Solis Standard Operating Procedure

System Work Mode Selection

This SOP document describes the different work modes that can be selected on the inverter.

1. Self Use Mode

This The PV power generation is supplied to the load preferentially, and the excess power is charged to the battery. After the battery is fully charged, the excess power is uploaded to the grid; the battery is discharged to the load at night.

NB. Enable the Self Use Mode Switch

1.1 Usage

This mode applies the area that has low feed-in tariff and high energy price.

1.2 Working Logic

Load priority: load>battery>grid

Power supply priority: PVr>battery>grid>DG

Support Time of Use setting in this mode.

1.3 Quick Step Overview

1. Enable the **Self use Mode Switch**

2. Enable the **Allow Grid Charging** if required.

3. If Allow Grid Charging function is enabled set the maximum **Grid charging Power Limit** allowed.

4. Enable the **Battery Reserve** function to reserve battery energy for backup power.

5. Set the **Reserve SOC** value as required by the customer to reserve the battery energy.

6. Time of use Discharge and charge time slots can also be added. Please refer to the "Time of Use" SOP
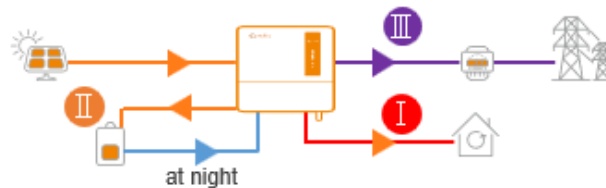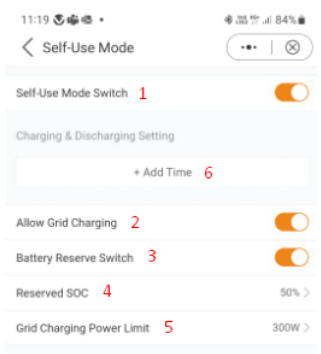

Figure 1 – Self Use Prioritization

2. Feed in priority mode.

The PV power generation is supplied to the load preferentially, the excess power is supplied to the grid firstly, and the battery keeps the basic charge of the battery.

NB. Enable the Feed in Priority Mode Switch

2.1 Usage

This mode applies to area that has high feed-in tariff and is allowed to export into the Grid.

2.2 Working Logic

Load priority : load>grid>battery

Power supply priority: PV>battery>grid>DG

Support Time of Use setting in this mode.

2.3 Quick Step Overview

1. Enable the **Feed in Priority Mode Switch**

2. **Allow Grid Charging** must be set On.

3. If Allow Grid Charging function is enabled set the maximum **Grid charging Power Limit** allowed.

4. Enable the **Battery Reserve** function to reserve battery energy for backup power.

5. Set the **Reserve SOC** to 100% as you do not want to export battery power to the grid.

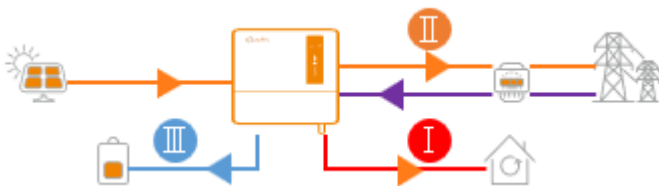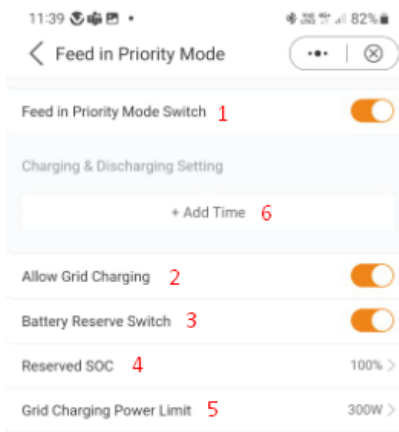6. Time of use Discharge and charge time slots can also be added. Please refer to the "Time of Use" SOP.

Figure 2 – Feed In Prioritization

3. Off grid mode

When there is No grid present, inverter needs to be set to Off-grid, and the backup port is off-grid output purely.

NB. Enable the Off-grid Mode Switch

3.1 Usage

This mode applies the area not covered by the grid or the system is not connected to the grid.

3.2 Working Logic

Load priority : load>battery

Power supply priority: PV>battery>DG

When a power outage is detected, the system will automatically enter the off-grid mode, supplying only the backup load.

3.3 Quick Step Overview

1. Enable the **Off-grid Mode Switch**

2 Set the **Off-Grid Over discharge SOC** to the required level to shut the back-up port off when the battery reaches the SOC set, for example in this example it was set to 30%.

This can be set lower, but be aware of the battery lowest limit SOC. This can be obtained from the battery manufacturer.
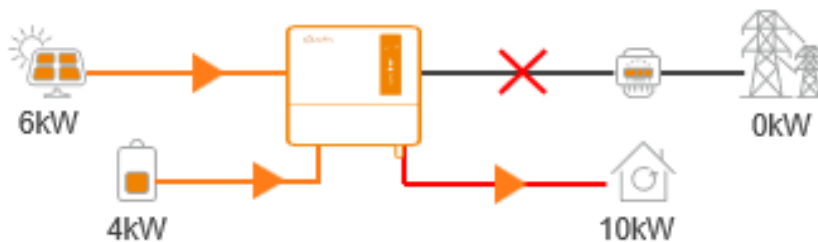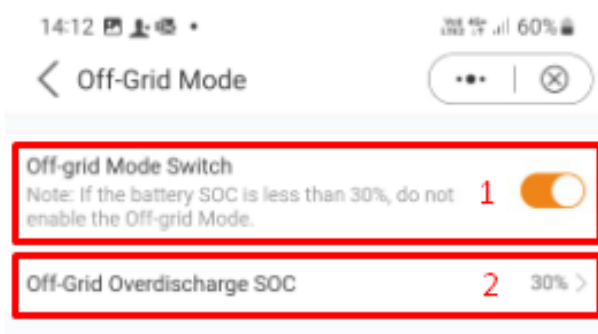

Figure 3 – Feed In Prioritization

4. Peak-Shaving

When there is No grid present, inverter needs to be set to Off-grid, and the backup port is off-grid output purely.

NB. Enable the Peak-Shaving Mode Switch

Note: This mode only supports the use with Lithium batteries with communication.

4.1 Usage

This mode applies the area where the electricity tariff is calculated according to the maximum power per unit time.

4.2 Working Logic

Load priority: load>battery>grid

Power supply priority: PV>grid>battery>DG

Support Time of Use setting in this mode.

In this mode, on the premise that the power supplied by the grid does not exceed the set value(P_max), the system will be trying to charge the battery to Peak SOC.

If （$P\_discharge+P\_max+PV < P\_load$）， it will exceed the set value(P_max) to support the load.

4.3 Quick Step Overview

1. Enable **Peak Shaving mode**
2. Set **Max useable Grid Power**
3. Set the **Baseline SOC**
4. Set the **Allow Grid Charge**
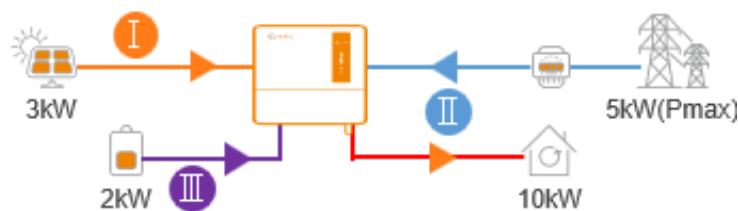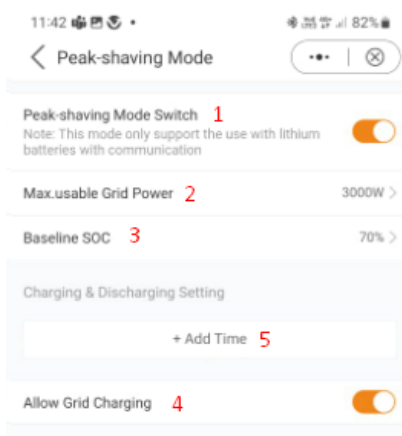5. **Time of use Discharge and charge time slots** can also be added. Please refer to the "Time of Use" SOP

Figure 4 – Peak-Shaving Prioritization

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