

Growatt 古瑞瓦特

OFF-Grid Inverters Presentation



Aug, 2019



SPF 5000 ES

High yields

- Investment
- power factor
- Parallel

Capable

- Wide PV input range
- Without battery mode
- SUB function

Safe & reliable

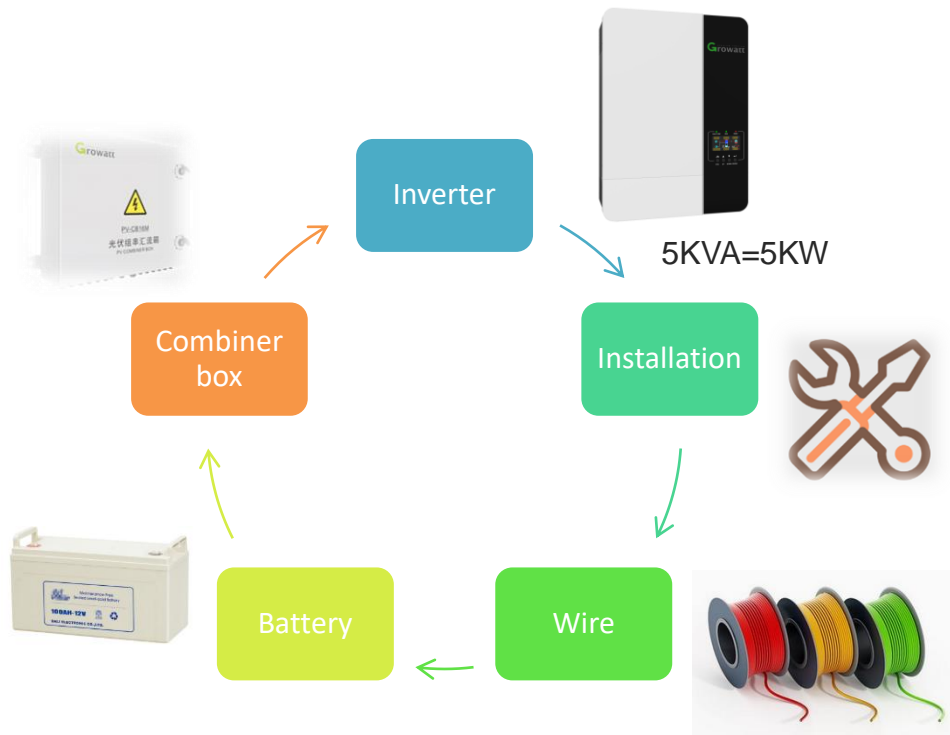
- Protection
- Equalization charge
- HMI operation

Application

- Save battery life
- Save electricity charge
- Off-peak charging

High yields -- Investment

Investment of off-grid system



ES series inverter:

1. PV input directly connect to PV terminal (No need install combiner box)
2. Without battery operation mode (save the investment of battery)
3. Solar panel in string and without battery (Save the cost of PV and battery wire in parallel)



SPF 5000 ES

High yields -- Output power factor

ES series inverter:
Output power factor : 1.0 (5KVA=5KW)



SPF 5000 ES

Power factor : 1.0

5KVA=5KW

5KVA=4KW

Power factor : 0.8

Inverter
100% load
still normal
working

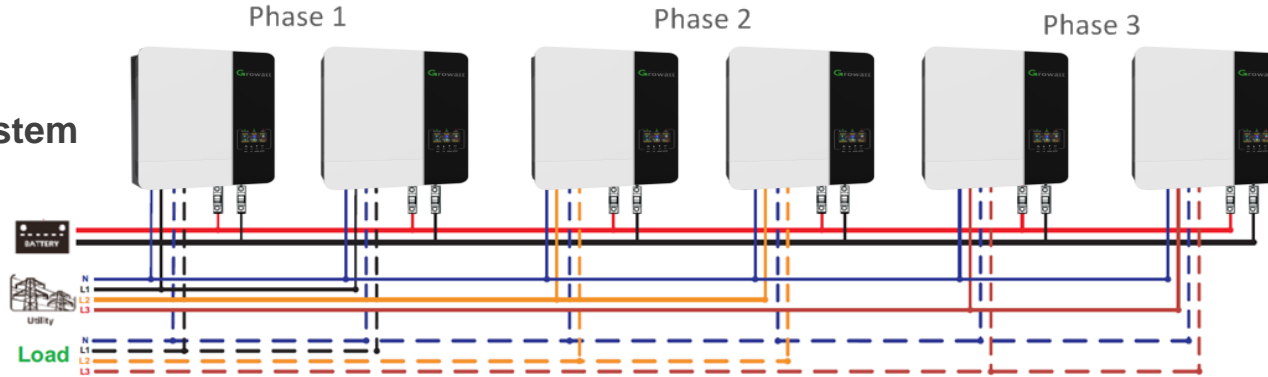
Over load
125%,
inverter stop
working

5KW resistance appliance

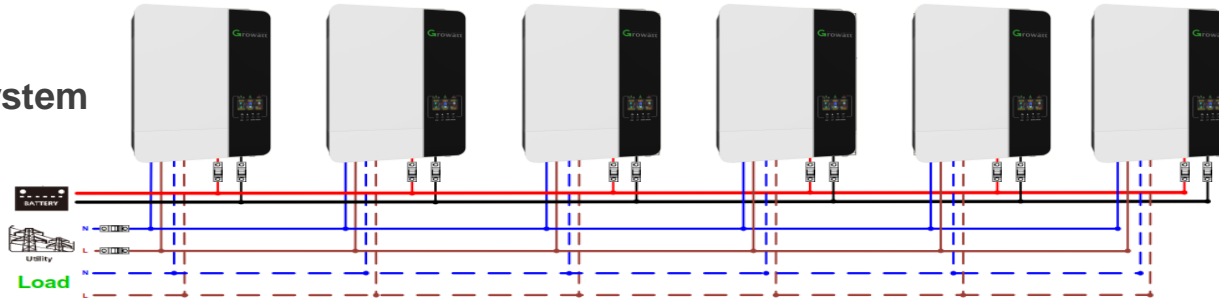
High yields -- Parallel

Parallel operation with up to 6 units only for 4/5KVA, the maximum system up to 30kw, also can be setting to 3 phase system .

Three phase system

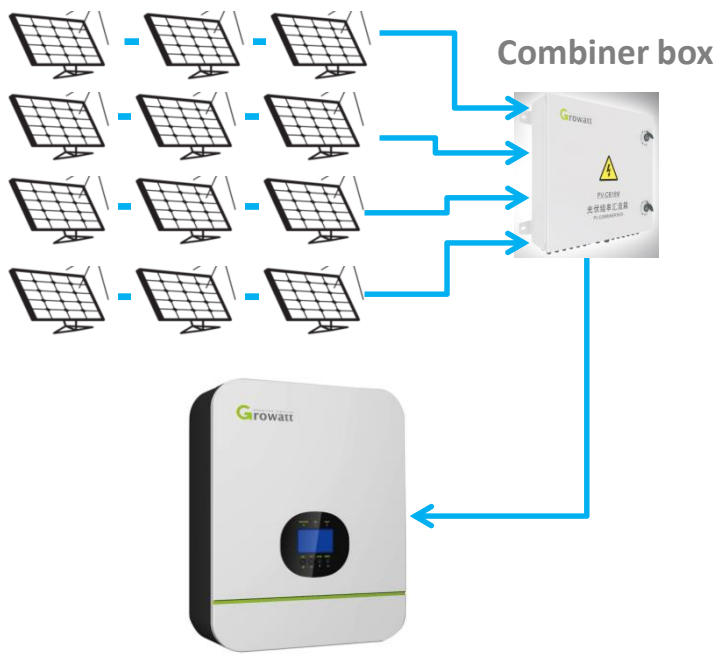


Single phase system



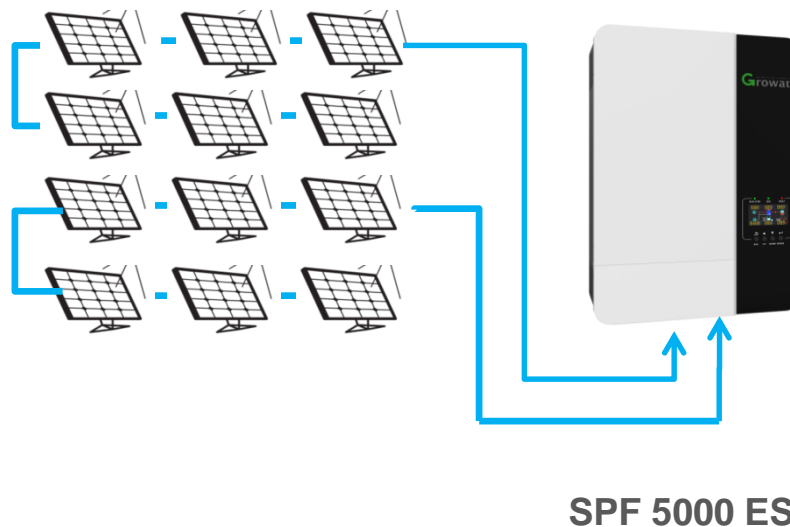
Smart &capable -- Wide PV range

General inverter Max .PV input is 145VDC



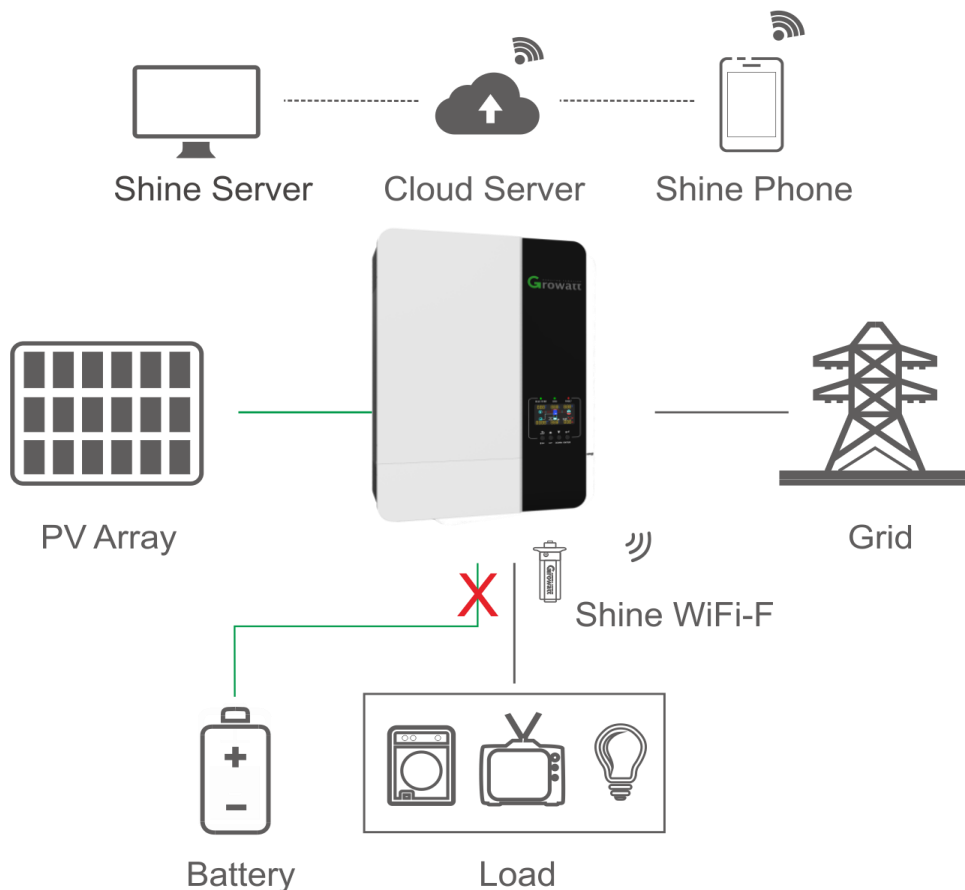
SPF 3000-5000TL HVM

SE series inverter input range up to 450VDC,
So without combiner box for PV input.
Convenient for installation and save the cost
of wire and combiner box.



SPF 5000 ES

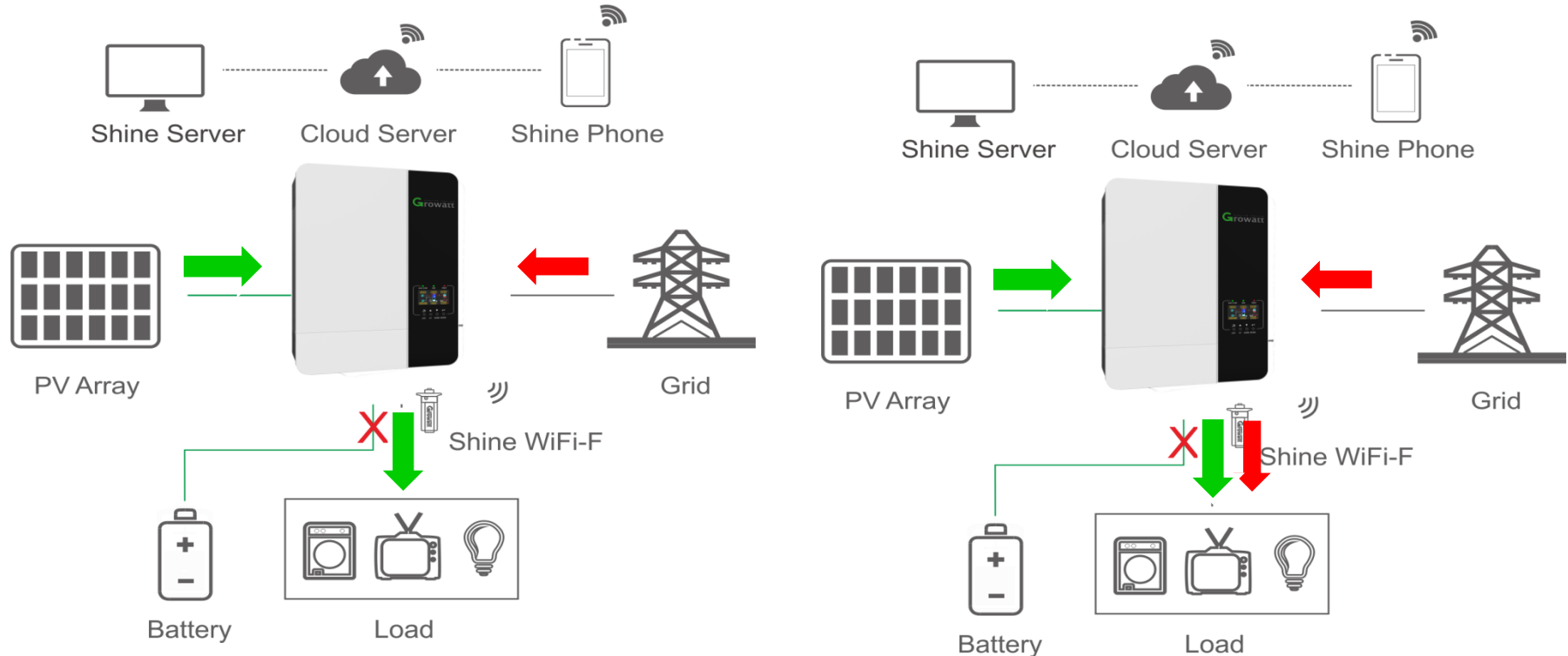
Smart &capable -- Without battery mode



1. **Directly connect solar panel and utility power without battery operation mode.**
2. **Disconnect battery input after inverter on standard mode .**
3. **Add more battery input for energy storage .**

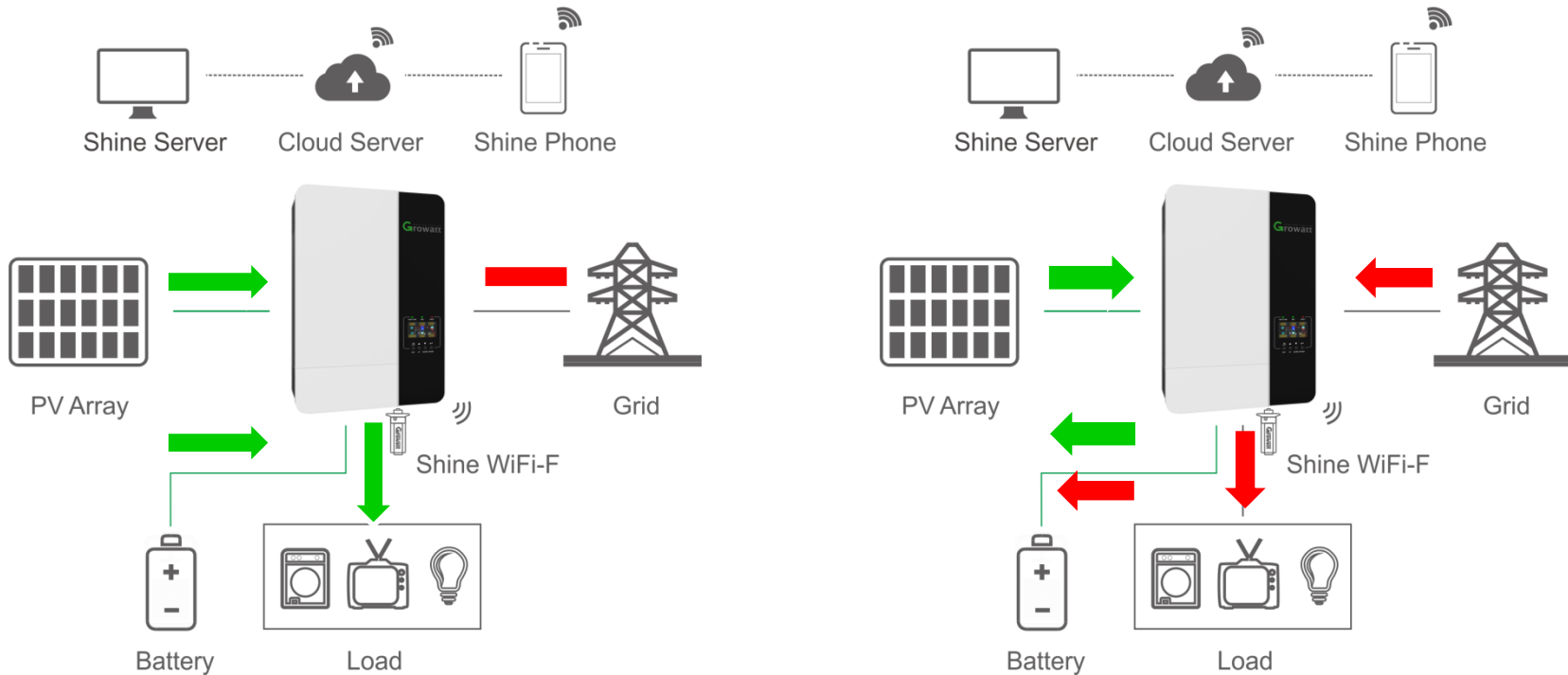
Smart &capable -- SUB function

If solar is sufficient ,solar supply power to load, utility will supply power to load at the same time when solar power is not sufficient .



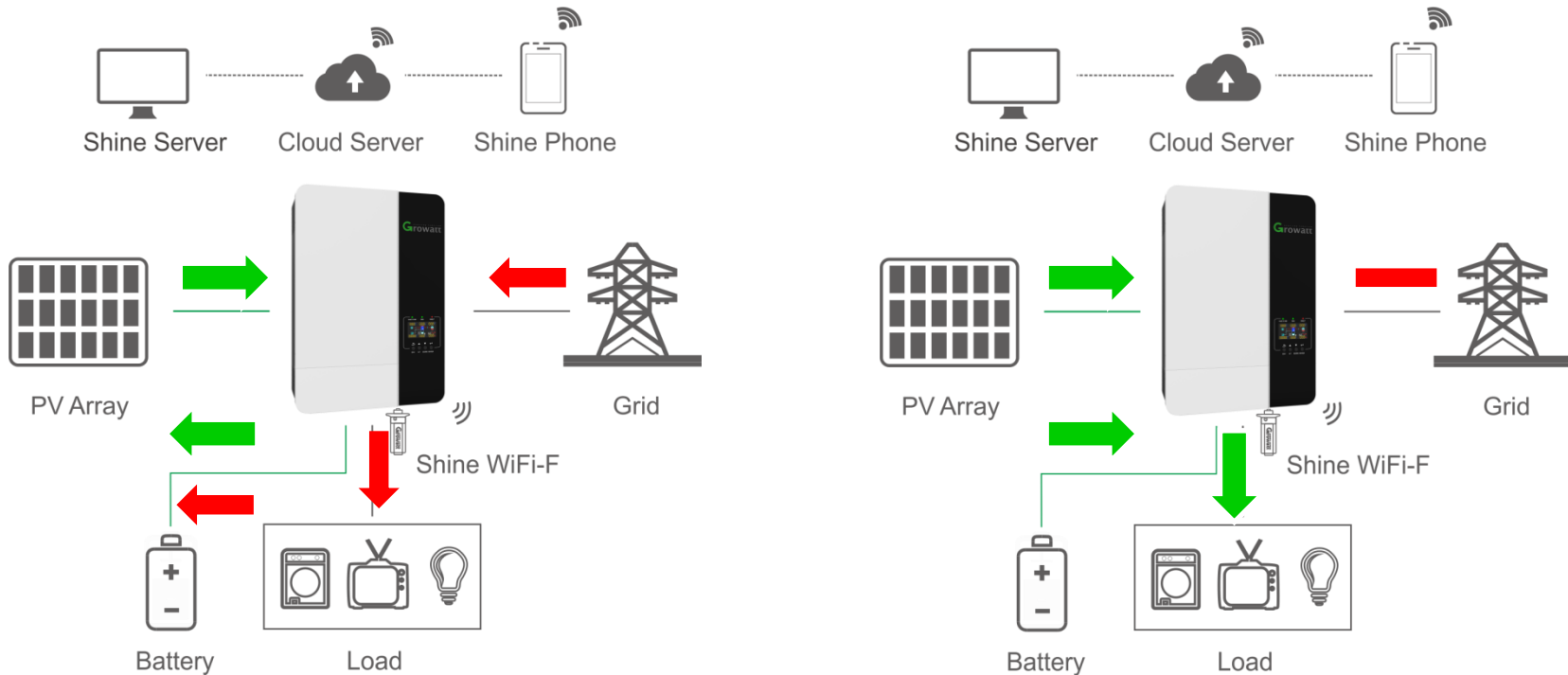
Setting voltage point back to utility or battery mode:

1.Back to utility mode voltage range: 44-51.2VDC

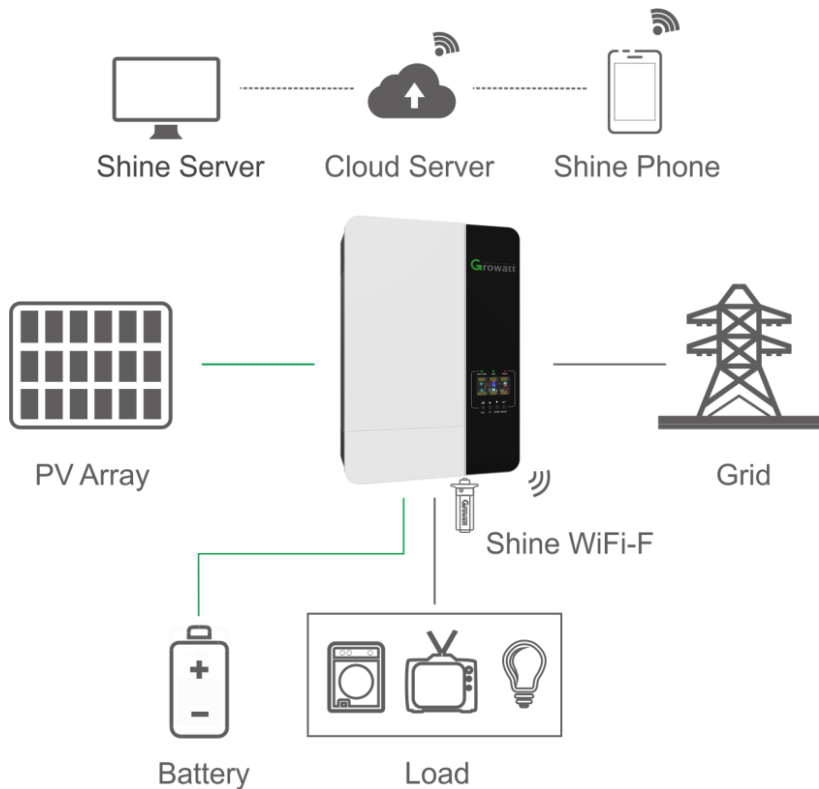


Setting voltage point back to utility or battery mode:

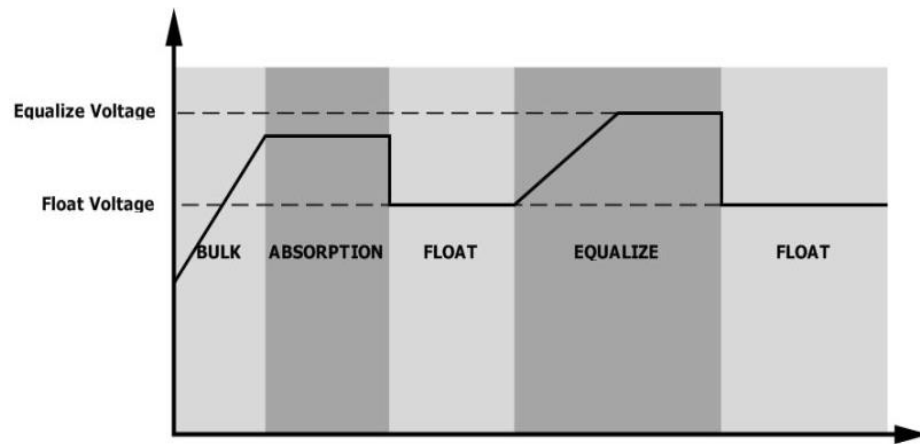
2.Back to battery mode voltage range:48-58VDC



Safe & reliable -- Equalization charge



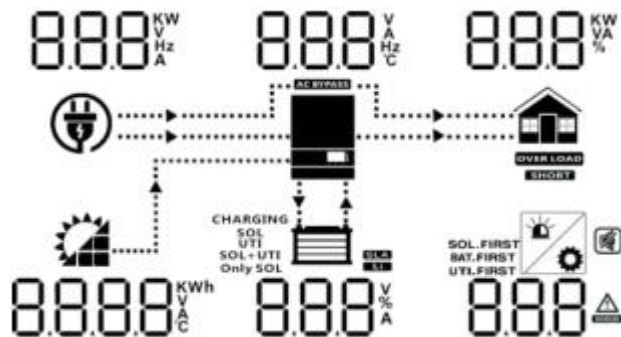
Inverter can setting battery equalization charge interval time and charge voltage to active lead-acid battery feature then can extend battery live.



Charging curve

Safe & reliable -- HMI operation

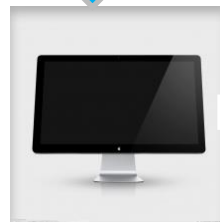
Display screen



SPF 5000 SE



USB cable



PC install monitor software

PV keeper monitoring platform



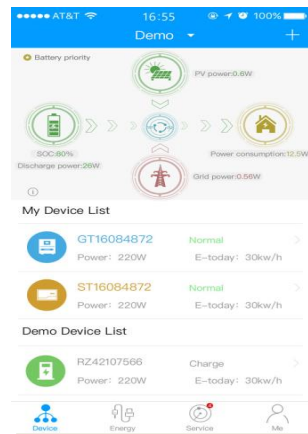
1. Input information (PV voltage, AC voltage, frequency, PV generator, battery voltage, charger current)

2. Output information(voltage , load percent, frequency, load in VA, load in watt, discharging current)

Safe & reliable -- HMI operation

Remote monitoring

WIFI , GPRS communication port for remote monitoring(Just for 4/5K units)



Phone APP



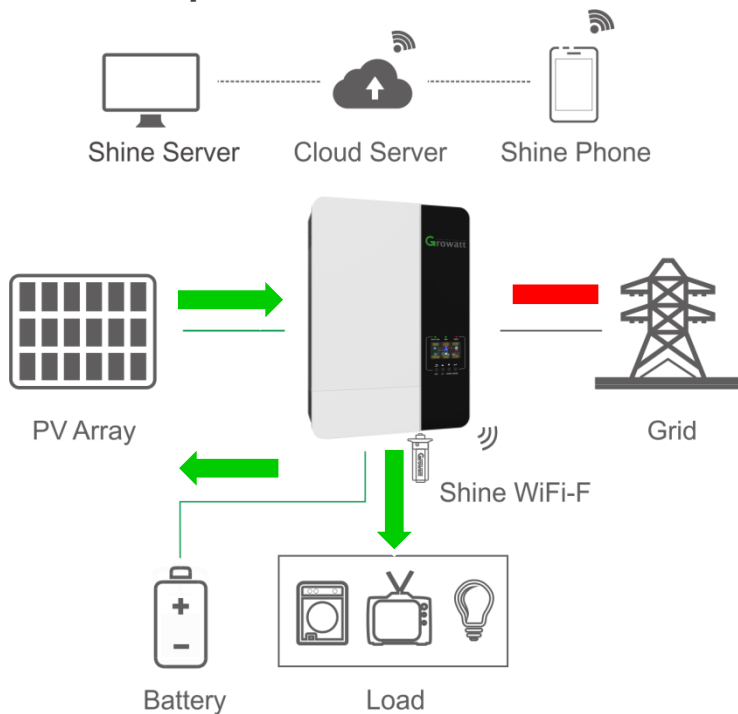
Server display

Application-- Save battery life

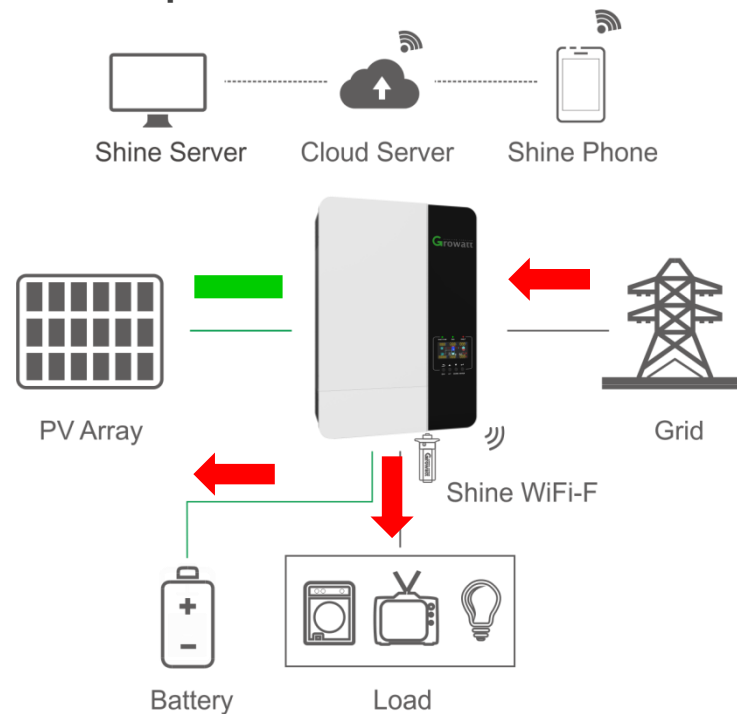
Priority mode : (output : solar first)

Solar supply power to load also charging for battery (if solar power is enough for load), when solar power is not available, automatic change to utility power to the load and charging for the battery.

solar power is sufficient



solar power is not available

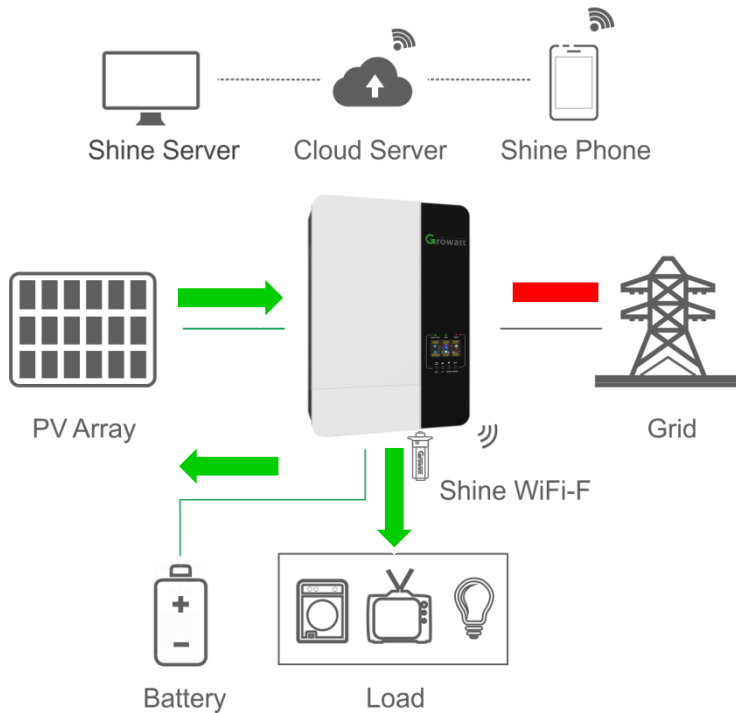


Application-- Save electricity charge

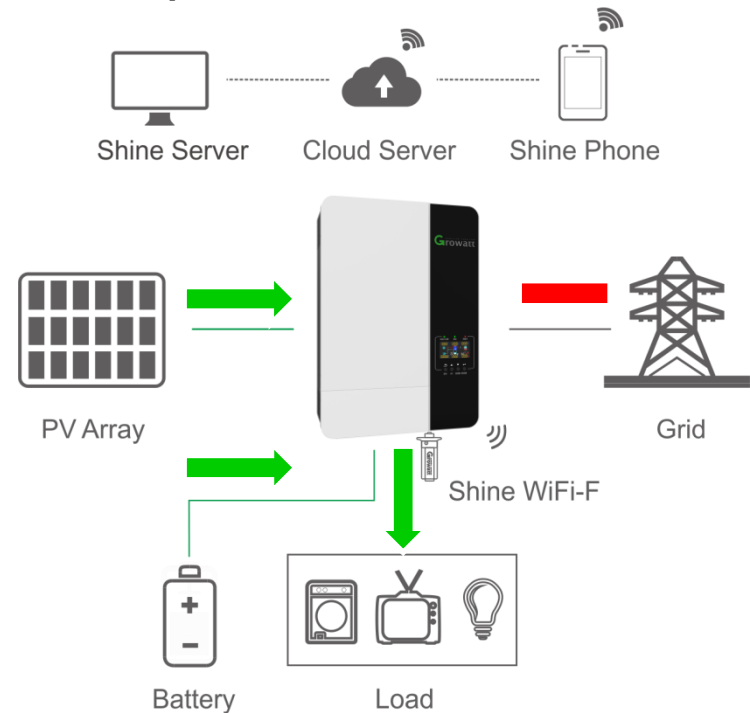
Priority mode: (output : SBU first)

Solar supply power to load also charging for battery (if solar power is enough for load), when solar power is not sufficient power for load, solar and battery power supply to the load at the same time.

solar power is sufficient



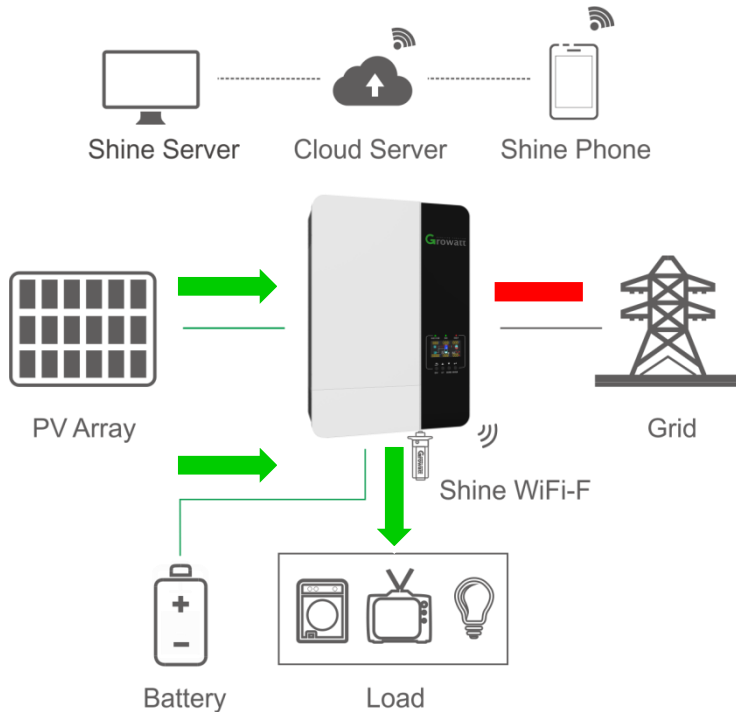
solar power is not sufficient



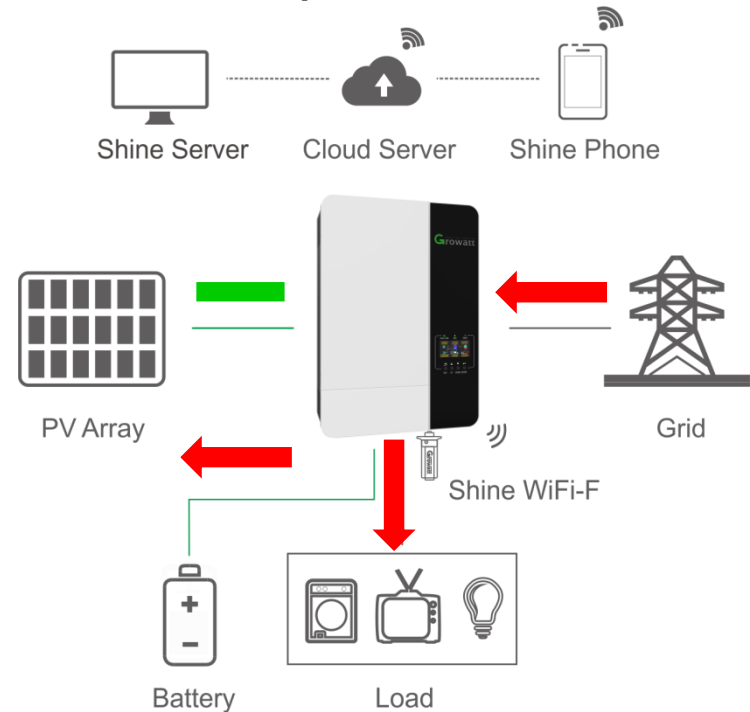
Application-- Off-peak charging

The time of grid power discharge and output can be setting during peak or off-peak time.

Peak time



Off-peak time



Thanks