

# AlphaESS

AN ENERGY STORAGE SOLUTION PROVIDER  
COVERING THE FULL POWER RANGE



**YOUR SMART ENERGY**

AlphaESS UK version





AlphaESS is one of the world-leading energy storage solution and service providers. The company specialises in residential and commercial applications, delivering pre-eminent products and fit-for-purpose solutions. With 15+ subsidiaries around the globe, AlphaESS provides local services and supports 90,000+ systems actively running in over 90+ countries, enabling millions of people to enjoy reliable, accessible and clean energy.

## GLOBAL PRESENCE / AWARDS AND CERTIFICATION



 **11**  
Years Since 2012

 **100,000+**  
Systems Installed Globally

 **90+**  
Countries & Regions

 **4**  
Product Development Units

 **180+**  
Patents in ESS Field

 **15+**  
Subsidiaries Worldwide

 **80,000m<sup>2</sup>**  
Production Facility

 **1,000+**  
Employees in the Globe



iF & Reddot & G-mark  
Design Award



TOP BRAND PV  
(STORAGE)



ees & THE smarterE  
award finalist



2022 TOP 1  
Australia Market  
Share



2021 Top 3  
overseas shipments  
ESS integrator



2021 TOP 5 residential  
energy storage solution  
provider in Germany



2021 TOP 6 supplier of  
global residential  
storage systems



Global Warranty

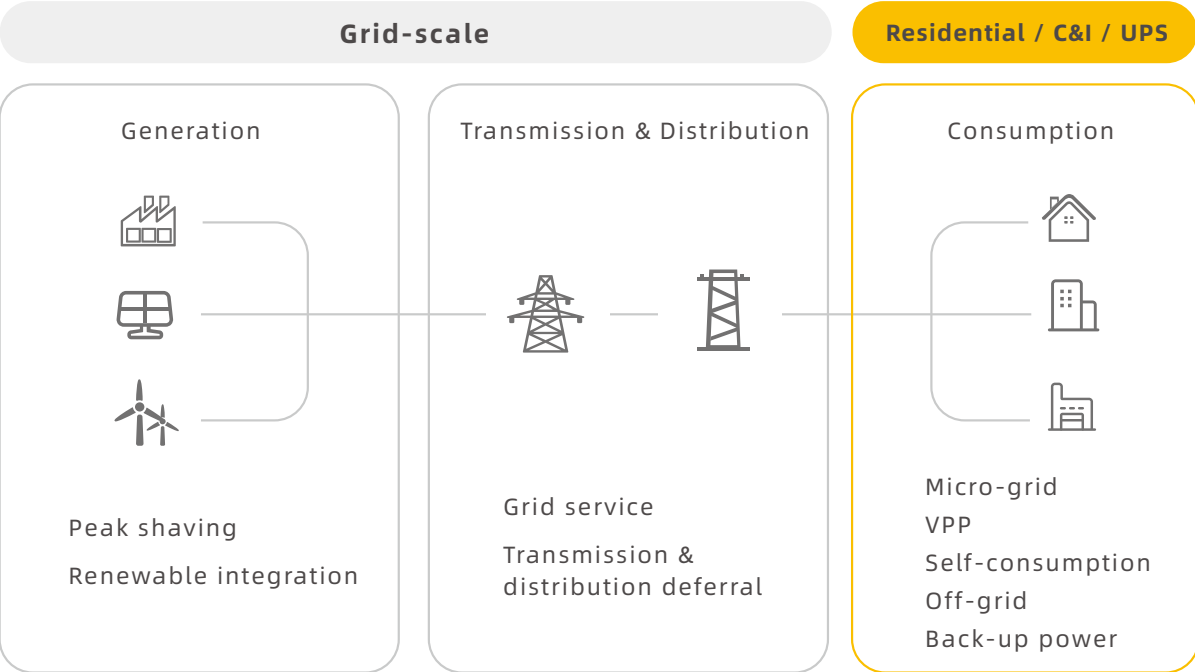


Global Warranty

OUR EXPERTISE



MAJOR APPLICATIONS



WHY ALPHAESS

1. Safety First

**ONLY**

**The safest chemistry LiFePO4**

We use only LiFePO4 batteries to ensure our customers benefit from the premium characteristics while maintaining the highest safety standards.

**The most robust cell types**

To ensure long mechanical lifespans and safety, AlphaESS never use unreliable casing materials.

**Global TIER 1 cell manufacturer**






2. Core Technology

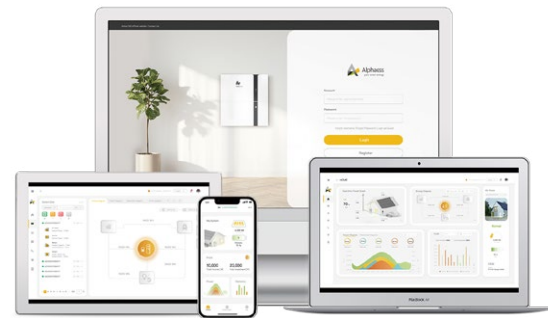
Application	Energy Transformation Smart Home	Energy Conservation Capitalization	<b>Secondary Development from Our Partners</b>
Platform	Prediction AI Algorithm	Scheduling Big Data	<b>AlphaESS Core</b>  Building a "Windows or Android System" within the Energy Sector  ESS covering full power range / power facilities
Communication Control	5G/4G Power Carrier BMS	Cloud Communication EMS	
Hardware	Power Generation/ Transmission/ Distribution	Grid	

### 3. Smart Energy

#### AlphaCloud

Connects all the AlphaESS systems and enables monitoring, smart control, trading and energy service.

-  Make maximum use of your PV system
-  Intelligently control your system to maximize self-consumption
-  Set parameters control and build VPP
-  Monitor your system 24/7 and upgrade it remotely
-  Enjoy a smart home with IoT compatibility



#### Battery Management System

##### Alpha BMS Research Institute

50+ BMS R&D veteran researchers with 10+ year ESS BMS

##### High SOC Accuracy

Our SOC algorithm is 97% accurate

##### Comprehensive Protection

3-level software protection  
Redundant hardware level protection

##### Functional Safety

ASIL (Automotive Safety Integrity Level) hardware (Level D), software and system architecture  
IEC61508 testing, the highest level (D)  
Comprehensive and optimized protection including multiple monitoring items, POST, hardwired alarm system, multiple protection during operation



#### Energy Management System

##### Multifunctional and Powerful

Local absorption, reducing PV power abandonment  
Peak and frequency regulation  
PV power self-consumption  
Load shifting  
Backup power supply, UPS/EPS  
Peak shaving  
Micro/Off-grid control  
Demand charge management

##### Highly Compatible

Enabling external control through SCADA, MODBUS, ETHERNET, etc.

##### Safety

Safety control designs  
Industry-leading cloud computing  
Financial-grade security



## Residential

3kW - 10 kW

- SMILE-B3-PLUS
- SMILE-G3
- SMILE5
- SMILE-S6-HV
- SMILE-T10-HV





WE DO MORE THAN **STORE** POWER  
WE MAKE IT **SMART**



UPS Ability



24/7 Online Monitor



Safe and Reliable (LFP ONLY)



Modular Design



High Compatibility



Easy Installation and Expansion

## SMILE Series

3  
kW



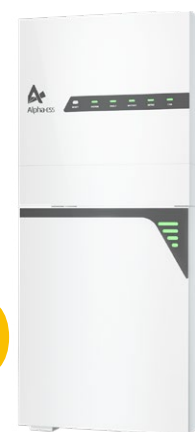
SMILE-B3-PLUS

5  
kW



SMILE5

10  
kW



SMILE-T10-HV

- S**elf sufficient
- M**odular battery
- I**ntelligent control
- L**ong lifespan
- E**legant design

3.68  
/ 5  
kW



SMILE-G3

6  
kW



SMILE-S6-HV

## SMILE-B3-PLUS 3kW / 5.04kWh

Expandable to 30.24kWh

### All-in-one Module

AC-Coupling

Nominal output 3 kW AC.

Built-in 5.04 kWh battery module

640 x 250 x 725 mm (W x D x H)

60 kg

IP65 (Outdoor)

Open API, modbus control portal



VPP Ready



Compatible with All  
Solar Inverters



Slim but Powerful



Built-in Battery

### Expandable Battery Module

IP65 (Outdoor)

Max. 5 units (parallel)

0.5C, 95% DoD, 48V

45 kg

640 x 250 x 345 mm (W x D x H)

5.04 - 30.24 kWh



SMILE-BAT-0.5C

## SMILE-G3: 3.68kW / 5kW

Expandable to 60.5kWh

### ① SMILE-G3-INV

#### Hybrid inverter

##### SMILE-G3-S3.6

Max. PV input 7.36 kW

Nominal output 3.5 kW

##### SMILE-G3-S5 (2024 Release)

Max. PV input 10 kW

Nominal output 5 kW

610 x 212 x 366 mm (W x D x H) / 19.5 kg

230 V rated voltage

IP65 (Outdoor)

Open API, modbus control portal



VPP Ready



Grid-Forming



Smart  
Off-Grid



High Max.  
PV Input



High PV Input  
Current



Better Backup  
Overload Capability

### ② Battery Module Options

IP65 (Outdoor) / IP21 (Indoor)



SMILE-G3-BAT-3.8S

1-4 units (series)

1C, 95% DoD, 96 V

39.2 kg

610 x 212.5 x 435 mm  
(W x D x H)

3.8 ~ 15.4 kWh



SMILE-G3-BAT-8.2P

Max. 6 units (parallel)

1C, 95% DoD, 256 V

78.3 kg

610 x 250 x 793 mm  
(W x D x H)

8.2 - 49.2 kWh



SMILE-G3-BAT-10.1P

Max. 6 units (parallel)

0.5C, 95% DoD, 96 V

90 kg

610 x 212 x 793 mm  
(W x D x H)

10.1 - 60.5 kWh

**SMILE5: 5kW    Expandable to 60.6kWh**

**① SMILE5-INV**

Hybrid inverter

Max. PV input 6.66 kW DC.

Nominal output 5 kW AC.

100Amp integrated charger

610 x 210 x 627 mm (W x D x H) / 30 kg

IP65 (Outdoor) / IP21 (Indoor)

UPS 5kW continuous for critical loads

Open API, modbus control portal

An integrated cable box with PV and battery isolator, AC circuit breaker



Best Seller



VPP Ready



Classic Design

**② Battery Module Options**

IP65 (Outdoor) / IP21 (Indoor)

Max. 6 units (parallel)

2.9 kWh  
Up to 6



M4856-P

1C, 96% DoD, 51.2 V

39 kg

610 x 220 x 305 mm  
(W x D x H)

2.9 - 17.2 kWh

5.7 kWh  
Up to 6



SMILE5-BAT

0.5C, 96% DoD, 51.2 V

73 kg

610 x 207 x 629 mm  
(W x D x H)

5.7 - 34.4 kWh

10.1 kWh  
Up to 6



SMILE-BAT-10.1P

0.5C, 96% DoD, 48 V

95 kg

610 x 236 x 678 mm  
(W x D x H)

10.1 - 60.6 kWh

**SMILE-S6-HV: 6kW    Expandable to 49.2kWh**

**① SMILE-S6-HV-INV**

Hybrid inverter

Max. PV input 9 kW DC.

Nominal output 6 kW AC.

100Amp integrated charger

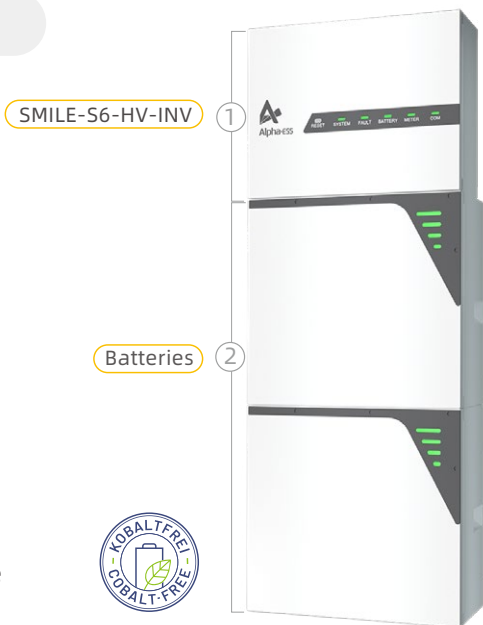
580 x 230 x 440 mm (W x D x H) / 25 kg

IP65 (Outdoor) / IP21 (Indoor)

UPS 6 kW continuous for critical loads

Open API, modbus control portal

With PV and battery isolator, AC circuit breaker on the side



VPP Ready



Full 6kVA Backup



AFCI & Rapid Shutdown



High Efficiency Battery

**② Battery Module Options**

IP65 (Outdoor) / IP21 (Indoor)

Max. 6 units (parallel)

8.2 kWh module

1C, 95% DoD, 256 V

71 kg (Indoor) / 75 kg (Outdoor)

580 x 230 x 730 mm (W x D x H) (Indoor)

580 x 230 x 820 mm (W x D x H) (Outdoor)

8.2 - 49.2 kWh

8.2 kWh  
Up to 6



SMILE-BAT-8.2PH  
(Indoor)

SMILE-BAT-8.2PH-P  
(Outdoor)

## SMILE-T10-HV: 10kW      Expandable to 49.2kWh

### ① SMILE-T10-HV-INV

Hybrid inverter

Max. PV input 16 kWp (2 MPPT)

Max. output power 10 kW

580 x 230 x 606 mm (W x D x H) / 30 kg

380 V / 400 V rated voltage

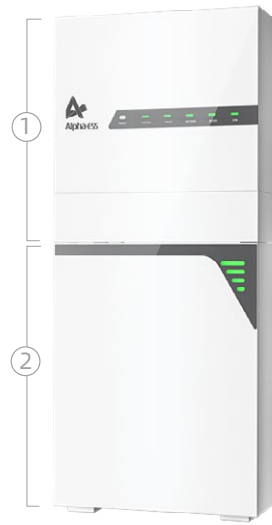
IP65 (Outdoor) / IP21 (Indoor)

An integrated high voltage cable box with  
PV and battery isolator, AC circuit breaker

BMS & EMS integrated

SMILE-T10-HV-INV

Battery



160% PV Input



Three Phase Output



High Voltage & High  
Efficiency

### ② Expandable Battery Module

IP65 (Outdoor) / IP21 (Indoor)

Max. 6 units (parallel)

8.2 kWh module

1C, 95% DoD, 256 V

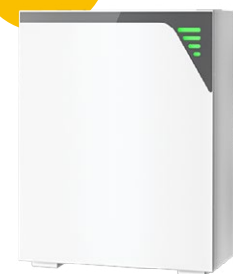
71 kg (Indoor) / 75 kg (Outdoor)

580 x 230 x 730 mm (W x D x H) (Indoor)

580 x 230 x 820 mm (W x D x H) (Outdoor)

8.2 - 49.2 kWh

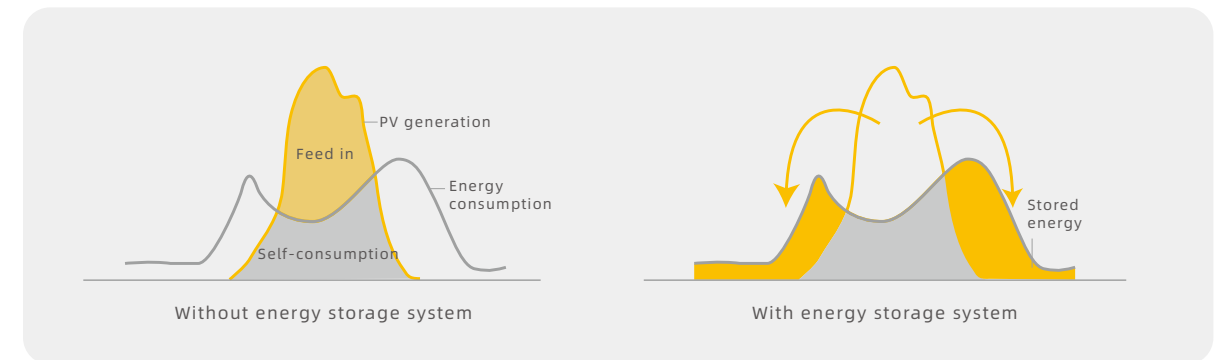
8.2 kWh  
Up to 6



SMILE-BAT-8.2PH  
(Indoor)  
SMILE-BAT-8.2PH-P  
(Outdoor)

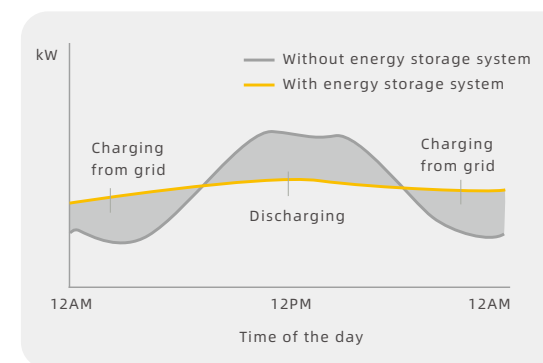
## MAXIMISING YOUR RETURNS

### 1. Self-Consumption Optimization



The energy storage system can help you cut down the electricity bill by storing surplus PV generation and discharging later to meet your demand of electricity.

### 2. Load Shifting



#### User-end: Load Shifting

Save money by avoiding peak electricity rates, storing electricity during off-peak times and discharging stored energy during peak times.

#### Transmission & Distribution: Peak Shaving

Avoid substation and power line upgrades by providing a fast and responsive emission free solution to variable load peaks.

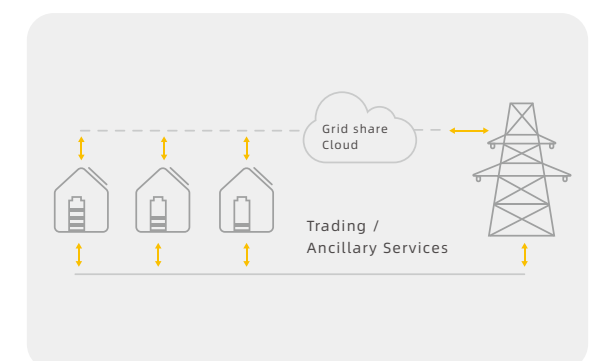
#### Ancillary Services

The combination of several flexible production and consumption units, controlled by a central intelligent system, is the core behind a VPP, which can stabilize the grid by balancing energy supply and demand.

#### Electricity Arbitrage

Optimize trading strategies to maximize returns. VPP can utilize the aggregated power to react to changes in electricity pricing by adapting to the existing supply of power on the grid.

### 3. VPP Revenue







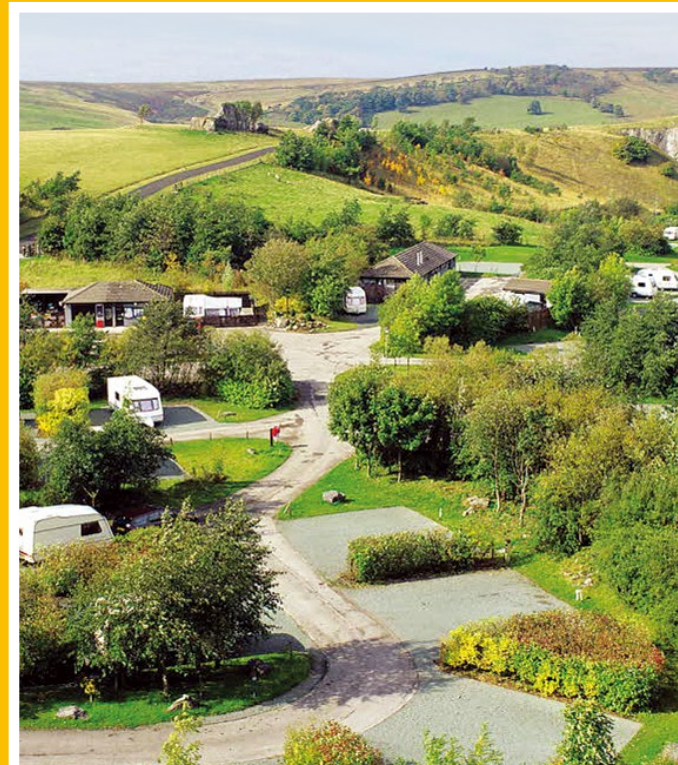
2 locations in the  
UK as well as in  
98 locations around  
the world





*Working with our partners at Immersa we developed the solution to meet the customers expanded requirements. It demonstrated the flexibility of the AlphaESS products and how they can be adapted in situations like the one at Farditch Farm Holiday Park.*

Mark Hale  
Managing Director, AlphaESS UK



## Commercial & Industrial

30 kW - 10 MW+



Back-up power



Off-grid



Micro-grid



Fuel saving solution



Self-consumption



Demand charge management



A **WIDE RANGE** of hybrid and battery PCS solutions for all your C&I projects with various requirements

#### H30 30 kW hybrid PCS

A small commercial and industrial solution for on/off grid with singular hybrid inverter

- 45 kW Max. PV input
- IP54 (Outdoor) / IP21 (Indoor)
- Built-in isolation transformer
- Battery DC voltage range: 150-750 V
- Battery Module: M38210-SC, M7790-S



#### T50 /100 50 / 100 kW hybrid PCS

A double inverter capacity PV input for off-grid  
Flexible power modular design

- 100 / 200 kW Max. PV input
- 1 MPPT
- Optional STS integrated transformer module
- Battery DC voltage range: 250-520 V
- Battery Module M48112-S, M38180-S, M38210-S



#### TB50 / 100 / 150 50 / 100 / 150kW battery PCS

Multiple MPPTs for flexibility / Grid-forming with solar inverters  
Operating on and off-grid

- AC-coupled solution
- 1 / 2 / 3 x 60kW PV string inverters
- STS / Transformer integrated
- Battery DC voltage range: 500-850V
- Battery Module M48112-S, M38180-S, M38210-S



#### TB250 / 500 250 / 500 kW battery PCS

Heavy-duty industrial application

- AC-coupled solution
- With Max. 10 x 50 kW PV string inverter
- 250kW transformer integrated
- 500kW transformerless
- Separate STS / cabinet required
- Battery Module M48112-S, M38180-S, M38210-S



A **FLEXIBLE** battery pack solution to meet all your C&I energy storage capacity needs

#### M7790-S The 1C battery solution

High energy density with high  
c-rating battery solution

- Energy Capacity: 6.9 kWh • Nominal Voltage: 76.8 V
- Max. charge and discharge: 90.5 A (1 hour)
- Weight: 64 kg



#### M48112-S The 1C battery solution

Small volume, modular and flexible  
High C-rating battery solution

- Energy capacity: 5.7 kWh • Depth of discharge: 90%
- Nominal voltage: 51.2 V
- Operating voltage range: 48-56.3 V
- Max. charge and discharge: 112 A (1 hour)
- weight: 65 kg



#### M38180-S The 1C battery solution

High energy density solution  
Cost effective solution

- Energy capacity: 6.9 kWh • Depth of discharge: 90%
- Nominal voltage: 38.4 V
- Operating voltage range: 36-43.2 V
- Max. charge and discharge current: 180 A (1 hour)
- Weight: 66 kg



#### M38210-S The 0.5C battery solution

High energy density solution  
Cost effective solution

- Energy capacity: 8.1 kWh • Depth of discharge: 90%
- Nominal voltage: 38.4 V
- Operating voltage range: 36-43.2 V
- Max. charging and discharging current: 105 A (2 hours)
- Weight: 62 kg



#### M38210-SC The 0.5C battery solution

High energy density solution  
Cost effective solution

- Energy capacity: 8.064 kWh • Depth of discharge: 90%
- Nominal voltage: 38.4 V
- Operating voltage range: 36-43.2 V
- Max. charge and discharge: 105 A (1 hour)
- weight: 64 kg





UK PROJECTS



**Project:** 68.4 kWh  
**Application:** Energy Storage for Hospitality Sector  
**Location:** Peak District



**Project:** 10kW / 41kWh  
**Application:** Energy self consumption and reduction in carbon footprint  
**Location:** Dursley



**Project:** 5kW / 8.7kWh  
**Application:** Solar & Energy storage usage  
**Location:** Gloucestershire



**Project:** 50kW / 154kWh  
**Application:** Net Zero carbon reduction initiative  
**Location:** Kilmarnock

GLOBAL PROJECTS



**Project:** 1 MW / 2 MWh  
**Application:** Energy Self-sufficient Shopping Mall  
**Location:** Accra, Ghana



**Project:** 500 kW / 1.26 MWh  
**Application:** UPS + Load Management for Pharmaceutical Factor  
**Location:** Cambodia

GLOBAL PROJECTS



**Project:** 500 kW / 1 MWh  
**Application:** Energy Independence for Hospital  
**Location:** Accra, Ghana



**Project:** 100 kW / 670 kWh & 50 x SMILE5 5 kW  
**Application:** Energy Self-sufficient Community  
**Location:** Australia



**Project:** 150 kW / 612 kWh  
**Application:** PV + Storage + Genset  
**Location:** Tangerang, Indonesia



**Project:** 50 kW / 103 kWh  
**Application:** Solar + Storage + Off Grid  
**Location:** NSW, Australia



**Project:** 50 kW/100 kW & 100 kWh-300 kWh  
**Application:** Solar-battery-diesel Microgrid System  
**Location:** DeeDoke village, Myanmar



**Project:** 100 kW/102.6 kWh  
**Application:** PV + Storage+ Genset  
**Location:** Borno State, Nigeria



**Project:** 50 kW/102 kWh  
**Application:** PV + Storage  
**Location:** Wolfsberg, Austria



**Project:** 6 MW / 12 MWh  
**Application:** PV + Storage  
**Location:** Hubei, China





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