

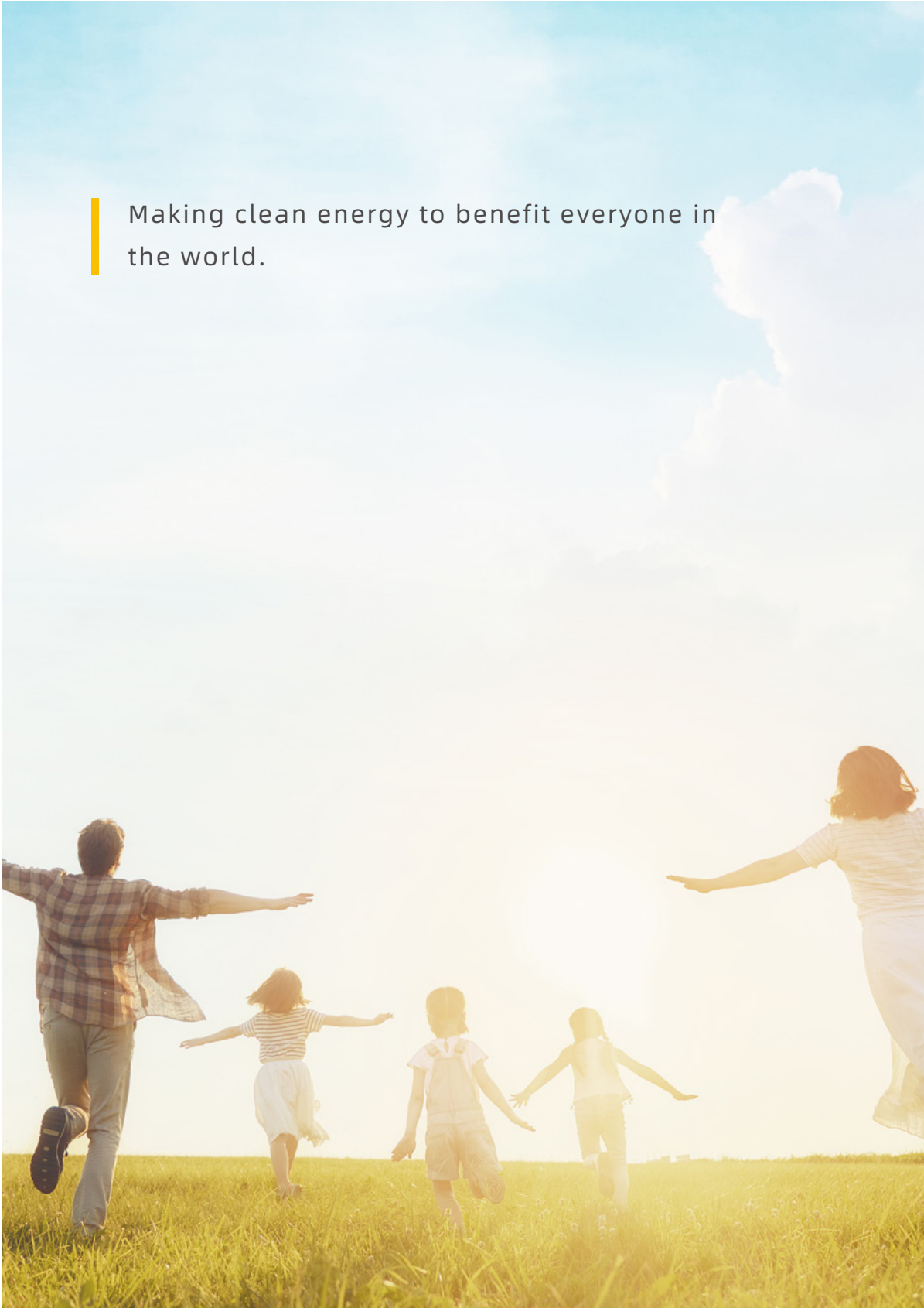
AlphaESS

AN ENERGY STORAGE SYSTEM INTEGRATOR
COVERING FULL POWER RANGE



YOUR SMART ENERGY





Making clean energy to benefit everyone in the world.



AlphaESS is a leading global energy storage solution and service provider. The company specializes in residential and commercial applications and delivers cost effective and fit-for-purpose solutions. AlphaESS has 10+ subsidiaries providing local services and 60000+ systems actively running in over 70 countries, enabling millions of people to live with reliable, accessible and clean energy.



10 Years
Established in 2012



40%
Employees in R&D



1 GWh
Annual production capacity



100+
Patents in the ESS field



300%
Annual revenue growth



60,000+
Shipments in the world

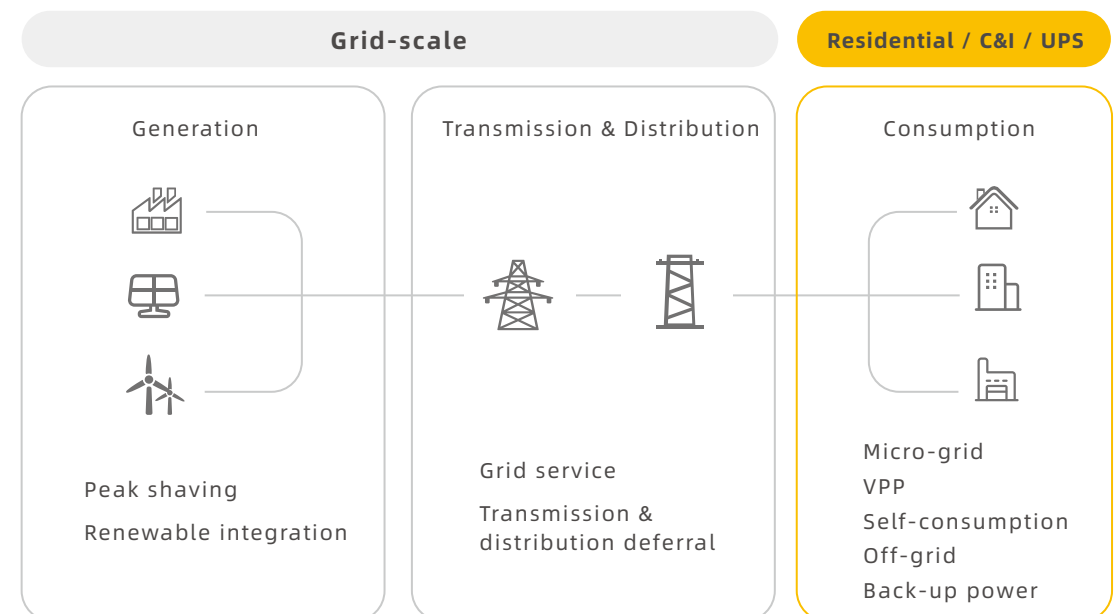
GLOBAL PRESENCE AND AWARDS



OUR EXPERTISE



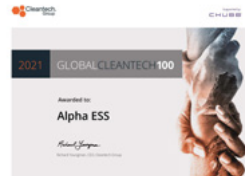
MAJOR APPLICATIONS



iF & reddot design award



Top Brand PV-Storage Australia



One of Top 100 Companies Global Cleantech 2021



ees & THE smarterE award finalist



2020 TOP 5 supplier of global residential storage systems



2020 TOP 10 residential energy storage solution provider in Germany

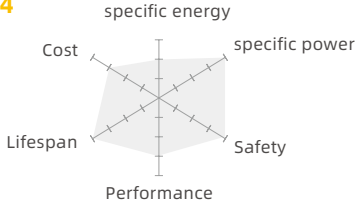
WHY ALPHAESS

1. Safety First

ONLY


The safest chemistry LiFePO4

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



The most robust cell types

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



Global TIER 1 cell manufacturer

2. Core

Application	Energy Transformation	Energy Conservation	Secondary Development from Our Partners
	Smart Home	Capitalization	

Platform	Prediction	Scheduling	AlphaESS Core Building a "Windows or Android System" within the Energy Sector ESS covering full power range / Power facilities
	AI Algorithm	Big Data	
Communication Control	5G/4G Power Carrier	Cloud Communication	
	BMS	EMS	
Hardware	Power Generation/ Transmission/ Distribution	Grid	

3. Smart Energy

AlphaCloud Platform

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

- Lifelong free access to monitoring via Web and APP
- New functions and latest version upgrades available remotely
- Set parameters control and build VPP
- IoT compatible



Battery Management System

Alpha BMS research institute

20+ BMS R&D veteran researchers with 10+ year ESS BMS experience

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 wind and PV power abandonment
Peak and frequency regulation
PV and wind 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



Residential

3kW - 10 kW

SMILE-B3-PLUS

SMILE-G3

SMILE5

SMILE-S5

SMILE-S6-HV

SMILE-T10-HV

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



ENJOY YOUR SMART ENERGY WITH A **SMILE**



UPS Ability



24/7 Online Monitor



Safe and Reliable(LFP ONLY)



Modular Design



High Compatibility



Easy Installation and Expansion



AlphaESS in OCEANIA



SMILE-B3-PLUS Expandable to 30.24kWh

All-in-one module

AC-Coupling
 Nominal output 3 kW AC.
 60 kg
 630 x 236 x 685 mm (W x D x H)
 IP65 (Outdoor)
 Built-in 5.04kWh battery



3kW
5.04kWh



Battery Module Option

1 C, 95% DoD, 48V
 40 kg
 650 x 219 x 315 mm (W x D x H)

5.04 kWh
Up to 5



SMILE-BAT-5P

NEW!

SMILE-S5: 5kW Expandable to 30.24kWh

① SMILE-S5

Hybrid inverter
 Max. PV input 8kW DC.
 Nominal output 5kW AC.
 640 x 250 x 350mm (W x D x H) / 20kg
 IP65 (Outdoor)
 UPS 20A continuous for critical loads
 Open API, modbus control portal

5kW
5.04 kWh



VPP Ready



Slim but Powerful



Built-in Battery



Easy Installation

② Battery Module Option

IP65 (Outdoor) 6 Max. modules in parallel
 1C, 95% DoD, 48V
 40kg
 650 x 219 x 315 mm (W x D x H)
 5.04 - 30.24 kWh

5.04 kWh
Up to 5



SMILE-BAT-5P

NEW!

SMILE-G3: 3.6kW/5kW Expandable to 30.24kWh

① **SMILE-G3**

Max. PV input 5.7/7.2/10 kW DC.
Nominal output 3.6/5 kW AC.
610 x 197 x 366mm (W x D x H) / 12kg
IP65 (Outdoor)
Open API, modbus control portal



Low Weight Inverter



Off-Grid Parallel Operation



Best Choice for VPP

② **Battery Module Option**

IP65 (Outdoor) 6 Max. modules in parallel

0.5C, 95% DoD, 96V
92kg
610 x 212 x 780 mm
(W x D x H)
10.1 - 60.5 kWh

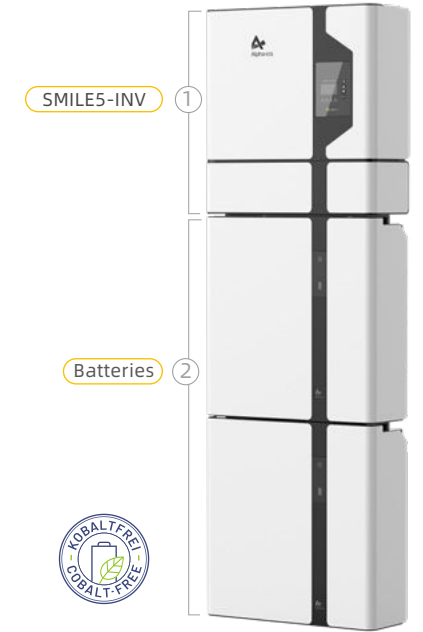


SMILE-G3-BAT-10.1P

SMILE5: 5kW Expandable to 80kWh

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) / 35 kg
IP65 (Outdoor) / IP21 (Indoor)
UPS 4kW continuous for critical loads
Open API, modbus control portal
An integrated cable box with PV and battery isolator, AC circuit breaker



③ **Battery Module Options**

IP65 (Outdoor) / IP21 (Indoor) 6 Max. modules in parallel

5.7kWh
Up to 6



SMILE5-BAT

0.5C, 96%DoD, 51.2 V
65 kg
600 x 250 x 600 mm
(W x D x H)
5.7 - 34.4 kWh

10.1 kWh
Up to 6



SMILE-BAT-10.1P

0.5C, 90%DoD, 48 V
92 kg
610 x 236 x 693 mm
(W x D x H)
10.1 - 60.6 kWh

13.3 kWh
Up to 6



SMILE-BAT-13.3P

0.35C, 100%DoD, 48 V
120 kg
610 x 236 x 812 mm
(W x D x H)
13.3 - 80 kWh

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

① **SMILE-S6-HV-INV**

- Max. PV input 9kW DC.
- Nominal output 6kW AC.
- 100Amp integrated charger
- 580 x 230 x 440 mm (W x D x H) / 25 kg
- IP65 (Outdoor)
- UPS 6 kW continuous for critical loads
- Open API, modbus control portal
- With PV and battery isolator, AC circuit breaker on the side



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

① **SMILE-T10-HV-INV**

- 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)
- An integrated high voltage cable box with PV and battery isolator, AC circuit breaker
- BMS & EMS integrated



Full Off-grid Compatible



Full 6kVA Backup



VPP Ready



Three Phase Output



Low-weight Inverter



Compatible with More PV

② **Battery Module Option**

IP65 (Outdoor) 6 Max. modules in parallel

- 8.2 kWh module
- 1C, 95%DoD, 256 V
- 88 kg
- 580 x 230 x 820 mm (W x D x H)
- 8.2 - 49.2 kWh



② **Battery Module Option**

IP65 (Outdoor) 6 Max. modules in parallel

- 8.2 kWh module
- 1C, 95%DoD, 256 V
- 88 kg
- 580 x 230 x 820 mm (W x D x H)
- 8.2 - 49.2 kWh





PORTABLE POWER STATION

BlackBee - 1000 1000 W/1036 Wh/11KG

Type-C Output	2
USB Output	2
Wireless Charging Output	2



EMERGENCY

To survive a blackout



TRAVEL

Portable power for adventures



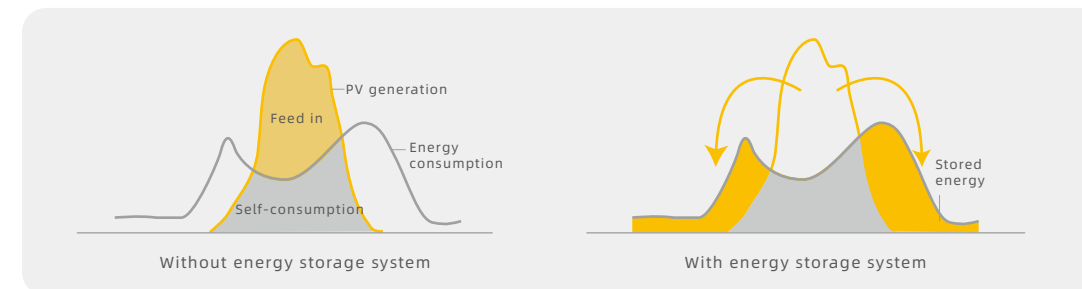
RENEWABLES

Fast solar recharging with MPPT

- ✓ Capable of charging 12 devices simultaneously
- ✓ State of the art & practical design
- ✓ Fast solar recharging with MPPT
- ✓ Wireless charging
- ✓ 94V0 flame-resistant case
- ✓ SOS function

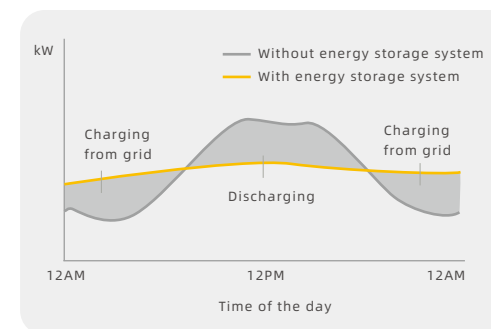
HOW TO SAVE MONEY

1. Self-Consumption Optimization



Minimize grid energy consumption by storing surplus PV generation in the battery and discharging the energy as needed to match your electricity usage.

2. Load Shifting



User-end: Load shifting

Save money by avoiding peak electricity rates by 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.

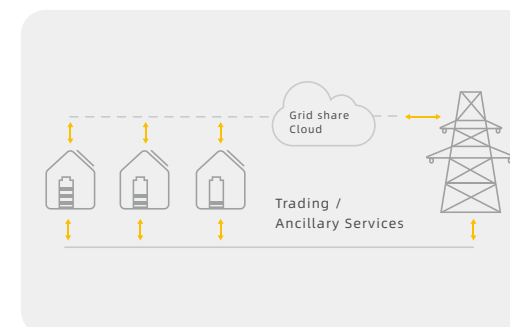
Ancillary services

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

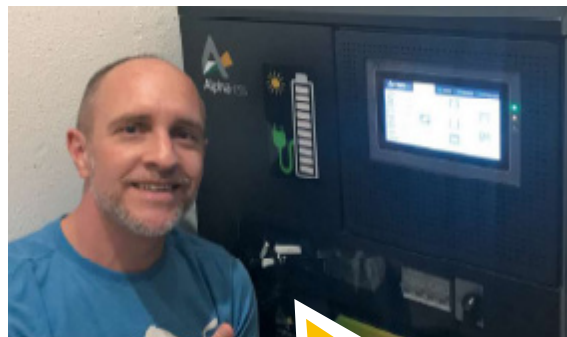
Optimize trading strategies to maximize returns. VPP can utilize the aggregated power to react to changes in electricity pricing on the exchanges by adapting to the existing supply of power on the grid and thus optimize trades.

3. VPP Revenue





Running in
70+ countries
around the world



" AlphaESS storage system - good product, good concept , good advice , good implementation . I am still satisfied with my photovoltaic system and integrated power storage and can only recommend the system to everyone. "



Commercial & Industrial

30 kW - 10 MW+



Back-up power



Off-grid



Micro-grid



Fuel saving solution



Self-consumption



Demand charge management

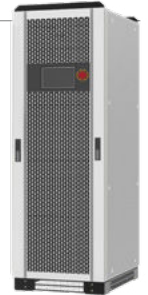
A **WIDE RANGE** of hybrid and battery PCS solutions for all your C&I projects with various requirements

H30 30 kW Hybrid Inverter

NEW!

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

- 60 kW Max. PV input
- On/off-grid switching
- Built-in isolation transformer
- Battery DC voltage range: 150-850V



T30 30 kW Battery Inverter

Flexible power modular design
24/7 Monitoring with local interface

- 30 kW nominal output power
- AC-coupled solution
- Optional STS module
- Transformer integrated
- Battery DC voltage range: 200 - 750V



T50 / 100 50 / 100 kW Hybrid Inverter

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

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



TB250 / 500 250 / 500 kW Battery Inverter

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



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

M48112-S
The 1C battery solution

Small capacity 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: 48-46.3 V
Module connections: 5-13 in series
Max. charge and discharge: 112 A (1hour)
weight: 65kg



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: 36-42.2 V
Module connections: 6-20 in series
Max. charging and discharging current: 105A (2hours)
Weight: 62kg



A **LARGE VARIETY** of battery storage racks or container solutions to be different scenarios in C&I installations

Battery Racks
Max 161.3 kWh each rack

Perfect for installation in rooms

28.6 - 51.6 kWh (M48112-S)
48.4 - 161.3 kWh (M38210-S)
Easy to parallel to MWh



10/20/40 ESS Container
Max. 3225.6 kWh in one container

A truly turn key ESS solution

10feet: Max.361.3kWh (1C) / Max.645.1 kWh (0.5C)
20feet: Max.929kWh (1C) / Max.1474.6kWh (0.5C)
40feet: Max.1909.6kWh (1C) / Max.3225.6kWh (0.5C)



GLOBAL PROJECTS



Project:
100 kW / 400 kWh

Application:
Solar + Diesel + Storage
for oil pumps sites

Location:
Moomba, SA, Australia

Project:
2.5 MW / 10 MWh

Application:
Storage + Peak Shaving

Location:
Nanjing, China



Project:
100 kW / 412 kWh

Application:
Solar + Storage + Diesel
for Rural Electrification

Location:
Pet Pye village, Myanmar



Project:
500 kW / 1.26 MWh

Application:
UPS+ Load Management
for Pharmaceutical factory

Location: Cambodia



Project:
50/100/150 kW (49sites)

Application:
Solar + Storage + Diesel
for Rural Electrification

Location: Myanmar



Project:
500kW / 1.1MWh

Application:
UPS + Load shifting + Self-
consumption, Renewable
Demonstration Park

Location: Yangzhong, China





Project:
500 kW / 1 MWh

Application:
Energy Independence for hospital

Location:
Accra, Ghana

Project:
60 kW / 68 kWh

Application:
Storage + Peak Shaving for EV charging

Location:
China



Project:
2 MW / 8 MWh

Application:
Storage + UPS + Peak Shaving

Location:
Changshu, China



Project:
1 MW / 2 MWh

Application:
Energy Self-sufficient Shopping Mall

Location:
Accra, Ghana



Project:
100 kW / 670 kWh

50 x SMILE5 5 kW

Application:
Energy Self-sufficient Community

Location: Australia

Project:
50 kW / 103 kWh

Application:
Solar + Storage + Off Grid

Location:
NSW, Australia





@AlphaEnergyStorageSystem



@AlphaESS



@alpha_ess



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