



**CONNECTING WONDERFUL LIFE  
WITH OPTIC-ELECTRIC NETWORK**



## **OVERVIEW OF BATTERY ENERGY STORAGE SYSTEM PRODUCTS**

ZHONGTIAN ENERGY STORAGE TECHNOLOGY CO.,LTD



Add: No.88 Qixin Road, NETDA, Nantong, Jiangsu, P.R. China, 226009

Tel: 86-0513-80100986 Email: sales@zttgroup.com <http://www.zttgroup.com>



## PRODUCT INTRODUCTION

### 50Ah BATTERY



Item	Parameter
Type	LFP
Model	ZTT30148135
Rated Capacity	50Ah (160Wh)
Nominal Voltage	3.2V
IR	≤1.0mΩ
Weight	1160 ± 50g

### 200Ah BATTERY



Item	Parameter
Type	LFP
Model	ZTT54174200
Rated Capacity	200Ah ( 640Wh )
Nominal Voltage	3.2V
IR	≤0.3mΩ
Weight	4065 ± 100g

### 280Ah BATTERY



Item	Parameter
Type	LFP
Model	ZTT71174200
Rated Capacity	280Ah ( 896Wh )
Nominal Voltage	3.2V
IR	≤0.25mΩ
Weight	5300 ± 200g

### 100Ah BATTERY



Item	Parameter
Type	LFP
Model	ZTT29173200
Rated Capacity	105Ah (336Wh)
Nominal Voltage	3.2V
IR	≤0.5mΩ
Weight	2200 ± 100g

### 216Ah BATTERY



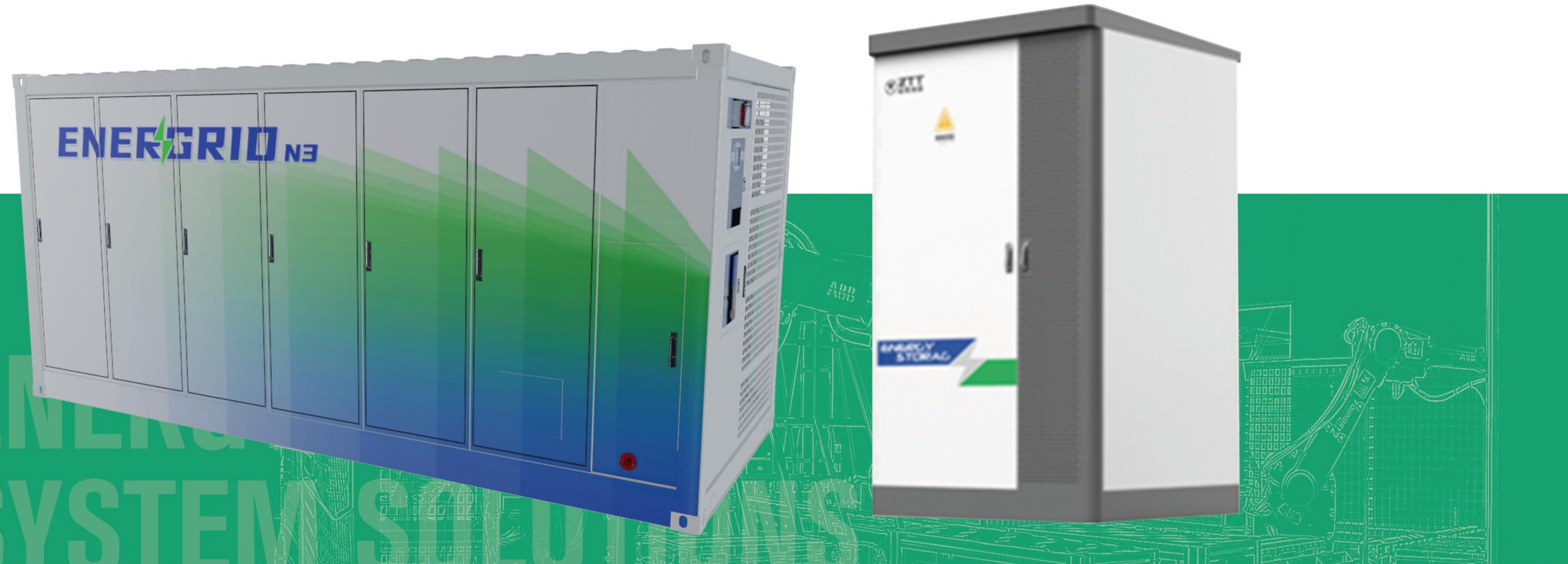
Item	Parameter
Type	LFP
Model	ZTT54174200
Rated Capacity	216Ah (691.2Wh)
Nominal Voltage	3.2V
IR	≤0.3mΩ
Weight	4075 ± 100g

### 314Ah BATTERY



Item	Parameter
Type	LFP
Model	ZTT71174200
Rated Capacity	314Ah ( 1004.8Wh )
Nominal Voltage	3.2V
IR	≤0.25mΩ
Weight	5600 ± 200g

## Liquid cooling battery container



## Product Description

ENERGRID series prefabricated liquid-cooling battery container integrates batteries, battery management system, liquid-cooling system, fire protection system, distribution lighting and other equipment, meeting the application scenarios of different voltages and different capacities and suitable for new energy stations and micro-grid systems. They cooperate with inverter boost system and EMS to meet the needs of smooth power output, peak cutting and valley filling, primary frequency modulation, secondary frequency modulation, dynamic capacity increase, emergency backup, renewable energy grid connection and other applications.

## Product Feature

- ★ High degree of integration: the cost of on-site equipment installation is reduced by the integration design of batteries, BMS, liquid-cooling system, fire protection system, power distribution lighting and other system equipment. And the liquid cooling solution has higher heat dissipation efficiency, meets the needs of high-power discharge, improving battery stability and battery life.
- ★ High safety performance: the three-level BMS realizes the whole system monitoring and management, and links with fire control and PCS for the disconnect strategy and promotes safe grounding, ensuring the safe and stable operation of the batteries.
- ★ Strong environmental adaptability: IP54 protection, and seismic design makes our products suitable for high altitude, high temperature, low temperature and other severe environments.

## Parameter

Product Series		ENERGRID N1	ENERGRID H1	ENERGRID N2	ENERGRID N3	ENERGRID M1
DC Parameter	Type of Battery	LFP	LFP	LFP	LFP	LFP
	Cell Capacity	216Ah	200Ah	280Ah	314Ah	280Ah
	Compound Mode	416S1P*12	416S1P*8	384S1P*10	416S1P*12	48S1P*5
	Nominal Voltage	1331.2V	1331.2V	1228.8V	1331.2V	768V
	Voltage Range	1160~1460V	1160~1460V	1050~1365V	1160~1460V	624~864V
	Nominal Capacity	3.45MWh	2.12MWh	3.44MWh	5.0MWh	215KWh
	C-Rate	0.5C	1C	0.5C	0.5C	0.5C
	System Efficiency	≥ 93%	≥ 93%	≥ 93%	≥ 93%	≥ 93%
Other Parameter	Operating Temperature Range	-30~45℃	-30~45℃	-30~45℃	-30~45℃	-30~45℃
	Operating Humidity Range	5%~ 95% ( no condensation )	5%~ 95% ( no condensation )	5%~ 95% ( no condensation )	5%~ 95% ( no condensation )	5%~ 95% ( no condensation )
	Operating Altitude Requirement	3000m ( >3000m derate )	3000m ( >3000m derate )	3000m ( >3000m derate )	3000m ( >3000m derate )	3000m ( >3000m derate )
	Temperature Control Scheme	Liquid Cooling	Liquid Cooling	Liquid Cooling	Liquid Cooling	Liquid Cooling
	Fire Protection Scheme	FK5112&Reserve Water For Spraying	FK5112&Reserve Water For Spraying	FK5112&Reserve Water For Spraying	FK5112&Reserve Water For Spraying	FK5112&Aerosol
	IP Grade	IP54	IP54	IP54	IP54	IP54
	Corrosion-Proof Grade	C3/C4/C5	C3/C4/C5	C3/C4/C5	C3/C4/C5	C3/C4/C5
	Noise	< 75db	< 75db	< 75db	< 75db	< 75db
	Class of Seismic Measure	Level 8	Level 8	Level 8	Level 8	Level 8
	Dimension ( L*W*H )	7000*2438*2896 mm	6058*2438*2896 mm	6058*2438*2896 mm	6058*2438*2896 mm	1304*1360*2200mm
		UL 9540, UL 9540A, IEC62619 UL1973 etc.	UL 9540, UL 9540A, IEC62619 UL1973 etc.	UL 9540, UL 9540A, IEC62619 UL1973 etc.	UL 9540, UL 9540A, IEC62619 UL1973 etc.	UL 9540, UL 9540A, IEC62619 UL1973 etc.

## 1500V DC PCS of electrochemical energy storage system



### Product Description

1500V DC system has greatly increased power and battery energy density. Benefiting from higher energy density, it can reduce the investment cost of BESS containers and auxiliaries equipment in the containers, and save the space, reducing civil construction and installation cost. Meanwhile, the overall efficiency of the whole station can be improved by the reduction of whole BESS station charge and discharge loss and power consumption due to less equipment and the increase of DC voltage.

### Product Feature

**High conversion efficiency:** Brand new three-level topology technology, max efficiency 99%

**Efficiency-Friendly structure:** 1500V DC, with bi-directional conversion, battery management

**Grid-Friendly:** reactive compensation, isolated grid operation

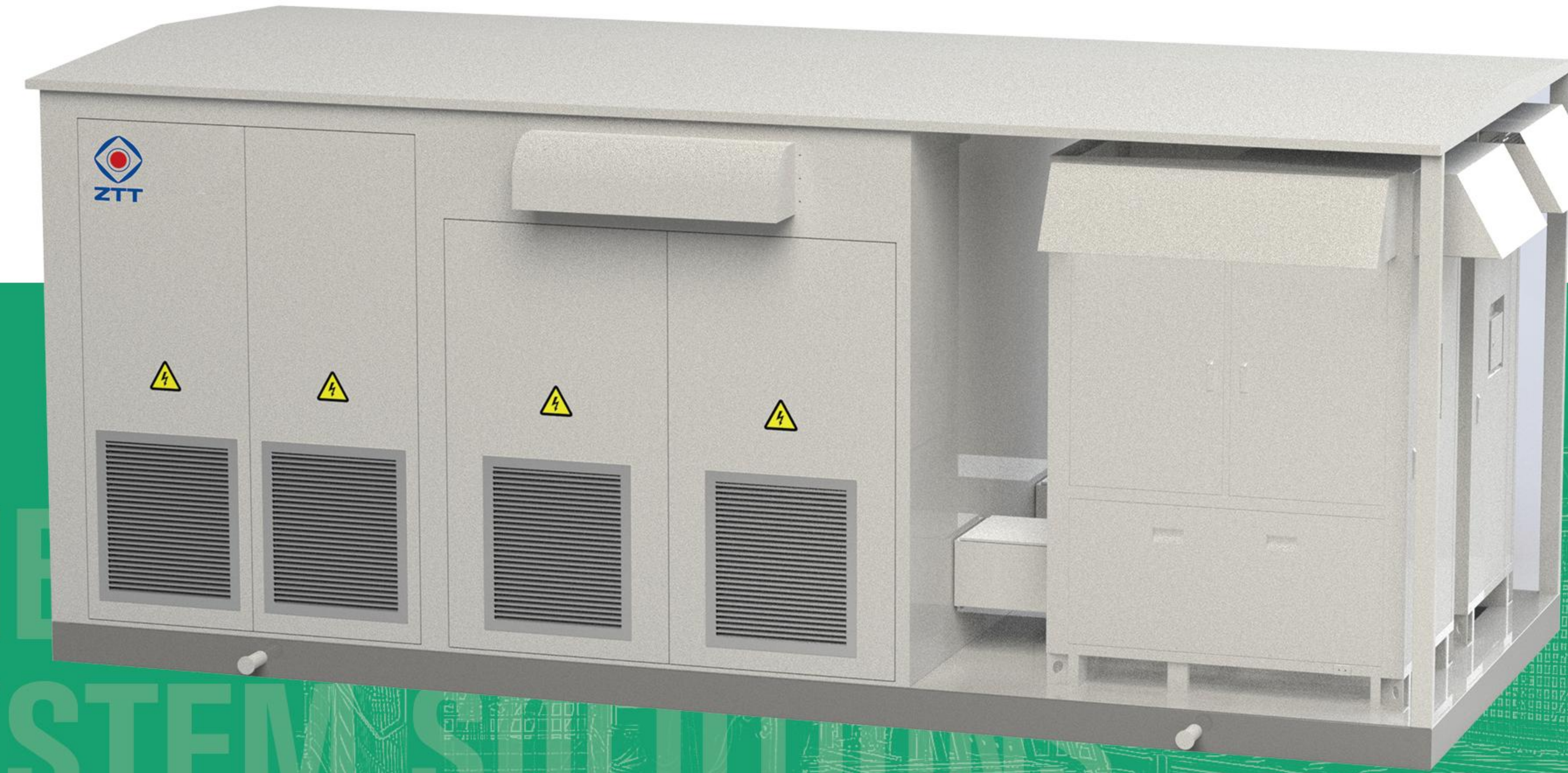
**Flexible configuration:** wide DC voltage operation range, multi-parallel connection, VSG, black start, suitable for various scenario BESS application such as power generation side/grid side/user side

**System stability:** 45°C full load, no power derating, high system stability

## Parameter

Type	Item	Parameter		
		PWRFORM-1250KE-OD	PWRFORM-1575KE-OD	PWRFORM-1725KE-OD
DC side	Max. DC busbar Voltage	1500Vdc		
	Max. DC current	1389A	1922A	1936A
	DC voltage range	1000-1500Vdc		
	DC voltage ripple coefficient	< 2%		
AC side	Rated power	1250kW	1575kW	1725kW
	Max. output power	1375kW	1733kW	1898kW
	AC connection mode	Three-phase three-wire		
	Isolation mode	No isolation transformer		
Grid operation parameter	Reactive power rage(KVar)	-100%-100%		
	Rated grid voltage	690V		
	Allowable grid voltage	(586-759)V		
	Rated frequency	50Hz/60Hz		
	Allowable frequency	± 10%		
	THD current	<3%(at rated output power)		
	Power factor	>0.99		
Off grid operation parameter	Exchange time of charge and discharge	<100ms		
	Rated output voltage	690V		
	Output voltage accuracy	1%		
	Voltage unbalance	<2%		
	THD voltage	<3%(linear load)		
	Rated output frequency	50Hz		
	Dynamic voltage transient range	<10%		
	Output over voltage protection	862V		
General parameter	Output under voltage protection	586V		
	Efficiency	99%		
	Allowable Env. Temperature range	-35-+60 °C(>45°C degrade operation)		
	Allowable relative humidity	0-100%		
	Noise	<80dB		
	Dimension (W*D*H)	1086*1770*2560 (Air inlet waterproof cover not included)		
	Weight	1750kg		
Display and communication	IP grade	IP54		
	Cooling method	Intelligent forced air cooling		
	Insulation resistance(M Ω)	>1M Ω		
	Dielectric Strength	2.5kV/1min no breakdown, no arcs		
	Communication port	RS485/CAN/Ethernet		
	DISPLAY	Touch Screen,WLAN+WEB HMI		
	Communication protocol	Modbus-RTU/Modbus-TCP/IEC61850/IEC104		

## Integrated PCS and booster transformer system



## Product Description

With the system integration design, the PWRFORM container enjoys advantages such as installation convenience, high efficiency, economic space occupation, easy for commission and maintenance etc, achieving lower kwh cost of BESS and increasing the economic benefits to the customers. The product quality is reliable, and charge and discharge can be managed independently. The intelligent air cooling design helps meeting with the full load operation at 45°C ambient temperature. With the IP54 protection design and C5 anti-corrosion protection level, it can meet the complicated operation condition in coastal area, ensuring the reliability of the BESS station operation, and helping the customers to increase revenue.

## Product Feature

- Pre-Fabricated:** easy for transportation and installation, saving cost
- Highly integrated:** integrated PCS, boost transformer, RMU and intelligent monitor and control unit
- More potential expansibility:** support multi-parallel connection, easy for flexible expansion
- IP 54 protection:** suitable for severe outdoor environment
- Excellent Grid Adaptability:** accept grid dispatch and proceed active/reactive power compensation

## Parameter

Type	Item	Parameter					
	Internal configuration	PWRFORM-1250KE*2		PWRFORM-1575KE*2		PWRFORM-1725KE*2	
	Product Series	PWRFORM-2500KE-HV-T		PWRFORM-3150KE-HV-T		PWRFORM-3450KE-HV-T	
DC side	Max. DC voltage			1500Vdc			
	DC voltage range			1000-1500Vdc			
	Max. DC current	1389A*2		1922A*2		1936A*2	
On grid parameter	Rated power	2500kW		3150kW		3450kW	
	Max. Output power	2750kW		3466kW		3796kW	
	Grid connection voltage			10kV/35kV(optional)			
	Rated frequency			50Hz/60Hz			
	THD current			<3% (at rated output power)			
Off grid parameter	Power factor			>0.99			
	Rated output voltage			10kV/35kV(optional)			
	Output voltage accuracy			1%			
	THD current			<3% (at rated output power)			
	Overload ability			110% overload			
General parameter	PCS Max. efficiency			99%			
	Isolated transformer			Oil type or dry type			
	IP grade			IP54			
	Allowable Env. Temperature range			-35~+60 °C(>45°C degrade operation)			
	Allowable relative humidity			0-100%			
	Cooling method			Intelligent forced air cooling			
	Communication			Modbus-RTU/Modbus-TCP/IEC61850/IEC104			

## SUCCESSFUL CASES



80MW200MWh BESS in Mongolia



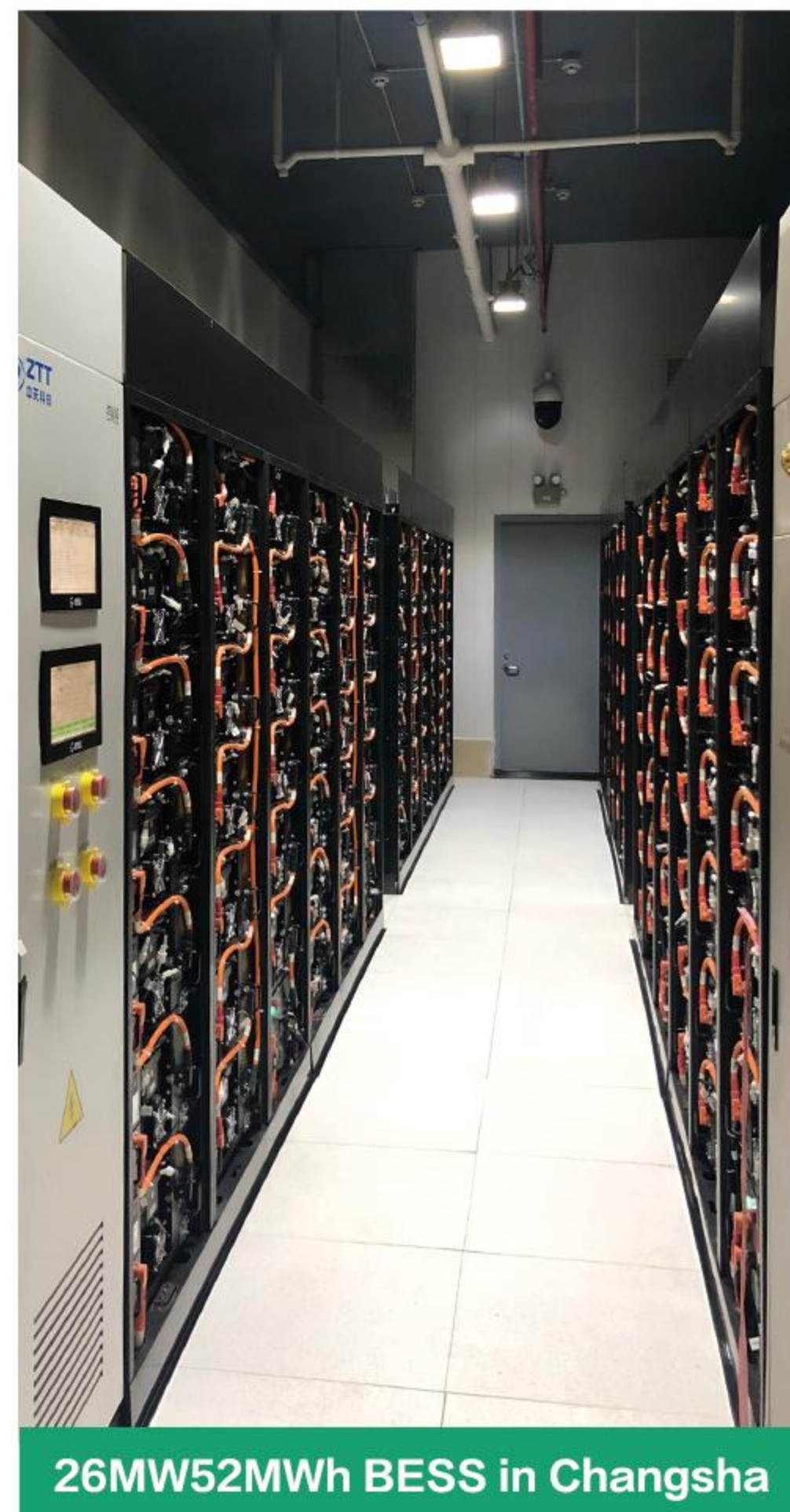
3MW26MWh Recycling Project



50MW/100MWh BESS in Xinjiang



5MW/10MWh BESS in Dabancheng District, Urumqi



26MW52MWh BESS in Changsha



30MW60MWh BESS in Kunshan



33MW66MWh BESS in Zhenjiang



30MW/60MWh BESS in Tuha Oilfield



80MW160MWh BESS in Tianmen



5MW10MWh GCL Energy BESS



China Huaneng 17MW/34MWh BESS



2MW5MWh ZTT BESS



50MW/100MWh BESS in Ningxia



Chongyang 50MW100MWh BESS



Dama 10MW20MWh BESS



Longshan 10MW20MWh BESS



30MW60MWh BESS in Chifeng



200MW400MWh Shared BESS in Nantong



20MW/40MWh BESS in Chengbu