


AlphaESS

AN ENERGY STORAGE SYSTEM INTEGRATOR
COVERING FULL POWER RANGE



YOUR SMART ENERGY





Making clean energy beneficial to
the greatest extent to everyone in the world.



AlphaESS is one of the leading energy storage solution and service providers in the globe. The company specializes in the residential and commercial market, aiming to deliver the most cost-effective and fit-for-purpose solutions. AlphaESS has 10+ subsidiaries providing local services and 40000+ systems actively running in over 50 countries, enabling millions of people to live with reliable, accessible and clean energy.



8 Years

Established in 2012



40%

Employees in R&D



1GWh

Annual production capacity



100+

Patents in the ESS field



300%

Annual revenue growth



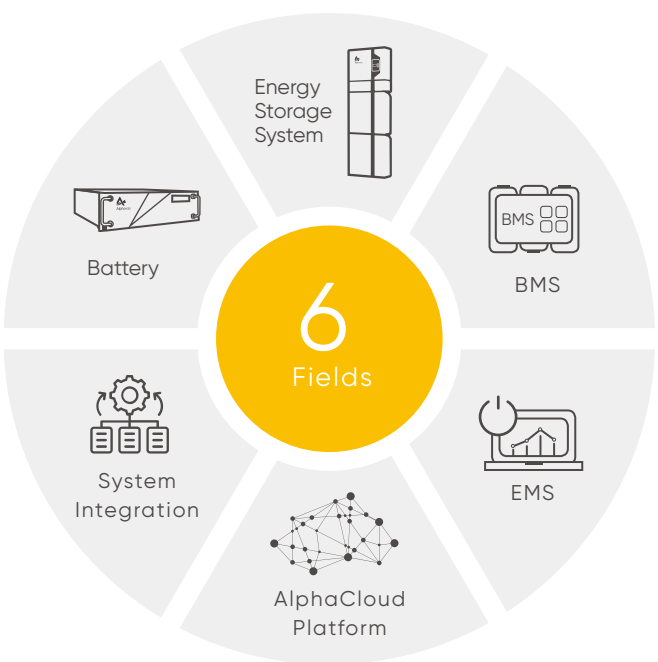
40,000+

Shipments in over 50 countries

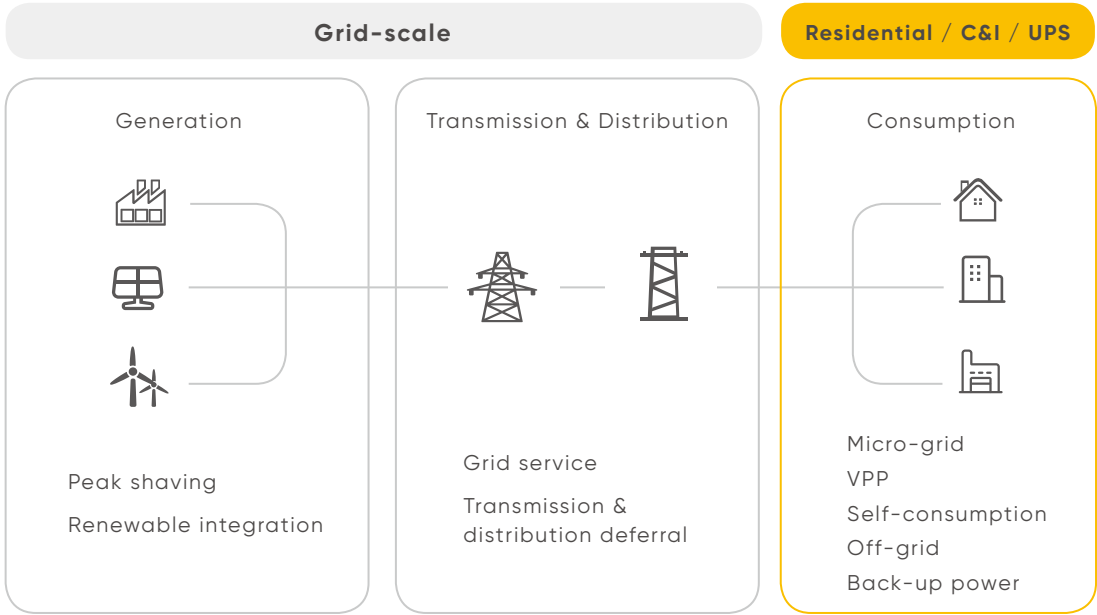
GLOBAL PRESENCE AND AWARDS



OUR EXPERTISE



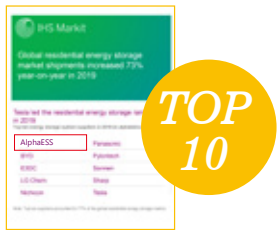
MAJOR APPLICATIONS



IF & reddot design award



The finalist of ess award & the smarter E award



Top-10 residential ESS global suppliers in 2019 (IHS Markit)



Australia's renewable energy award for outstanding contributor

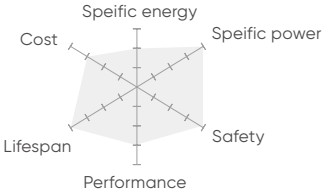
WHY ALPHAESS

1. Safety First

ONLY


The safest chemistry LiFePO4

We only use LiFePO4 batteries to ensure our customers enjoy the premium electrical characteristics without suffering from safety issues.



The most robust cell types

AlphaESS never uses unreliable casing material to ensure long mechanical life-span and safety.



Global TIER 1 cell manufacturer

2. Core

Application

Energy Transformation

Energy Conservation

Smart Home

Capitalization

Secondary Development from Our Partners

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

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 function 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 accuracy reaches 97%

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

3 kW - 10 kW

SMILE-B3

SMILE5

SMILE-T10

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



A **SMILE**
YOU PAY WILL
ALWAYS RETURN



Safe



Uninterrupted Power Supply (UPS)



Fast response



Easy installation



Virtual Power Plant (VPP) ready



24/7 monitoring

3 kW



SMILE-B3

5 kW



SMILE5

10 kW



SMILE-T10

SMILE-B3: 3kW / 2.9kWh Expandable to 17.2kWh

All-in-one Module

Battery inverter 3kW

2.9kWh storage integrated (1C, 96% DoD, 51.2V)

610 x 236 x 625mm (W x D x H) / 45kg

IP65 (Outdoor) / IP21 (Indoor)

Free online monitoring

Wifi communication (optional)

Open API, modbus control portal

3 kW
2.9 kWh



Expandable Battery Module: M4856-P

2.9kWh battery (1C, 96% DoD, 51.2V)

610 x 236 x 303mm (W x D x H) / 42kg

IP65 (Outdoor) / IP21 (Indoor)

Max. 5 units to the main unit (parallel)

2.9kWh
Up to 6



SMILE5: 5kW Expandable to 80kWh

① SMILE5-ESS

Hybrid inverter

Max. PV input 6.6kW DC.

Nominal output 5kW AC.

100Amp integrated charger

610 x 236 x 615mm (W x D x H) / 60kg

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

① SMILE5-ESS

② Batteries



② Battery Module Options

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

2.9 kWh
Up to 6



M4856-P

1C, 96%DoD, 51.2V
42kg

610 x 236 x 303mm
(W x D x H)

2.9 - 17.2 kWh

5.7 kWh
Up to 6



SMILE5-BAT

0.5C, 96%DoD, 51.2V
65kg

600 x 250 x 600mm
(W x D x H)

5.7 - 34.4 kWh

10.1 kWh
Up to 6



SMILE-BAT-10.1P

0.5C, 90%DoD, 48V
92kg

610 x 236 x 693mm
(W x D x H)

10.1 - 60.6 kWh

13.3 kWh
Up to 6



SMILE-BAT-13.3P

0.35C, 100%DoD, 48V
120kg

610 x 236 x 812mm
(W x D x H)

13.3 - 80 kWh

SMILE-T10: 10kW / 11.5-23kWh

① SMILE-T10-ESS

Hybrid inverter

Max. PV input 13kWp/12kWp* DC. (2MPPT)

Max output power 10kW. 3 phase.

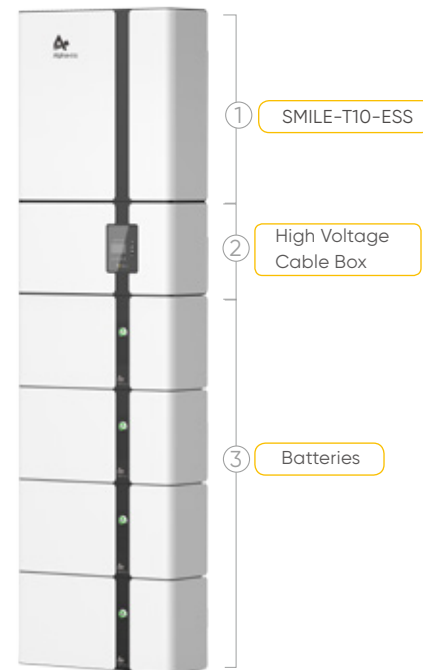
610 x 236 x 605mm / 610 x 236 x 655mm* (W x D x H)

40kg

380V/400V rated voltage

IP65 (Outdoor) / IP21 (Indoor)

*only for Australia and New Zealand



② High Voltage Cable Box

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

BMS & EMS integrated

Multilevel protection for over-temperature, over-voltage and over-current

System operation monitoring, includes power, energy and other parameters

Intelligent energy management algorithm supported

③ Battery Module: M4586-S

1C, 90%DoD, 51.2V

42kg

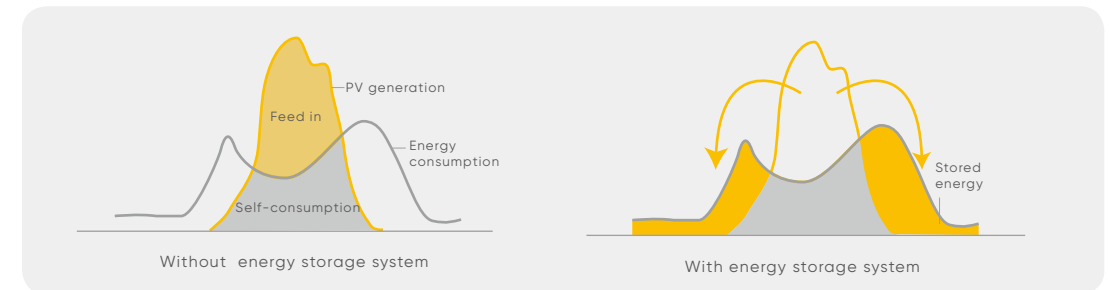
610 x 236 x 303mm
(W x D x H)

11.5 ~ 23 kWh



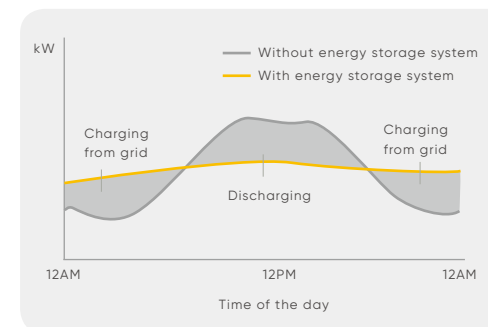
HOW TO SAVE MONEY

1. Self-Consumption Optimization



Store the surplus PV generation in the battery and smartly discharge the energy to match your electricity usage. You can cut electricity bill by minimizing the energy consumption from the grid.

2. Load Shifting



User-end: Load shifting

Store electricity during off-peak time and shift energy to be used at peak time. You can save money by avoiding electricity peak rate.

Transmission & distribution: Peak shaving

Avoid the upgrade of substation and power line to supply the peaks of variable load, where energy storage provides a fast response and emission-free solution.

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

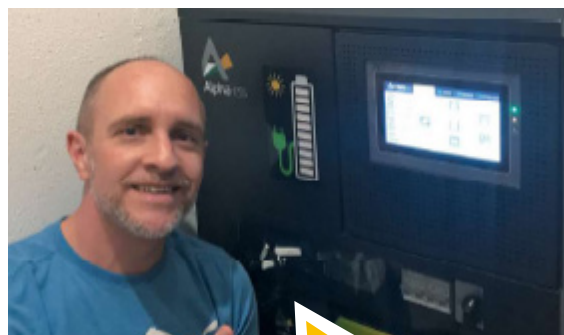
Optimize trading strategies to maximize returns. VPP can utilize the aggregated power to react to changes of the electricity price on the exchanges, quickly adapting to the existing supply of power in the grid, and thus execute trades.

3. VPP Revenue





Running in
50+ countries
 around the world



" AlphaESS storage system - product good, concept good, advice good, implementation good. 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

T30 / 50 / 100

30 / 50 / 100kW hybrid PCS

A double inverter capacity PV input for off-grid

Flexible power modular design

80 / 110 / 200kWp Max. PV input

1 MPPT

Optional STS module

Transformer integrated

Battery DC voltage range: 250-520 V



TB50 / 100 / 150

50 / 100 / 150kW battery PCS

Multiple MPPTs for flexibility

Grid-forming with solar inverters

Keep operating off-grid

AC-coupled solution

1 / 2 / 3 x 60kW PV string inverters

4 / 8 / 12 MPPT

STS / Transformer integrated

Battery DC voltage range: 250-520 V



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 / ATS 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 with flexibility
High C-rating battery solution

Energy capacity: 5.7 kWh
Depth of discharge: 90%
Nominal voltage: 51.2 V
Operating voltage range: 48-57.6 V
Module connections: 4-13 in series
Max. charge and discharge: 112 A (1hour)
weight: 65 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 V
Module connections: 6-20 in series
Max. charging and discharging current: 105A (2hours)
Weight: 62 kg



M48240-S

The 0.5C battery solution

High energy density solution
Cost effective solution

Energy capacity: 11.5 kWh
Depth of discharge: 90%
Nominal voltage: 48 V
Operating voltage range: 45-54 V
Module connections: 6-16 in series
Max. charging and discharging current: 120A (2hours)
Weight: 105 kg



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

Battery Racks

22.8 -161.3 kWh each rack

Perfect for installation in rooms

22.8 -74.1 kWh (M48112-S)
48.6-161.3 kWh (M38210-S)
Easy to parallel to MWh



Outdoor Battery Cabinet

Max. 103 kWh each cabinet

Perfect outdoor solutions for remote areas

28.7 -103 kWh (M48112-S)
64 - 97.2 kWh (M38210-S)
Easy to parallel to MWh



10/20/40 ESS Container

Max. 2MWh in one container

A truly turn key ESS solution

10feet: up to 300 kWh (1C)
20feet: 600 kWh (1C) / 1.3 MWh (0.5C)
40feet: 1.6 MWh (1C) / 3.3 MWh (0.5C)



GLOBAL PROJECTS



Project:
100 kW / 250 kWh

Application:
Solar + Diesel + Storage
for oil pumps sites

Location:
Moomba, SA, Australia

Project:
2.5 MW / 12 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





An Energy Storage System Integrator Covering Full Power Range

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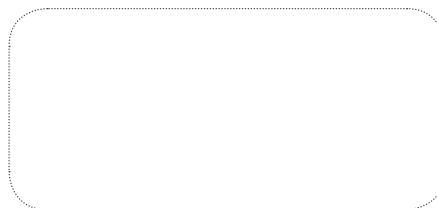
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