



# SMILE5

On Grid Energy Storage System (ESS)  
Complete Solution for Residential Applications



# 1

## WHAT IS SMILE5?

Get on board with the solar storage revolution using the latest SMILE-10.3P battery. Not only you will save money you can earn income through power trading.

- 1) 24-hours blackout black out redundancy (UPS) Unlimited Power Supply;
- 2) Stylish design to suit every home;
- 3) Income and energy saving through VPP technology;
- 4) Good for the planet, great for your home;

SMILE5 contains an Alpha SMILE5 inverter and an Alpha SMILE-10.3P battery. The overall dimensions of SMILE5 are 1604 X 610 X 236.6mm.

### 1.1 SMILE5 Inverter

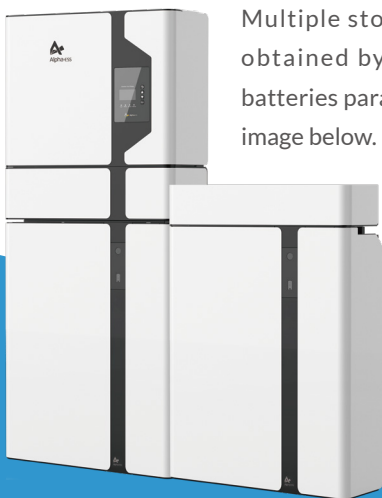
The inverter is a power device which can convert DC power (Solar or BAT) to AC power (the electricity could use in the house).

We choose Alpha as our inverter because of its reliability and longevity.

Alpha inverter has UPS backup function inbuilt, which means it could keep your backup load on during a blackout evening without noticing it.

### 1.2 Battery

Standard SMILE5 system contains 10.3 kWh battery, in which 90% of this capacity is the usable capacity ( $10.3 \times 0.9 = 9.3$  kWh usable capacity).



Multiple storage batteries can be obtained by simply locating two batteries parallel to one another. See image below.



## 1.3 Battery Usage

When under normal usage (with healthy & functional grid), the battery will discharge and charge according to the load and PV automatically to reach the best financial benefit for you.

SMILE5 has a backup function conveniently built-in. During the event of a blackout, the load (applications) connect to the backup port of the SMILE5 and automatically activate the backup function (also called UPS FUNCTION).



**Note:** UPS stands for Uninterrupted Power Supply, which means power restore time is less than 20ms during a blackout event.

The backup capability and normal power could change based on the Inverter size:

INV Type	Normal power (kW)	Backup Capability (kW)
SMILE5-INV	5	4.6

For easy understanding, please see below examples for typical load combination that could be used under normal conditions or powered by the backup.

### Under normal condition:

- 2kW power can support 12 LED lights (10W each), 1 TV (30W), 1 refrigerator (350W) and 1 Air conditioner (1500W) at the same time.
- 5kW power can support 10 LED lights (10W each), 1 refrigerator (350W), 1 oven (1000W), 1 clothes washer (550W) and 1 Central Air Conditioner (3000W) at the same time.

### Under Backup condition:

- 2kW power can support 12 LED lights (10W each), 1 TV (30W), 1 refrigerator (350W) and 1 heater (1500W) at the same time.
- 4.6kW power can support 10 LED lights (10W each), 1 refrigerator (350W), 1 hair blower (600W), 1 heater (1500W), 1 toaster (1500W) and 1 iron (450W) at the same time.

The backup period time could also change based on the numbers of the battery connected to the system.

Please check the example below:

**1 x SMILE5 10.3kWh battery** = 5kW discharging for approx 1.86 hours  
= 4.6kW discharging for approx 2.02hours  
= 2kW discharging for approx 4.65 hours

**2 x SMILE5 10.3kWh batteries** = 5kW discharging for approx 3.72hours  
= 4.6kW discharging for approx 4.04 hours  
= 2kW discharging for approx 9.30 hours



**Note 1:** Load can vary largely, please decide your backup load according to your blackout experience locally and only connect the emergency resistive load (It is a type of load that draws current in the same proportion with the apply voltage) without exceeding the limitation of the inverter.



**Note 2:** The system will automatically turn on after a few seconds of "Cool-down" when the backup load is oversize, but if the application hasn't been changed, the system will repeat the "cool-down" cycle until the overload issue has been solved.

## 1.4 VPP

### What is VPP:

Discover energy has developed unique Virtual Power Plant (VPP) software that connects to the solar and battery system via the cloud that works together to behave like a power plant releasing energy back to the grid at peak demands. The software aggregates the capacities of the distributed energy resources (DER) for enhancing power generation. Your excess power is sold on your behalf at the optimum trading price to maximise your energy income. They are operated and monitored from a central point in the cloud and coordinated by Discover Energy to respond dynamically to market signals.

### Who is Discover Energy:

Discover Energy is a 100% Australia Owned energy retailer. They are committed to make a bigger difference by helping to reduce daily emissions more effectively by combining green energy and redistributing excess green energy back to the grids.

### The benefits of VPP:

**Cheaper:** Your solar system will produce energy with an excess being stored in your batteries. When grids require more energy, our smart software will determine the optimal time to sell your excess energy back to grids.

**Smarter:** Discover Energy has developed innovative Virtual Power Plant (VPP) technologies, based on your rooftop solar system, batteries and cloud-based software.

**Greener:** Electricity production is a large contribution to carbon emissions and the change in our climates is costing us all dearly. Joining VPP is not only cheaper, smarter, it's also greener.

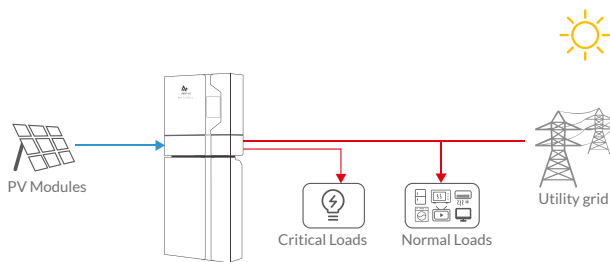


# 2

## HOW THE SMILE5 WORKS

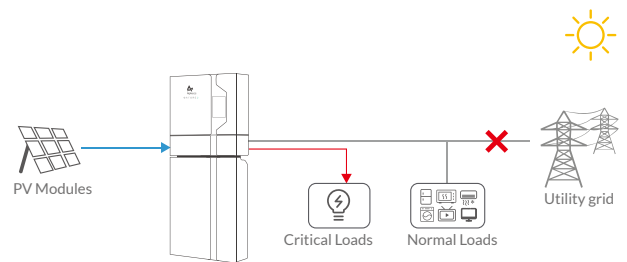
### 2.1 Normal Usage Mode

The battery will help the homeowner to save the excess energy in the daytime and release it during the night. This means you become less reliant on the grid energy consumption as your home consumption is supported by the SMILE5 generally lowering energy costs.



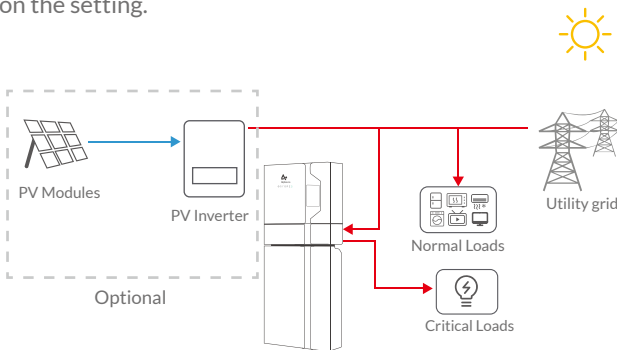
### 2.2 Back-up Mode

The back-up mode will automatically switch on when the grid fails. The battery will discharge and support your backup applications. At the same time, your solar panels are connected to SMILE5 and they will also be able to generate energy and charge the battery during the daytime.



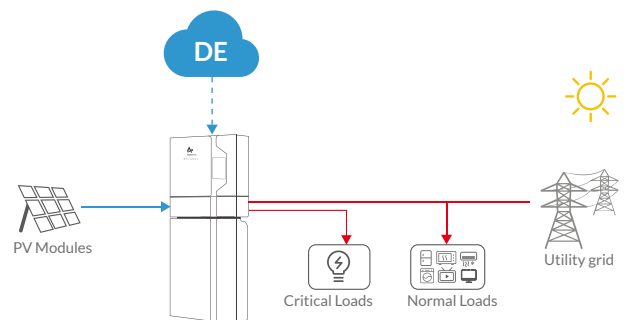
### 2.3 Grid Coupling Mode

SMILE5 can work without solar panels in the system even with a house which already had an existing grid-tied inverter. The battery can be charged by the grid or the existing inverter. The charge time/power can be set flexibly on the setting.



### 2.4 VPP Mode

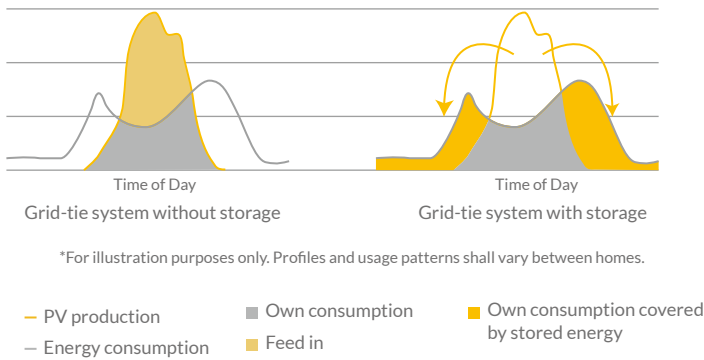
With software developed by Discover Energy, SMILE5 can export energy to the grid selling it at peak demand to maximise the financial return to you. This VPP Energy Trading can work under AC-coupled mode as well.



# 3

## HOW TO SAVE MONEY

SMILE5 can store excess daytime PV energy into the battery and release back for night time usage. By doing this, your electricity bill will not only covered by Solar power in the daytime but also taken care by SMILE5 battery at night time.



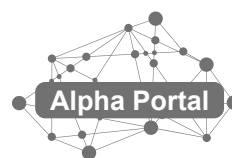
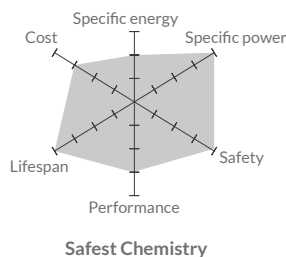
In addition, the VPP function could boost your income even further. Your solar system will produce energy with the excess energy being stored in your batteries. When grids require more energy, our smart software will determine the optimal time to sell your excess energy back to grids.

# 4

## HOW TO MAINTAIN THE SYSTEM

### Maintenance Free

SMILE5 is a maintenance-free system. We are using LiFePO4 (LFP) as our battery chemistry which has been well known in the industry for its stability and longevity. It doesn't release gas or consume any water hence don't need to maintain a lead-acid battery.



Real-time Monitoring

In addition, the system is constantly monitored by Alpha Online Monitor System which has fault remind function built-in. If the system went into a fault, Alpha will diagnose the system and solve the issue.



## 5 WHAT IF THE SYSTEM HAS PROBLEM?

Please record your system Serial Number and contact your local installer for further information.

Our service number is  **1300 968 933**

In order to efficient the service, we would prefer to talk to your installer for troubleshooting, please contact them before calling this number.

## 6 WARRANTY T&C

Please check the link below:

[https://www.alpha-ess.com/Upload/Images/20190710020256\\_960752.pdf](https://www.alpha-ess.com/Upload/Images/20190710020256_960752.pdf)



**Please note:** All SMILE5 battery has 10 years product warranty and 5 years power control system product warranty.