

5.4 储能系统 Energy Storage System

- 1. 堆叠式储能系统
Stacked energy storage system
- 2. 机架式储能系统
rack energy storage system
- 3. 机柜式储能系统
Cabinet type energy storage system
- 4. 集装箱储能系统
Container energy storage system



charge

electro-discharge

储能能量
stored energy

备用电源
emergency power supply

对外放电
external discharge

削峰填谷
peak-load shifting

储能系统应用领域 Application Field of Energy Storage System



储能系统优势 Advantages of Energy Storage System

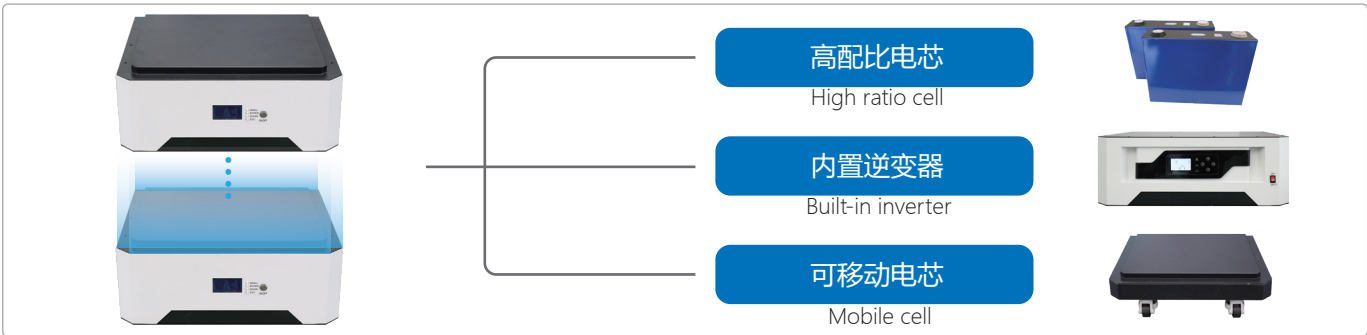
采用磷酸铁锂（LiFePO4）作为正极材料，具有高安全性、长寿命和稳定性等特点。储能系统被设计用于将家庭、企业、工厂、通信基站中的太阳能电力、电网电力等储存起来，在需要时供应给家庭电器、企业设备、通信基站等，从而降低能源成本，提高能源效率，以及实现能源的可持续利用。储能系统可以实现能量的搬移、转换和优化，为电力系统提供多种服务和功能，例如平滑可再生能源的波动、削峰填谷、调节电网频率和电压、提高电网稳定性和可靠性、降低电力成本和污染排放等。

Ferrous lithium phosphate (LiFePO4) is used as a positive electrode material, which has the characteristics of high safety, long service life and stability. The energy storage system is designed to store solar power and grid power in homes, enterprises, factories, and communication base stations, and supply it to household appliances, enterprise equipment, and communication base stations when needed, thereby reducing energy costs, improving energy efficiency, and achieving sustainable use of energy. The energy storage system can realize the movement, conversion and optimization of energy, and provide a variety of services and functions for the power system, such as smoothing the fluctuations of renewable energy, peak-load shifting, adjusting the frequency and voltage of the grid, improving the stability and reliability of the grid, reducing the cost of electricity and pollution emissions.



1. 堆叠式储能系统 Stacked Energy Storage System

- 支持多种通信协议；· 模块化结构，易于安装，模块化并机，智能可视化管理；
- 高性能智能电池管理系统，数据更精准，保护更全面；
- 循环寿命长；· 可搭配混合逆变器使用，纯正弦输出，内置mppt控制器；
- Support a variety of communication protocols;
- Modular structure, easy to install, modular parallel, intelligent visual management;
- High-performance intelligent battery management system, more accurate data, more comprehensive protection;
- Long cycle life; · Can be used with hybrid inverter, pure sinusoidal output, built-in mppt controller;



2. 机架式储能系统 Rack Energy Storage System

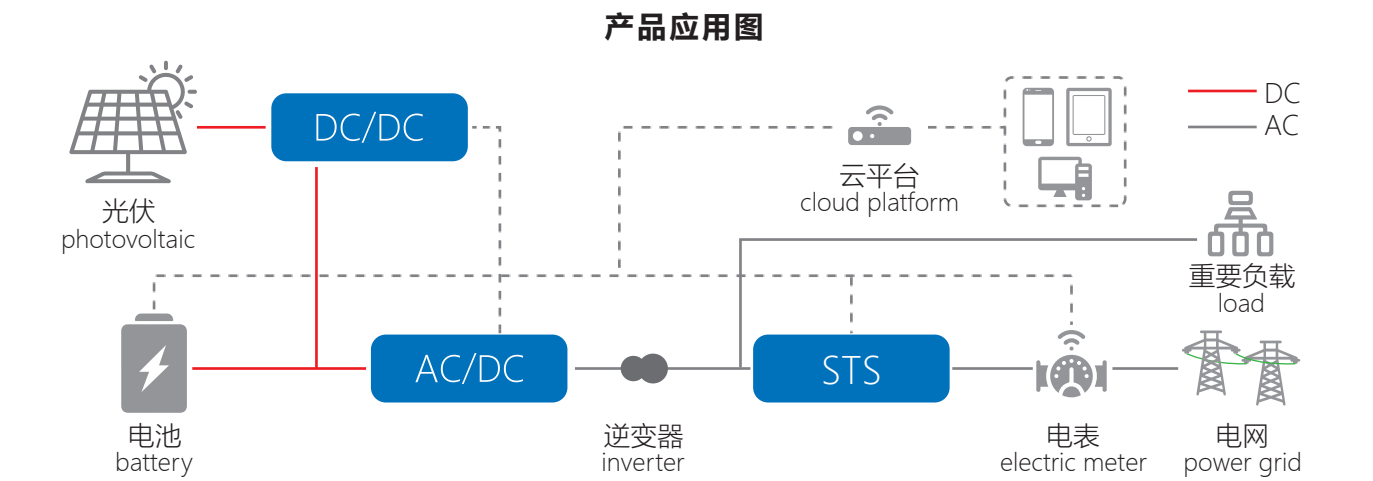


3. 机柜式储能系统 Cabinet Energy Storage System

可用于家庭、金融、医疗、工业设备、电力设备、环境监测、电力不稳、能源短缺、无电地区储能发电、削峰填谷节能优化。

It can be used for household, finance, medical treatment, industrial equipment, power equipment, environmental monitoring, power instability, energy shortage, power and storage in areas without electricity, and energy-saving optimization of peak cutting and valley filling.

- 人机控制界面，用户操作简单；· 采用安全环保的磷酸铁锂电池、循环寿命长、使用寿命≥10年；
- 人性化报警功能和完善的在线保护功能，具有高可靠性；
- 模块化并机，智能可视化管理，系统集成出货，现场接入负载即可使用；
- Man-machine control interface, simple user operation;
- Adopt safe and environmentally friendly ferrous lithium phosphate battery, long cycle life, service life ≥10 years;
- Humanized alarm function and perfect online protection function, with high reliability;
- Modular parallel, intelligent visual management, system integration and shipment, on-site access to the load can be used;

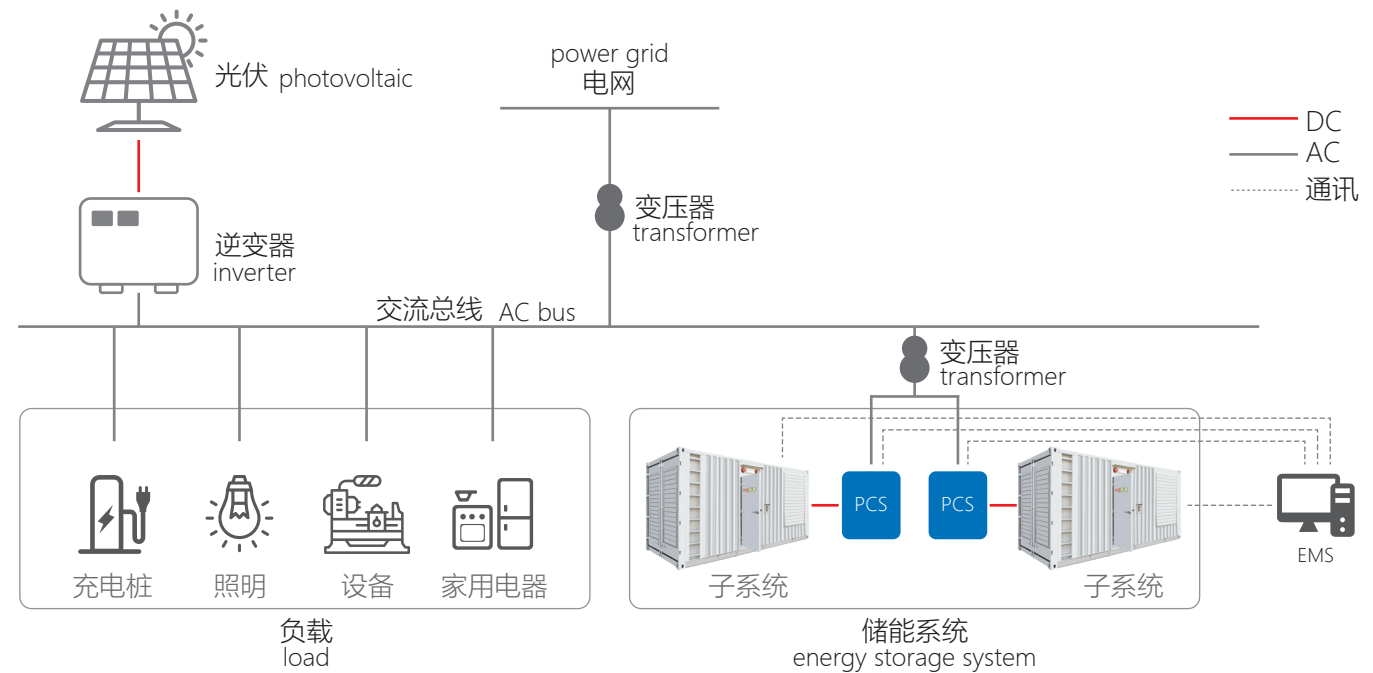


4. 集装箱储能系统 Container Energy Storage System

可用于微电网系统、商业综合体、边防哨所、金融系统、医院、数据中心等领域。产品集成度高、可靠性强、尺寸定制化、使用寿命长。

It can be used in microgrid systems, commercial complexes, frontier sentry, financial systems, hospitals, data centers and other fields. High product integration, reliability, size customization, long service life.

- 智能人机界面，系统信息一目了然，用户操作简单；
- 采用安全环保的磷酸铁锂电池、循环寿命长 ≥ 10 年、使用更安全；
- 人性化报警功能和完善的在线保护功能，具有高可靠性；
- Intelligent man-machine interface, clear system information at a glance, simple user operation;
- Adopt safe and environmentally friendly ferrous lithium phosphate battery, long cycle life ≥ 10 years, safer use;
- Humanized alarm function and perfect online protection function, with high reliability;



产品				
参数	1.堆叠式储能系统	2.机架式储能系统	3.机柜式储能系统	4.集装箱储能系统
项目				
型号	HQDY-5-15	HQDY-10-20	HQDY-100-215	HQDY-500-1075
电池类型	磷酸铁锂	磷酸铁锂	磷酸铁锂	磷酸铁锂
电池模块数量	3	4	15	5*15
电池额定电压(V)	51.2	51.2	768	768
电池额定容量(Ah)	300	400	280	1400
电池电压范围 (V)	40 ~ 58.4	40 ~ 58.4	648 ~ 864	648 ~ 864
电池额定能量 (Wh)	15360	20,480	215,040	1,075,000
电池标准放电电流(A)	150	200	140	700
逆变功率 (W)	5,000	10,000	100,000	500,000
交流输出电压 (V)	220	220	400	400
交流输出频率 (Hz)	50	50	50	50
PV最大功率 (W)	4000	8000	100000	500000
MPPT电压范围(V)	60 ~ 130	60 ~ 130	180 ~ 800	180 ~ 800
显示屏	LCD	LCD	触摸屏	触摸屏
尺寸: L*W*H(mm)	555*495*1315	600*700*1510	2360*1600*1000	6100*2500*2900
重量(kg)	158	276	2500	19000
充电温度范围(°C)	0 ~ 45	0 ~ 45	0 ~ 45	0 ~ 45
放电温度范围(°C)	-20 ~ 60	-20 ~ 60	-20 ~ 60	-20 ~ 60
循环寿命	3000次	3000次	6000次	6000次
安全认证	CE,FCC,ROHS, RCM	CE,FCC,ROHS,RCM	CE,FCC,ROHS,RCM	CE,FCC,ROHS,RCM
运输报告	UN38.3,MSDS	UN38.3, MSDS	UN38.3, MSDS	UN38.3, MSDS