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## COSPOWERS





# HANDBOOK OF ELECTRIC ENERGY STORAGE PRODUCTS

Cospowers Technology Co., Ltd.



## ABOUT COSPOWERS

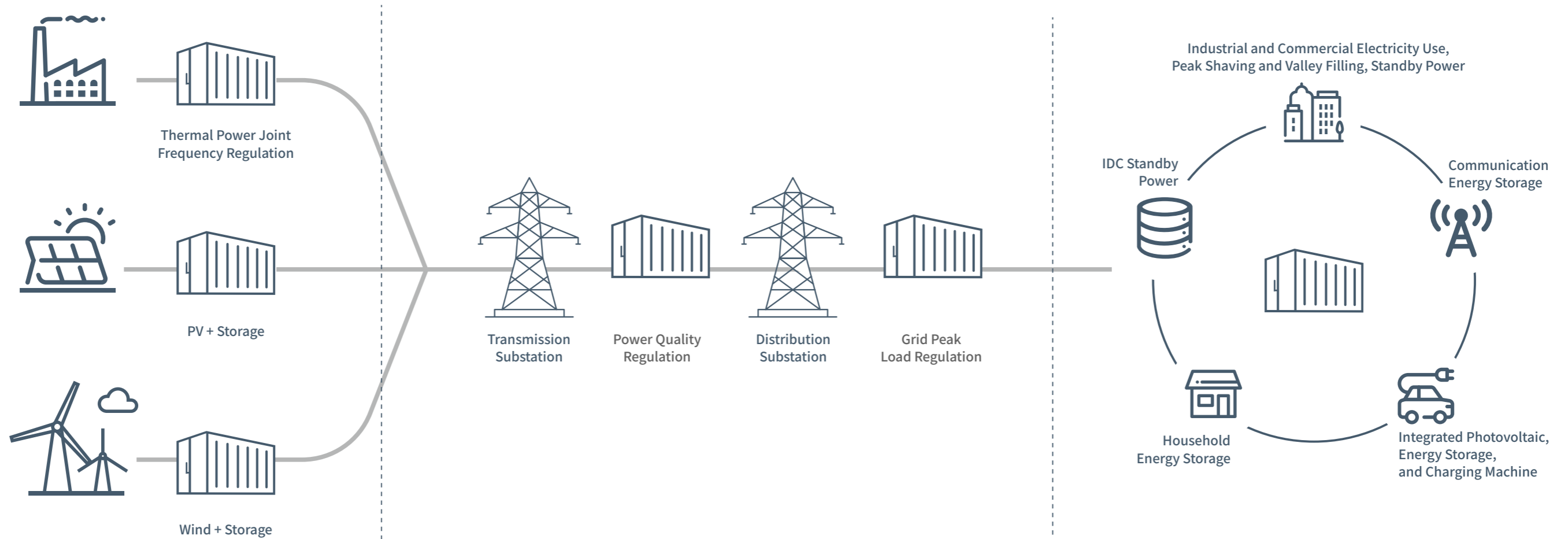
Cospowers Technology Co., Ltd. is a high-tech enterprise specializing in the field of new energy storage. With a technical team boasting over 30 years of deep expertise in the energy storage battery industry, the company possesses comprehensive capabilities in R&D, manufacturing, sales, and service across materials, cells, battery management systems, energy management systems, and system integration. It has provided diversified products and systematic solutions for more than 70 countries and regions worldwide in sectors such as utility-scale energy storage, commercial and industrial energy storage, data center energy storage, telecommunications energy storage, residential energy storage, sodium-ion battery energy storage, and consumer batteries.

 <b>23GWh+</b> Global Cumulative Shipments	 <b>Tier1</b> BloombergNEF Energy Storage Manufacturer	 <b>860K m<sup>2</sup></b> Factory area	 <b>530+</b> Patents and Software Copyrights	 <b>30+</b> Participation in Standard Formulation
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# Applications of Energy Storage



## Energy Storage on the Power Generation Side

- Peak and Frequency Regulation (Traditional Power Generation Side)
- Smoothing the Fluctuations of New Energy and Increasing the Accommodation of New Energy
- Increasing the Standby Capacity of the Power Grid

### Revenue Model

Reduce assessments or increase compensation;  
 Reduce the electricity price losses due to curtailment of wind and solar power;  
 Participate in grid frequency regulation and receive rightward frequency regulation compensation;  
 At the same time, it can obtain the benefits of increased power generation brought by priority dispatch.

## Grid-side Energy Storage

- Improve Power Quality
- Frequency Regulation
- Increase Grid Standby Capacity
- Delay Equipment Expansion

### Revenue Model

Utilize the functions of frequency regulation and peak load regulation to participate in grid services, enhance the stability of the power grid, and thereby obtain revenue.

## User-side Energy Storage

- Distributed Energy Accommodation
- Peak Shaving and Valley Filling, Load Shifting
- Integrated Photovoltaic, Energy Storage, and Charging
- Backup Power

### Revenue Model

Peak-Valley Price Arbitrage; Demand Response Subsidies;  
 Demand Control, Reducing or Slowing Down Grid Expansion Costs;  
 Backup Power, Improving Electricity Reliability, Reducing Power Outage Losses,  
 while also Reducing Traditional Emergency Standby Power Investment.

# Lithium-ion Cell



## 280Ah

Product Model	FP71173207A
Rated Capacity	280Ah
Nominal Voltage	3.2V
Voltage Range	2.5~3.65V
Maximum Charge/Discharge Rate	0.5P/1P

### Product Certification



## 314Ah

Product Model	FP71173207A
Rated Capacity	314Ah
Nominal Voltage	3.2V
Voltage Range	2.5~3.65V
Maximum Charge/Discharge Rate	0.5P

### Product Certification



## 588Ah

Product Model	FP73288216A
Rated Capacity	588Ah
Nominal Voltage	3.2V
Voltage Range	2.5~3.65V
Maximum Charge/Discharge Rate	0.5P/0.5P

### Product Certification



# Liquid cooling solution



Cell		
Capacity	280Ah	314Ah
Life cycles	25°C, 12000 times@0.5C	
Operating voltage	2.5~3.65V (T>0°C) / 2.0~3.65V (T≤0°C)	
internal resistance	0.25mΩ	
Self-discharge per month	≤3.0%	
Energy density	≥160Wh/kg	≥179Wh/kg
Maximum Continuous Charge/Discharge Rate	0.5P/1P	0.5P
Peak current	2C (30s)	
Dimensions (W*D*H)	72*174*207mm	



Module			
Rated capacity	46.59kWh	52.25kWh	104.49kWh
Max continuous charge and discharge current	280A	157A	157A
Dimensions (W*D*H)	780*1118*254 (±2)mm		790*2187*252 (±5)mm
IP Class	IP67		



Battery cluster			
Rated capacity	372.736kWh	418kWh	2*418kWh
Max continuous charge and discharge current	280A	157A	2*157A
Dimensions (W*D*H)	890*1160*2510mm		928*2187*2651mm

# COSPOWERS AI Smart Cloud Platform



## AI Monitoring



Real-time monitoring of battery performance and operating status, enabling lifespan prediction and proactive protection through AI simulation and fault identification.

## Data Management



High-availability clusters and remote backup ensure data security, while a comprehensive indicator and reporting system supports investment and market decision-making.

The new platform is built on a microservices architecture, supporting high-availability clusters and multi-tenant management, enabling a fully closed-loop data flow for solar, storage, and charging. By integrating intelligent forecasting and optimized dispatch, it establishes a source-grid-load-storage coordination model, helping comprehensive energy systems achieve economical, low-carbon, and multi-objective optimal operation.

## AI Dispatch



Leveraging multi-source data and intelligent algorithms to collaboratively participate in the electricity market, enhancing system flexibility and accommodation capacity to achieve optimal strategies.

## Smart Operation and Maintenance



Electrical equipment inspection, diagnostic battery system maintenance strategy push, offline operation and maintenance work order management, and evaluation.

# EnerGalactic-5015-0.5C HOT

Application Field:

- Peak-valley arbitrage and backup power for customer-side C&I commercial and industrial energy storage;
- Peak shaving, valley filling, and output smoothing for renewable energy stations (wind and solar);
- Grid-side frequency regulation, peak shaving, and distribution network transformer capacity expansion.



Temperature variation within the entire cabinet < 3°C



PACK-level fire protection for high safety



High energy density, flexible layout, and expandability



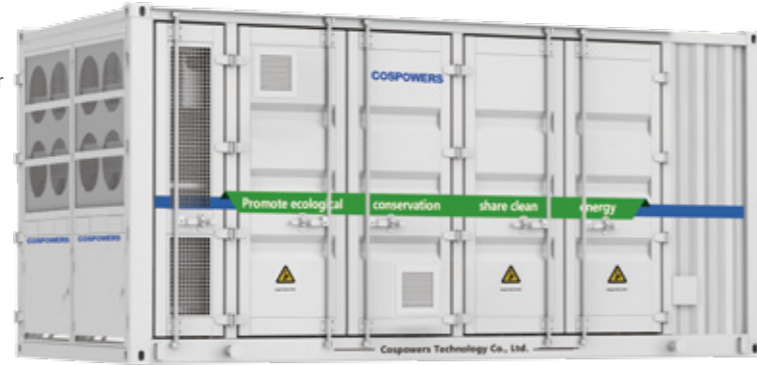
Modular prefabrication no on-site installation required

Parameters/ Model		EnerGalactic-5015-0.5C	
Battery Module	Cell Capacity	314Ah-LFP	
	Module Configuration	1P52S	1P104S
	Module Nominal Voltage	166.4V	332.8V
	Module Energy	52.2496kWh	104.499kWh
	Protection Level	IP67	
Battery Rack	Number of Modules	8pcs	4pcs
	Battery Rack Nominal Voltage	DC1331.2V	
	Voltage Range	1164.8~1476.8V	
	Single Rack Energy	417.997kWh	
Battery Enclosure	Number of Battery Racks	12pcs	
	Battery System Energy	5015kWh	
	Dimensions (W*D*H)	6058*2438*2896mm	
	Weight	≤43t	
	Cooling Method	Liquid Cooling	
	Protection Level	IP54	
Other Parameters	Compliance Standards	IEC62619、IEC63056、UL1973、UL9540、UL9540A、UN38.3、UN3536、RoHS、EN 61000-6-2、EN 61000-6-4、EN 62477-1	

# EnerGalactic-3727-1C

Application Field:

- Peak-valley arbitrage and backup power for customer-side C&I commercial and industrial energy storage;
- Peak shaving, valley filling, and output smoothing for renewable energy stations (wind and solar);
- Grid-side frequency regulation, peak shaving, and distribution network transformer capacity expansion.



Temperature difference across the entire cabinet < 5°C



Three-tier fire protection, high safety



High energy density, flexible layout and scalability



Modular prefabrication, no on-site installation required

Parameters/ Model		EnerGalactic-3727-1C
Battery Module	Cell Capacity	280Ah-LFP
	Module Configuration	1P52S
	Module Nominal Voltage	166.4V
	Module Energy	46.59kWh
	Protection Level	IP67
Battery Rack	Number of Modules	8pcs
	Battery Rack Nominal Voltage	DC1331.2V
	Voltage Range	1164.8~1476.8V
	Single Rack Energy	372.73kWh
Battery Enclosure	Number of Battery Racks	10pcs
	Battery System Energy	3727kWh
	Dimensions (W*D*H)	6058*2438*2896mm
	Weight	≤39t
	Cooling Method	Liquid Cooling
	Protection Level	IP54
Other Parameters	Compliance Standards	IEC62619, UL1973, UL9540A, UN38.3

# Celestial Energy-5015-0.5C HOT

Application Field:

- Peak-valley arbitrage and backup power for customer-side C&I commercial and industrial energy storage;
- Peak shaving, valley filling, and output smoothing for renewable energy stations (wind and solar);
- Grid-side frequency regulation, peak shaving, and distribution network transformer capacity expansion.



Modular and standardized design



Multi-level protection system



Integrated AC/DC system for efficient installation and commissioning



Intelligent operation and maintenance

Parameters/ Model		Celestial Energy-5015-0.5C
DC side Parameters	Cell Capacity	314Ah-LFP
	Module Configuration	1P104S
	Number of Modules per Rack	4pcs
	Number of Battery Racks	12pcs
	Battery System Energy	5015kWh
	Voltage Range	1144~1497.6V
AC side Parameters	Rated AC Power	12*215kW
	Rated Grid Voltage	AC690V
	Wiring Configuration	3W+PE
	Rated Grid Frequency	50/60Hz
System level Parameters	Isolation Method	No Isolation Transformer
	Operating Temperature	-30~55°C
	Ambient Humidity	0~95% (No Condensation)
	Operating Altitude	2000m
	Communication Method	Ethernet, RS485, optional 4G/5G mobile communication
	Protection Level	IP54
	Cooling Method	Liquid Cooling
	Noise Level	≤75dB
	Fire Protection	Heptafluoropropane/Perfluoroketon Enclosure-level/Aerosol + Water Fire Protection, Combustible Gas Detection, and Explosion-Proof Ventilation System
	Dimensions (W*D*H)	6058*2438*2896mm
Compliance Standards	Weight	44t
	Cluster	IEC62619, UL1973, UL9540A, UN38.3
	PCS	UL1741, EN50549, VDE4110, VDE4120, VDE4130, GB/T34120, GB/T36547...

# Celestial Energy-3340-0.5C

Application Field:

- Peak-valley arbitrage and backup power for customer-side C&I commercial and industrial energy storage;
- Peak shaving, valley filling, and output smoothing for renewable energy stations (wind and solar);
- Grid-side frequency regulation, peak shaving, and distribution network transformer capacity expansion.





Modular and standardized design



Multi-level protection system



Integrated AC/DC system for efficient installation and commissioning



Intelligent operation and maintenance

Parameters/ Model		Celestial Energy-3340-0.5C
DC side Parameters	Cell Capacity	314Ah-LFP
	Module Configuration	1P52S
	Number of Modules per Rack	8pcs
	Number of Battery Racks	8pcs
	Battery System Energy	3340kWh
	Voltage Range	1164.8~1476.8V
AC side Parameters	Rated AC Power	8*200kW
	Rated Grid Voltage	AC690V
	Wiring Configuration	3W+PE
	Rated Grid Frequency	50/60Hz
	Isolation Method	No Isolation Transformer
System level Parameters	Operating Temperature	-30~55°C
	Ambient Humidity	0~95% (No Condensation)
	Operating Altitude	2000m
	Communication Method	Ethernet, RS485, optional 4G/5G mobile communication
	Protection Level	IP54
	Cooling Method	Liquid Cooling
	Noise Level	≤75dB
	Fire Protection	Heptafluoropropane/Perfluoroketon Enclosure-level/Aerosol + Water Fire Protection, Combustible Gas Detection, and Explosion-Proof Ventilation System
	Dimensions (W*D*H)	6058*2438*2896mm
Weight	30t	
Compliance Standards	Cluster	IEC62619, UL1973, UL9540A, UN38.3
	PCS	UL1741, EN50549, VDE4110, VDE4120, VDE4130, GB/T34120, GB/T36547...

# Celestial Energy-2089-0.5C NEW

Application Field:

- Peak-valley arbitrage and backup power for customer-side C&I commercial and industrial energy storage;
- Peak shaving, valley filling, and output smoothing for renewable energy stations (wind and solar);
- Grid-side frequency regulation, peak shaving, and distribution network transformer capacity expansion.





Modular and standardized design



Multi-level protection system



Integrated AC/DC system for efficient installation and commissioning



Intelligent operation and maintenance

Parameters/ Model		Celestial Energy-2089-0.5C
DC side Parameters	Cell Capacity	314Ah-LFP
	Module Configuration	1P52S
	Number of Modules per Rack	4pcs
	Number of Battery Racks	10pcs
	Battery System Energy	2089kWh
	Voltage Range	582.4~738.4V
AC side Parameters	Rated AC Power	2*500kW
	Rated Grid Voltage	AC400V
	Wiring Configuration	3W+PE
	Rated Grid Frequency	50/60Hz
	Isolation Method	No Isolation Transformer
System level Parameters	Operating Temperature	-30~55°C
	Ambient Humidity	0~95% (No Condensation)
	Operating Altitude	2000m
	Communication Method	Ethernet, RS485, optional 4G/5G mobile communication
	Protection Level	IP54
	Cooling Method	Liquid Cooling
	Noise Level	≤75dB
	Fire Protection	Heptafluoropropane/Perfluoroketon Enclosure-level/Aerosol + Water Fire Protection, Combustible Gas Detection, and Explosion-Proof Ventilation System
	Dimensions (W*D*H)	6058*2438*2896mm
Weight	25t	
Compliance Standards	Cluster	IEC62619, UL1973, UL9540A, UN38.3
	PCS	UL1741, EN50549, VDE4110, VDE4120, VDE4130, GB/T34120, GB/T36547...

# Celestial Energy- 835kWh/690/800VAC-0.5C HOT NEW

Application Field:

- Peak-valley arbitrage and backup power for customer-side C&I commercial and industrial energy storage;
- Peak shaving, valley filling, and output smoothing for renewable energy stations (wind and solar);
- Grid-side frequency regulation, peak shaving, and distribution network transformer capacity expansion.



Modular and standardized design



Multi-level protection system



Integrated AC/DC system for efficient installation and commissioning



Intelligent operation and maintenance

Parameters/ Model		Celestial Energy-835kWh/690/800VAC-0.5C	
DC side Parameters	Cell Capacity	314Ah-LFP	
	Module Configuration	1P104S	
	Number of Modules per Rack	4pcs	
	Number of Battery Racks	2pcs	
	Battery System Energy	835kWh	
Voltage Range		1144~1497.6V	
AC side Parameters	Rated AC Power	2*215kW	
	Rated Grid Voltage	AC690V	AC800V
	Wiring Configuration	3W+PE	
	Rated Grid Frequency	50/60Hz	
	Isolation Method	No Isolation Transformer	
System level Parameters	Operating Temperature	-30~55°C	
	Ambient Humidity	0~95% (No Condensation)	
	Operating Altitude	2000m	
	Communication Method	Ethernet, RS485, optional 4G/5G mobile communication	
	Protection Level	IP54	
	Cooling Method	Liquid Cooling	
	Noise Level	≤75dB	
	Fire Protection	Aerosol Fire Suppression + Water Fire Protection + Combustible Gas Detection + Explosion-Proof Ventilation System	
	Dimensions (W*D*H)	1800*2460*2490mm	
Weight	8.1t		
Compliance Standards	Cluster	IEC62619, UL1973, UL9540A, UN38.3	
	PCS	UL1741, EN50549, VDE4110, VDE4120, VDE4130, GB/T34120, GB/T36547...	

# Celestial Energy 835kWh/400VAC-0.5C NEW

Application Field:

- Peak-valley arbitrage and backup power for customer-side C&I commercial and industrial energy storage;
- Peak shaving, valley filling, and output smoothing for renewable energy stations (wind and solar);
- Grid-side frequency regulation, peak shaving, and distribution network transformer capacity expansion.



Modular and standardized design



Multi-level protection system



Integrated AC/DC system for efficient installation and commissioning



Intelligent operation and maintenance

Parameters/ Model		Celestial Energy-835kWh/400VAC-0.5C	
DC side Parameters	Cell Capacity	314Ah-LFP	
	Module Configuration	1P104S	
	Number of Modules per Rack	2pcs	
	Number of Battery Racks	4pcs	
	Battery System Energy	835kWh	
Voltage Range		572~748.8V	
AC side Parameters	Rated AC Power	4*105kW	
	Rated Grid Voltage	AC400V	
	Wiring Configuration	3W+PE	
	Rated Grid Frequency	50/60Hz	
	Isolation Method	No Isolation Transformer	
System level Parameters	Operating Temperature	-30~55°C	
	Ambient Humidity	0~95% (No Condensation)	
	Operating Altitude	2000m	
	Communication Method	Ethernet, RS485, optional 4G/5G mobile communication	
	Protection Level	IP54	
	Cooling Method	Liquid Cooling	
	Noise Level	≤75dB	
	Fire Protection	Aerosol Fire Suppression + Water Fire Protection + Combustible Gas Detection + Explosion-Proof Ventilation System	
	Dimensions (W*D*H)	1800*2460*2490mm	
Weight	8.2t		
Compliance Standards	Cluster	IEC62619, UL1973, UL9540A, UN38.3	
	PCS	UL1741, EN50549, VDE4110, VDE4120, VDE4130, GB/T34120, GB/T36547...	

# Electric Energy Storage Application Cases



## Bulgaria 200MW/800MWh Battery Energy Storage System Project

**Project Time:** 2025

**Project Location:** Bulgaria

**Project Highlights:** Ultra-large capacity, peak shaving and valley filling, supporting the European power grid.



## Spain 54.92MW/250.72MWh Hybrid Energy Storage System Project

**Project Time:** 2025

**Project Location:** Spain

**Project Highlights:** Solar-storage hybrid, ultra-large capacity, intelligent operation.

# Electric Energy Storage Application Cases



## India 11MW/22.99MWh Energy Storage Project

**Project Time:** 2025

**Project Location:** India

**Project Highlights:** Wind power paired with energy storage to smooth output.



## Latvia 5MW/10MWh Energy Storage System Project

**Project Time:** 2025

**Project Location:** Latvia

**Project Highlights:** Customized solution, peak shaving and valley filling, providing auxiliary grid services.

# Electric Energy Storage Application Cases



**Heilongjiang Yichun Tieli Nianfeng 20MW Wind Power + 20MW/40MWh Energy Storage Project**

**Project Time:** 2024

**Project Location:** Yichun, Heilongjiang, China

**Project Highlights:** Wind power paired with storage, grid support.

# Electric Energy Storage Application Cases



**Xinjiang Wuqia 50MW Wind Power + 50MW/200MWh Energy Storage Project**

**Project Time:** 2023

**Project Location:** Wuqia, Xinjiang, China

**Project Highlights:** Large-scale wind farm in the Gobi desert, featuring long operational lifespan.



**Anhui Tianchang 200MW Fishery-Photovoltaic + 87.5MW/175MWh Energy Storage Project**

**Project Time:** 2023

**Project Location:** Tianchang, Anhui, China

**Project Highlights:** Flexible control of power supply, improving power quality.



**Guizhou Weining 80MW/160MWh Wind Power Energy Storage Project**

**Project Time:** 2023

**Project Location:** Weining, Guizhou, China

**Project Highlights:** Promotes renewable energy consumption, enhances grid stability.

# Electric Energy Storage Application Cases



## Ningxia Zhongwei 100MW/200MWh Photovoltaic-Integrated Energy Storage Project

**Project Time:** 2023

**Project Location:** Zhongwei, Ningxia, China

**Project Highlights:** Innovative desert control economy, empowering Ningxia's green and low-carbon development.



## Gansu Linze 500MW Photovoltaic Desert-Control Power Generation + 40MW/80MWh Energy Storage Project

**Project Time:** 2022

**Project Location:** Linze, Gansu, China

**Project Highlights:** Flexible power control, regulating grid inflection points, smoothing power fluctuations.

# Electric Energy Storage Application Cases



## Hubei Xiantao 200MW Fishery-Photovoltaic + 57.5MW/115MWh Energy Storage Project

**Project Time:** 2022

**Project Location:** Xiantao, Hubei, China

**Project Highlights:** Integrates technology, intelligent operation & maintenance, and ecological aquaculture to create a low-carbon ecological demonstration zone.



## East Africa Photovoltaic Power Generation and Energy Storage Project

**Project Time:** 2022

**Project Location:** East Africa

**Project Highlights:** Effectively mitigates the intermittency of solar PV generation, providing stable and adjustable clean power for the local area.

# Four Core Pillars of the Energy Storage Cloud Platform



## Multi-Model Analytics



Establishes various models based on heat generation and charge/discharge data to conduct multi-dimensional analysis on each individual battery cell, followed by a comprehensive evaluation.

## High Identification Accuracy



Collects data every 500 milliseconds and applies dynamic compensation and correction to the battery data to ensure high identification accuracy.

## Data Real-Time Performance



Performs data analysis for the energy storage power station based on each complete charge/-discharge cycle, significantly improving the battery assessment frequency.

## Proactive Early Warning

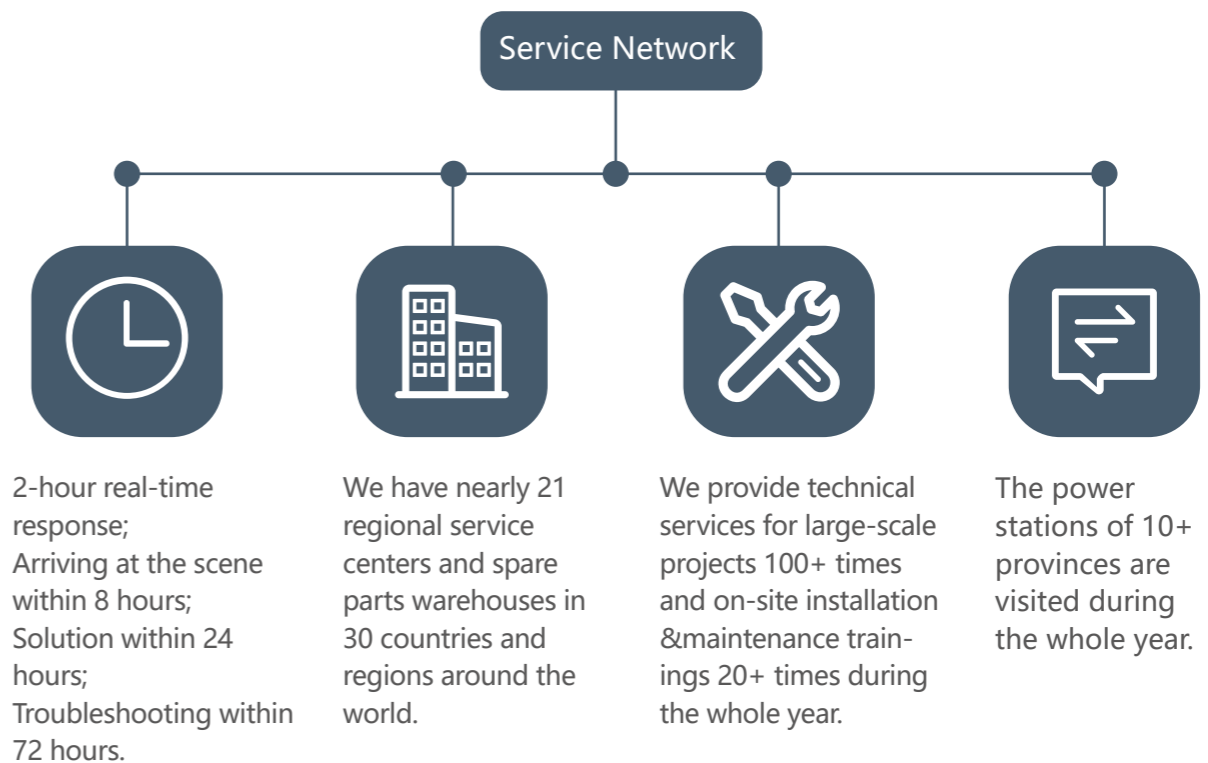


Analyzes battery data to enable the screening of potentially faulty batteries up to 7 days in advance, providing specific maintenance recommendations.

# After-Sales Service



The guidance of Cospower is to improve customer satisfaction, to provide high quality, efficient and professional technical services for customers.



# Cooperatice Customers

