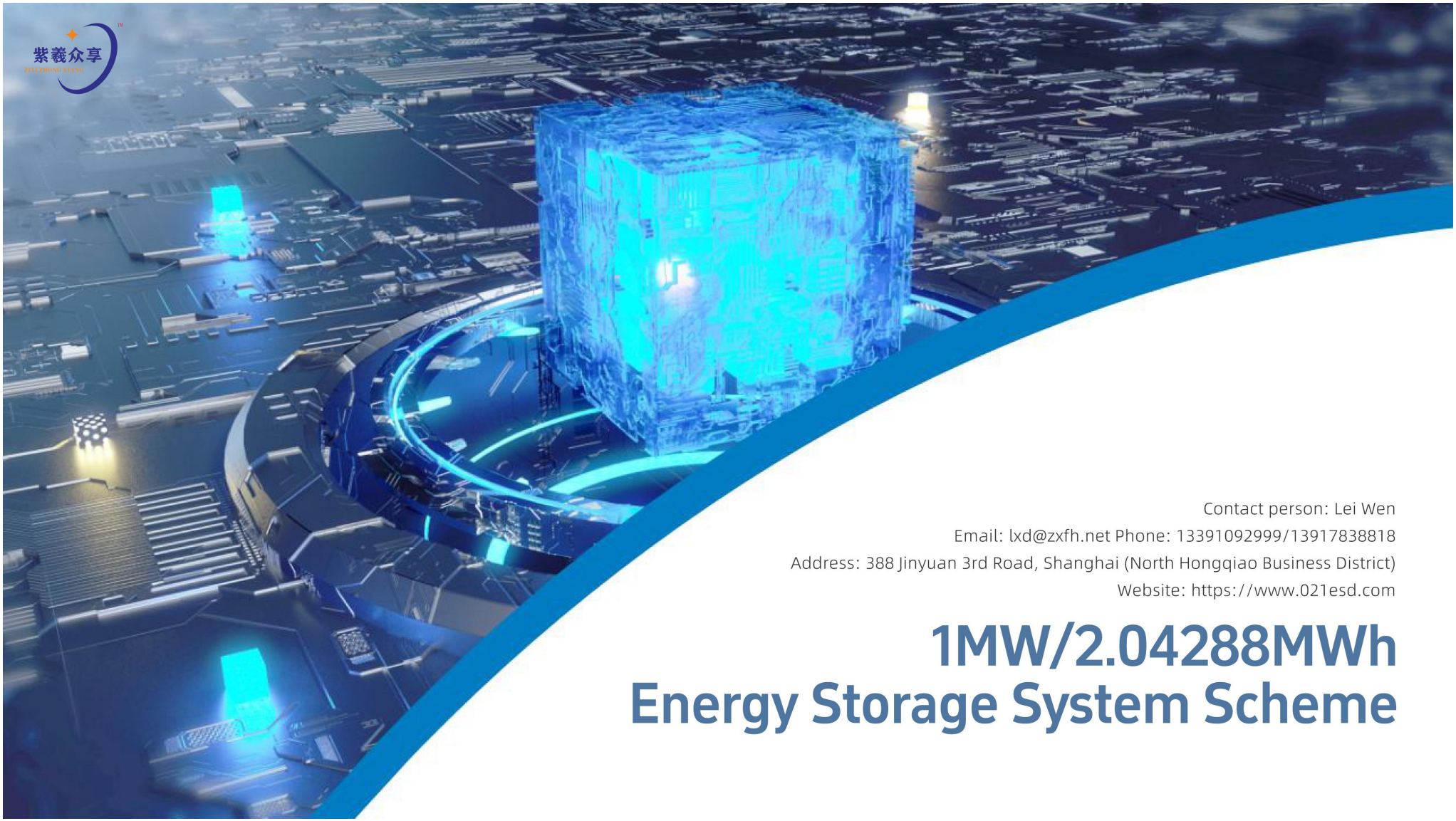


Contact person: Lei Wen
Email: lxd@zxfh.net Phone: 13391092999/13917838818
Address: 388 Jinyuan 3rd Road, Shanghai (North Hongqiao Business District)
Website: https://www.021esd.com

1MW/2.04288MWh Energy Storage System Scheme

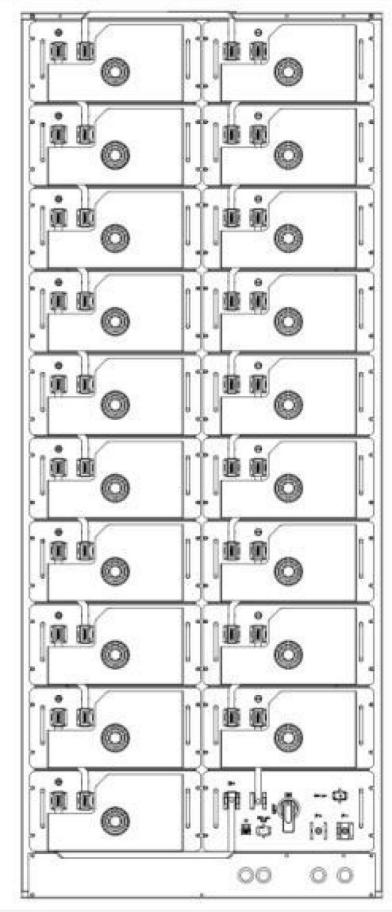
1.Customer demand situation

Serial Number	project	parameter	notes
1	Place of use		
2	Usage environment	container	
3	Battery capacity	2.04288MWh	
4	Load power	1MW	
5	Operation mode		

2.Battery solution

The battery cluster consists of 19 1P12S battery packs and 1 high-voltage box:

729.6V/280Ah battery cluster parameters			
Serial Number	project	Parameters	notes
1	Cell model	LF280	280Ah lithium iron phosphate
2	Matching battery modules	1P12S	
3	Rated voltage of battery cluster (V)	seven hundred and twenty-nine point six	228 strings
4	Battery cluster capacity (Ah)	two hundred and eighty	System energy: 204.288kWh
5	Voltage platform (V)	592.8~832.2	Monomers 2.6~3.65
6	Continuous charging and discharging current	Charging: Suggested 1C Discharge: Recommendation 1C	Room temperature 25 ℃
7	Battery cluster weight (kg)	Approximately 1720	
8	Cooling method	air-conditioning	
9	Heating method	air-conditioning	
10	Battery cluster size (mm)	1018 * 660 * 2500	



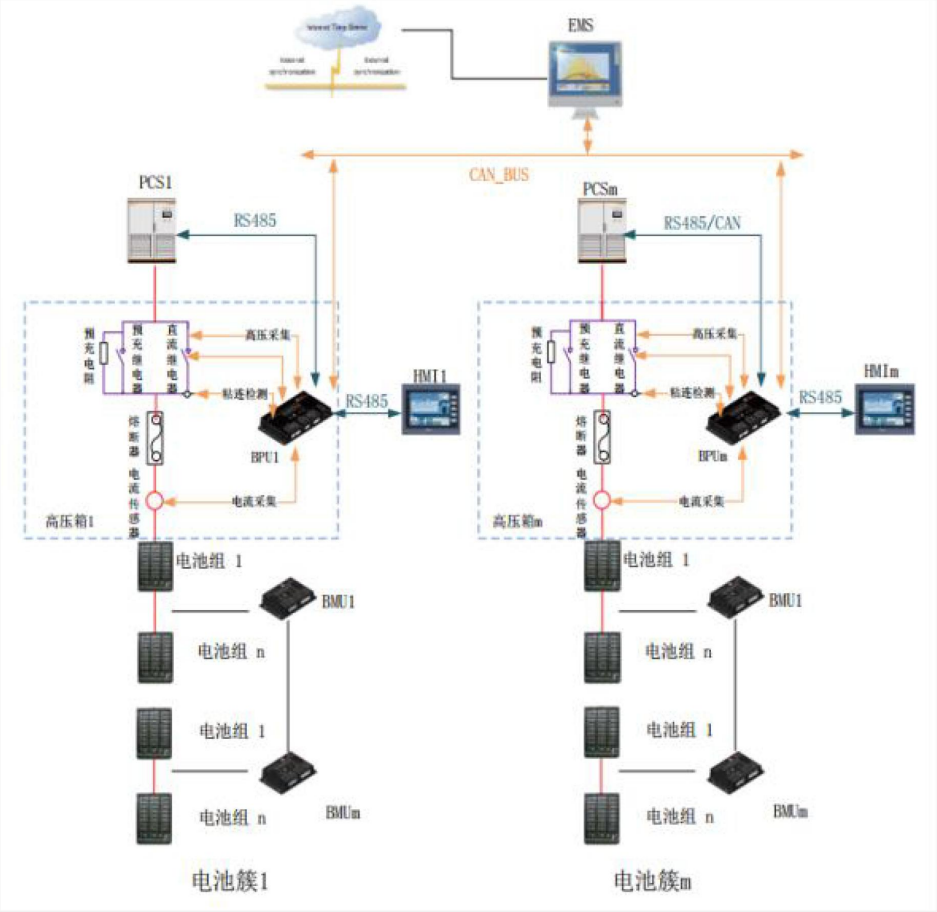
2.Battery solution

The battery system is installed in a 40 foot container and integrates 10 battery clusters.

729.6V/2800Ah battery system parameters							
Serial Number	project	Parameters	notes	Serial Number	project	Parameters	notes
1	Cell model	LF280	280Ah lithium iron phosphate		Continuous charging and discharging current (A)	Charging: 1C Discharge: 1C	Room temperature 25 ℃
2	Matching battery clusters	1P228S	The system consists of 10 battery clusters		Container specifications	40 feet	Steel, high box
3	Rated voltage of battery system (V)	729.6	228 strings		Cooling method	air-conditioning	
4	Battery system capacity (Ah)	2800	System energy: 2042.88kWh		Heating method	air-conditioning	
5	Voltage platform (V)	592.8 ~ 832.2	Monomers 2.6~3.65				

2.Battery solution

Introduction to Battery Management System



Basic information: including SOC, SOH, total voltage, total current, rechargeable capacity, rated capacity, remaining capacity, number of online batteries, online temperature sensing number, average voltage, average temperature, etc

Statistical information: including the highest single cell voltage and number, lowest single cell voltage and number, highest single cell temperature and number, lowest single cell temperature and number, and statistics of battery pack charging and discharging times

Status information: including leakage status, individual voltage status, charging and discharging current status, temperature status, communication status, SOC status, SD card status, etc. Insulation detection: including insulation module working status, positive insulation resistance, negative insulation resistance, insulation detection resistance, insulation module detection total voltage, etc. Charger information: including charger type, charging status, charger connection status, charger output voltage, charger output current, etc Charged time, estimated remaining charging time, and various abnormal alarm states, etc

Relay information: including pre charge relay, charging relay, discharge relay, refrigeration and heating relay, etc., display device general information: including protocol version number, product UUID, hardware version, software version, product type, product name, SN code, etc. Self check diagnosis information: charging relay self diagnosis status, discharge relay self diagnosis status, SOC full correction diagnosis, SOC empty correction diagnosis, etc Self diagnostic status of national standard charger

High insulation and voltage resistance level - The insulation and voltage resistance level reaches the additional insulation specified in the national standard (see 6.2.3 in GB/T18384.3), and the system comes with insulation detection function, which can achieve real-time display of explosion-proof status and effective protection of insulation failure, ensuring personal safety;

High resolution thermal management - The system has multiple temperature control strategies such as temperature difference management, high and low temperature limit management, and dual management of refrigeration and heating, ensuring that the system operates in a comfortable temperature range and preventing extreme events such as battery self ignition from occurring:

High flame retardant level - all key components of the system have reached UL94-V0 flame retardant level;

Distributed two-level management - The system adopts a distributed two-level management system, combining nearby management with centralized management principles, and reasonably divides the system functional system, greatly simplifying the complexity of interfaces and controls, and improving system reliability;

Powerful balancing management - can perform electric balancing management on batteries based on intelligent balancing strategies, effectively ensuring battery consistency; Meanwhile, through thermal balance management, the battery pack can operate within a unified temperature range, effectively ensuring temperature consistency of the battery;

Rich extension interfaces - external support for multiple active outputs, passive outputs, and multiple isolated CAN bus outputs, meeting diverse management needs and effectively achieving intelligent battery management;

3、 PCS scheme (1MW)

Using 2 500kW PCS

model	PWS1-500KTL		
Communication output		system parameter	
Rated output power (kW)	500	Maximum conversion efficiency	98.3%
Wiring method	Three phase three wire	Dimensions (width x height x depth mm3)	1100 * 2160 * 800
Output overload capacity (kw)	550	Weight (Kg)	six hundred
Grid connected operation mode		Noise (dB)	<70
Allow grid voltage (Vac)	380（-15%~15%）	Protection level	IP20
Allow grid frequency (Hz)	50/60（-2.5~1.5）	Allow ambient temperature	-20~55
Total current harmonic distortion rate	≤3%	Cooling method	Air-cooled
Voltage ripple coefficient	≤1%	Allow relative humidity	0-95% (without condensation)
power factor	-1~1	Allow altitude	three thousand
Lonely network operation mode		Display and Communication	
Rated output voltage (Vac)	380	display	\touch screen
Output voltage distortion	≤1%	communication interface	RS 485 and Ethernet, Modbus protocol
Rated output frequency (Hz)	50/60	BMS access	have
DC input			
Maximum DC power (kW)	550		
DC voltage range (Vdc)	600-900		
Maximum DC current (A)	700		
Number of DC input channels	8		

4、 Fire protection plan

Heptafluoropropane (HFC-227ea) is colorless and odorless in fire extinguishing, with zero ozone depletion potential (OPD). Among ISO recognized clean gas fire extinguishing agents, it has good cleanliness, low toxicity, good electrical insulation performance, and high fire extinguishing efficiency. The key parts are made of new materials, and the product performance is reliable. Its main indicators have reached the leading level in China, with a high insurance coefficient, reliable operation, and convenient maintenance. Simultaneously equipped with multiple methods such as automatic, manual, and mechanical emergency start, the system installation is reliable. Heptafluoropropane (HFC-227ea) is colorless and odorless in fire extinguishing, with zero ozone depletion potential (OPD). Among ISO recognized clean gas fire extinguishing agents, it has good cleanliness, low toxicity, good electrical insulation performance, and high fire extinguishing efficiency. The key parts are made of new materials, and the product performance is reliable. Its main indicators have reached the leading level in China, with a high insurance coefficient, reliable operation, and convenient maintenance. Simultaneously equipped with multiple methods such as automatic, manual, and mechanical emergency start, the system installation is reliable.

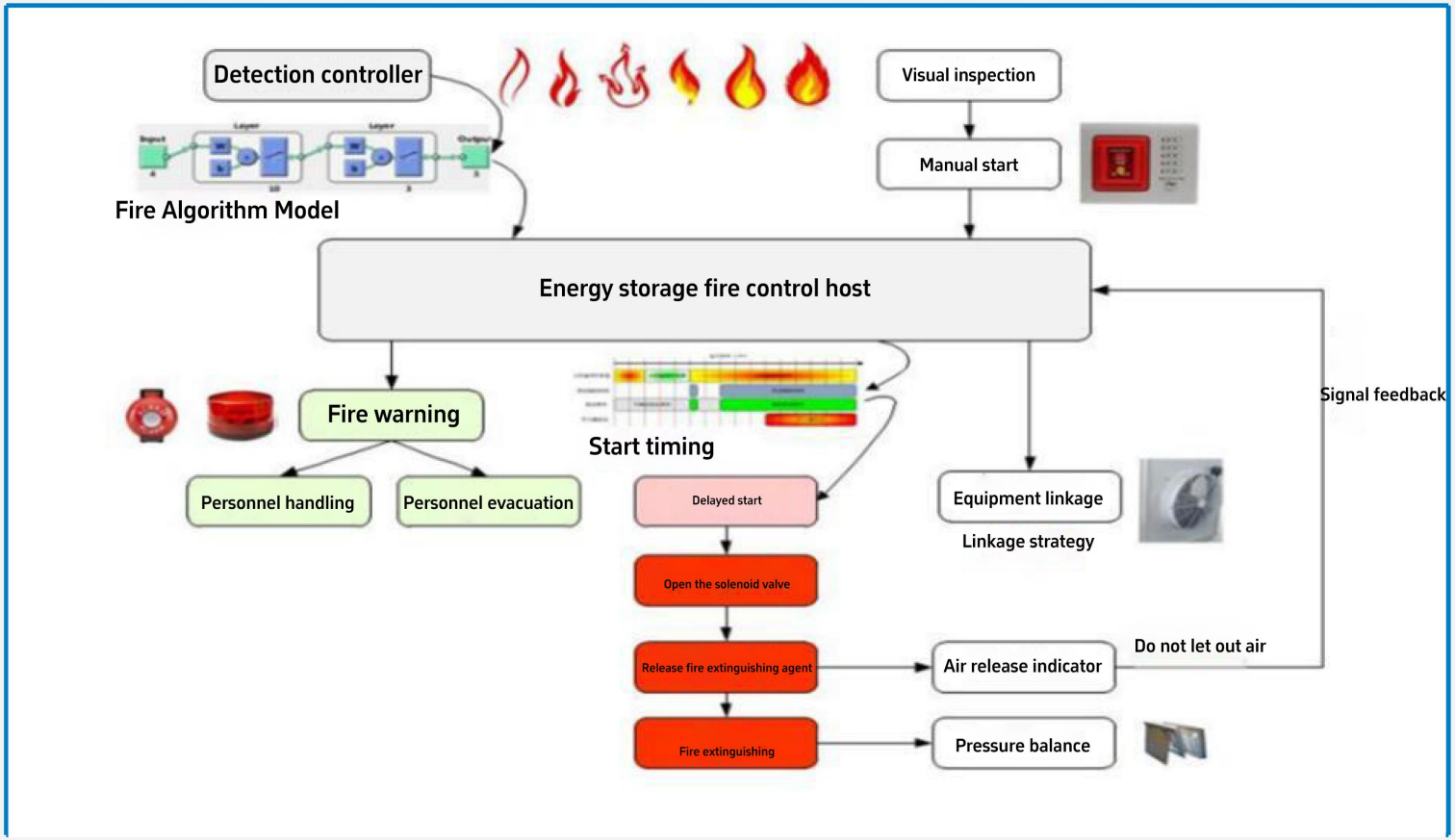
Point type photoelectric smoke detector
Fire detectors

Fire sound and light alarm

Manual fire
Alarm button

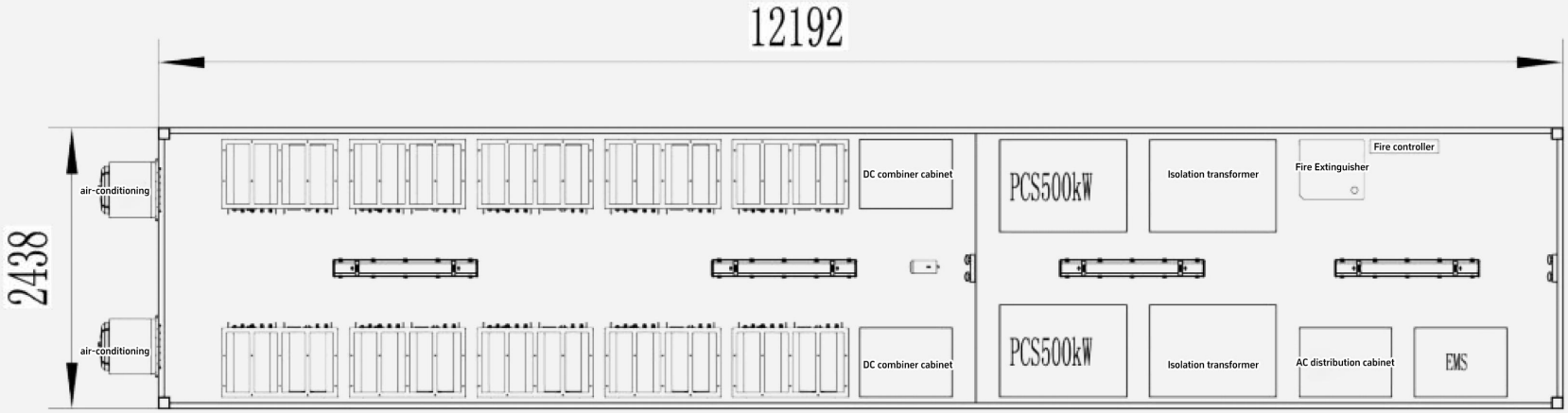
Fire alarm controller

4. Fire protection plan

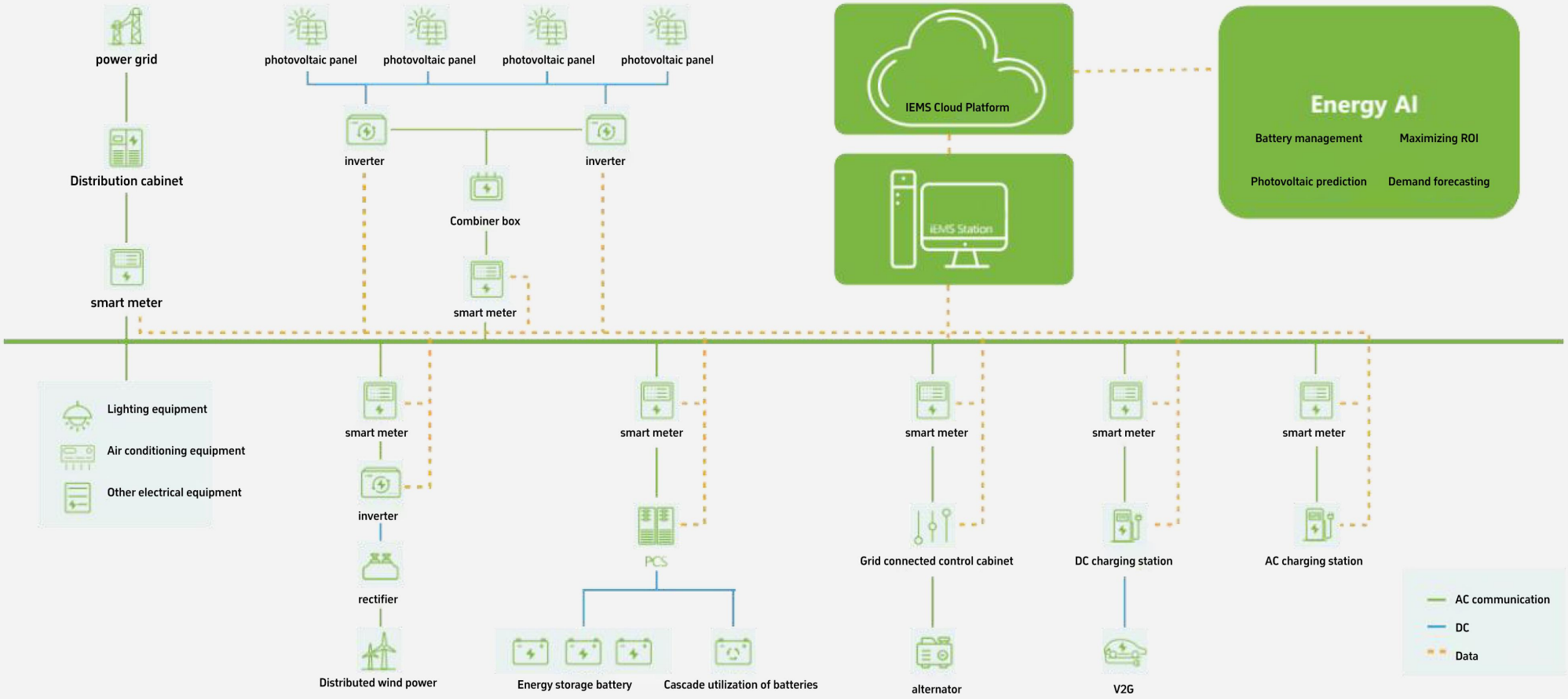


5. System solution

The energy storage system is integrated into a 40 foot container, which includes a battery system, DC combiner system
Temperature control system, fire protection system, energy management system, auxiliary control system, power supply system, etc



6. EMS Introduction



6. EMS Introduction

advantage

Intelligent operation strategy

Built in scientific and efficient multiple operational strategies, which can be automatically selected and switched according to actual needs

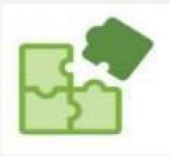
Remote physical examination for battery life cycle management to obtain health data of energy storage batteries, ensuring the safety and reliability of the life cycle of photovoltaic charging stations

Strong compatibility

Widely compatible with mainstream photovoltaic, energy storage, and charging station equipment manufacturers in the market

Cloud based centralized control

Cloud+station architecture, which can achieve both local deployment of a single station and cloud management of a group of stationsIntelligent operation strategy



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Strong compatibility

Widely compatible with mainstream photovoltaic, energy storage, and charging station equipment manufacturers in the market

Cloud based centralized control

Intelligent AI algorithm model

A self-learning microgrid control algorithm model that adapts to practical environments and pursues higher returns

Rich API interfaces

Provide standard API interfaces to achieve API data sharing with third-party ecosystem partners

Flexible and suitable for multiple business scenarios, including photovoltaic energy storage, wind energy storage, energy storage charging, photovoltaic energy storage charging, and other energy storage linkage business scenarios

Flexible configuration

Flexible and on-demand configuration of functional components such as energy storage management, photovoltaic management, and charging station management for different business scenarios

6. EMS Introduction
cloud platform

★ Intelligent operation strategy switching

★ Real time push of station operation reports

★ With two operating modes: local control and cloud monitoring, achieving unmanned operation

★Display of operational data for 7 * 24-hour microgrids

★ Multidimensional statistical analysis of energy consumption and revenue data,

★ Support unified cloud management for multiple sites

紫羲众享
ZIXI ZHONG XIANG

THANK YOU!

Official website consultation hotline: 400 8203396
Email: lxd@zxfh.cn
Website: https://www.021esd.com
Shanghai factory address: 388 Jinyuan 3rd Road, Shanghai (North Hongqiao Business District)
Zhejiang factory address: Building 3A, Datian Chengyu Science and Technology Innovation Park, Linhai City, Taizhou, Zhejiang Province