



Official Public Account



Greener Energy, Better Future

ZONERGY CORPORATION

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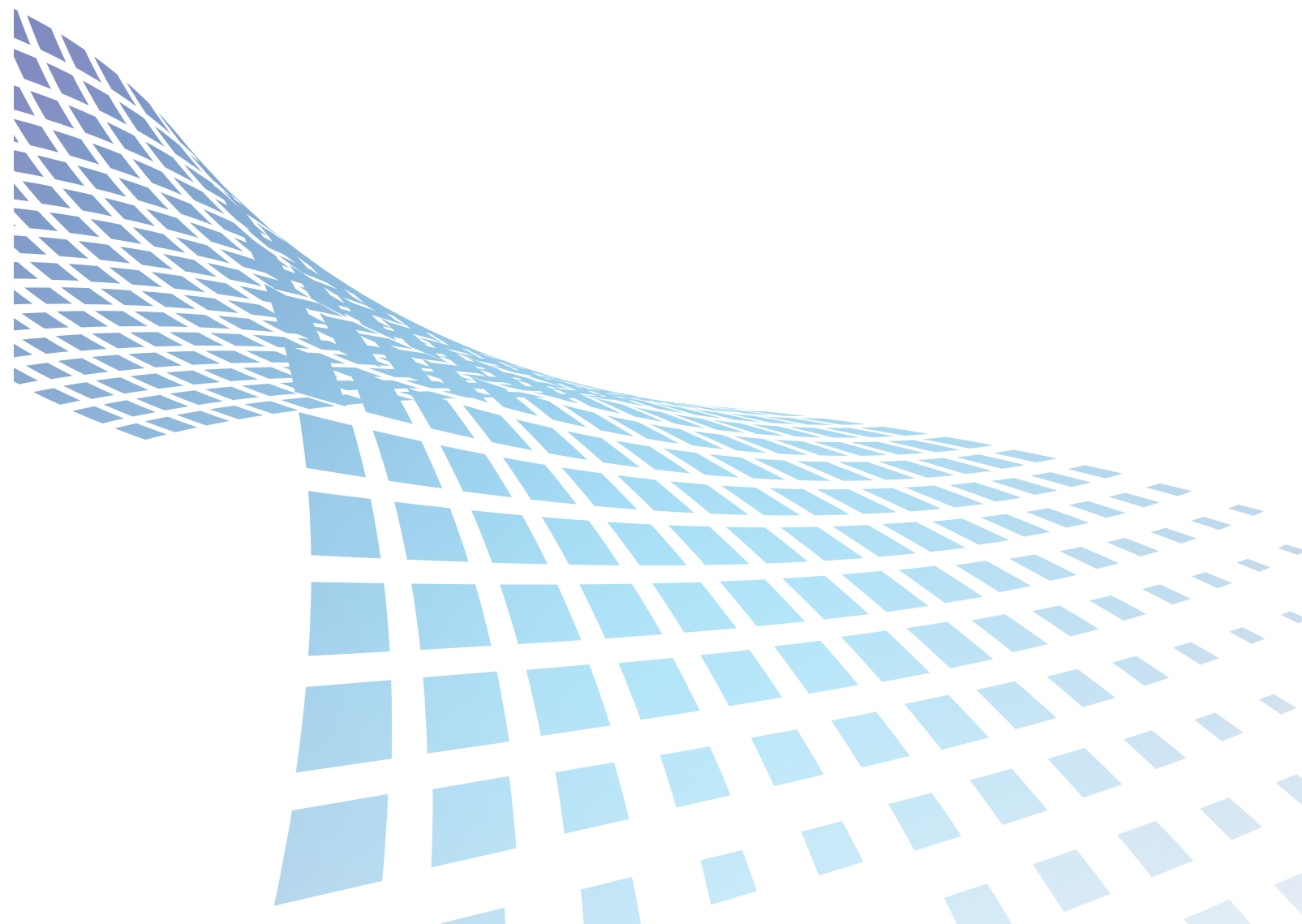
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ZONERGY CORPORATION

Comprehensive Solution Provider for Smart Micro-grid





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Company Profile

Founded in 2007, Zonergy Corporation is a world-renowned provider of smart photovoltaic energy storage micro-grid solutions. Through years of development, the company has cultivated outstanding capabilities in technological R&D, market expansion, and engineering implementation, ensuring comprehensive support for all business operations and delivering high-quality solutions and product services to global customers.

The company's product series includes residential energy storage, industrial and commercial energy storage, portable energy storage, etc. Designed in strict compliance with international and domestic standards, all its products have obtained certifications from authoritative institutions such as CQC, UN/MSDS, CE/CB, IEC, EN, VDE, and CEI, and have also been certified as a Lighting Global equipment partner by the World Bank.

Adhering to independent R&D, the company had secured over 230 authorized and pending intellectual property rights by 2024. It possesses integrated capabilities in R&D, production, and solutions for sodium battery cells + 3S (PCS + BMS + EMS). Since 2021, the company has initiated the R&D, validation, and industrialization layout of sodium-ion batteries and key materials. Its square aluminum-shell sodium-ion battery was the first in the industry to obtain TÜV SÜD international certification.

In 2024, Zonergy officially joined the United Nations Global Compact, committing to advancing sustainable development worldwide. On the path toward green energy transition, Zonergy will continue to serve global customers with high-quality products and solutions, working hand in hand to build a green and better future!



Won the title of National High-tech Enterprise in 2024



Achieved the "Customs AEO Advanced Certification" in 2025



Won the title of "Specialized and Sophisticated SME That Produces New and Unique Products, Sichuan" in 2024



Approved as Sichuan Enterprise Technology Centre in 2023



Approved to establish a National Postdoctoral Research Workstation in 2023



CNAS-accredited laboratory of the Photovoltaic Energy Storage Research Institute obtained five witness certification authorizations, including TÜV SÜD and TÜV Rheinland



China Construction Engineering Luban Prize (National Quality Project)



A top-ranked new energy brand in Pakistan



Member of the United Nations Global Compact



Project partner of UNHCR and World Bank

Honors and Qualifications

Enterprise qualifications		Qualification entity	Qualification level
1	National High-tech Enterprise	ZONERGY CORPORATION	National
2	National Intellectual Property Advantage Enterprise	ZONERGY CORPORATION	National
3	Postdoctoral Research Workstation	ZONERGY CORPORATION	National
4	Customs AEO Advanced Certified Enterprise	Zigong Xingchuan Photoelectric Co., Ltd.	National
5	National Technology-based SME	Zigong Xingchuan Energy Storage Technology Co., Ltd.	National
6	Smart Photovoltaic Pilot Demonstration Project	Sichuan Zhongxing Energy Co., Ltd.	National
7	Advanced Unit in Ensuring Power Access for People Without Electricity	ZONERGY CORPORATION	National
8	Technology-based SME	Zonergy (Chengdu) Company Limited	National
9	Specialized and Sophisticated SME That Produces New and Unique Products, Sichuan	ZONERGY CORPORATION	Provincial
10	Innovative SME, Sichuan	ZONERGY CORPORATION	Provincial
11	Engineering and Technology Research Centre for Smart Micro-grid with Photovoltaic Energy Storage, Sichuan	ZONERGY CORPORATION	Provincial
12	Enterprise Technology Centre, Sichuan	ZONERGY CORPORATION	Provincial
13	Top 100 New Economy Enterprises in Sichuan in 2024	ZONERGY CORPORATION	Provincial
14	Major Projects Under Sichuan-Chongqing Cooperation in 2021	ZONERGY CORPORATION	Provincial



POSTDOCTORAL PROGRAMME



AEO CERTIFICATE



National High-tech Enterprise



Invention patent



Utility model patent certificate

Invention patent

Invention patent

Annual Overseas Energy Project Innovation Award

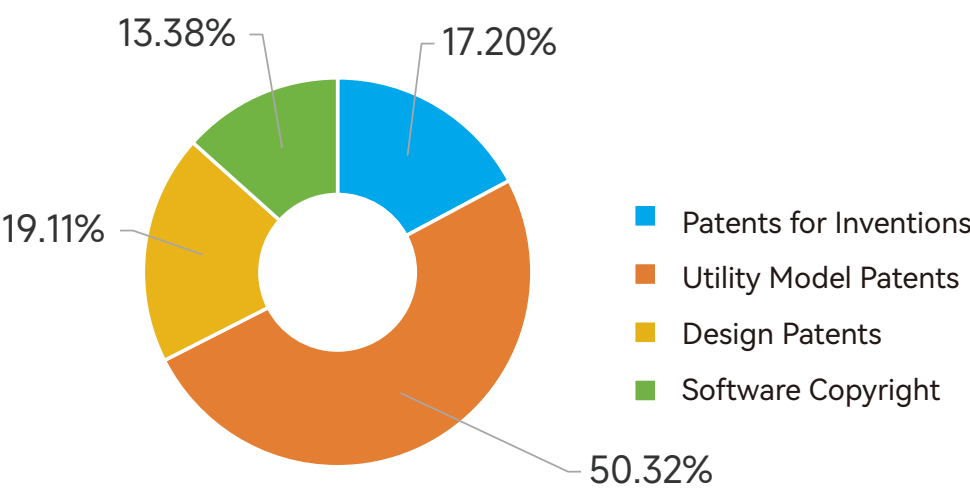
Luban Award



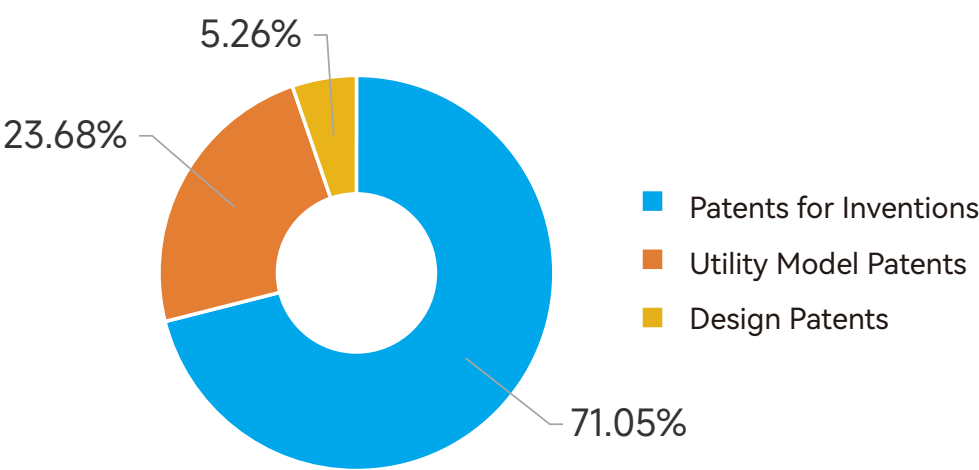
Specialized, Sophisticated, and Innovative SMEs in Sichuan Province



| Intellectual Property Rights



As of 2024, the Company has 157 validly authorized intellectual property rights, including 27 invention patents, 79 utility model patents, 30 design patents, and 21 software works.



We have 76 intellectual property rights under approval, including 54 invention patents, 18 utility model patents, 4 design patents.

| Technical Advantages

01

Leading sodium-ion battery + 3S full-stack self-developed capability

Mastering the comprehensive strength of sodium-ion battery + 3S (PCS + BMS + EMS) R&D, production, and solution integration.

02

Multi-machine parallel connection technology, capable of direct parallel connection on the AC side with up to 10 PCS

Modular design, simple wiring, high reliability, fast response, long service life, more efficient, safe and easy to expand.

03

Safer and more reliable BMS

Our multi-level modular technology platform allows us to refine battery management down to the single-cell level, resulting in industry-leading battery consistency management. This platform also supports the mixed use of new and old batteries, as well as the mixed-use of lithium and sodium batteries. Our goal is to provide the most efficient and effective battery management solutions possible.

04

Commercial and industrial energy storage system based on polyanionic sodium-ion battery

More than 49 patents applied, including 33 invention patents; NaESS+PV+Charger project achieved on-grid operation as the lead in Sichuan Province.

05

Enabling a distributed resource planning and management portfolio through EMS

System simulation design, station-level edge controllers, and station-level intelligent optimized regulation.

06

Excellent system integration capabilities

Flexible, efficient, reliable, scalable, networking. Possessing a leading industrial and commercial energy storage product with an energy efficiency of 88%.

Zenergy has received accreditation through International Mutual Recognition of Laboratory Results.



|Advanced Sodium-ion Battery Technology

01

Safer
No fire, no explosion

02

Ultra-wide operating temperature range
-60°C~60°C

03

Faster charging
Charging from 20% to 80% in 15 minutes

04

Lower cost
Rich Resource Reserves
Cost advantage over lithium battery when the industry chain matures

- The first generation of sodium-ion batteries has been converted to mass production and successfully commercialized, with an energy density of 100-160Wh/Kg and more than 3,000 cycles;
- Prismatic sodium-ion cell passed TÜV SÜD international certification in 2023.This milestone made Zonergy the industry's first to receive such accreditation;
- Awarded the Golden Energy-Storage Prize for advanced technology of sodium-ion battery;
- Awarded "The Third Batch of Sodium-ion Battery Evaluation Approval Units" by Zhongguancun Energy Storage Industry and Technology Alliance in 2023;
- NaESS+PV+Charger integration solution project achieved on-grid operation as the lead in Sichuan Province;
- In 2023, the company received the Gold Storage Award for Advanced Sodium-Ion Battery Technology, was listed as a third-round qualified participant in the sodium-ion battery evaluation program, and became the first to achieve TÜV SÜD international certification for square aluminum-shell sodium-ion batteries;
- In 2025, its "Research and Development of Grid-connected/Off-grid Poly-anion Composite Sodium-Iron Phosphate Battery and System with Integrated Photovoltaic Energy Storage" was awarded the National Science and Technology Achievement Certificate and recognized as "Internationally Advanced".



Comprehensive Product Series

Products cover residential energy storage, industrial and commercial energy storage, portable energy storage, sodium-ion energy storage, etc.

*Off-grid Energy Storage
Inverter Granite Series*



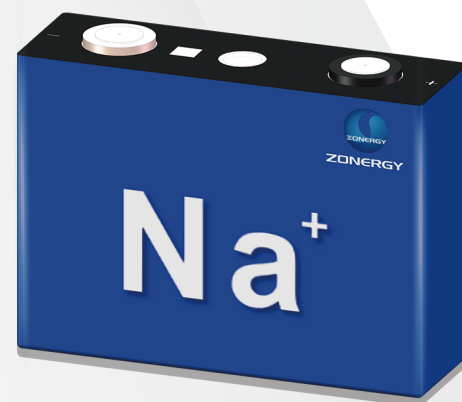
*Residential Single-phase On-grid
PV Inverter Mercury Series*



*Portable DC Power
Supply Baldr Series*



*Residential Three-phase On-grid
PV Inverter Apollo Series*



Prismatic Sodium-ion Cell

*Residential Three-phase Energy
Storage System Panda Series*



*Residential Single-phase Energy
Storage System Panda Series*



*Modular Commercial And Industrial
Energy Storage Systems Powercube Series*

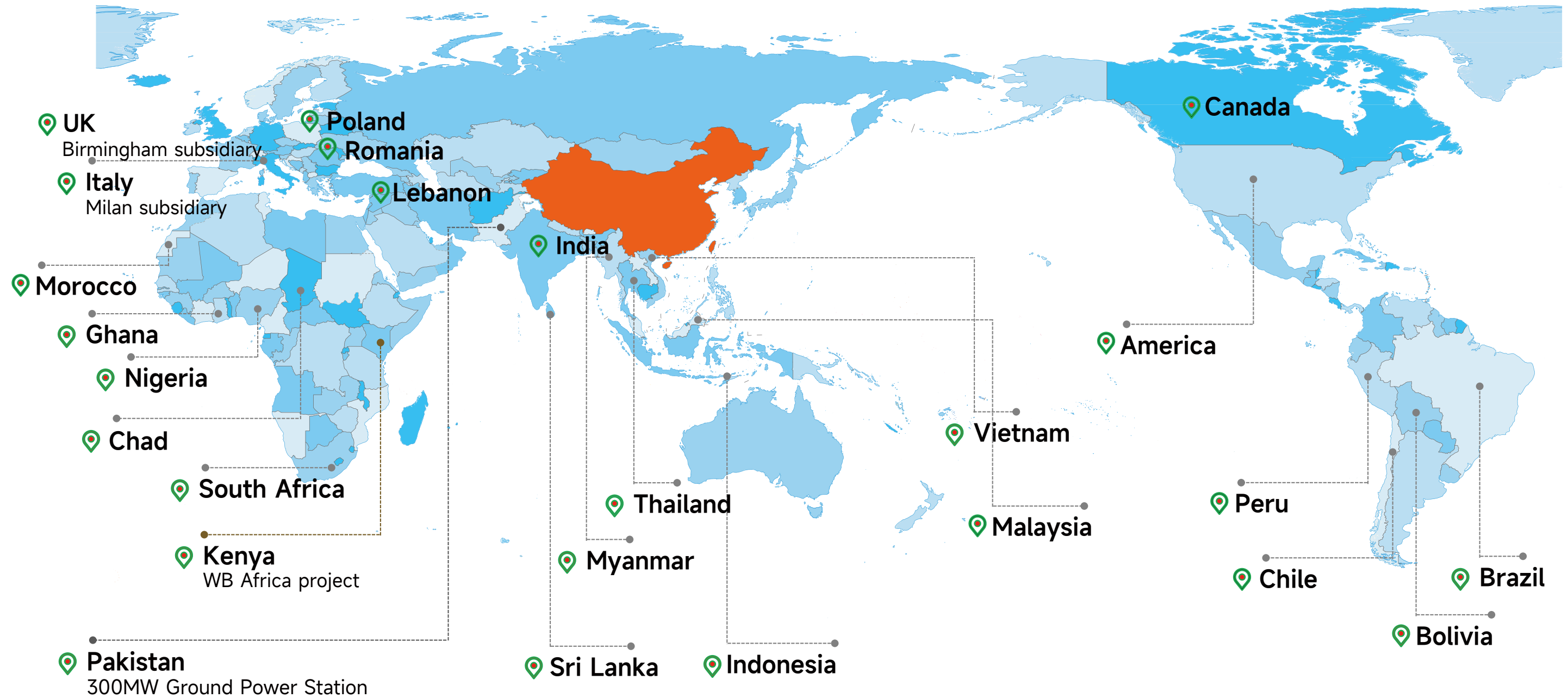
| Domestic Market

- Construction of large-scale photovoltaic power plants in western provinces;
- Construction of industrial and commercial distributed photovoltaic storage projects in Guangdong and other regions;
- Shandong Zibo photovoltaic power generation project included in the first batch of national "National Distributed Photovoltaic Power Generation Scale Application Demonstration Area";
- Shenzhen Science and Technology Park rooftop photovoltaic power generation project approved as a national "Solar Photovoltaic Power Generation Centralized Application Demonstration Area";
- Participation in the Three-Year Action Plan for Comprehensively Solving the Problem of Access to Electricity for Population without Electricity promoted by National Energy Administration;
- Address the power supply issues for 453,000 people in the most challenging conditions in provinces and autonomous regions such as Sichuan, Gansu, and Qinghai;
- Awarded the title of "Advanced Unit for Comprehensively Solving the Problem of Electricity Access for the Population without Electricity" by the National Energy Administration;
- "PV Independent Power Supply Project for Electricity Construction in Unelectrified Areas" in Sichuan has been selected for the list of "Pilot Demonstration List of Intelligent Photovoltaic" by six ministries in 2020.



International Market

Market coverage in 30+ countries



- European headquarter established in 2022;
- The Largest Independent Power Producer in Pakistan's Photovoltaic Power Generation Sector.

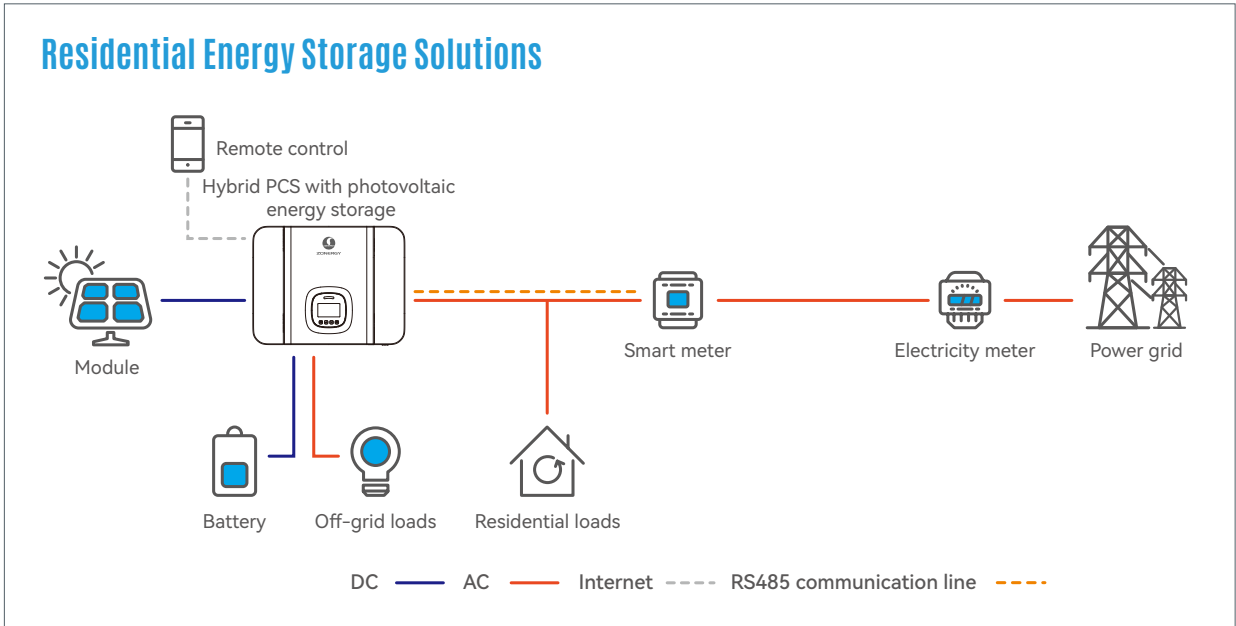
- The first phase of the 9×100MW PV project in Pakistan(the 3×100MW project), was fully connected to the grid for power generation in July 2016, with an annual power output of over 500 million kWh.

|Residential Energy Storage

The residential energy storage system addresses stable power demand and offers functions such as leveraging price differentials between peak and off-peak hours to reduce electricity costs and enhance the self-consumption rate of photovoltaic power generation. It serves as an integrated solution tailored for household scenarios.

The core of the residential energy storage system is the battery pack, BMS, and energy storage inverter, which is paired with household PV to form a residential photovoltaic energy storage system, mainly including the battery pack, BMS, hybrid PCS, and PV modules.

Residential energy storage is developing rapidly in the European market. Europe's higher level of electricity prices combined with peak and valley price differentials, as well as the incentive policy and declining energy storage cell prices, contribute to the favorable economic viability of residential energy storage.



|Residential Energy Storage Application Scenarios: Energy Storage + X



Residential Energy Storage



Residential Photovoltaic Energy Storage



Residential Photovoltaic Energy Storage and Charging



Residential Photovoltaic Energy Savings



Residential Photovoltaic Energy Storage Heat Pump

Residential Energy Storage Solutions

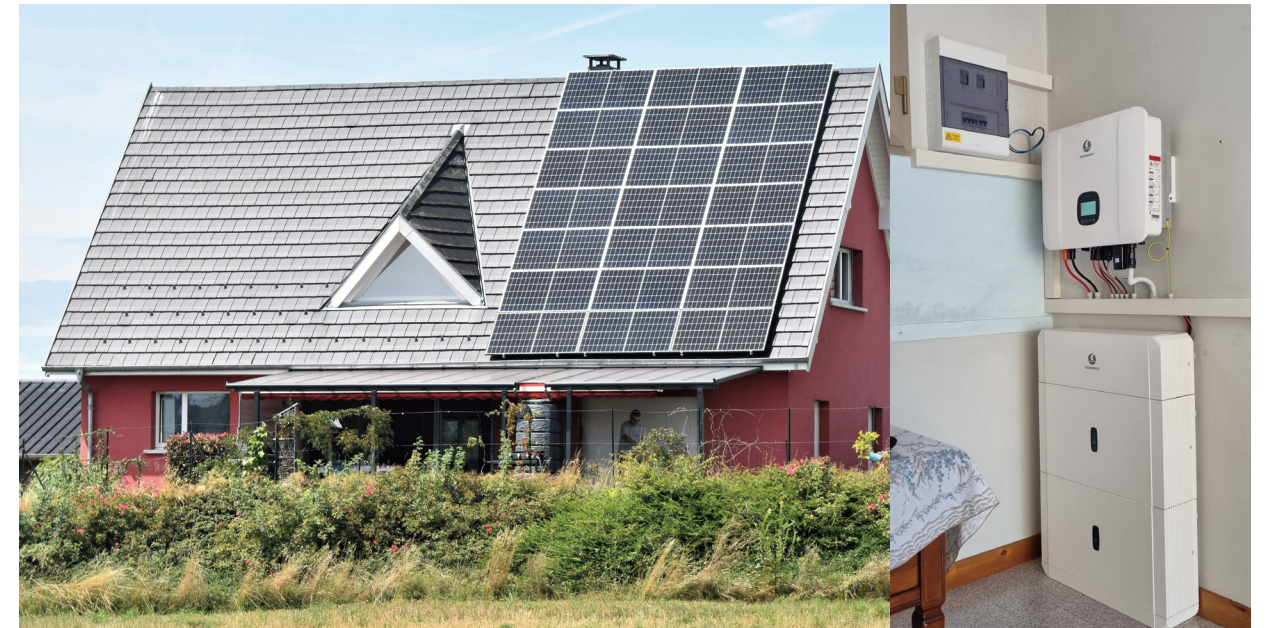


Residential energy storage is suitable for areas with high peak-to-valley spreads or weak grids;

The main application modes include:

1. Shaving peaks and filling valleys to reduce users' electricity bills;
2. Backup power supply to replace the traditional UPS power supply function

Residential Photovoltaic Energy Storage Solutions

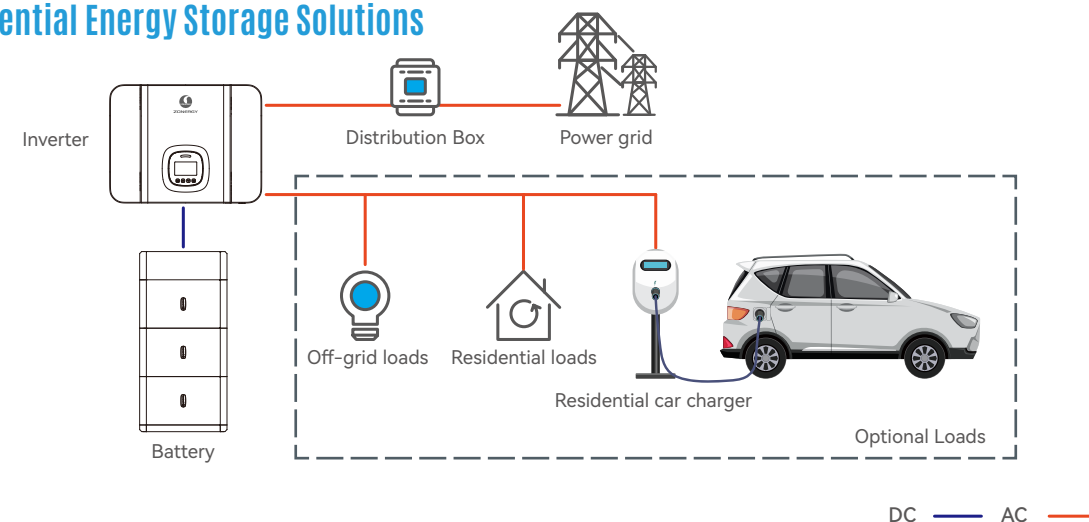


Residential photovoltaic energy storage is suitable for areas with high electricity prices, high peak-to-valley price differentials, or weak grids;

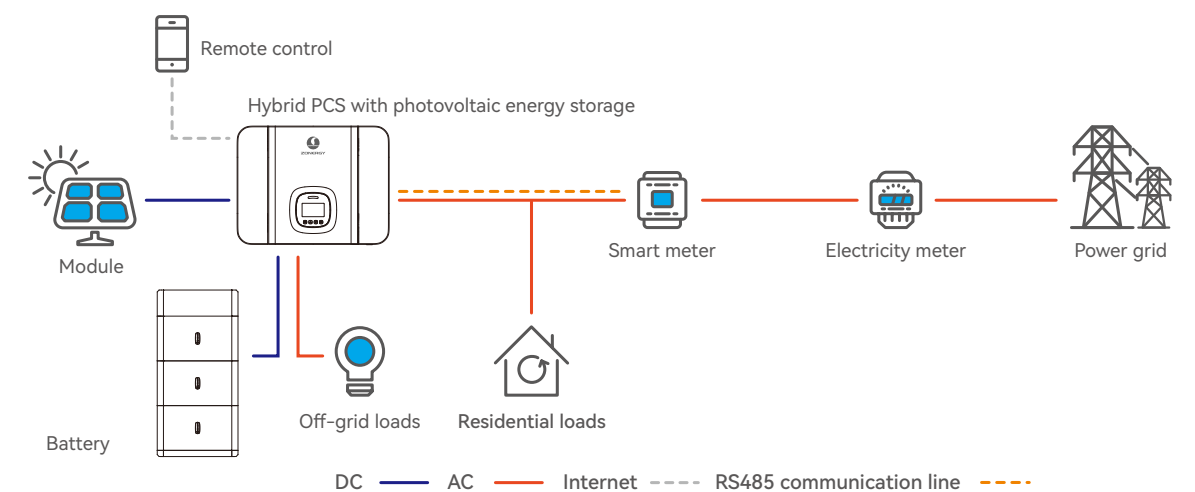
The main application modes are as follows:

1. Self-generation and self-consumption, feeding excess power back into the grid, maximize the PV self-generation and self-consumption rate;
2. Cutting peaks and filling valleys to reduce the price of electricity for users;
3. Off-grid application to ensure reliable power supply for critical loads.

Residential Energy Storage Solutions



Residential Photovoltaic Energy Storage



Residential Photovoltaic Energy Storage and Charging Solutions



Solar energy is converted to electricity through photovoltaic power generation and stored in an energy storage system to charge electric vehicles through home vehicle charging piles; When the power generation is greater than the consumption, the excess power can also be incorporated into the power grid, realizing the mutual complement between the power grid and energy storage, and achieving synergetic photovoltaic energy storage and charging.

Residential Photovoltaic Energy Savings Solutions



Photovoltaic energy storage systems power thermal storage heaters for places with weak power grids, long cold seasons, and abundant light supply;

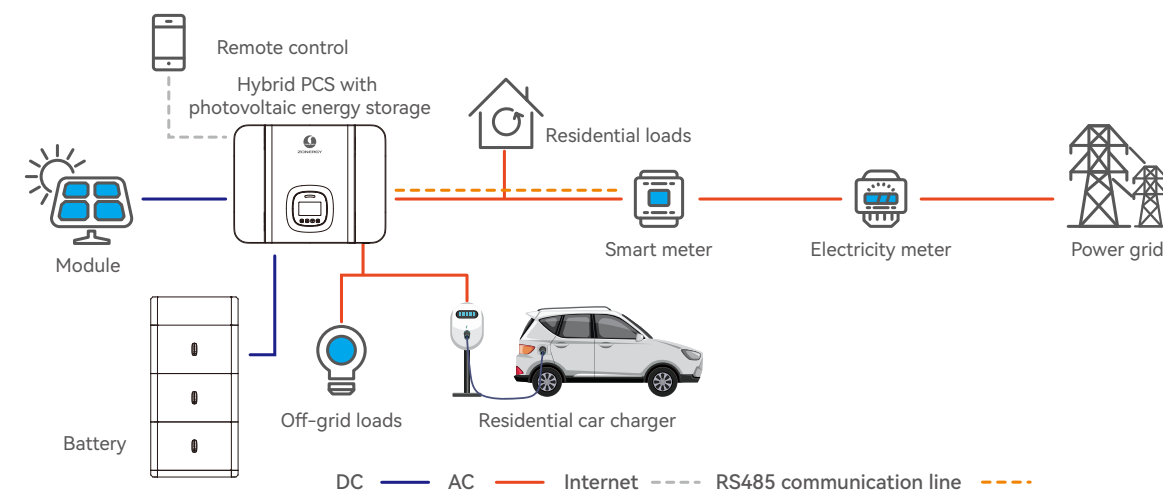
Residential photovoltaic energy saving systems heat during the heating season and supply power during the non-heating season;

Heating season: photovoltaic and energy storage-based, grid synergistic power supply to thermal storage electric heaters, grid direct supply to far-infrared high-temperature radiation electric heaters;

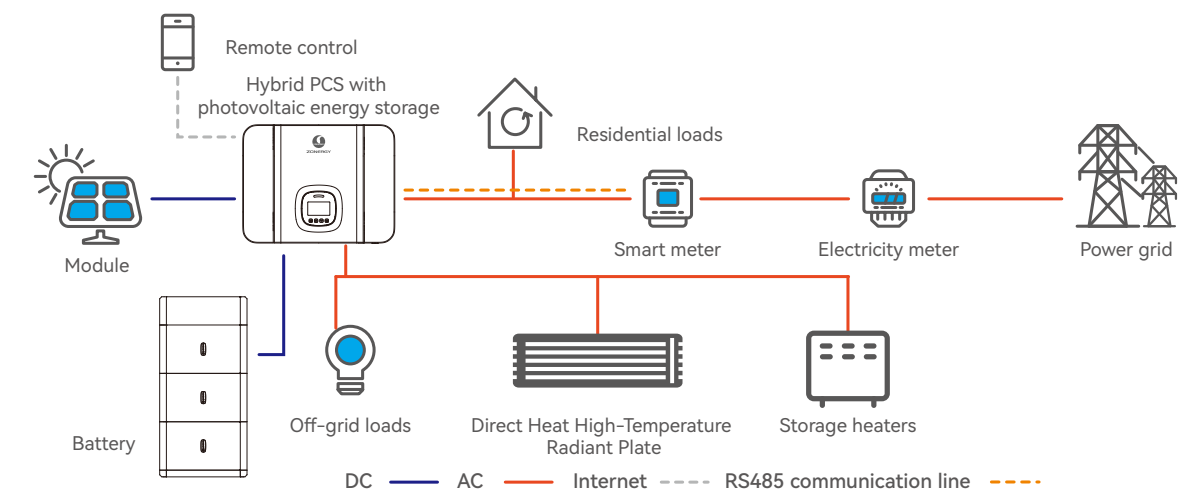
Non-heating season: off-grid mode self-generation and self-consumption.

Grid-connected mode for self-generation and self-consumption, with surplus power going back to the grid.

Residential Photovoltaic Energy Storage and Charging Solutions



Residential Photovoltaic Energy Savings Solutions



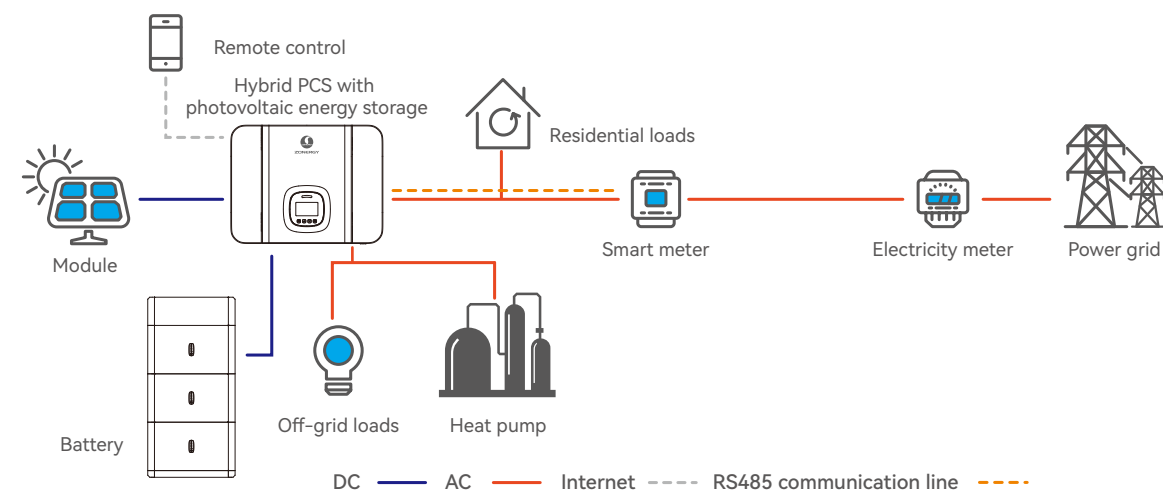
Residential Photovoltaic Energy Storage Heat Pump Solutions



Photovoltaic storage integration products are gradually becoming popular in the market, which can effectively help families reduce their dependence on natural gas, coal, and other energy sources, and the converted and stored electricity can greatly satisfy their daily needs;

"Photovoltaic + storage + X" model for the heat pump demand to create conditions. For the majority of European regions, winter heating is a necessity of life. The rapid increase in the installed capacity of photovoltaic energy storage products in Europe has created excellent market conditions for the penetration rate of heat pump products.

Residential Photovoltaic Energy Storage Heat Pump Solutions



Residential Product Case



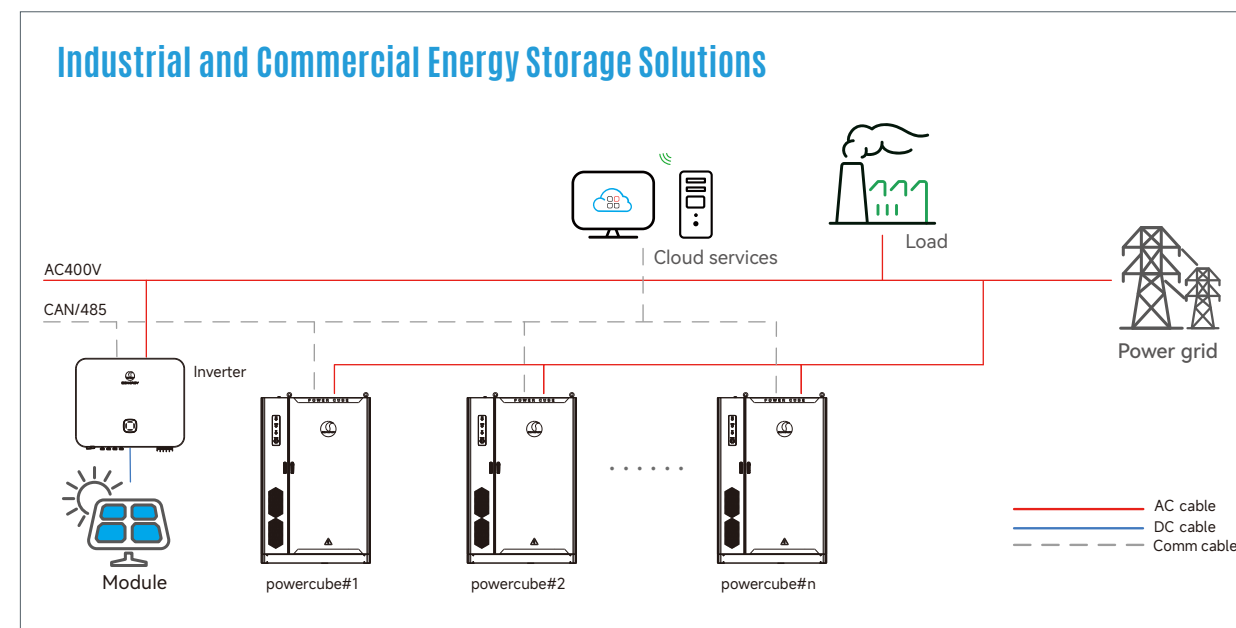
Industrial and Commercial Energy Storage

Industrial and commercial energy storage is a typical application of distributed energy storage system on the user side, mainly composed of photovoltaic modules, hybrid PCS, battery packs, loads, etc., mostly modular scalable design;

The main application scenarios include factories and shopping malls, photovoltaic energy storage charging stations, and microgrid+ energy storage, and new application scenarios have appeared in data centers, 5G base stations, heavy trucks switching, port shore power, and so on;

The main application modes include grid-connected mode, pure off-grid mode, and integrated grid-connected and off-grid mode;

The main electrical system architectures are AC-coupled and DC-coupled.



Industrial and Commercial Energy Storage Application Scenarios



Industrial and Commercial Application



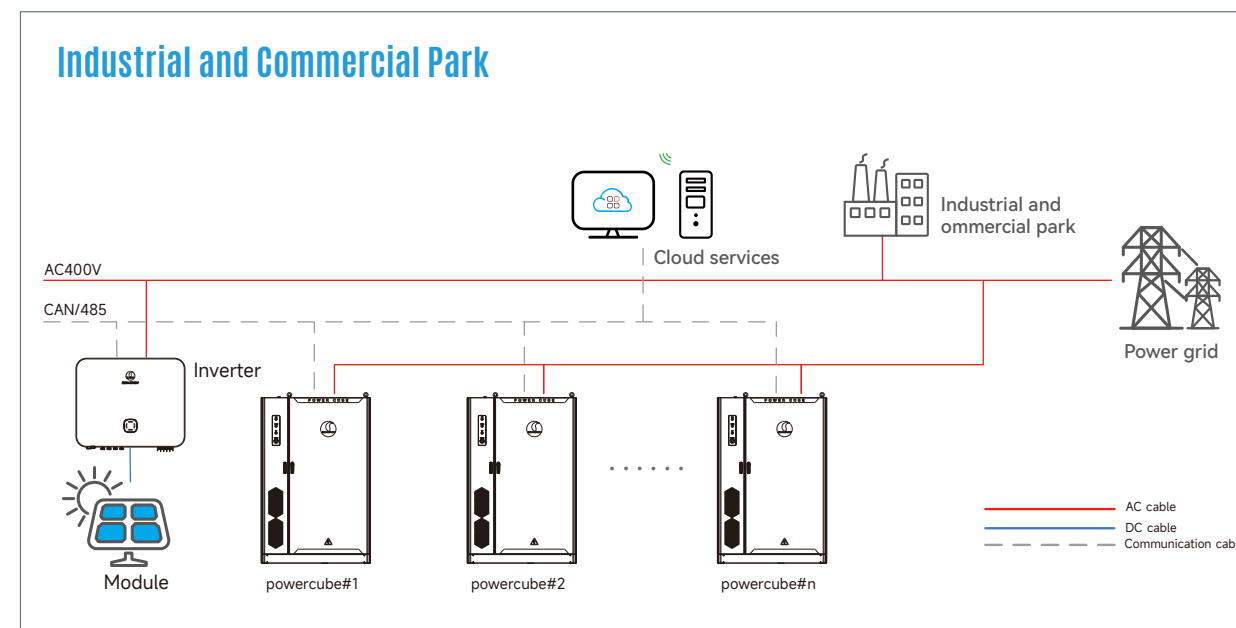
Micro-grid



Photovoltaic Energy Storage and Charging Station

Industrial and Commercial Energy Storage Solutions Industrial and Commercial Park

Energy storage cabinet Powercube can use a lithium battery as an energy storage device to complete the balance and optimization of power supply and power demand among grid, energy storage, and load, and can easily access new energy equipment such as photovoltaic, which brings application value in the areas of peak and valley power consumption, distribution network capacity increase, and power security.

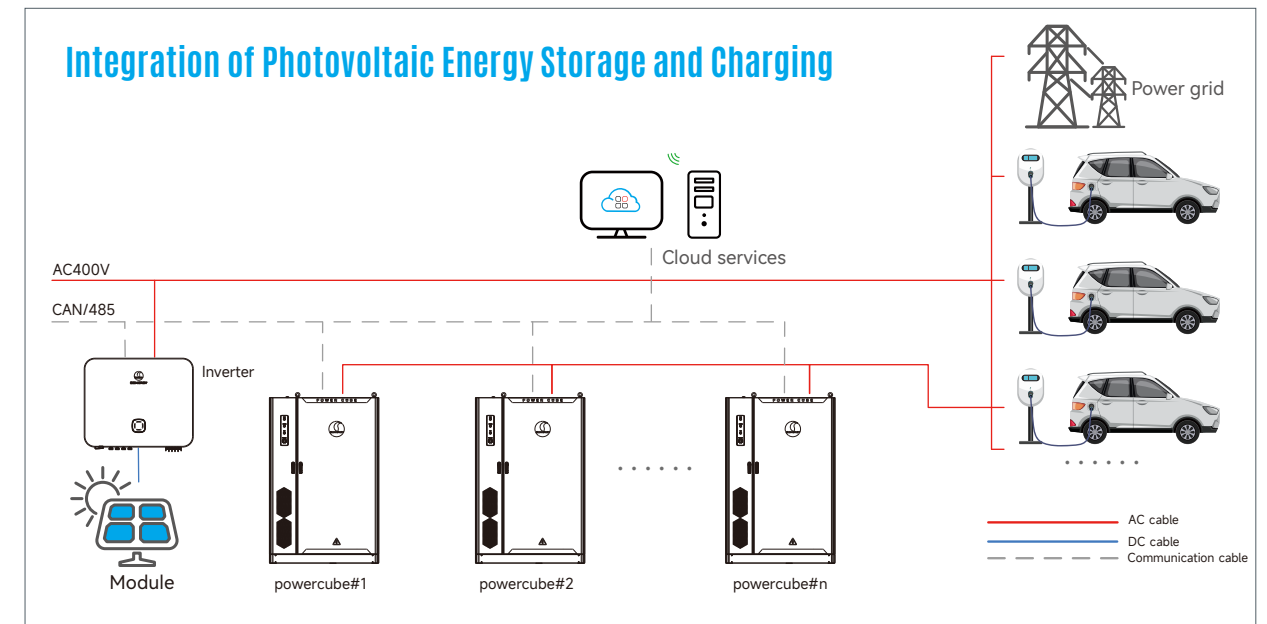


Industrial and Commercial Energy Storage Solutions Integration of Photovoltaic Energy Storage and Charging

Electric vehicle charging has a significant impact on the power grid due to its high charging power, but the overall power consumption is not large;

The system adopts a distributed design, consisting of photovoltaic, industrial, and commercial energy storage and charging terminals, allowing flexible deployment of charging power and energy storage capacity;

This solution is widely used in charging scenarios with insufficient distribution capacity and large peak-to-valley price difference, bringing customers dynamic capacity increase and peak-to-valley profitability.

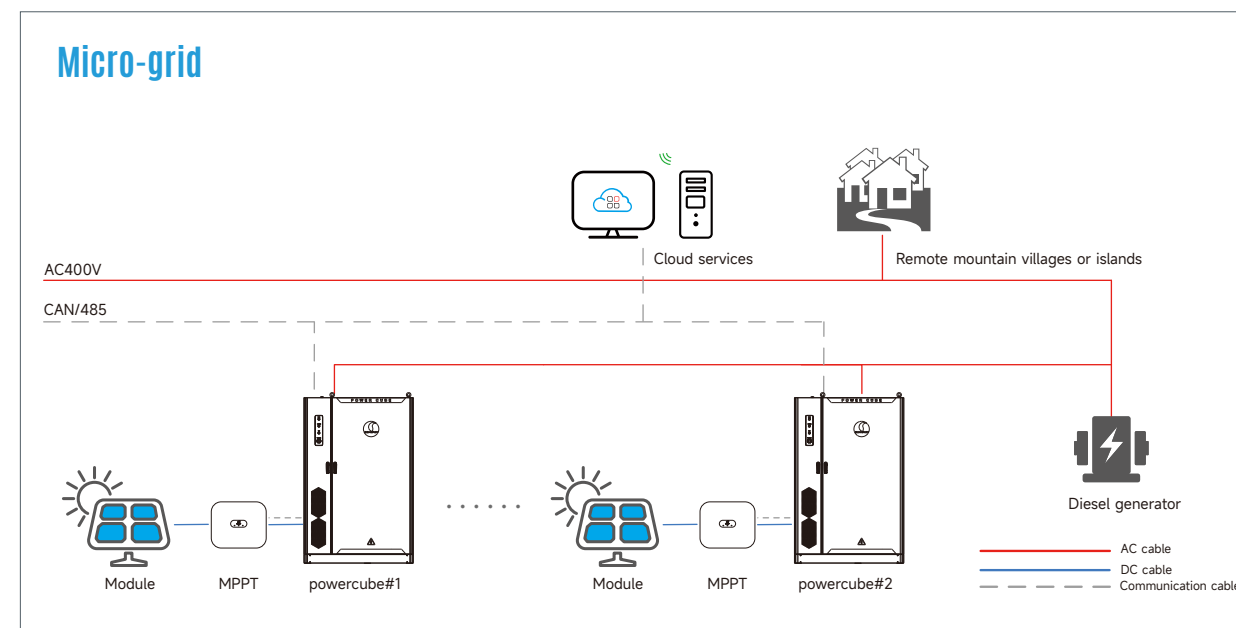


Commercial & Industrial Energy Storage Solutions

Micro-grid

In remote and non-grid areas, where the population is sparse and far from the main network, self-built power grids are needed;

Utilizing new energy generation and microgrid technology presents a superior solution. Microgrids must generate electricity in diverse forms, such as solar energy and diesel generators, based on local environmental conditions. Energy storage systems are utilized to regulate electricity generation and consumption, ensuring a consistent flow of power.



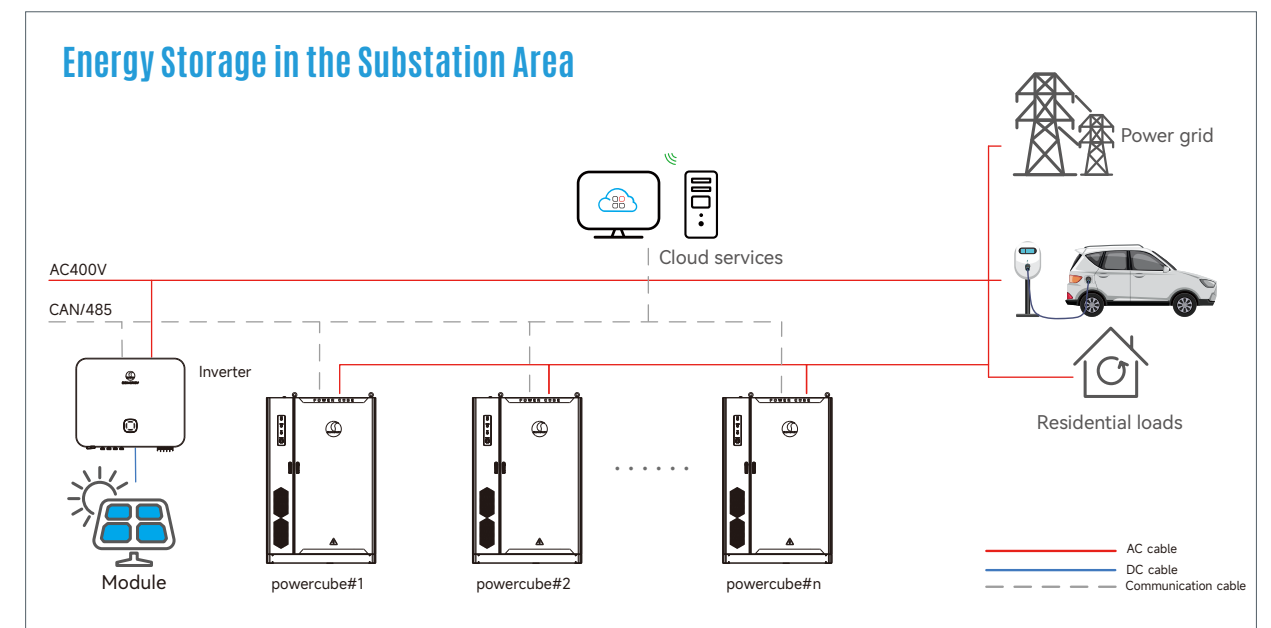
Commercial & Industrial Energy Storage Solutions

Energy Storage in the Substation Area

Power distribution network loads are on the rise, and issues such as end-stage low voltage and heavy overloading of individual stages are becoming increasingly apparent;

With the access of a large number of distributed new energy generation devices, the power structure of the grid has changed significantly, and fluctuations in regional power quality are facing severe tests;

The integrated energy storage cabinet Powercube system can participate in power demand response according to the power grid operation plan, play a role in absorbing new energy, peak shaving, and valley filling, and improve the power supply range of the transformer or the power supply capacity of the region, and ensure reliable power consumption for residents.

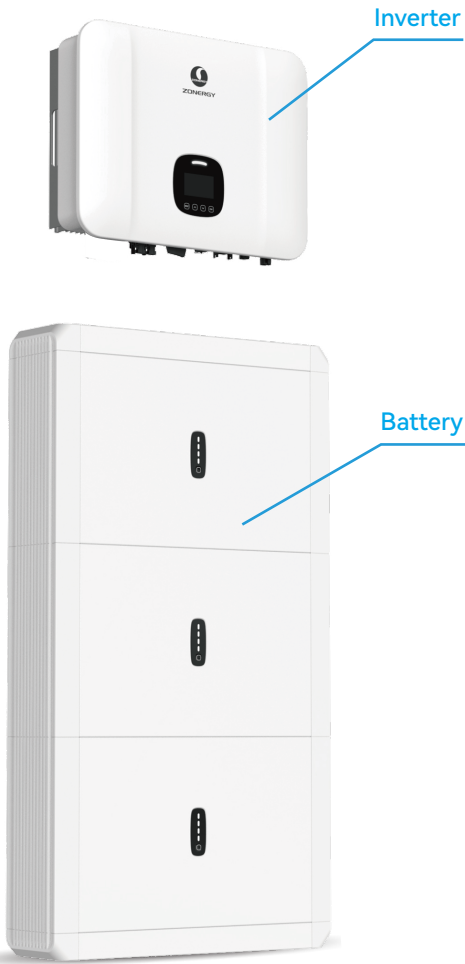


Panda

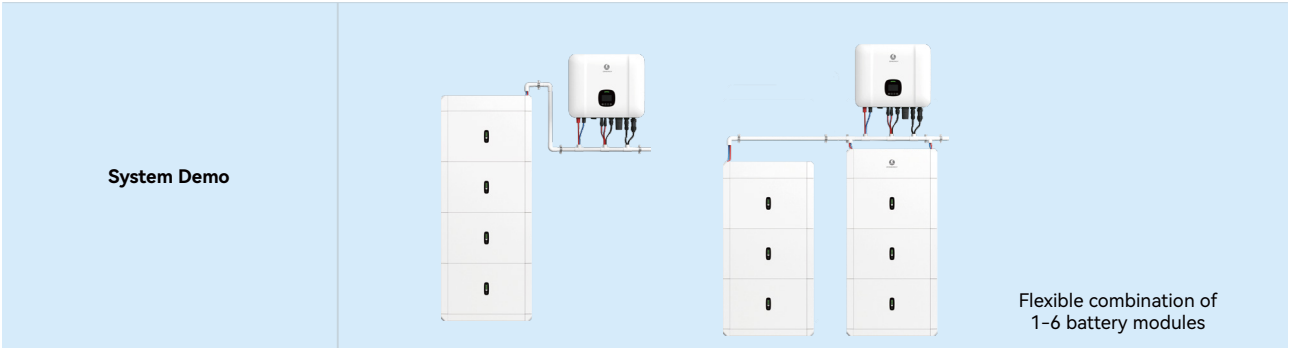
Residential Single-phase Energy Storage System Panda Series

Panda 3680S~6000S-5HP~30HP

Panda 3680S~6000S-5HP~30HP
Technical parameters



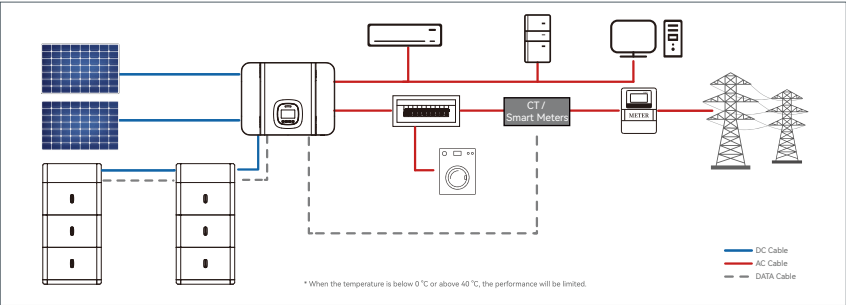
- The 5 KWh module adopted enables variable capacity range of 5-30 kWh.
- The switching time between on-off grid less than 10 ms secures Uninterruptable Power Supply for the load.
- The Lithium Iron Phosphate (LFP) cell secures safe and reliable operation.
- The automatic isolation of the faulty battery module secures smooth system operation.
- The APP-based remote monitoring offers easy maintenance and unlimited function expansion.
- The built-in Smart Grid Management module enables power grid dispatching.
- The Degree of Protection at IP66 makes it suitable for various harsh environments for application.



System Specification							
Nominal Output Power	3680 W	4000 W	4600 W	5000 W	6000 W	3680 W	4000 W
Capacity Range	5.12~30.72 kWh						
Usable Capacity Range	4.6~27.65 kWh						
Battery Chemistry	LFP (LiFePO4)						
IP Protection	IP66 (Outdoor)						

	Inverter Technical Specification						
Model	Venus 3680-S1	Venus 4000-S1	Venus 4600-S1	Venus 5000-S1	Venus 6000-S1	Venus 3680-S2	Venus 4000-S2
Phase	Single Phase						
Max. PV Input Voltage	600 V						
MPPT Voltage Range	100 V~550 V						
Max. PV Input Current	16 A / 16 A					16A	
Max. PV Input Power	8000 W	9000 W	9000 W	9000 W	9000 W	4500 W	4500 W
Max. MPPT Short-circuit Current	20 A / 20 A					20A	
Number of Independent MPPT	2					1	
Start-up Voltage Range	120 V						
Max. Charging/Discharging Current	100 A						
Max. Charging/Discharging Power	5000 W						
Nominal Output Voltage on Grid	220 V,230 V,240 V (comply with local regulations)						
Output Voltage Range on Grid	180 ~ 276 V						
Rated Grid Output Frequency on Grid	50 Hz/60 Hz						
Max. AC output Power	3680 W	4000 W	4600 W	5000 W	6000 W	3680 W	4000 W
Nominal AC Output Voltage	230 V						
Communication	CAN2.0/RS485, WIFI/4G(optional)						
Display	LCD & APP						
Dimension(W*H*D) mm	540 x 450 x185						
Certification	EN IEC62109-1, EN IEC62109-2, IEC61683, IEC61727, IEC62116, IEC60068, EN IEC61000-6-1, EN IEC61000-6-3, IEC60529 IP66, EN50549-1, EN50530, Italy CEI 0-21, Germany VDE4105, UK G98, G99, Spain UNE217001, UNE217002, NTS 2.1 , RoHS(2011/65/EU+2015/863), WEEE(2012/19/EU), ISTA, UKCA						

Battery Technical Specification						
Module Model	Limestone 5H-P	Limestone 10H-P	Limestone 15H-P	Limestone 20H-P	Limestone 25H-P	Limestone 30H-P
Module Capacity	5.12 kWh	10.24 kWh	15.35 kWh	20.48 kWh	25.64 kWh	30.72 kWh
Usable Capacity	4.6 kWh	9.21 kWh	13.81 kWh	18.43 kWh	23.04 kWh	27.65 kWh
Nominal Voltage	51.2 V					
Max. Charging/Discharging Power	2.5 kW	5 kW	5 kW	5 kW	5 kW	5 kW
Operating Temperature Range	-20 ~ +50 °C					
Dimension(W*H*D) mm	650 x 620 x 180	650 x 980 x 180	650 x 1340 x 180	650 x 1700 x 180	650 x 1340 x 180 650 x 980 x 180	650 x 1340 x 180 650 x 1340 x 180
Certification	IEC62619, IEC63056, EN IEC61000-6-1, IEC61000-6-3, EN IEC62040-1, EN IEC62477-1, IEC60730-1 Annex H, IEC60529 IP66, UN38.3, MSDS, RoHS(2011/65/EU+2015/863), WEEE(2012/19/EU), ISTA					



Note: Technical parameters listed hereunder are for reference only. Actual parameters shall be subject to products shipped.

Panda

Residential Three-phase Energy Storage System Panda Series

Panda 8000T~15kT-10HS~60HS

Panda 8000T~15kT-10HS~60HS
Technical parameters



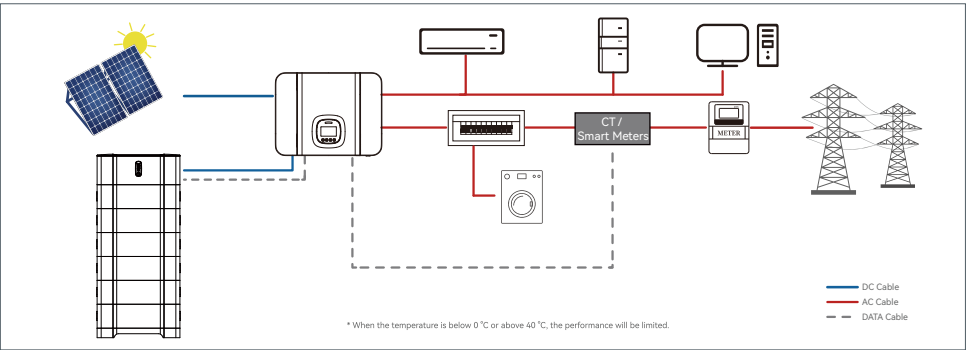
- The module adopted enables variable capacity range of 10~60 kWh.
- The switching time between on-off grid less than 10 ms secures Uninterruptable Power Supply for the load.
- The Lithium Iron Phosphate (LFP) cell secures safe and reliable operation.
- The automatic isolation of the faulty battery module secures smooth system operation.
- The APP-based remote monitoring offers easy maintenance and unlimited function expansion.
- The built-in Smart Grid Management module enables power grid dispatching.
- The Degree of Protection at IP66 makes it suitable for various harsh environments for application.



System Specification				
Nominal Output Power	8000 W	10 kW	12 kW	15 kW
Capacity Range	10~60 kWh			
Usable Capacity Range	9~54 kWh			
Battery Chemistry	LFP (LiFePO4)			
IP Protection	IP66 (Outdoor)			

Inverter Technical Specification				
Model	Venus 8000-T1	Venus 10K-T1	Venus 12K-T1	Venus 15K-T1
Phase	Three Phase			
Max. PV Input Voltage	1000 V			
MPPT Voltage Range	160 V ~ 1000 V			
Max. PV Input Current	16 A		20 A	
Max. PV Input Power	12 kW	15 kW	26 kW	
Number of Independent MPPT	2			
Start-up Voltage Range	180 V			
Battery Voltage Range	180 V ~ 710 V			
Max. Charging/Discharging Current	30 A			
Max. Charging/Discharging Power	8 kW	10 kW	12 kW	
Nominal Output Voltage on Grid	400V			
Output Voltage Range on Grid	320 V ~ 480 V			
Nominal Output Frequency on Grid	50 Hz / 60 Hz			
Rated Grid Output Frequency on Grid	45~55Hz / 55~65Hz (comply with local regulations)			
Max. AC output Power	8.8 kW	11 kW	13.2 kW	16.5 kW
Communication	RS485/WIFI/4G(optional)			
Display	LED+bluetooth+APP			
Dimension(W*H*D) mm	420 x 520 x226			
Certification	NBT32004, IEC62109, IEC61727, IEC61683, IEC62116, Italy CEI 0-21, Germany VDE4105, EN62109-1/-2, EN62920, EN61000-6-1/-3, EN50549-1, VDE4105, UK G99/G100			

Battery Technical Specification	
Module Model	Limestone 10HS~Limestone 60HS
Number of modules	4~12
Module Capacity	10 kWh~60 kWh
Nominal Voltage	204.8 V~614.4 V
Max. Operating Current	25 A
Operating Temperature Range	-20 ~ +50 °C
Certification	IEC62619, IEC63056, EN IEC61000-6-1, IEC61000-6-3, EN IEC62040-1, EN IEC62477-1, IEC60529 IP66, UN38.3, MSDS, RoHS(2011/65/EU+2015/863), WEEE(2012/19/EU), ISTA



Note: Technical parameters listed hereunder are for reference only. Actual parameters shall be subject to products shipped.

Mercury

Residential Single-phase On-grid PV Inverter Mercury Series
Mercury 3000-S1~6000-S1



Intelligent adaptive weak power grid
to avoid frequent disconnection.



Independent dual MPPT tracking
adaptable to different installation
scenarios.



Wide DC voltage range and longer
power generation duration.



This product supports remote
parameter setting, fault diagnosis
and software upgrade.



This product with a variety of
monitoring modes supports RS485,
Wi-Fi/Ethernet/GPRS.



The Degree of Protection at IP66
makes it suitable for various harsh
environments for application.

Mercury 3000-S1~6000-S1 Technical parameters

Technical parameters:	Mercury 3000-S1	Mercury 3680-S1	Mercury 4000-S1	Mercury 4600-S1	Mercury 5000-S1	Mercury 6000-S1
	Input (DC)					
Maximum panel input power recommended	4900 Wp	5520 Wp	6000 Wp	6900 Wp	7500 Wp	9000 Wp
Maximum input voltage	600 V					
Start-up input voltage	120 V					
Rated input voltage	360 V					
MPPT voltage range	100 V-550 V					
Full load DC voltage range	250 V-520 V					
Number of independent MPPT	2					
Strings	1/1					
Maximum Input current	16 A/16 A					
Maximum short circuit current	20 A/20 A					
	Output (AC)					
Rated output power	3000 W	3680 W	4000 W	4600 W	5000 W	6000 W
Maximum output current	13 A	16 A	17.4 A	20 A	21.7 A	26 A
Nominal grid voltage	L/N/PE, 220Vac, 230Vac, 240Vac					
Nominal AC voltage range	180 VAC-276 VAC (according to local standard)					
Rated grid frequency	50 Hz/ 60 Hz					
Grid frequency range	45 Hz-55 Hz/54 Hz-66 Hz (according to local standard)					
Active power adjustable range	0~100%					
Total harmonic component (current)	<3%					
Power Factor	1 (adjustable range: 0.8 leading ~ 0.8 lagging)					
	Efficiency					
Maximum efficiency	97.60%		97.70%		97.80%	
European weighted efficiency	97.10%		97.20%		97.30%	
MPPT efficiency	>99.9%					
	Protection					
Insulation impedance detection	yes					
DC reverse connection protection	yes					
Ground fault monitoring	yes					
Over-current protection	yes					
DC switch	yes					
AFCI protection	optional					
	General parameters					
Ambient temperature range	-25 ~ + 60 °C					
Stand-by loss	<10 W					
Topology	no transformer					
Degrees of protection	IP66					
Relative Humidity range allowed	0~100%					
Communication	RS485, WIFI / 4G (optional)					
Protection level	Class I					
Maximum altitude for product operation	3000m(>2000m Rating reduction occurs)					
Connection mode of current sensor	external					
Noise	<29 dB					
Weight	11 kg					
Cooling mode	natural cooling					
Dimension (mm)	350*350*155					
Display	LED indicator light, Bluetooth / WIFI + APP					
	Other					
Certification	EN IEC62109-1, EN IEC62109-2, IEC61683, IEC61727, IEC62116, IEC60068, EN IEC61000-6-1, EN IEC61000-6-3, EN50530, IEC60529 IP66, RoHS(2011/65/EU+2015/863), WEEE(2012/19/EU), ISTA, CQC NB/T32004, GB/T37408					
Warranty	5 Years					

Note: Technical parameters listed hereunder are for reference only. Actual parameters shall be subject to products shipped.

Apollo

Residential Three-phase On-grid PV Inverter Apollo Series
Apollo 8000-T1~15K-T1



DC to AC capacity ratio can reach as high as 1.5 times.



DC arcing detection function can be selected to eliminate potential fire hazards.



The adaptive control algorithm adopted ensures the product fit for unstable grid.



Flexible monitoring modes support RS485, Wi-Fi and GPRS.



The Degree of Protection at IP66 makes it suitable for various harsh environments for application.



The product supports output of 1.1 times overload. This effectively increases power generation.

Apollo 8000-T1~15K-T1 Technical parameters

Technical parameters:	Apollo 8000-T1		Apollo 10K-T1		Apollo 12K-T1		Apollo 15K-T1	
Input parameters (DC)								
Max. panel input power recommend (kW)	12		15		18		22.5	
Max. DC input voltage (V)					1100			
Max. input current of each MPPT (A)			16				20	
Short circuit current of each MPPT (A)			25				30	
No. of MPPT			2				2	
Strings			1+1				2+2	
Start-up voltage (V)					180			
MPPT Voltage range (V)					160V~1000			
Full-load MPPT Voltage range (V)					550~850			
Rated Input Voltage (V)					600			
Output parameters (AC)								
Rated output power (kW)	8.8kW@40°C 8kW@45°C		11kW@40°C 10kW@45°C		13.2kW@40°C 12kW@45°C		16.5kW@40°C 15kW@45°C	
Max. output power (kW)	8.8		11		13.2		16.5	
Output connection type					3W+PE or 3W+N+PE			
Rated voltage/Voltage range (V)					400/320~480			
Rated grid frequency					45~55Hz / 55~ 65Hz (According to local grid standards)			
Rated output current (A)	12.2		15.2		18.2		22.8	
Maximum output current (A)	13.4		16.7		20.1		25.1	
Power Factor (settable)					> 0.99 @ full power (adjustable range: 0.8 leading ~ 0.8 lagging)			
Total Harmonic Distortion THDi (full load)					< 3% (full load)			
Efficiency								
MPPT efficiency					99.9%			
Maximum efficiency			98.4%				98.5%	
Euro. efficiency			97.8%				98.0%	
China efficiency			97.5%				97.8%	
Protection function								
DC switch					yes			
Output short circuit protection					yes			
Power grid fault monitoring					yes			
DC reverse connection detection					yes			
String monitoring					yes			
DC lightning protection					type II			
AC lightning protection					type II			
DC insulation impedance detection					yes			
AC leakage current detection					yes			
Over-temperature protection					yes			
DC component monitoring					yes			
Islanding detection					yes			
Smart IV diagnosis					yes			
Auxiliary power supply detection					yes			
Bus voltage monitoring					yes			
PID repair and protection					optional			
Arc fault detection					optional			
Remote upgrade and setup					yes			
anti-counterflow meter					optional			
Fault recorded					yes			
Display and communication								
Display mode					LED indicator light, Bluetooth / WIFI + APP			
Communication mode					RS485, WIFI / 4G (optional)			
General parameters								
Dimension (mm) (W×H×D)					518x422x208.5			
Weight (kg)					20			
Operating temperature range					-25°C ~ +60°C			
Cooling mode					Air colling without fan			
Maximum altitude for product operation					3000m (> 2000m Rating reduction occurs)			
Relative Humidity					0~100%			
Input terminal					MC4			
Output terminal					OT/DT terminal (Max. 50mm² cable section)			
Degree of protection					IP66			
Self power consumption at night					<1W			
Noise (dB)					<35			
Topology					no transformer			
Other								
Certification					EN IEC62109-1, EN IEC62109-2, IEC61683, IEC61727, IEC62116, IEC60068, EN IEC61000-6-2, EN IEC61000-6-4, EN50530, IEC60529 IP66, RoHS(2011/65/EU+2015/863), WEEE(2012/19/EU), ISTA, CQC NB/T32004, GB/T37408			
Warranty					5 Years			

Note: Technical parameters listed hereunder are for reference only. Actual parameters shall be subject to products shipped.

Granite

Residential Off-grid Energy Storage System Granite Series

Granite 0500-PWM~001K-MPPT



Intelligent charging management effectively protects batteries.



The inverter output is standard 220 V / 50 Hz AC.



LED + LCD display enables real-time display of operation, fault and battery status.

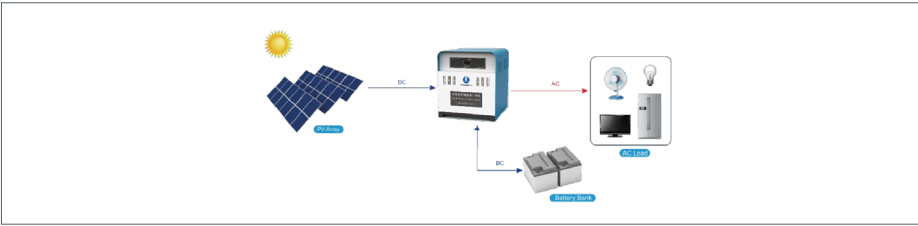


Complete protection functions of the product secure a high system stability.

Granite 0500-PWM~001K-MPPT

Technical parameters

Technical parameters:	ZPHA0500-PWM	ZPHA001K-PWM	ZPHA0500-MPPT	ZPHA001K-MPPT
	Solar controller			
Input voltage allowed	24 ~ 60			
Maximum input current allowed	20	30	60	60
	Battery			
Battery type	lead acid or colloid			
Battery under-voltage protection point	21.6			
Battery under-voltage protection recovery point	26			
Battery over-voltage protection point	32			
Battery over-voltage protection recovery point	30			
Battery floating charge voltage	28			
Battery overcharge protection point	29			
Battery overcharge protection recovery point	26.8			
	AC output			
Output power	500/400 W	1000/800 W	500/400 W	1000/800 W
Output waveform	sine wave			
Rated AC output voltage	220±3%			
Rated AC output frequency	50±0.1			
Inverter efficiency	>85%			
Dynamic response time	<60			
Overload protection	100 ~ 125% (600), 125 ~ 150% (60), 150 ~ 200% (10)			
Short circuit protection	<0.1			
Stand-by power consumption	<12	<18	<12	<18
	Display function			
Status	inverter indication, over voltage and under voltage indication, fault indication			
Numerical display LCD	output voltage frequency display, battery voltage and percentage display, load voltage and current display, solar energy input voltage display, and charging current display			
	Other parameters			
Protection function	battery over-voltage protection, under-voltage protection, over-temperature protection,output over-load protection, load short circuit protection, etc.			
Noise	≤35			
Working environment	-20~50 °C			
Relative Humidity allowed	≤95% non condensing			
Altitude	≤3000			
Cooling mode	Smart air cooling			
Degree of protection	IP20 (indoor)			
Dimension	560*442*501			
Package	620*500*560			
Weight (kg)	23 (battery excluded)	25 (battery excluded)	23 (battery excluded)	25 (battery excluded)
Certification	CQC			



Note: Technical parameters listed hereunder are for reference only. Actual parameters shall be subject to products shipped.

Granite

Off-grid Energy Storage Inverter Granite Series

Granite 3000L-M1



Fully digital control design
Integrating MPPT solar
controller and inverter



Pure sine wave output
Super strong impact resistance



LED+LCD Real-time monitoring
of inverter operation status and
various operating parameters

Granite 3000L-M1

Technical parameters

Technical parameters:	Granite 3000L-M1
Basic parameters	
Rated power	3000 W
System voltage	48 V
Output voltage	220 V ±5%
Output frequency	50/60 Hz ±1%
Conversion efficiency	≥85%
Overload capacity	100~120% 10min; 120%~150% 1min; >150% 10s
Output waveform	Pure Sine Wave
Solar energy control	
Charging mode	MPPT
Maximum power	3360 W
Maximum charging current	60 A
Photovoltaic input voltage range	70~150 VDC
Maximum input voltage of photovoltaic system	170 VDC
Other parameters	
Display method	LCD + LED
Display contents	Indication of PV input voltage, PV charging current, battery voltage, inverter output voltage, load capacity, working status, etc.
Cooling mode	Fan cooling
Communication mode	RS485
Noise level	<60 (1 m)
Sea level for use	≤ 3000 m When exceeding 3,000 meters, it needs to be derated according to the standard for use
Working temperature	-20~55 °C
Storage temperature	-15~70 °C
Humidity range	0~90%RH Non-condensing
Authentication	CQC Golden Sun Certificate
Weight	26 kg
Dimension (W*H*D)	500*330*198 mm
Battery parameters	
Modules Model	Limestone 7.5H-P
Battery Chemistry	LFP (LiFePO4)
Modules capacity	7.68 kWh
Nominal voltage	51.2 V
Operating voltage range	43.2~58.4 V
Standard Charging/discharging Power	100 A
Weight	67.5 kg
Dimension (W*H*D)	600*430*270 mm

Note: Technical parameters listed hereunder are for reference only. Actual parameters shall be subject to products shipped.

Power Cube

Modular Industrial and Commercial ESS Power Cube Series

Power Cube EC215-100K-M01

Power Cube EC215-100K-M01

Technical parameters



Technical parameters:	Power Cube EC215-100K-M01
Battery configuration	
Battery type	LFP 280 Ah
PACK configuration	14.336 kWh / 1P16S
Battery system configuration	215 kWh / 1P240S
Voltage Range	672-864 Vdc
AC parameters (on-grid)	
Rated power	100 kW
Maximum charge and discharge power	110 kW
Rated grid voltage	400, 3W+N+PE
Grid voltage range	360-440 Vac
rated current	150 A
Maximum Current	160 A
Rated grid frequency	50 Hz
Allowable grid frequency fluctuations	±5 Hz
Power Factor Range	-1 ~ +1
iTHD	< 3% (Rated power)
System parameters	
Size of battery cabinet	1600*1080*2270 mm (W*D*H)
Weight of battery cabinet	~2400 kg
Protection level	IP55
Operating temperature range	-30~+50℃ (>45℃Reduction)
Operating humidity range	0~95% (No condensation)
Max. working altitude	3000 m
Cooling mode	Intelligent air-cooled
Isolation mode	No transformer
Communication interface	Ethernet
Communication protocol	Modbus TCP
System certification	EN IEC62477-1, EN IEC62619, IEC60730 Annex H, EN IEC61000-6-2, EN IEC61000-6-4, UN38.3
PCS certification	GB/T34120, EN/IEC62477-1, IEC61000-6-2/-4, VDE 4105, EN50549-1, UK G99, Italy CEI 0-21



System efficiency is 5-8% higher than the industry average
Significantly improve system investment ROI.



Industry leading in battery temperature consistency
Effectively extending battery life by more than 10%.



Real-time data monitoring and fault recording,
early warning, fault location.



Pack-level combustible gas detection and fire protection



Integrated design, convenient transportation,
reduce installation costs.



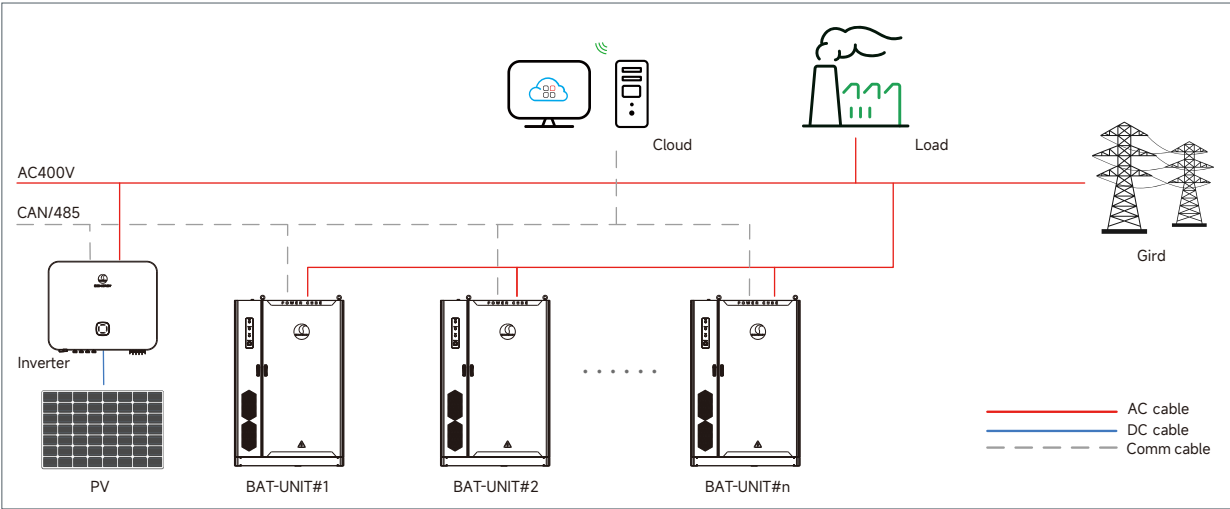
The large capacity cell reduces the system series-parallel connection.



Support for parallel, flexible capacity expansion.



Support grid-connected and off-grid operation.



Baldr

Portable DC Power Supply Baldr Series (10~20 W)


ZSPD-LFP0010B04~LFP0020B06





ZSPD-LFP0010B04~LFP0020B06


Technical parameters


Technical parameters:	ZSPD-LFP0010B04	ZSPD-LFP0020B06
Conventional parameters		
Solar photovoltaic panel	18V/10W*1PCS	18V/20W*1PCS
Battery capacity	4Ah/12.8VDC, LFP*1PCS	6Ah/12.8VDC, LFP*1PCS
Accessories in detail	8 m photovoltaic panel cable * 1, LED bulb 2.2 w /210 lm * 3, LED bulb cable 5 m * 3, five in one USB charging cable * 1	
Output port	5 VDC/ 1 A USB output * 2, 12.8 VDC/0.5 A output * 4	
LED indicator	solar charging indicator, battery power indicator, load status indicator	
Protection functions	over charging protection, over-discharging protection, over-current protection, short circuit protection, PV polarity reverse connection protection	
Rated voltage of the battery (VDC)	12.8	12.8
Maximum charging current for the controller (A)	3	3
Load current (A)	2.5	2.5
Dimension (mm)	198*93*70	198*93*70
Net weight (kg)	0.8	1.1
Gross weight (kg)	1.6	1.8
Working duration	LED bulb 2 W * 3 8 hours	LED bulb 2 W * 3 12 hours
Certification	CQC, MSDS UN38.3, CE, RoHS, Lighting Global	


- 


The integration design makes this product portable, appealing and useful.
- 

The smart circuit design with multiple protection built-in enables stable operation.
- 

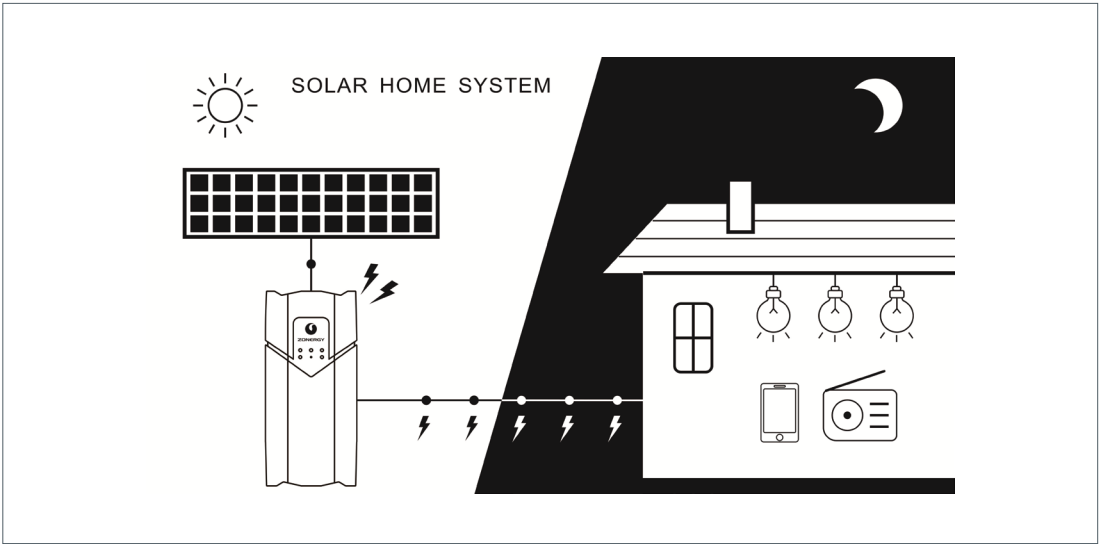
Solar power is provided at the charge for electricity of 0.
- 

The power supply is equipped with 5 V USB standard output ports providing continuous charging for mobile phones.
- 

12 V output ports provided are suitable for most DC appliances.
- 

Automatic protection can be activated for over-charging, over-discharging, short circuiting and reverse connecting with no need to replace the fuse.
- 

With multiple output ports, one set of this product can adequately meet various demand from the user.



Note: Technical parameters listed hereunder are for reference only. Actual parameters shall be subject to products shipped.

Baldr

Portable DC Power Supply Baldr Series (30~60 W)

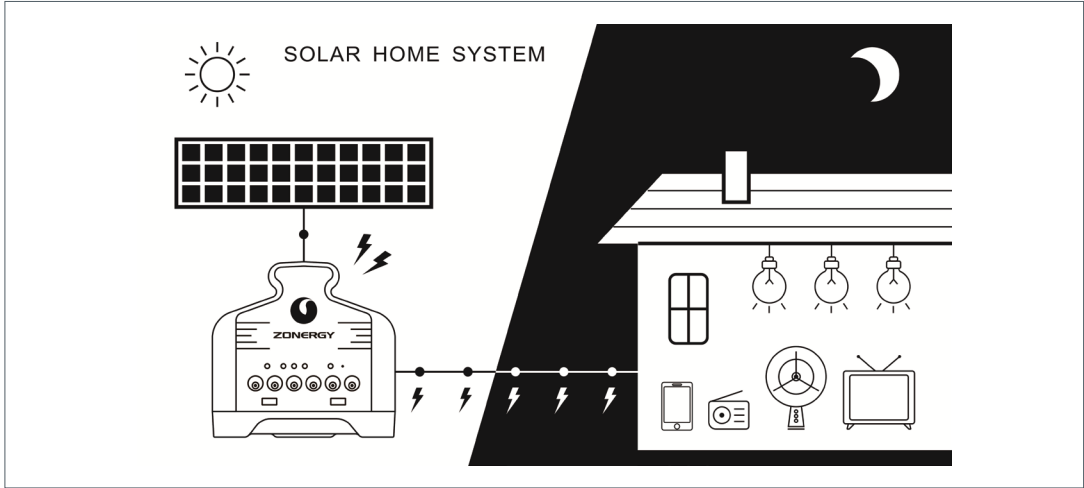
ZSPD-LFP0030B12~LFP0060B20



ZSPD-LFP0030B12~LFP0060B20
Technical parameters

Technical parameters:	ZSPD-LFP0030B12	ZSPD-LFP0050B18	ZSPD-LFP0060B20
Conventional parameters			
Solar photovoltaic panel	18V/30W*1PCS	18 V/50 W*1PCS	18V/60W*1PCS
Battery capacity	12Ah/12.8VDC, LFP*1PCS	18Ah/12.8VDC, LFP*1PCS	20Ah/12.8VDC, LFP*1PCS
Accessories in detail	8 m photovoltaic panel cable * 1, LED bulb 3 w /310 lm * 3, LED bulb cable 5m * 3, five in one USB charging cable * 1		
Output port	5 VDC / 1 A USB output * 2, 12.8 VDC/2.5 A output * 6		
LED indicator	solar charging indicator, battery power indicator, load status indicator		
Protection functions	over charging protection, over-discharging protection, over-current protection, short circuit protection, PV polarity reverse connection protection		
Rated voltage of the battery (VDC)	12.8	12.8	12.8
Maximum charging current for the controller (A)	10	10	10
Load current (A)	5	5	5
Dimension (mm)	217*170*163	217*170*163	217*170*163
Net weight (kg)	2.1	2.7	2.9
Gross weight (kg)	3.3	3.8	4
Working duration	LED bulb 3 W * 3 17 hours	LED bulb 3 W * 3 25 hours	LED bulb 3 W * 3 28 hours
Certification	CQC, MSDS UN38.3, CE, RoHS, Lighting Global		

- The integration design makes this product portable, appealing and useful.
- The smart circuit design with multiple protection built-in enables stable operation.
- Solar power is provided at the charge for electricity of 0.
- The power supply is equipped with 5 V USB standard output ports providing continuous charging for mobile phones.
- 12 V output ports provided are suitable for most DC appliances.
- Automatic protection can be activated for over-charging, over-discharging, short circuiting and reverse connecting with no need to replace the fuse.
- With multiple output ports, one set of this product can adequately meet various demand from the user.



Note: Technical parameters listed hereunder are for reference only. Actual parameters shall be subject to products shipped.

Baldr

Portable DC Power Supply Baldr Series (80~100 W)

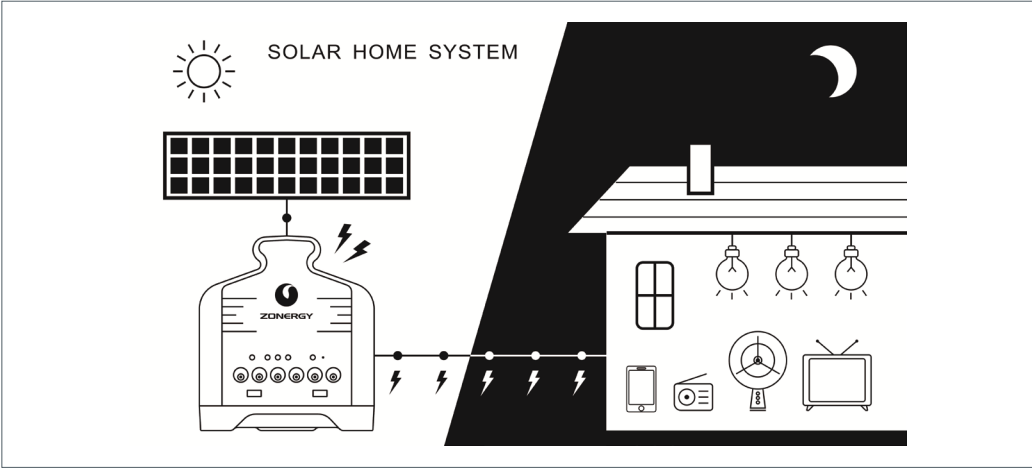
ZSPD-LFP0080B28~LFP0100B40



ZSPD-LFP0080B28~LFP0100B40
Technical parameters

Technical parameters:	ZSPD-LFP0080B28	ZSPD-LFP0100B40
Conventional parameters		
Solar photovoltaic panel	18V/80W*1PCS	18V/100W*1PCS
Battery capacity	28 Ah/12.8 VDC, LFP*1 PCS	40 Ah/12.8 VDC, LFP*1 PCS
Accessories in detail	15 m photovoltaic panel cable * 1, LED bulb 3 w /480 lm * 3, LED bulb cable 5m * 3, five in one USB charging cable * 1	
Output port	5 VDC/ 1 A USB output * 2, 12.8 VDC/2.5 A output * 6, 12.8 VDC/5 A* 2, 12.8 VDC/8 A cigarette lighter outlet	
LED indicator	solar charging indicator, battery power indicator, load status indicator	
Protection functions	over charging protection, over-discharging protection, over-current protection, short circuit protection, PV polarity reverse connection protection.	
Rated voltage of the battery (VDC)	12.8	12.8
Maximum charging current for the controller (A)	10	10
Load current (A)	10	10
Dimension (mm)	283*170*189	283*170*189
Net weight (kg)	4.1	5.3
Gross weight (kg)	5.6	6.8
Working duration	LED bulb 5 W * 4 18 hours	LED bulb 5 W * 4 25 hours
Certification	CQC, MSDS UN38.3, CE, RoHS, Lighting Global	

- The integration design makes this product portable, appealing and useful.
- The smart circuit design with multiple protection built-in enables stable operation.
- Solar power is provided at the charge for electricity of 0.
- The power supply is equipped with 5 V USB standard output ports providing continuous charging for mobile phones.
- 12 V output ports provided are suitable for most DC appliances.
- Automatic protection can be activated for over-charging, over-discharging, short circuiting and reverse connecting with no need to replace the fuse.
- With multiple output ports, one set of this product can adequately meet various demand from the user.



Note: Technical parameters listed hereunder are for reference only. Actual parameters shall be subject to products shipped.

Na

Small aluminum shell/soft pack series of sodium-ion battery cells

NFPP50160118-EA60/NFM19161124-EA24



- Ultra-safe
Passed TÜV SÜD safety tests including projectile fire test, overcharge/overdischarge, short circuit, thermal abuse, and nail penetration
Maximum battery cell surface temperature ≤60°C during nail penetration test
- Ultra-low temperature endurance
-20°C, 94% capacity retention rate
-60°C, 81% capacity retention rate
- Ultra-high rate
8C discharge capacity retention rate ≥90%
Customizable solutions supporting 20C+ rates for specific applications
- Ultra-long life
Projected cycle life exceeds 2,500 cycles at 80% SOH (NFM)
Projected cycle life exceeds 6,000 cycles at 80% SOH (NFPP)
- Convenient and safe storage and transportation
Capable of 100% capacity recovery after discharging to 0V, allowing safe storage and transportation at zero-voltage state
Maintains 40% SOC at shipment with self-discharge to zero voltage in up to 2.5 years

NFPP50160118-EA60/NFM19161124-EA24

Technical parameters

Technical parameters:	NFM19161124-EA24	NFPP50160118-EA60
Standard capacity	24Ah	60Ah
Operating voltage	1.5~3.95V (≥0°C) ,1.2~3.95V (< 0°C)	1.5~3.4V (≥0°C) ,1.2~3.4V (< 0°C)
Nominal voltage	2.95V@0.5P	2.83V@0.5P
Internal resistance of battery	< 1.2mΩ	< 0.5mΩ
Monthly self-discharge	≤5.0%/month	≤5.0%/month
Operating temperature (charging)	-10~60°C	-10~60°C
Operating temperature (discharging)	-60~60°C	-60~60°C
Battery weight	570±30g	1580±100g
Storage temperature	-60~60°C	-60~60°C
Battery size	Thickness: 19mm Width: 161mm Height: 124mm	Width: 160±0.3mm Height: 118.6±0.5mm Thickness: 50±0.3mm
Operating altitude	< 5000m	< 5000m
Cycle life	≥2500Cycles, 80%SOH	> 6000Cycles, 80%SOH

Application areas:

The small aluminum shell / soft pack series of sodium-ion battery cells feature excellent safety performance, light weight, high energy density, flexible design, and long cycle life. They can be flexibly configured while offering an outstanding cost-performance ratio, making them highly valuable for applications in light-duty power or power-type fields.

Application scenarios:

Two-wheelers, three-wheelers, low-speed electric vehicles, start-stop power supplies, and other applications requiring higher energy density and greater flexibility.



Two-wheelers



Three-wheelers



Low-speed electric vehicles



Start-stop power supply

Na

Long cycle/high capacity series sodium-ion battery cell

NFPP72174205-EA165/NFPP72174205-EA175



- Ultra-safe
Passed TÜV SÜD safety tests including projectile fire test, overcharge/overdischarge, short circuit, thermal abuse, and nail penetration
Maximum battery cell surface temperature ≤60°C during nail penetration test
- Ultra-low temperature endurance
-20°C, 94% capacity retention rate
-60°C, 81% capacity retention rate
- Ultra-high rate
3C discharge capacity retention rate ≥97.2% (90% group standard)
Customizable solutions supporting 20C+ rates for specific applications
- Ultra-long life
0.5P charge/discharge cycle at room temperature, 95% capacity retention rate after 1,000 cycles (tested)
Projected cycle life exceeds 6,000 cycles at 80% SOH
- Convenient and safe storage and transportation
Capable of 100% capacity recovery after discharging to 0V, allowing safe storage and transportation at zero-voltage state
Maintains 40% SOC at shipment with self-discharge to zero voltage in up to 2.5 years

NFPP72174205-EA165/NFPP72174205-EA175

Technical parameters

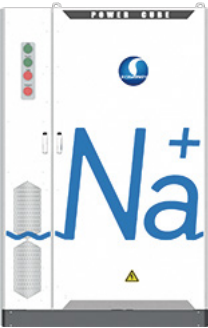
Technical parameters:	NFPP72174205-EA165	NFPP72174205-EA175
Standard capacity	165Ah (tested 172Ah)	175Ah (tested 182Ah)
Operating voltage	1.5~3.4V (≥0°C) 1.2~3.4V (< 0°C)	1.5~3.4V (≥0°C) 1.2~3.4V (< 0°C)
Nominal voltage	2.83V@0.5P	2.83V@0.5P
Internal resistance of battery	< 0.25mΩ	< 0.2mΩ
Monthly self-discharge	≤5.0%/month	≤5.0%/month
Operating temperature (charging)	-10~60°C	-10~60°C
Operating temperature (discharging)	-60~60°C	-60~60°C
Battery weight	4700±100g	4650±100g
Storage temperature	-60~60°C	-60~60°C
Battery size	Width: 173.6±0.3mm Height: 206.8±0.5mm Thickness: 71.7±0.5mm	Width: 173.6±0.3mm Height: 206.8±0.5mm Thickness: 71.5±0.5mm
Operating altitude	< 6000m	< 6000m
Cycle life	> 8000Cycles, 80%SOH	> 6000Cycles, 80%SOH

Application areas:

The long-cycle/high-capacity series sodium-ion battery cells are valued for their excellent energy density, ultra-long cycle life, outstanding low-temperature and safety performance, combined with convenient modular design, which significantly enhances cost-effectiveness and economic benefits, making them highly suitable for widespread applications in energy storage field.

Application scenarios:

Energy storage, special vehicles, start-stop power supplies, and other applications that require moderate energy density but are relatively sensitive to safety and cost.



Sodium-ion battery and Photovoltaic-storage-charging



Special vehicles



Start-stop power supply

Note: Technical parameters listed hereunder are for reference only. Actual parameters shall be subject to products shipped.

| Project cases - Centralized solar power station projects



Togtoh Photovoltaic Power Station, Hohhot, Inner Mongolia

Togtoh Photovoltaic Power Station in Togtoh County, Hohhot, Inner Mongolia was completed with a total installed capacity of 20 MW and connected to the grid in 2016. The project is a combination of photovoltaic and animal husbandry. After completion, the project has in local economic development a positive role providing not only new clean power supply but also a good environment and support for the development of animal husbandry. As a result, the social, economic and environmental benefits are prominent. It is estimated that the total power generation is about 690 million kWh during the project life (25 years), equivalent to saving some 241000 tons of standard coal and reducing 687000 tons of carbon dioxide emission.



Photovoltaic Power Station 9*100 MW in Pakistan

Zonergy gives full play to the rich experience of its international project management and implementation in comprehensive participation in project development for China Pakistan Economic Corridor. The Company's investment, construction and operation of the photovoltaic power station with the capacity of 9 * 100 MW in Punjab, Pakistan turned out a successful on-grid project for Phase I of 3 * 100 MW in July 2016. As one of the largest power stations invested and operated overseas by Chinese enterprises, the cumulative power generated by the power station has exceeded 3.7 billion kWh by 2023. Calculated according to the total population of Pakistan, the per capita benefit from the power station is 12 kWh, making a great contribution to Pakistan's green energy transformation.



Shengda Photovoltaic Power Station in Qingshuihe County, Hohhot, Inner Mongolia

Shengda Photovoltaic Power Station in Qingshuihe County, Hohhot, Inner Mongolia was completed with a total installed capacity of 10 MW and connected to the grid in 2016. After the project completion, the mode of "decentralized inverter and step up transformer distribution, and centralized grid connection" was adopted to connect with the local grid. The supply of clean energy into the local grid has been optimizing the system power supply structure, reducing the pressure for environmental protection, promoting the sustainable development of regional economy, and contributing to energy conservation and emission reduction in the region. It is estimated that the total power generation is about 360 million kWh during the project life (25 years), equivalent to saving some 126000 tons of standard coal and reducing 35892 tons of carbon dioxide emission.

| Project cases - Centralized solar power station projects



Hinggan League Photovoltaic Power Station, Inner Mongolia

Hinggan League Photovoltaic Power Station is located in Arilinyihe Village, Debosi Town, Horqin Right Front Banner, Inner Mongolia. The project was started in April 2016. In June 2016 Phase I of the Project with a generation capacity of 10 MW was completed for grid connection. In September 2016, phase II of the Project with a generation capacity of 10 MW was also completed for grid connection. The project therefore has a total of 20 MW installed capacity with grid connection. This project transforms the local abundant solar resources into green energy output, provides the locals with employment opportunities through project construction, operation and maintenance, optimizes regional power construction, promotes the utilization of green resources, and facilitates sustainable economic development. With an area of more than 1700 mu, the Project by June 2023 has generated 219540000 kWh power in total and achieved 191.42 million kg carbon dioxide emission reduction.



Desert Photovoltaic Power Station in Alxa League

Located in Alxa League Economic Development Zone, Inner Mongolia, the power station has a total installed capacity of 30 MW from the development and utilization of desert wasteland of 2600 mu. Geographical conditions for the project construction were extremely complex. The Company overcame many difficulties and completed the project with a smooth grid-connection within a construction period as less as 108 days. This clearly reflected the project management and project roll-out capability of the Company in project construction.

Project cases - Distributed power station projects



Distributed photovoltaic power station project in telecom industry

Zonergy is the first domestic enterprise approved as the "National Golden Sun Demonstration Project in the Telecommunications Industry", and has assumed a leading position in the new energy field of the global telecommunications industry. There are more than 10000 communication base stations powered with new energy supply built by Zonergy globally. The Company established cooperative relations with China Tower and installed photovoltaic storage equipment on the tower site in an effort to help China Tower to reduce operating cost and ensure a safe, stable and sustainable operation of base station equipment.



The 1.27 MW solar photovoltaic power station installed in Hi-tech Park in Nanshan, Shenzhen

The 1.27 MW solar photovoltaic power station installed in Hi-tech Park in Nanshan, Shenzhen is a National Golden Sun Demonstration project invested and constructed by Zonergy. The project has an effective installation area of 16263 square meters and an annual average power generation of 1453400 kWh. Within the valid working period of the power station (25 years), it can save 12700 tons of standard coal and reduce 31000 tons of carbon dioxide emission.



Photovoltaic power project in Jiaxing, Zhejiang

Located in Xiuzhou Industrial Park, Jiaxing, Zhejiang Province, the project has a total installed capacity of 0.75 MW. The on-grid power generation was successfully launched in 2014. So far, the project has been in safe and smooth operation with an annual power generation of about 750000 kWh. Not only does the project contribute to the development of local green economy, but also reduces operating cost such as electricity charges for the owner to achieve win-win results.

Project cases - Distributed power station projects



Solar Power Generation Project of Training Centre, Pakistan International Airlines (PIA)

The installed capacity of the Solar Power Generation Project of Training Centre of Pakistan International Airlines (PIA) is 351 kW. Zonergy participated in the project construction as the main contractor. After overcoming difficulties arising from the pandemic and other aspects, the Company completed the project as quickly as possible. The project is expected to generate 494000 kWh of electricity every year. Within a design service life of 25 years, it will reduce a total of 4920 tons of carbon emission, making a positive contribution to Pakistan's energy transformation.



Projects from the World Bank

According to the World Bank report, compared with the main grid and off-grid solar home system, micro-grid is a more feasible solution for areas with high population density for medium power demand. Globally, there are at least 19000 micro grids installed providing electricity to about 47 million people in 134 countries with a total investment of US \$28 billion. Zonergy is a global project equipment partner of the World Bank. It contracted five World Bank projects as BADIN, JPMC, NICH, UJAWAL, and TMK in Sindh and Baluchistan in Pakistan with a total capacity of 5 MW.



Distributed photovoltaic power project in Wal Nobel Group, Pakistan

The project is located in the plant area of Wah Nobel Group, 45 km away from Islamabad, Pakistan. The scale of the project is 1.25 MW with the annual power generation of 2 million kWh. Since the successful grid connection, it secures not only a stable power supply for both production and household for the whole plant, but also a much lower power cost for the enterprise, which has been highly praised and recognized by the owner.

Project cases - Off-grid solar power storage projects



Off-grid solar energy storage projects in Sichuan Province

Zonergy solved the problem of electricity unavailability for 211.2 thousand people living in 275 towns from 33 counties with photovoltaic power stations constructed in three prefectures as Ganzi, Aba and Liangshan in Sichuan Province. The total installed capacity of off-grid energy storage project amounts to 24.97 MW, which made a great contribution to the local clean power supply. Zonergy assumes the responsibility of operation and maintenance for the whole project during operation period, carries out regular training, and strengthens patrol inspection and maintenance to ensure the long-term stable operation of the power station.



Off-grid solar energy storage projects in Gansu Province

Zonergy solved the problem of electricity unavailability for people living in 589 villages in 178 towns from 31 districts or counties with photovoltaic power stations constructed in 8 prefectures and cities as Gannan, Zhangye, Wuwei, Jiuquan, Longnan, Qingyang, Pingliang, and Lanzhou. The total installed capacity of off-grid energy storage project amounts to 11.29 MW. This includes 60 centralized power stations and 19320 sets of household power solution systems. Practically, they solved the problem of electricity unavailability in life, medical care, and education for 88 thousand people. During the operation period, timely patrol inspection and maintenance ensures smooth operation of these power stations.



Off-grid solar energy storage projects in Qinghai Province

Zonergy solved the problem of electricity unavailability for telecom base stations, areas without Mains Electricity, and disaster recovery in remote areas with off-grid photovoltaic power stations constructed in Yushu and Golog Tibetan Autonomous Prefecture. The total construction capacity of off-grid energy storage project amounts to 2.93 MW. The total power generation during the service life of the system will exceed 120 million kWh, bringing stable and green power to people living in remote areas.

Project cases - Off-grid solar power storage projects



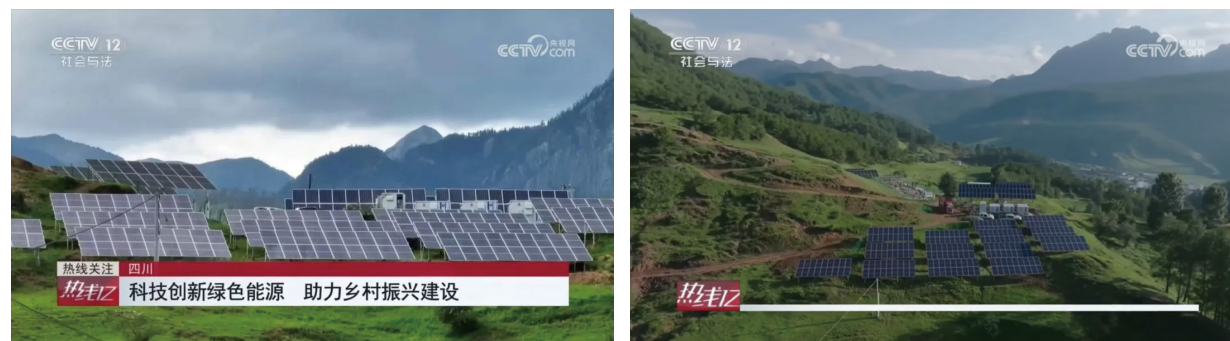
Overseas Off-grid solar energy storage projects

Zonergy constructed many overseas off-grid systems such as the off-grid energy storage system with complementary mechanism for wind energy and solar energy for the ADB in Pakistan, the power supply system with complementary mechanism for wind energy and solar energy in Nepal, 6180 sets of household off-grid storage systems in Chad financed by National Development and Reform Commission of the P. R. China, 600 sets of mobile solar equipment in Namibia as an aid from the P. R. China. Zonergy has clearly targeted solutions to please customers in Pakistan, Nepal, Bangladesh, Chad, Namibia, Republic of the Congo and other countries.





CCTV12 "Hotline 12" column published on January 26 titled "Technological Innovation in Green Energy to Aid Rural Revitalization Construction" focused on Sichuan Photovoltaic Independent Power Supply Capacity Expansion Project construction. One of the projects executed by Zenergy Corporation.



In 2023, the company completed the construction of the "2023 Sichuan Province Photovoltaic Independent Power Supply Capacity Expansion Project", with a total of 19 off-grid energy storage station projects. Among them, 10 were in Liangshan Prefecture, and 9 were in Ganzi Prefecture, addressing the power issues for over 15,000 people, and upgrading PV services for more than 2,000 households.



At the end of 2023, the first phase of the Zenergy's 500kW/1MWh photovoltaic energy storage and charging integration demonstration project (50kW/105kWh) was officially put into operation in Zigong city. It is the first sodium-ion battery storage demonstration project successfully put into operation in Sichuan Province.