

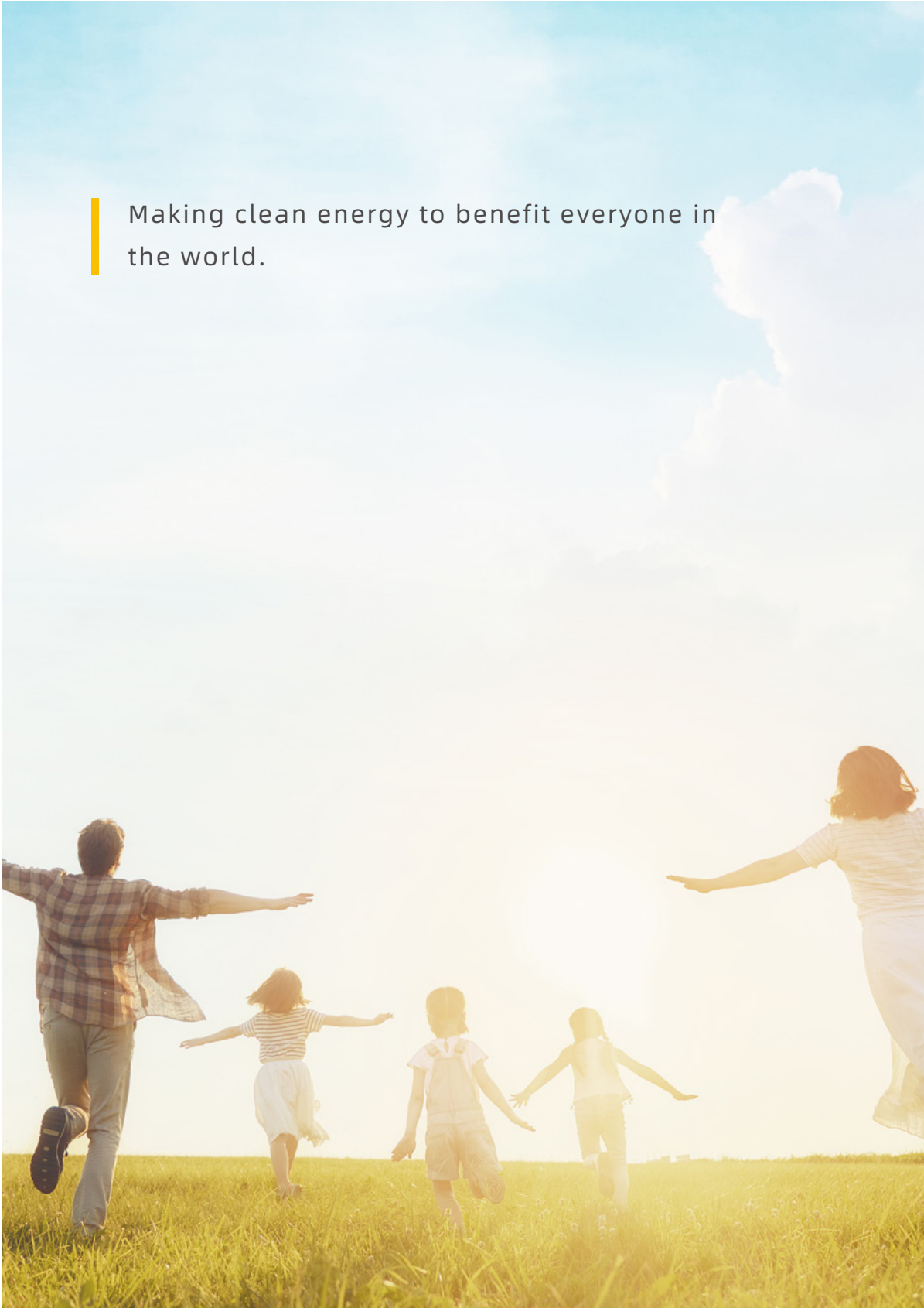
# AlphaESS

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

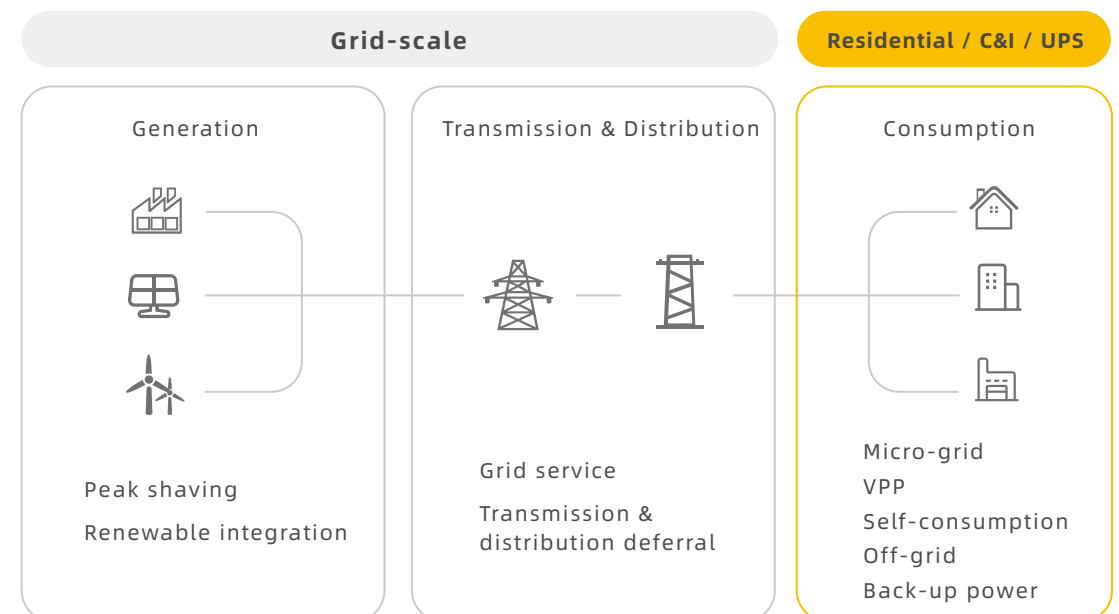
## GLOBAL PRESENCE AND AWARDS



## OUR EXPERTISE



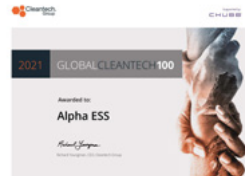
## MAJOR APPLICATIONS



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

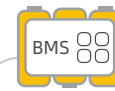
|                       |   |                                       |   |
|-----------------------|---|---------------------------------------|---|
| Application           | Energy Transformation<br>Smart Home         | Energy Conservation<br>Capitalization | <b>Secondary Development from Our Partners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

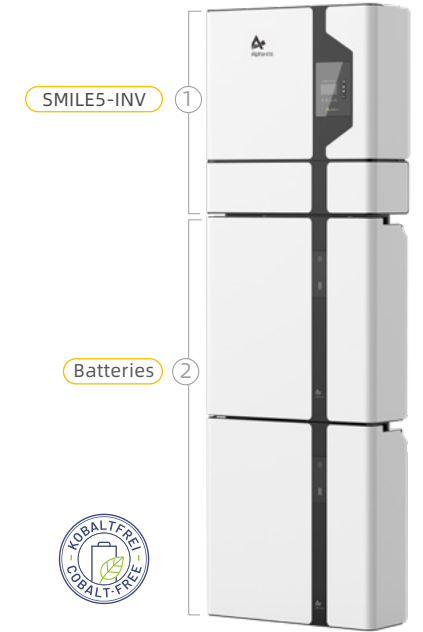


SMILE-G3-BAT-10.1P

**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



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



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



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

8.2 kWh  
Up to 6



SMILE-BAT-8.2PH

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

8.2 kWh  
Up to 6



SMILE-BAT-8.2PH





## 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



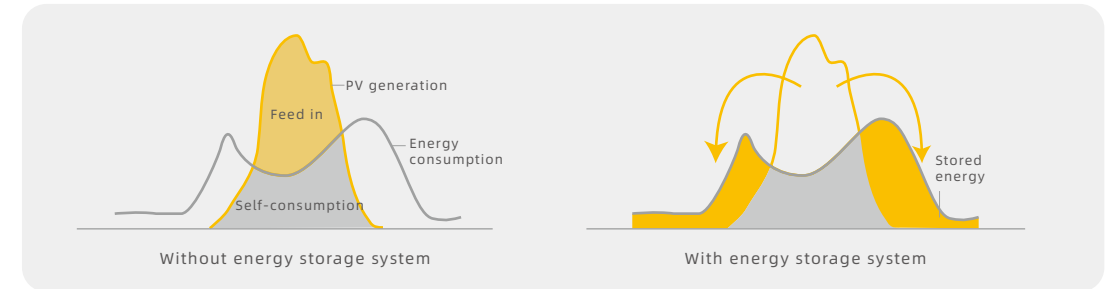
### RENEWABLES

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

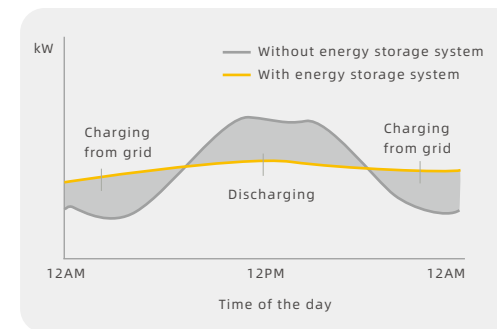
## HOW TO SAVE MONEY

### 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

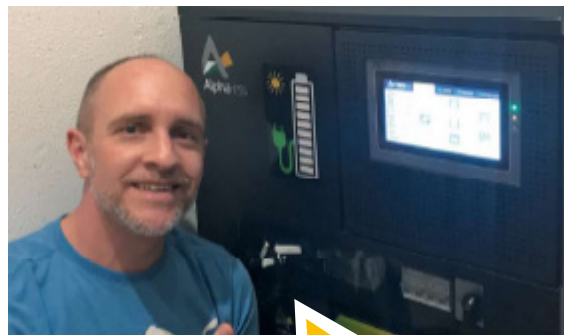
Optimize trading strategies to maximize returns. VPP can utilize the aggregated power to react to changes in electricity pricing on the exchanges by adapting to the existing supply of power on the grid and thus optimize trades.

### 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

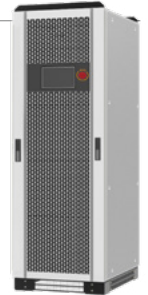
A **WIDE RANGE** of hybrid and battery PCS solutions for all your C&I projects with various requirements

### 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



@AlphaESS



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