Marwell Solar Commercial&Industrial OFF-GRID SYSTEMS & GRID-CONNECTED SYSTEMS SOLUTIONS

Company Profile

Marwell Technology Co., Ltd. is an enterprise specializing in photovoltaic new energy generation, inverter, energy storage system and other fields. The company is mainly committed to R&D, production and sales of new energy products such as inverters, energy storage systems, smart energy management systems, and reaching global household and industrial and commercial users through leading sales channels.

The company firmly implements the development strategy of continuous innovation, friendly service and driving sustain-able growth, and makes contributions to global clean energy. The company adheres to the business philosophy of "custom-er first, green energy, and bright future", innovates and seeks change, conforms to the trend, and is based on the new energy field with a global vision and forward-looking thinking





Safer
Long lifespan, intelligent BMS

Reliable
IP54, wide temp range

Flexible
Modular, easy to expand

Convenient
Auto networking, easy maintenance

Product Specification

Model	**MW-96KWH-307.2V**
Battery Pack Model	**MW314-96KWH**
High-Voltage Pack	**HV96K**
Nominal Voltage	**307.2V**
Nominal Capacity	**96 kWh**
Cabinet Size (mm)	**800×1080×2260**
Weight w/o Inverter	**1140 kg**
Cooling Method	**Air-cooled**
Protection Class	**IP55**
Firefighting Type	**Aerosol**

Battery Specifications

Battery Types	**51.2V-314Ah×6**
Cell Capacity	**314Ah**
Recommend Charge/Discharge Current (A)	**100**
Max. Charge/Discharge Current (A)	**140**
Communication	**RS485/CAN**
Working Temperature	**-10~50°°C**
Transport or Storage Temp. Range	**-20~60°°C**
Certification	**CE/IEC/UL/UN38.3/MSDS**
Design Life	**10 years+**
Cycle Life	**(0.5C/0.5C,80% DOD)>6000 times**

Inverter Specifications

Inverter Matching	**Max 50 kW**
Communication	**Ethernet/Modbus/TCP/IP**
Inverter Type	**Deye/Solis/Megarevo/Other**
Detailed Specifications	**Refer to inverter manual**

Specifications subject to change without notice.



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Product Specification

Model	**MW-128KWH-409.6V**
Battery Pack Model	**MW314-128KWH**
High-Voltage Pack	**HV128K**
Nominal Voltage	**409.6V**
Nominal Capacity	**128 kWh**
Cabinet Size (mm)	**1290×1080×1740**
Weight w/o Inverter	**1700 kg**
Cooling Method	**Air-cooled**
Protection Class	**IP55**
Firefighting Type	**Aerosol**

Battery Specifications

Battery Types	**51.2V-314Ah×8**
Cell Capacity	**314Ah**
Recommend Charge/Discharge Current (A)	**100**
Max. Charge/Discharge Current (A)	**140**
Communication	**RS485/CAN**
Working Temperature	**-10~50°°C**
Transport or Storage Temp. Range	**-20~60°°C**
Certification	**CE/IEC/UL/UN38.3/MSDS**
Design Life	**10 years+**
Cycle Life	**(0.5C/0.5C,80% DOD)>6000 times**

Inverter Specifications

Inverter Matching	**Max 60 kW**
Communication	**Ethernet/Modbus/TCP/IP**
Inverter Type	**Deye/Solis/Megarevo/Other**
Detailed Specifications	**Refer to inverter manual**

Specifications subject to change without notice.



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Product Specification

Model	**MW-209KWH-665.6V**
Battery Pack Model	**MW314-209KWH**
High-Voltage Pack	**HV209K**
Nominal Voltage	**665.6V**
Nominal Capacity	**209 kWh**
Cabinet Size (mm)	**1290×1080×2260**
Weight w/o Inverter	**2140 kg**
Cooling Method	**Air-cooled**
Protection Class	**IP55**
Firefighting Type	**Aerosol**

Battery Specifications

Battery Types	**51.2V-314Ah×13**
Cell Capacity	**314Ah**
Recommend Charge/Discharge Current (A)	**100**
Max. Charge/Discharge Current (A)	**140**
Communication	**RS485/CAN**
Working Temperature	**-10~50°°C**
Transport or Storage Temp. Range	**-20~60°°C**
Certification	**CE/IEC/UL/UN38.3/MSDS**
Design Life	**10 years+**
Cycle Life	**(0.5C/0.5C,80% DOD)>6000 times**

Inverter Specifications

Inverter Matching	**Max 100 kW**
Communication	**Ethernet/Modbus/TCP/IP**
Inverter Type	**Deye/Solis/Megarevo/Other**
Detailed Specifications	**Refer to inverter manual**

Specifications subject to change without notice.



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Product Specification

Model	**MW-225KWH-716.8V**
Battery Pack Model	**MW314-225KWH**
High-Voltage Pack	**HV225K**
Nominal Voltage	**716.8V**
Nominal Capacity	**225 kWh**
Cabinet Size (mm)	**1290×1080×2260**
Weight w/o Inverter	**2260 kg**
Cooling Method	**Air-cooled**
Protection Class	**IP55**
Firefighting Type	**Aerosol**

Battery Specifications

Battery Types	**51.2V-314Ah×14**
Cell Capacity	**314Ah**
Recommend Charge/Discharge Current (A)	**100**
Max. Charge/Discharge Current (A)	**140**
Communication	**RS485/CAN**
Working Temperature	**-10~50°°C**
Transport or Storage Temp. Range	**-20~60°°C**
Certification	**CE/IEC/UL/UN38.3/MSDS**
Design Life	**10 years+**
Cycle Life	**(0.5C/0.5C,80% DOD)>6000 times**

Inverter Specifications

Inverter Matching	**Max 125 kW**
Communication	**Ethernet/Modbus/TCP/IP**
Inverter Type	**Deye/Solis/Megarevo/Other**
Detailed Specifications	**Refer to inverter manual**

Specifications subject to change without notice.



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Product Specification

Model	**MW-256KWH-819.2V**
Battery Pack Model	**MW314-256KWH**
High-Voltage Pack	**HV256K**
Nominal Voltage	**819.2V**
Nominal Capacity	**256 kWh**
Cabinet Size (mm)	**2510×1300×1250**
Weight w/o Inverter	**2660 kg**
Cooling Method	**Air-cooled**
Protection Class	**IP55**
Firefighting Type	**Aerosol**

Battery Specifications

Battery Types	**51.2V-314Ah×16**
Cell Capacity	**314Ah**
Recommend Charge/Discharge Current (A)	**100**
Max. Charge/Discharge Current (A)	**140**
Communication	**RS485/CAN**
Working Temperature	**-10~50°°C**
Transport or Storage Temp. Range	**-20~60°°C**
Certification	**CE/IEC/UL/UN38.3/MSDS**
Design Life	**10 years+**
Cycle Life	**(0.5C/0.5C,80% DOD)>6000 times**

Inverter Specifications

Inverter Matching	**Max 125 kW**
Communication	**Ethernet/Modbus/TCP/IP**
Inverter Type	**Deye/Solis/Megarevo/Other**
Detailed Specifications	**Refer to inverter manual**

Specifications subject to change without notice.

20FT Container Energy Storage System



C&I energy storage | Rural power shortage | Off-grid island | Nomadic farm | Mine off-grid

Product Features

Simple and flexible

- High integration, small size, easy installation, operation and maintenance
- IP54 protection grade, stronger environmental adaptability
- Off-grid cold start function, support multimachine parallel function
- Simple structure, small footprint, flexible layout, easy installation, operation and maintenance
- Modular design, power and capacity can be expanded
- Communication is flexible, can accept BMS instructions in real time, communication methods are RS485, CAN

Economical & Intelligent

- Highest power density, maximum efficiency of 97.5%
- Reducing the maximum demand electricity cost, with considerable economic benefits
- Supporting peak shaving and valley filling, and dynamic expansion of transformers

Safe & Reliable

- built-in isolation transformer, high load adaptability
- Built-in fire protection, temperature control, and early warning systems provi multiple safety guarantees
- Supports battery management system and comprehensive thermal managen
- Intelligent control system, which can be connected to the local monitoring system for unified management and control

Battery Input

Battery Type	Lithium Iron Phosphate (LiFePO4)
Cell Specification	3.2V / 280Ah & 3.2V / 314Ah
Battery Capacity (kWh)	3440.64 / 5015.96
Nominal Voltage (V)	1228.8 / 1331.2
Battery Voltage Range (V)	1075.2~1382.4 / 1123.2~1497.6
Number of Battery Clusters	12 × 1P384S / 12 × 1P416S

AC data

Max Output Power (kVA)	1892 / 2750
Rated Power (kW)	1720 / 2500
Rated Current (A)	2482 / 3608
Max. Output Current (A)	2730 / 3969
Rated Voltage (V)	400
Voltage Range (V)	320~460
Frequency (Hz)	50/60
Power Factor	1 Lagging-1 Leading
AC Connection	3W+N+PE
THDI	< 1% Linear, < 5% Non-linear
Rated Voltage (V)	400
THDU	< 1% Linear, < 5% Non-linear
Rated Frequency (Hz)	50/60
Overload Capacity	110%, Long-term

General Data

Display	LCD
BMS Communication Mode	CAN / RS485 / Ethernet
EMS Communication Mode	Modbus RTU / TCP-IP
Ingress Protection	IP55 (Battery Pack IP67)
Fire Extinguishing System	Pack-Level Detection + Aerosol Suppression
Operating Temperature	-30~+55°C
Dimension W*D*H (mm)	6058×2438×2896
Weight (KG)	About 35000 / ≤ 42000
PCS Cooling Way	Temperature Control Intelligent Air Cooling
Battery Cooling Way	Intelligent Liquid Cooling
Altitude	≤ 4,000 m
Relative Humidity	0~95% Non-condensing

Standard

Inverter Grid Regulation	IEC/EN62109-1/-2; EN62477-1; IEC/EN61000-6-2/-6-4; EN50549-1: NRS 097-2-1:2017
Battery Standards	IEC62619 / IEC63056 / UL1973 / UL9540A / UN38.3 / NFPA855

Specifications subject to change without notice.

40FT Container Energy Storage System (Liquid Cooling)



MW-ESS7.53MWH-1500V

Product Features

Simple & flexible

- IStandardized design, easy to expand and maintain
- Integrated monitoring system
- Independent air duct design, more stable operation

Economical & friendly

- Reduce the maximum demand cost and have considerable economic benefits
- Supports peak shaving and valley filling, dynamic expansion of transformers, etc

Safe and reliable

- Supports battery management system and comprehensive thermal management
- Perfect fault classification and protection mechanism
- Built-in fire protection, temperature control, and early warning systems provide multiple safety guarantees
- Built-in isolation transformer, strong load adaptability
- Complete protection functions to protect the inverter and battery

Battery Input	
Battery Type	**Lithium Iron Phosphate (LiFePO4)**
Cell Specification	**3.2V / 314Ah**
Battery Capacity (kWh)	**7528.5**
Nominal Voltage (V)	**1331.2**
Battery Voltage Range (V)	**1123.2~1497.6**
Number of Battery Clusters	**18 × 1P416S**
Max. Charge/Discharge Current (A)	**189A**
AC (on-grid)	
Max Output Power (kVA)	**4136**
Rated Power (kW)	**3760**
Rated Voltage (V)	**400**
Voltage Range (V)	**320~460**
Rated Current (A)	**5428**
Max. Output Current (A)	**5971**
Frequency (Hz)	**50/60**
THDI	**<3%**
Power Factor	**1 Lagging-1 Leading**
AC Connection	**3W+N+PE**
AC (Off Grid)	
Rated voltage (V)	**400**
THDU	**< 1% Linear, < 5% Non-linear**
Rated frequency (Hz)	**50/60**
Overload capacity	**110% Long-term**
General Data	
Max Efficiency	**97.5%**
Ingress Protection	**IP55 (Battery Pack IP67)**
Fire Extinguishing System	**Pack-Level Detection + Aerosol Suppression**
Operating Temperature	**-30~+55°C**
PCS Cooling Way	**Temperature Control Intelligent Fan**
Battery Cooling Way	**Intelligent Liquid Cooling**
Relative Humidity	**0-95%, Non-condensing**
Altitude	**≤ 4,000 m**
Dimensions (W/D/H) MM	**12192×2438×2896**
Weight (T)	**About 55T**
Transformer Ratio	**315/400**
On/ Off Grid Switching	**Automatic**
Display and Communication	
Display	**LCD**
BMS Communication	**CAN / RS485 / Ethernet**
EMS Communication	**Modbus RTU / TCP-IP**
Standard	
Inverter Grid Regulation	**IEC/EN62109-1/-2; EN62477-1; IEC/EN61000-6-2/-6-4; EN50549-1; NRS 097-2-1:2017**
Battery Standards	**IEC62619 / IEC63056 / UL1973 / UL9540A / UN38.3 / NFPA855**

Specifications subject to change without notice.

MW Hybrid Inverter

C&I Energy Storage Inverter



MW-30KS~500KS-CP

Product Features

Safe & reliable

- Built-in isolation transformer for high load adaptability
- Perfect protection function for inverter and battery
- Redundancy design for important functions

Abundant configuration

- Integrated design, easy to integrate
- Support simultaneous access of load,battery,power grid , diesel and PV
- Built-in maintenance bypass switch, improve system availability

Intelligent & efficient

- Support battery capacity and discharge time prediction
- Smooth switching between on and off grid, uninterrupted supply of load
- Operate with EMS to monitor system status in real time

Friendly & flexible

- Various working modes can be set flexibly
- PV controller modular design, easy to expand
- Flexible Battery Type(Li-ion,lead-acid)

Parameter	MW-30KS-CP	MW-50KS-CP	MW-100KS-CP	MW-150KS-CP	MW-250KS-CP	MW-500KS-CP
AC (On-grid)						
Max output power (kVA)	33	55	110	165	275	550
Rated power (kW)	30	50	100	150	250	500
Rated voltage (V)				400		
Rated current (A)	43	72	144	-	-	722
Voltage range (V)				320-460		
Rated frequency (Hz)				50/60		
Frequency range (Hz)				45-55/55-65		
THDI				<3%		
Power factor				1 lagging-1 leading		
AC connection				3W+N+PE		
Transformer ratio	100/400	200/400	270/400	270/400	270/400	315/400
AC Output						
Max output power (kVA)	33	55	110	165	275	550
Rated power (kW)	30	50	100	150	250	500
Rated voltage (V)				400		
Rated current (A)	43	72	144	-	-	722
THDU				≤1% linear; <5% nonlinear		
Rated frequency (Hz)				50/60		
Overload capacity				110% long-term		
Photovoltaic Input						
Max. PV input voltage				1000V DC		
Max. PV power (kW)	60/120	60/120	120/180/240	120/180/240	300/360	600/660/720
MPPT voltage range (V				200-850V DC		
MPPT range @ full loa				450-850V DC		
Battery						
Battery voltage range (V)	250-850	320-850	420-850	420-850	420-850	500-850
Max. charging power (kW)	60/120	60/120	120/180/240	120/180/240	300/360	600/660/720
General Data						
Dimension W*D*H (mm)	800×800×1900	800×800×1900	1200×800×2050	1200×800×2050	(600×720×2050)×1 + 1200×800×2050	(600×720×2050)×2 + 1600×1050×2050
Weight (kg)	620/650	720/750	1120/1150/1180	1250/1280/1310	1980/2010	3265/3295/3325
Operation temperature				-30°C to +55°C		
Relative humidity				0~95% non-condensing		
Ingress protection				IP54		
Noise emission (dB)				<70		
Altitude				5000m (>3000m Derating)		
Cooling				Air cooling		
Display & Communication						
Display				LCD touch-screen		
BMS communication				RS485/CAN		
EMS communication				RS485, TCP/IP		
Certificates						
Certificates	EN62109-1/-2, EN62477-1, EN61000-6-2, EN61000-6-4, NRS097-2-1:2017, IEC61727, IEC62116, IEC61683					

Specifications subject to change without notice.

Power Conversion System (with Transformer)

C&I Energy Storage Inverter



MW-30KT~500KT-CP

Parameter	MW-30KT-CP	MW-50KT-CP	MW-100KT-CP	MW-150KT-CP	MW-250KT-CP	MW-500KT-CP
DC (Battery)						
Voltage range (V)	250-850	320-850	420-850	420-850	420-850	500-850
Max. current (A)	-	-	-	405	-	1128
AC (On-grid)						
Max output power (kVA)	33	55	110	165	275	550
Rate output power (kW)	30	50	100	150	250	500
Rated voltage (V)	400					
Voltage range (V)	320-460					
Rated current (A)	43	-	-	-	-	-
Max. output current (A)	48	-	-	-	-	-
Rated frequency (Hz)	50/60					
Frequency range (Hz)	45-55/55-65					
THDI	<3%					
Power factor	1 lagging-1 leading (settable)					
AC connection	3W+N+PE					
AC (Off Grid)						
Rated current (A)	-					
THDU	<1% Linear, <5% Nonlinear					
Rated frequency (Hz)	50/60					
Overload capacity	110% long-term					
General Data						
Max. efficiency	96.3%	96.5%	97.1%	97.1%	97.3%	97.5%
Ingress protection	IP54					
Noise emission (dB)	<70					
Operating temperature	-30°C to +55°C					
Cooling	Temperature control intelligent air cooling					
Relative humidity	0~95% non-condensing					
Altitude	5000m (>3000m Derating)					
Dimension W*D*H (mm	800×800×1900					
Weight (KG)	605	676	936	1057	1582	2665
Transformer ratio	100/400	200/400	270/400	270/400	270/400	315/400
On/Off grid switching	Automatic					
Display & Communication						
Display	LCD touch-screen					
BMS communication	RS485/CAN					
EMS communication	RS485, TCP/IP					
Certificates						
Certificates	IEC/EN62109-1/-2, IEC/EN62477-1, IEC/EN61000-6-2, IEC/EN61000-6-4, CGC					

Specifications subject to change without notice.

Product Features

Friendly & flexible

- Wide battery voltage range, support multiple battery access
- Reactive power, active power adjustable
- Off-grid cold start function, support multi-machine parallel function

Intelligent & efficient

- Highest power density, maximum efficiency of 97.5%
- With grid-connected charging and discharging, off-grid independent inverter function

Safe & reliable

- built-in isolation transformer, high load adaptability
- AC/DC dual backup for auxiliary power supply




Hangzhou residential off-grid energy storage project

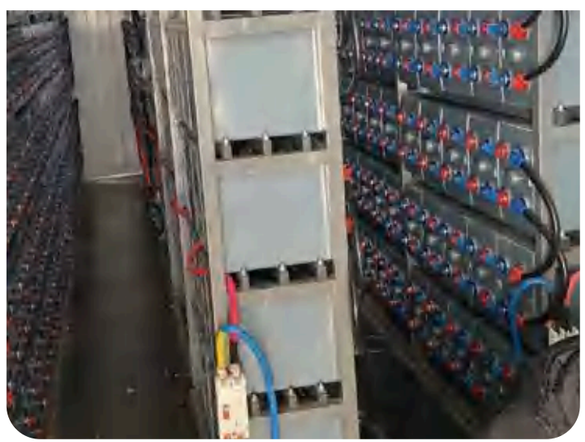






Foshan Family Community Microgrid Photovoltaic Installation Project




Large scale photovoltaic energy storage projects

- SNE-250KT-CP+MV+450KWH
- December 2022
- Peak shaving and frequency regulation of power grid








Large scale photovoltaic energy storage projects

- 2.5MWMicrogrid energy storage installation project
- 2022
- Indoor installation

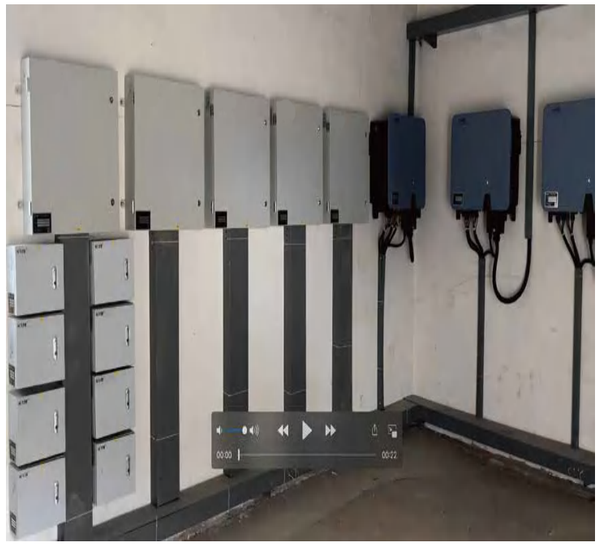



SNE-500KT+506 kWh battery · Austrla : October 2023 · Outdoor container installation , Industrial and commercial virtual power plant



SNE-250KT-CP+MEGA 0250 T+800 kW batery:Africa Africa Sierra Leone-Freetown · 2019-Indoor installationOptical storage microgrid





Xinjiang Energy Storage Project

SNE-250KT kWh battery · XinjiargNovember 2019 · Indoor installation · Optical storage microgrid, backup power supply



Beijing

Beijing 100KW300KWH Micro NetworkIndustrial and commercial energy storage system





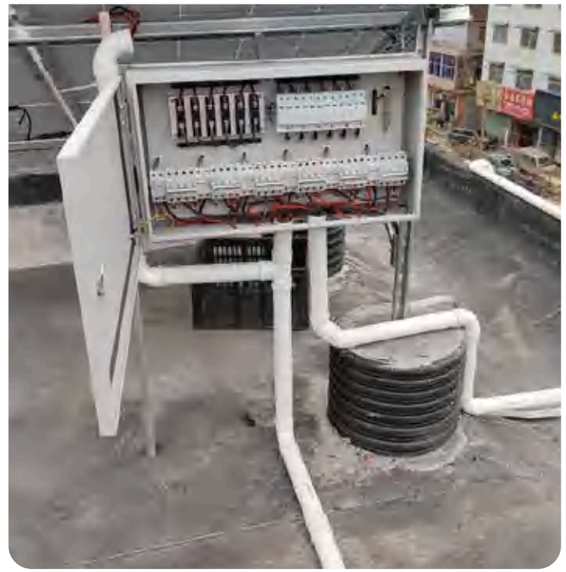


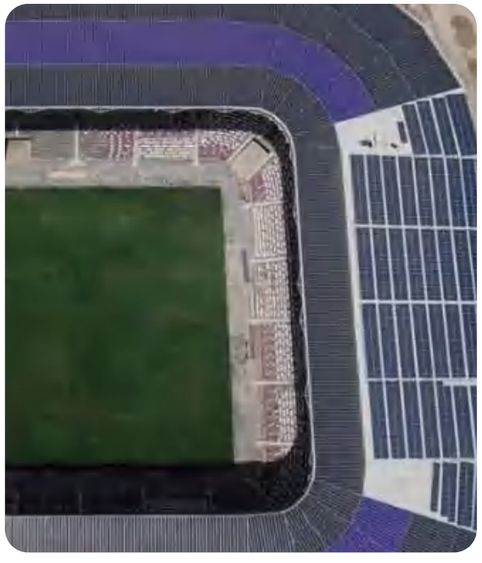
Inner Mongolia Hohhot city energy storage project

- **MW-500KT-CP*1MW battery**
- **Hohhot city, Inner Mongolia**
- **April 2020**
- User side clipping peaks and valleys

Hebei Tangshan SEN-500KT-CP

- MEGA 0050T+40 kWh battery
- Hebei Tangshan
- October 2019 · Indoor installation · Backup power
- **Backup power supply**













Inner Mongolia Hohhot city energy storage project

- **MW-500KT-CP*1MW battery**
- **Hohhot city, Inner Mongolia**
- **April 2023**
- **Outdoor installation**
- User side clipping peaks and valleys

South Africa steel plant energy storage project

- **South Africa steel plant 2.5MW energy storage project**
- **Pretoria, South Africa**
- **October 2023**
- **Indoor installation**
- **Backup power supply**













Energy storage projects in Southeast Asia

- 1MWH energy storage project in Southeast Asia
- Southeast Asia Vietnam
- December 2022
- Outdoor installation
- User side clipping peaks and valleys

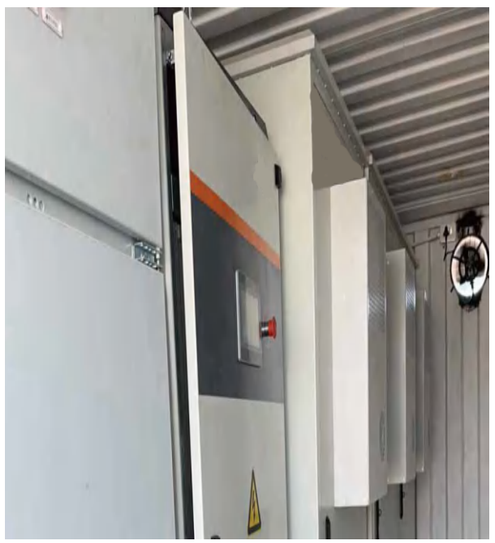
South Africa farm energy storage project

- South Africa farm 250KW/506KWH energy storage project
- Cape Town, South Africa
- February 2023
- Indoor installation
- Backup power supply











Southeast Asia Laos energy storage project

■ Laos 20MW40MWH ■ August 2022 ■ Peak frequency regulation of power grid





Southeast Asia Myanmar energy storage project

■ Myanmar Microgrid 500KW1000KWH ■ August 2023 ■ Indoor installation





Mongolia Bayannur city energy storage project

■ Mongolia 30MW60MWH ■ November 2023 ■ Peak and frequency regulation of power grid





Large-scale commercial photovoltaic energy storage projects

■ Africa 500KW506KWH ■ The year 2023 ■ Indoor installation



