

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 60000+ systems actively running in over 70 countries, enabling millions of people to live with reliable, accessible and clean energy.



9 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

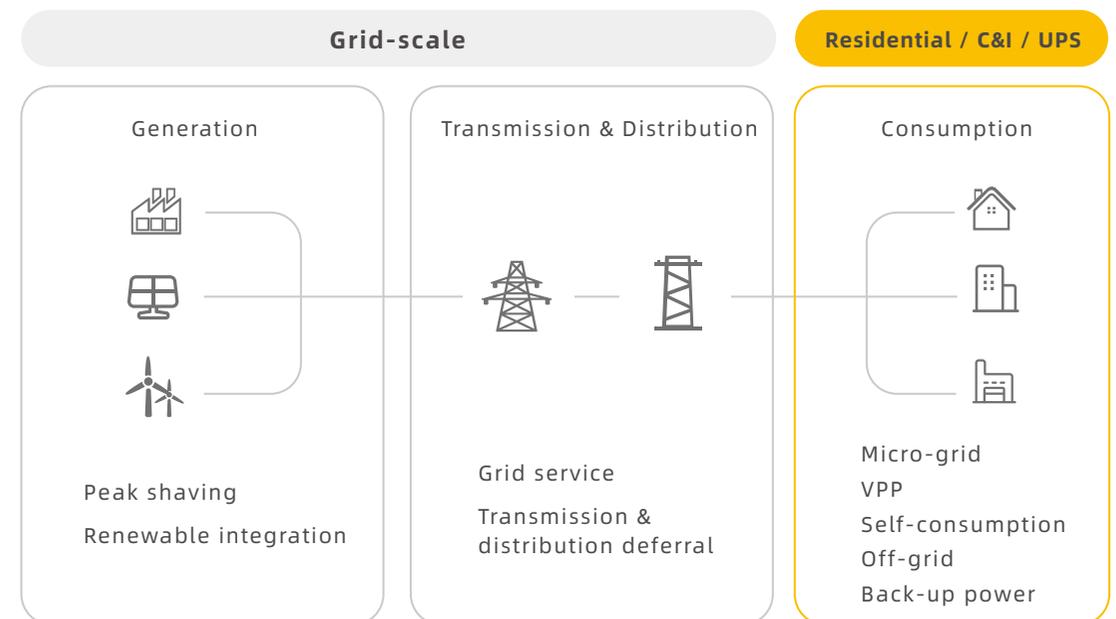
GLOBAL PRESENCE AND AWARDS



OUR EXPERTISE



MAJOR APPLICATIONS



IF & reddot design award



Top Brand PV-Storage Australia



One of Top 100 Companies Global Cleantech 2021



The finalist of ess award & the smarter E award



TOP 5 supplier of the global residential storage system in 2020



2020 TOP 10 residential energy storage solution provider in Germany

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 use unreliable casing material to ensure long mechanical life-span and safety.

Global TIER 1 cell manufacturer

2. Core

Application	Energy Transformation Smart Home	Energy Conservation Capitalization	Secondary Development from Our Partners
Platform	Prediction AI Algorithm	Scheduling Big Data	AlphaESS Core Building a "Windows or Andriod 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 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



BMS Battery Management System

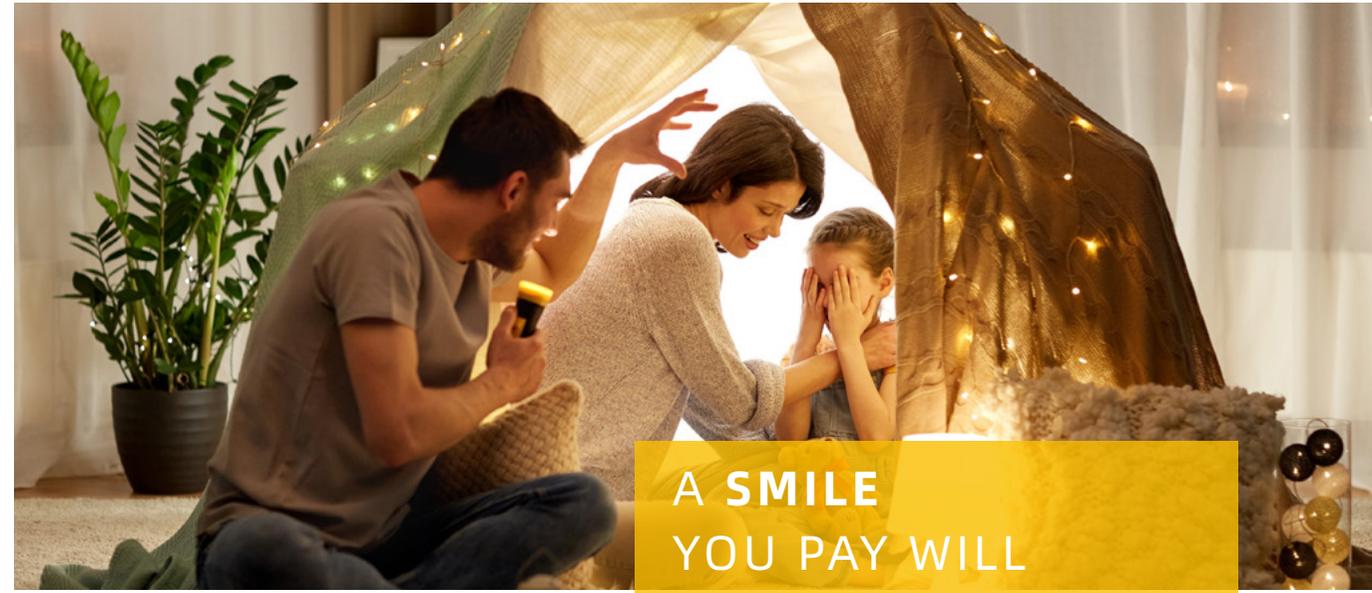
- Alpha BMS research institute**
20+ BMS R&D veteran researchers with 10+ year ESS BMS experience
- High SOC accuracy**
Our SOC algorithm accuracy reaches 97%
- Comprehensive protection**
3-level software protection, Redundant hardware level protection

- 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

EMS 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



A SMILE
YOU PAY WILL
ALWAYS RETURN



Safe



Easy installation



Fast response



Easy to Transport



24/7 monitoring



High Efficiency



Virtual Power Plant
(VPP) ready



Uninterrupted
Power Supply (UPS)

Residential

3kW - 10kW

SMILE-B3

SMILE-B3-PLUS

SMILE5

SMILE-S6-HV

SMILE-T10-HV

SMILE-EVCT11

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



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

All-in-one Module

Battery inverter 3 kW
 2.9 kWh storage integrated (1C, 96% DoD, 51.2 V)
 610 x 219 x 650 mm (W x D x H) / 50 kg
 IP65 (Outdoor) / IP21 (Indoor)
 Free online monitoring
 Wifi communication (optional)
 Open API, modbus control portal



Expandable Battery Module: M4856-P

2.9 kWh battery (1C, 96% DoD, 51.2 V)
 610 x 236 x 302 mm (W x D x H) / 39 kg
 IP65 (Outdoor) / IP21 (Indoor)
 Max. 5 units to the main unit (parallel)



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



Expandable battery module

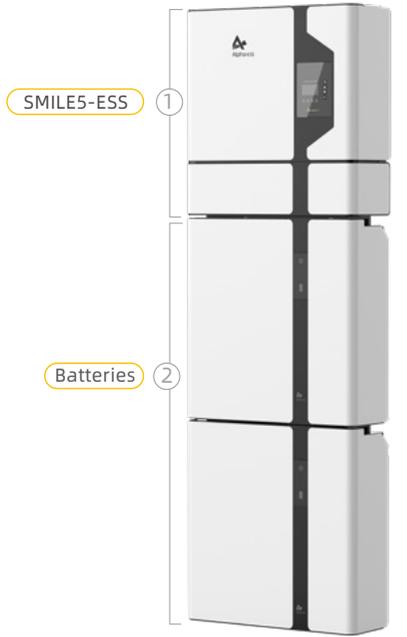
1 C, 95% DoD, 48V
 40 kg
 650 x 219 x 315 mm (W x D x H)



SMILE5: 5kW Expandable to 80kWh

① SMILE5-ESS

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



② Battery Module Options

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

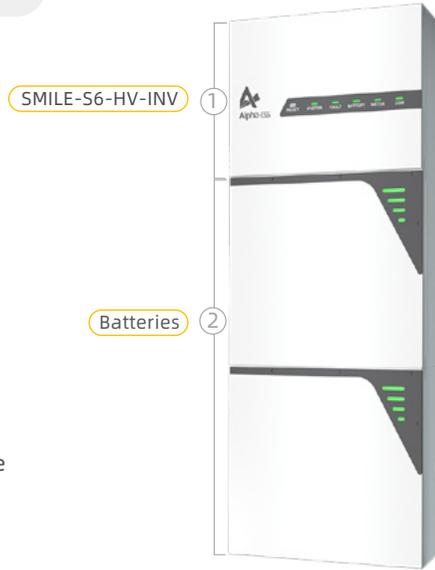
			
2.9 kWh Up to 6	5.7 kWh Up to 6	10.1 kWh Up to 6	13.3 kWh Up to 6
M4856-P	SMILE5-BAT	SMILE-BAT-10.1P	SMILE-BAT-13.3P
1C, 96%DoD, 51.2 V 39 kg 610 x 236 x 302 mm (W x D x H) 2.9 - 17.2 kWh	0.5C, 96%DoD, 51.2 V 73 kg 610 x 207 x 629 mm (W x D x H) 5.7 - 34.4 kWh	0.5C, 96%DoD, 48 V 95 kg 610 x 236 x 693 mm (W x D x H) 10.1 - 60.6 kWh	0.35C, 100%DoD, 48 V 121 kg 610 x 236 x 816 mm (W x D x H) 13.3 - 80 kWh

NEW!

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



Full Off-grid Compatible



Full 6kVA Backup



Best Choice for VPP

NEW!

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



Three Phase Output



Low-weight Inverter



More PV Generation

② **Battery Module Options**

IP65 (Outdoor) 6 Max. modules in parallel

- 5 kWh module
- 1 C, 95%DoD, 153.6 V
- 50 kg
- 580 x 226 x 530 mm (W x D x H)
- 5 -29.5 kWh

5 kWh Up to 6



SMILE-BAT-5PH

- 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**

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

EV CHARGING STATION



SMILE-EVCT11

Dimension (H x W x D): 325 x 181 x 87 mm

Weight: 3.2 kg

Operating Temperature: -30 ~ 50 °C

Related Humidity: 15 ~ 90%

Operating Altitude: < 2000 m

AC Rated Voltage: 400 V, 3P+N+PE

Rated Current: 16 A

Frequency: 50/60 Hz

AC Output Voltage: 400 V

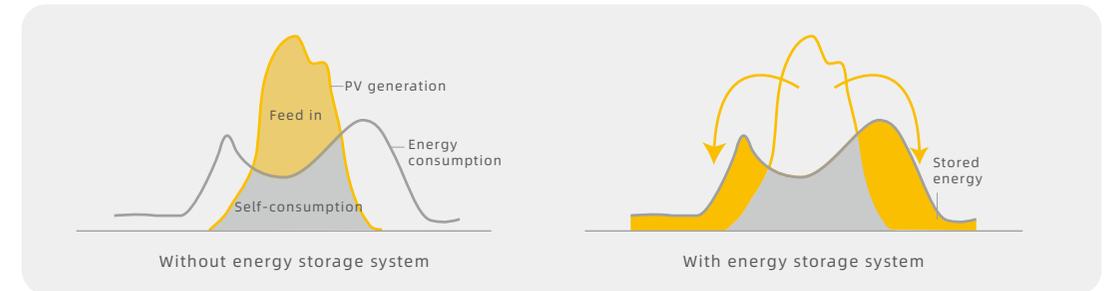
Max. Current: 16 A

Rated Power: 11000 W

- 👍 Easy installation
- 👍 Light and durable
- 👍 Key card identifiable
- 👍 Vertical & wall-mounted
- 👍 Preset charging available

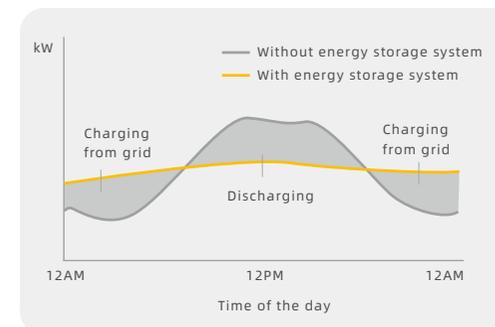
HOW TO SAVE MONEY

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.

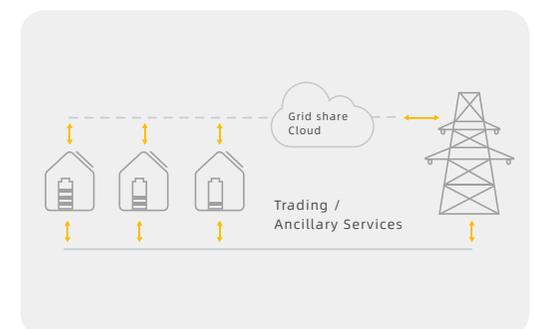
Ancillary services

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.

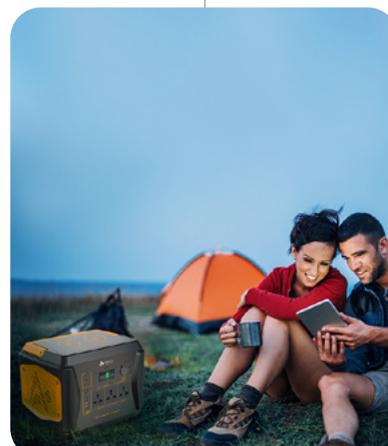
3. VPP Revenue



Li-ion Battery

PORTABLE POWER STATION

GET POWER SOURCE,
ENJOY OFF-GRID LIFE



Exclusive for Japan
MINI SMILE



MS500

MS1000

Output Power	500 W	1000 W
Nominal Capacity	500 Wh	1000 Wh
Dimension (L x W x H)	300 x 190 x 227.5 mm	333 x 229 x 263 mm
Weight	6.18 kg	10.55 kg
Output Port	8	9



High-class



Multiple charging methods



Emergency power supply for outdoor & home outage

AP1000



Output Power	1000 W	Type-C Output	2
Nominal Capacity	1036 Wh	USB Output	2
AC Output	3	Weight	11.35 kg
DC Output	3	Dimension (L x W x H)	340 x 255 x 270 mm

- ✓ Wild & portable design
- ✓ Wireless charging
- ✓ Extra LED surface light

- ✓ 94V0 flame-resistant case, stable reliable
- ✓ Dustproof outlet for air supply



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 PCS

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

NEW!



T30 30 kW battery PCS

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 PCS

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

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



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: 500-850V



TB250 / 500 250 / 500 kW battery PCS

Heavy-duty industrial application

- AC-coupled solution
- With max.10 x 50kW 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 with flexibility
High C-rating battery solution

Energy capacity: 5.7 kWh
Depth of discharge: 90%
Nominal voltage: 51.2 V
Operating voltage range: 48-46.3 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



M48240-S
The 0.5C battery solution

High energy density solution
Cost effective solution

Energy capacity: 11.5kWh
Depth of discharge: 90%
Nominal voltage: 48 V
Operating voltage range: 45-52.8 V
Module connections: 6-16 in series
Max. charging and discharging current: 120A
(2hours)
Weight: 112kg



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



Outdoor Battery Cabinet
Max. 96.8kWh each cabinet

Perfect outdoor solutions for remote areas

34.4-51.6 kWh (M48112-S)
56.4-96.8 kWh (M38210-S)
Easy to parallel to MWh



10/20/40 ESS Container
Max. 3225.6kWh 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.1909.6 kWh (1C) / Max.3225.6 kWh (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





An Energy Storage System Integrator Covering Full Power Range

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