

ZOE ENERGY STORAGE

Dedicated to Being a Global Force in Transforming Energy Structures



ZOE

Carlos and and

ZOE Energy Storage EN 24-06



ZOE signifies "life" in Greek

Every life form in the universe represents a form of energy storage. The birth of life, and indeed miracles, emerge when energy comes into order. We witness each collision between life and the universe; faint yet overwhelmingly impactful, it symbolizes a coupling state of one form of energy with another.

ENERGY FOR LIFE

ZΟΞ

Vision

Dedicated to Being a Global Force in Transforming Energy Structures

Mission

Bridging Grids and Scenarios for Organized Electricity Use and Balanced Loads

Values

Innovation, Integrity, Service, Collaboration



About ZOE

ZOE Energy Storage, a pioneer in integrating investment, operation of energy storage stations, and the R&D, manufacturing, and sales of energy storage systems, has its global headquarters in Shanghai. With its R&D center in Jiangsu and joint laboratories established with top universities and international institutions, ZOE advances the development and application of energy storage technology. The company operates 14GWh intelligent energy storage factories in Jiangxi and Sichuan and has established the ZOE Digital Center in Shanghai. Leveraging outstanding R&D capabilities and innovative approaches, ZOE delivers both standardized and tailored energy storage solutions, bridging grids and scenarios for organized electricity use and balanced loads.

As a subsidiary of the ZOE Energy Group, ZOE Energy Storage contributes to the group's overarching mission. Founded in 2013, ZOE Energy Group is a high-tech enterprise dedicated to the development, investment, and management of new energy projects. Targeting carbon neutrality, the Group has developed 23 utility-scale solar projects with a combined capacity of 3.53GW and is progressing with wind, photovoltaic projects of 1.23GW. With a cumulative investment exceeding \$4.4 billion, the Group has realized an annual compound growth rate of 183%, underscoring its commitment to sustainable energy development.

23 Utility-scale solar projects





-23gw

Total capacity of wind and solar projects in process



Annual compound growth rate



ENERGY STORAGE SYSTEM R&D, Manufacturing, Sales

Service Area

WI IA WUI

Technical Support O&M Analysis, After-Sales Service

Dedicated to Being a Global Force in Transforming Energy Structures

Core Business

ENERGY STORAGE PLANTS Investment and operation

Our Service

Europe, China, Online Services

R&D Innovation

Establish joint laboratories with universities and research institutions to advance the development and application of energy storage technology



14GWh Intelligent Energy Storage Factory



Digital Energy

· Developing "Z DIGITAL", a digital energy ecosystem for commercial and industrial energy storage · Achieving resource optimization, energy management&trading, and carbon reduction

Milestone

Inception >

2013

ZOE Energy Group established.

Established operational photovoltaic module factory, with annual capacity of 500MW.

2014

Expansion >

2015

Initiated global strategy, invested in overseas markets.

2016

Launched the "ZOE Future Home" sub-brand, pioneering into the distributed photovoltaic market with over 2000 residential photovoltaic projects. Honored with the Gold Award in the Chinese residential photovoltaic market.

2017

Ranked top five in Chinese photovoltaic module shipments to Australia.

2018

Venturing into new energy vehicle industry, invested in aftermarket service platforms.

2019

Thriving >

2020

Secured a 200MW photovoltaic bidding project, the largest single project in the China Southern Power Grid and Guizhou Province.

Focused on domestic market, secured a 350MW national photovoltaic bidding project, ranked first among private enterprises in Guizhou Province.

2021

Secured new energy projects with a total installed capacity of 1.92GW, including 7 photovoltaic and 2 wind power projects, leading nationally.

New Chapter >

2022

· Shanghai ZOE Energy Storage Technology Co., Ltd. established

· Established the R&D center, successfully developed liquid cooling battery energy storage system

· Established the ZOE Digital Energy Center · Planned Jiangxi energy storage factory

2023

- · Intensified efforts in expanding global market
- \cdot Launched Z BOX liquid cooling battery energy storage system, obtained CGC and CE certification · Launched a 2GWh energy storage factory in Jiangxi and planned 12GWh factories in Sichuan and other areas

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ZOESOLAR Renewable Energy Power Station

Annual power generation capacity

(approx. 3.5 million homes Houses powered annually

Annual revenue from operational power stations

approx. 3.5 million tons Annual carbon reduction



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Project Cases

China Southern Power Grid's Largest Single Photovoltaic Power Station

Gangwu 200MW Photovoltaic Project



Project Cases



Project Cases

Photovoltaic Power Station for Ecological Restoration of Rocky Desertification



Jiangxiping 150MW Photovoltaic Project



Photovoltaic and Energy Storage Power Station for Frequency Regulation



Distributed Photovoltaic Projects



Photovoltaic Poverty Alleviation Projects



lenghai County Photovoltaic Poverty Alleviation Project

ation: 795.000

Longjiang Village Photovoltaic Poverty Alleviation Project

Project total capacity: 500 kW Expected annual total power generation: 3.975 m



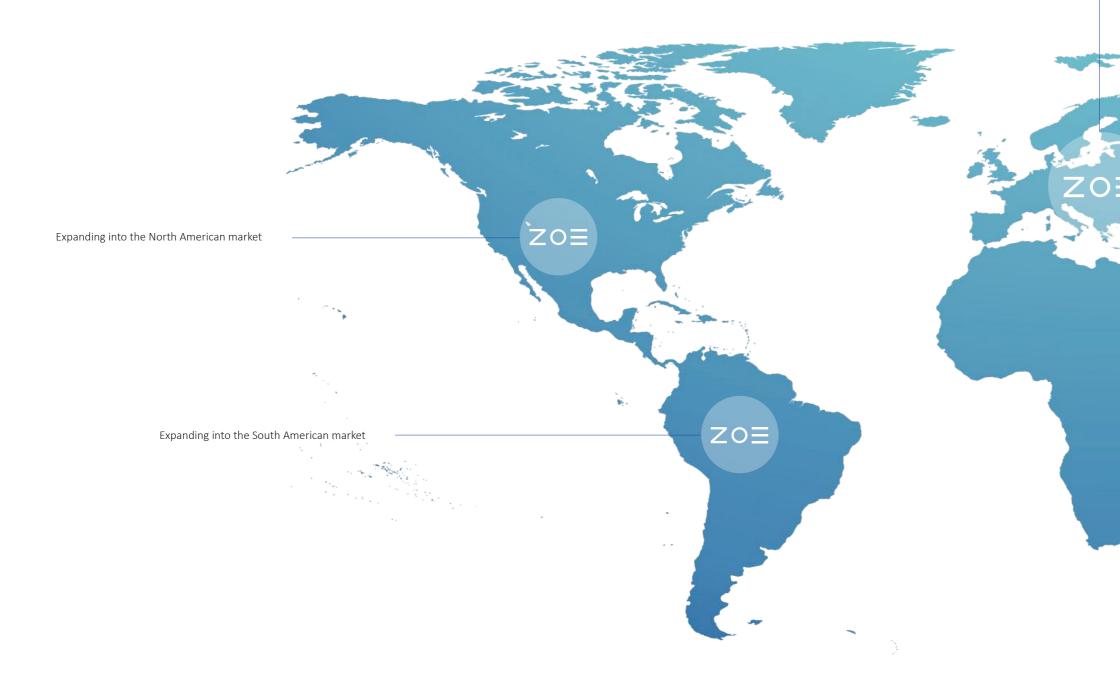
Energy Storage System

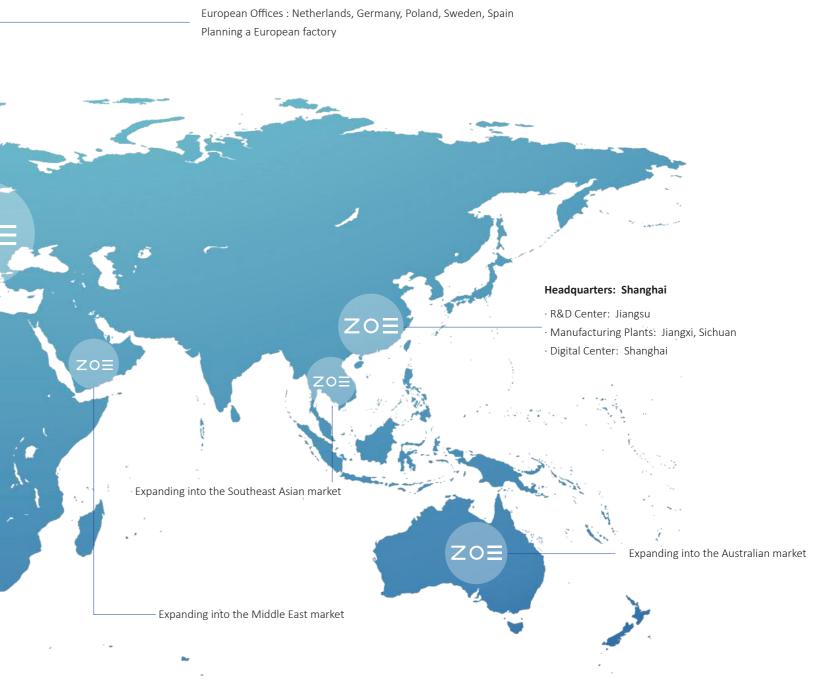
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Industrial Landscape





Manufacturing

14GWh Intelligent Energy Storage Factory









The company operates advanced energy storage factories with a total capacity of 14GWh in Jiangxi and Sichuan, China. These facilities include automated Pack, PCS, and system integration lines. Equipped with cutting-edge technology and comprehensive testing capabilities, these factories employ a MES system to collect production, material, process, quality, and other relevant information. This enhances automation, intelligence, and flexibility in production, ensuring the highest standards of safety and quality in our products.

R&D Innovation









by TÜV NORD



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CORE PATENTS

TMP Witness Laboratory qualification by TÜV Rheinland of Germany

Witness Laboratory qualification



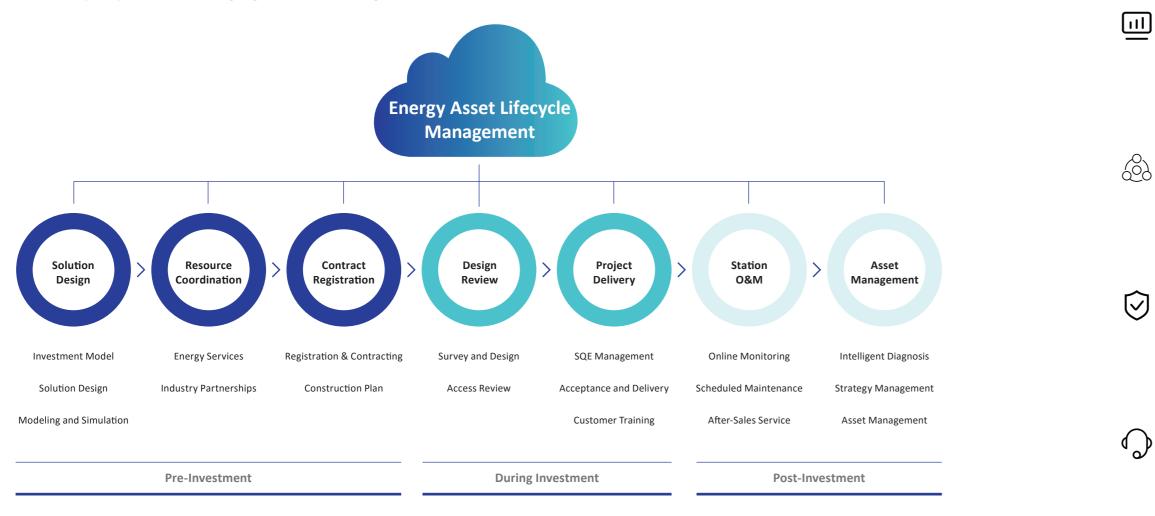






Investment

ZOE Energy Storage establishes a comprehensive lifecycle management system for distributed energy assets, deeply understanding and meeting customer needs with a full spectrum of services from pre to post-investment through digital and smart technologies.



Operation and maintenance

Seamless Platform Integration

Unified data management

Compatibility with all communication protocols, EMS, and EMU

Integrated engineering, operation, and billing management

Multi-Level Operational Strategy

On-site within 2 hours

Immediate dispatch from three factories

Regional coordination with 7/24-hour resource and personnel deployment

Holistic Safety Monitoring System

Visible: On-site safety conditions are visible and audible Traceable: Real-time equipment parameter monitoring and automatic diagnostics Clear: Full lifecycle data storage and report generation

Robust Technical Support System

IT support

Inspection and evaluation

Maintenance

Relay protection and high-voltage testing



ZOE Energy Storage Global Product Series



Our products are internationally certified, ensuring compliance with global safety, quality, and performance standards

CE certified, adhering to Europe's LVD and EMC standards for electrical safety and electromagnetic interference
Certified for EU grid connection under EN 50549-1, recognized in Sweden, Poland, Spain, and Italy for seamless local grid integration
Achieving certifications like CGC and CQC, meeting rigorous quality control and product consistency standards throughout production



ZOE



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Z BOX-H 372kwh

Battery Energy Storage System (Liquid Cooling)

Safe & Reliable

Cost-efficient

Smart Management

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· Cabinets physically separated for safety

· SMS System for layered security

· High-quality, efficient lithium batteries

· Full lifecycle management

· Rapid power response for virtual power plants, grid connection, and off-grid operation

· Intelligent balancing strategies maintain battery consistency

· Dynamic energy regulation strategy switching

Flexible Deployment

· Modular design for easy expansion

· Enables centralized deployment, decentralized deployment, and integration with solar storage charging

· Cloud-edge-end collaboration for 24/7 monitoring, ensuring safe and stable equipment operation

· Cloud-based big data and intelligent algorithms for flexible system strategy adjustment

Model	C372L-D-EU
General data	
DOD	95%
Protection degree	IP55 (Battery room)
Cooling concept	Liquid cooling
Heating concept	Liquid heating
Fire suppression system	Aerosol
Operating temperature range	-20~55 ℃
Relative humidity	5%~95% RH
Max.working altitude	2000 m
Display	APP/ Web/ LED
COM interfaces	RS485/ Ethernet
Dimensions (W*D*H)	1370*1330*2270 mm
Weight	3550±50 kg
Battery data	
Cell type	LFP
Rated capacity	280 Ah
Serial-parallel type	1P416S
Rated capacity per pack	46.592 kWh
Pack number	8
System rated energy capacity	372.736 kWh
DC rated voltage	1331.2 V
DC voltage range	1164.8~1497.6 V
Rated DC current	140 A
Max. DC current	160 A

Safe & Reliable

Cost-efficient

Flexible Deployment

Smart Management



Battery Energy Storage System (Liquid Cooling)

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· Cabinets physically separated for safety \cdot SMS System for layered security · High-quality, efficient lithium batteries · Full lifecycle management

· Rapid power response for virtual power plants, grid connection, and off-grid operation

· Intelligent balancing strategies maintain battery consistency

· Dynamic energy regulation strategy switching

· Modular design for easy expansion

· Enables centralized deployment, decentralized deployment, and integration with solar storage charging

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· Cloud-based big data and intelligent algorithms for flexible system strategy adjustment

Model	C215-A-EU
General data	
DOD	95%
Protection degree	IP55 (Battery room & PCS room)
Cooling/Heating concept	Liquid cooling/ Liquid heating
Fire suppression system	Aerosol
Operating temperature range	-20~55 °C
Relative humidity	5%~95% RH
Max.working altitude	2000 m
Display	APP/ Web/ LED
COM interfaces	RS485/ Ethernet/ 4G (optional)
Dimensions(W*D*H)	1399*1344*2080 mm
Weight	2450±50 kg
Battery data	
Cell type	LFP
Rated capacity	280 Ah
Serial-parallel type	1P240S
Rated capacity per pack	43.008 kWh
Pack number	5
System rated energy capacity	215.04 kWh
DC rated voltage	768 V
DC voltage range	672~864 V
Rated DC current	140 A
Max. DC current	160 A
AC data	
Rated AC power	105 kW
Rated grid voltage	400 Vac
Rated grid frequency	50/60 Hz
Max. AC current	167 A
AC wiring type	3W/N+PE
Power factor	-1~+1

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Battery Energy Storage System (Air Cooling)

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LOW COSTS

Plug and play design

· Highly integrated for easier transport and installation

FLEXIBLE

6 models in single cabinet
 <u>Modular</u> design for easy system expansion

SAFE & RELIABLE

Integrates AI pre-alarm
 Ultra safe design with complete FFS

EFFICIENT

Intelligent fan cooling ensures longer lifespan System efficiency ≥89%

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Model
Battery
Cell type
Battery cel
System con
Rated DC v
DC voltage
Battery cap

Max. charge PCS

Rated powe PCS configur Rated AC vo AC voltage r

AC frequent Rated AC cu Power facto

THDi Charge/ dise

Protection Overvoltage

Overcurrent

Short-circui

General Da

Ambient ter Relative hur Noise level

Dimensions Weight (t)

IP degree

Cooling met

Altitude (m)

Communica Display

Standard an

	I01-90KN-94	I01-100KN-104	I01-110KN-114	I01-120KN-125	I01-120KN-135	I01-150KN-156	
		LFP					
ell capacity (Ah)		1	10		1		
onfiguration	9*(2P16S)	10*(2P16S)	11*(2P16S)	12*(2P16S)	13*(2P16S)	15*(2P16S)	
voltage (V)	460	512	563	614	665	768	
e range (V)	403~518	448~576	492~633	537~691	582~748	672~864	
pacity (BOL) (kWh)	94	104	114	125	135	156	
ge/discharge rate			1	С			
wer (kW)	90	100	110	120	120	150	
guration	2*60kW (PCS+DC/DC)	2*60kW (PCS+DC/DC)	2*60kW (PCS+DC/DC)	2*60kW (PCS+DC/DC)	2*60kW (PCS+DC/DC)	3*50kW (PCS)	
voltage (V)			400, 3	/N/PE			
e range			-20% ~	+15%			
ncy (HZ)			50,	/60			
current (A)	129	144	158	173	173	216	
tor	0.8cap~0.8ind						
		≤3% (Full load)					
ischarge switch time (ms)	< 100						
n							
ge protection		YES					
nt protection		YES					
uit protection			Y	ES			
perature protection	YES						
ata							
emperature range (°C)			-30	~ 60			
umidity			0-95% (Non-	condensing)	· · · · · · · · · · · · · · · · · · ·		
el (dB)			Ś	75			
ns (W*D*H mm)			1500*15	00*2200			
			≈2	4			
			IP	54			
ethod			Intelligent	fan cooling			
ng system			Novec 123				
m)			≤20	000			
cation interfaces				+ LAN			
			Touch				
and Certification	IEC 62619, IEC 61000, IEC 62477, EN 50549, UN38.3						

Z BOX-P



System Model	A2H3441L-B	A1H3441L-B				
System Information						
Max. Power	1725kW	3440kW				
Nameplate Capacity	3440.64kWh	3440.64kWh				
Compatible Inverters	PE: FP2865k SMA: SCS2630UP-XT	PE: FP3820k2 SMA: SCS3450UP				
Battery Information						
Battery Chemistry	LFP					
Capacity	280Ah					
Configuration	384S10P					
Nominal Voltage	1228.8V					
Voltage Range	1075.2~1382.4	ŧV				
Working Conditions						
Degree of Protection	NEMA 3R/IP54					
Noise Emission	<80dB @1M					
Operating Temperature Range	-30°C ~50°C					
Relative Humidity	0~95% (No condensing)					
Max. Working Altitude	9,800ft/ 3,000	m				
General Information						
Dimensions(WxHxD)	6,058x2,438x2,896mm					
Weight	36,000kg					
Cooling Method	Liquid Cooling					
Fire Suppression System	Drypipe, Ventilation, Aerosol (Optional)					
Aux. Power Supply	400VAC/3P4L,50Hz					
Max.Current of Aux. Power Supply	72A 90A					
Communication Protocol	Modbus TCP/IP					
Certificate	IEC62619,UL1973,UL9540A,UN3536					

Product M Battery Dat

Cell type Rated capac

Serial-parall Rated capac

Pack numbe

System rated Rated DC vo

DC voltage

Rated DC cu Max. DC cur

AC Data Rated AC po

Rated grid v Rated grid fr Max. AC cur AC wiring ty

THDi Power factor

General Data

DOD

Degree of pr Cooling/He ____ Fire suppres

Operating t

Relative hum Max. workin

Display

COM interfa

Dimensions

Weight

Features

🔊 Low Capex

😤 Low Field Labor Cost

🕼 Minimized Site Installation

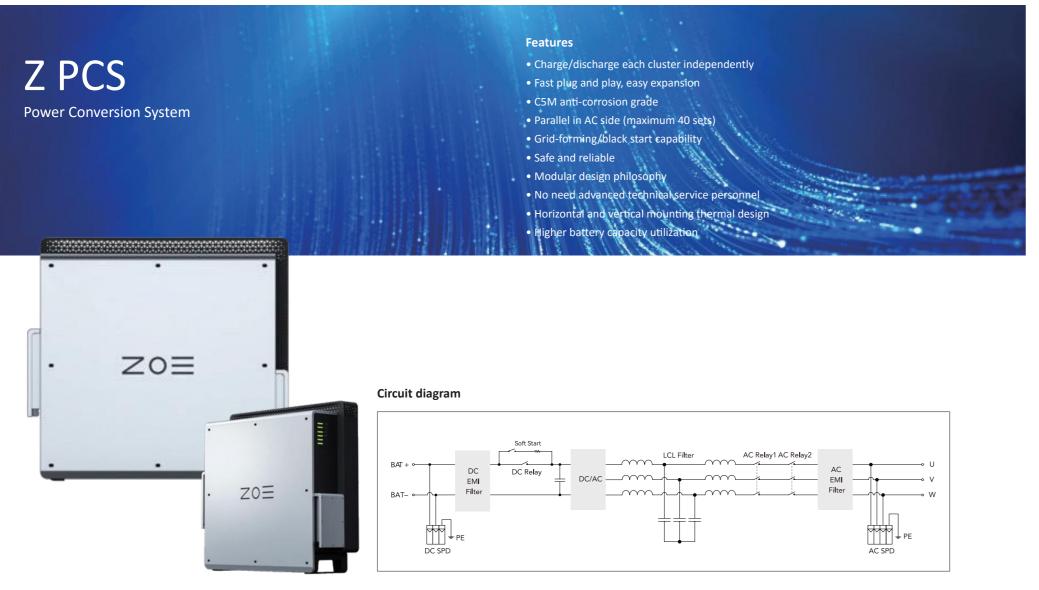
④ Flexible Deployment According to The Site Layout

ALL-IN-ONE Li-ion Battery Storage System

odel	S1313L-A-EU			
ita				
	LFP			
city	285Ah			
llel type	6P240S			
icity per pack	43.776kWh			
er	6*5			
ed energy capacity	1313.28kWh			
oltage	768V			
range	672~864V			
urrent	1710A			
ırrent	1950A			
ower	1260kW			
voltage	400Vac			
frequency	50/60Hz			
irrent	2004A			
ype	3W/N+PE			
	<3% (Rated AC power)			
or	-1~+1			
ata				
	90% DOD			
protection	IP54			
eating concept	liquid cooling/liquid heating			
ession system	NOVEC 1230			
temperature range	-20~55°C			
imidity	5~95%RH			
ing altitude	2000m			
	Web/LED/LCD			
faces	RS485/Ethernet			
s(W*D*H)	6058*2438*2591mm			
	20T			

Z BOX-P 1.26MW / 1.313MWh





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ZOE-ECS200-HB-A 200kW

Input -DC	
Max. DC voltage	1500 Vdc
Startup voltage	1000 Vdc
Max. input current	224.5 A
Full-load voltage range	1000~1500 Vdc

Output -AC (on-grid)	
AC output power	220kVA@35 °C , 200kVA@45 °C
Rated output voltage	690Vac, 3W+PE
AC voltage range	607~759 Vac (Adjustable)
Rated frequency	50/60 Hz
Rated (Max.) output current	167.4 A (184.1 A)
Power factor	-1~+1
THDi	<1.5% (100% load)

Output -AC (off-grid)	
Rated output voltage	690Vac, 3W+PE
AC voltage range	607~759 Vac (Adjustable)
Rated frequency	50/60 Hz
AC voltage distortion	<1.5% (100% linear load)
DC voltage component	<0.5% Un (Linear balance load)
Unbalanced load capacity	100%

General data	
Max. efficiency	99%
European efficiency	98.5%
Isolation mode	Transformerless
Protection degree	IP66
Operating temperature range	-40~+60 °C (>45 °C derating)
Relative humidity	0-100%, non-condensing
Cooling	Smart air cooling
Max.working altitude	4000m (>3000m derating)
Communication interfaces	RS485/CAN/Ethernet
Dimensions (W × D × H)	810*275*845mm
Weight	98kg
	GB/T 34120-2017
	GB/T 34133-2017
	IEC 62477-1
Certification	IEC 61000-6-2
	IEC 61000-6-4
	EN 50549-1
	EN 50549-2

Application Scenario

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Commercial & Industrial Energy Storage Solutions

production lines.

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Generation/Grid Side Energy Storage Solutions

In the global shift towards sustainable energy, generation/grid side storage solutions are crucial. By digitally managing energy generation, storage, and distribution, we enhance power system stability, reliability, and efficiency. Our focus is on promoting clean energy on a large scale, meeting the demands for environmental sustainability.

• Scenarios: Renewable energy, large thermal power stations, hydropower stations, shared energy storage stations • Demands: Peak shaving, frequency regulation and smoothing renewable energy fluctuations

Offering tailored energy storage solutions for commercial and industrial demands, our modular design flexibly fits diverse settings, enhancing investment return. Focused on peak and valley power management, these solutions facilitate peak shifting and load leveling, reducing grid stress and electricity costs. Ideal for sectors needing reliable power, like data centers, medical facilities, and

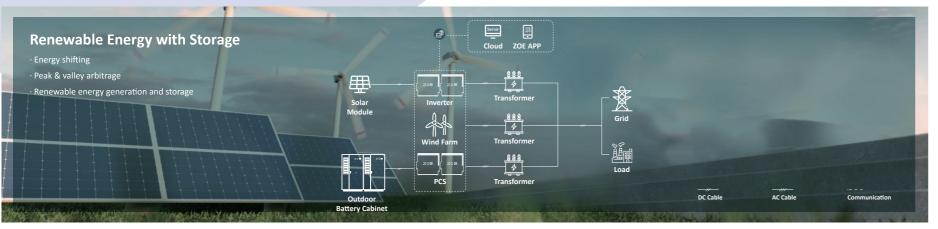
• Scenarios: Full electrification, industrial parks, ports, office buildings, data centers, PV-storage-charging, etc

• Demands: Power rationing, high peak rates, demand charges, capacity shortages, costly transformer upgrades, spatial constraints, ESG compliance

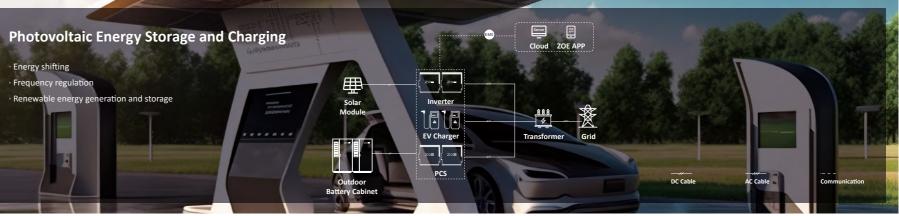
Solution

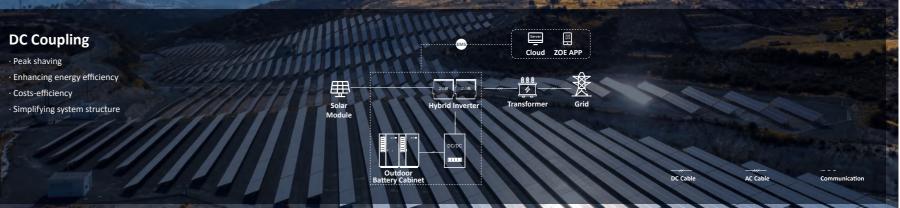
- · On/Off Grid (C&I, Utility)
- · Renewable Energy with Storage
- · Photovoltaic Energy Storage and Charging
- · DC Coupling
- \cdot Micro-grid











Generation/Grid Side Renewable Energy with Storage





27MW/27MWh

Xishan Energy Storage Power Station Project



Scenario Requirements	PV + Storage	Configuration		
Project Date	2023	Product	Z BOX-H	PCS
System Capacity	27MW/27MWh	Specification	1C	3150kW
Application	Peak shaving, Frequency regulation	Quantity	72	9

Commercial and Inclustrial Renewable Energy with Stora

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Scenario R Project Dat System Cap Application

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11MW/22MWh

Hongfeng Solar and Storage Project



Requirements	24/7 uninterrupted high-energy usage	Configuration		
Date	2023	Product	Z BOX-H	PCS
Capacity	11MW/22MWh	Specification	0.5C	200kW
ion	Peak shaving, Back-up power	Quantity	60	60

Renewable Energy with Storage in High-Altitude Areas



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O The Tibetan Plateau, China

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Scenario R

Applicatio

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Highland Energy Storage Project

Requirements	Renewable energy storage in low-temperature environments at high altitudes	Configuration		
		Product	Z BOX-H/C	PCS
ion	Maximizing renewable energy use, preventing wind and solar waste	Specification	0.5C	200kW/100kW

Commercial and Industrial Energy Storage



































Scenario Requirements	Energy saving, Demand reduction
Project Date	2023
Application	Peak & valley arbitrage, Demand management



Focusing on commercial and industrial energy storage needs, ZOE Energy Storage has developed Z-DIGITAL, a digital energy ecosystem that utilizes digital and smart technologies to aggregate diverse energy sources effectively, thus achieving resource optimization, energy management and trading, as well as carbon reduction.

· Adopts a distributed, pluggable modular design, supporting big data management, algorithmic modeling & deployment, and energy management & scheduling across multiple energy forms

· Releases scenario-based applications to facilitate diverse business system integrations, enabling multi-energy and multiscenario system configurations

· Offers an "AI+Energy" solution that integrates smart predictive algorithms and strategic functionalities to aggregate diverse energy scenarios

· Integrates and utilizes multi-source heterogeneous data through IoT, Big Data, and AI technologies, offering data value extraction services for various energy scenarios

· Facilitates large-scale, diverse edge IoT device access, offering standardized connection services and data lifecycle management to create a synergized cloud-edge energy IoT service









Virtual Power Plant

- Energy Monitoring
- Resource Aggregation
- Resource Allocation
- Command Decomposition
- Transaction Declaration
- Transaction Settlement



OZ-Zone Zero Carbon Zone System

- Power Energy Monitoring
- Electrical Safety Alerts
- Power Quality Management
- Energy Consumption Analysis
- Smart Operations and Maintenance
- Carbon Management and Services





- O Z-AMS Asset Management System
 - Asset Approval
 - Asset Measurement
 - Asset Evaluation
 - Asset Safety



- Module-Level
- Cluster-Level
- Station-Level

BUSINESS COOPERATION

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ENERGY FOR LIFE