RITAR®

RITAR®

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202511修订

RITAR® Ritar International Group

Solid State OPzV Battery

Specialized for Energy Storage

Specialized for Energy Storage

The solutions of Intelligent and safe energy storage system

Specialized for Energy Storage Solid Lead Battery Group Standard (t/ciaps 0032-2024)

General Rules for Design of Industrial Upstairs Building

Safety Report
Combustion Experiment Report

Tyrell Certification

Seismic performance of telecommunication equipment Certificate of Conformity

CNAS for Conformity Assessment Laboratory Accreditation Certificate

USA UL certification

European Union CE certification

National Green Factory

High-tech Enterprise Certification

Ministry of Industrialisation and Information Technology "little giant" firm

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RITAR POWER,
YOUR RELIABLE POWER

LEADER IN ENERGY STORAGE INDUSTRY

Introduction of RITAR International Group

Ritar International Group, established in 2002, now employs a global workforce of over 6,500 individuals. At the heart of the new energy sector, Ritar is committed to delivering inherently safe energy storage solutions across the globe.

The company maintains eight significant production bases across China and Vietnam, alongside 11 international storage and logistics centers, with sales presence in many countries. Our facilities ensures that our products are swiftly available to meet the demands of the global market.

Ritar also boasts a national-level CNAS laboratory and holds more than 200 national invention patents. Our extensive range includes over 1,000 product types such as Solid State OPzV batteries, IDC-specific lead-acid batteries, UPS batteries, and lithium batteries. With ongoing innovation in research, development, production, sales, and service, Ritar has crafted a robust ecosystem within the new energy industry. Our products find extensive applications in sectors like grid and power supply sides, industrial and commercial energy storage, residential energy storage, rail transit, telecommunications base stations, and data centers.

Looking forward, Ritar International Group remains steadfast in its commitment to innovation in the safe energy storage domain, continuously driving forward the development of the new energy sector and enhancing the quality of products and services offered to our global clientele.

RITAR INTERNATIONAL GROUP STRUCTURE

Ritar Power (Vietnam) Co., Ltd.

Hengyang Ritar Power Co., Ltd.

Hengyang Rich Power Co., Ltd.

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RITAR INTERNATIONAL GROUP

Ritar International Group Limited

Shenzhen RBD Technology Co., Ltd.

Shenzhen Global Power Technology Co., Ltd.

Shenzhen Rich Storage Co., Ltd.

New energy industry

Hengyang Ritar Power Co., Ltd. | Hengyang Rich Power Co., Ltd.
Ritar Power (Vietnam) Co., Ltd. | Hengyang Global Power Technology Co., Ltd.

Industrial segments for energy storage systems

ShenZhen Global Power Technology Co., Ltd. | Shenzhen Rich Storage Co., Ltd. | Shenzhen RBD Technology Co., Ltd.

MILESTONES OF RITAR

2002 — RITAR International Group was Established; Officially entered the leadacid battery industry.

2003 — Shanghai RITAR Power EV Battery Ltd. was established.

2005 — RITAR has breakthrough Solid State OPzV Battery in researches successfully, there are only two Solid State OPzV Battery production companies in the world, one is a company from German and RITAR is the only one in China.

2006 — Solid State OPzV Battery Used by NASA, the National Aeronautics and Space Administration.

2007 — RITAR was Listed on NASDAQ as first listed battery production company from China; and invested in Hengyang RITAR, to built largest battery factory in Asia.

2008 — World's Largest GPS Positioning System using RITAR batteries.

2009 — Became the first one in China for the famous American Battery manufacturers in the United States to develop custom IDC Batteries.

2010

RIATR Successfully Constructed Shanghai World ExpoBrazilian Pavilion 8MWh energy storage power plant. It is China's first large-scale megawatt-class energy storage power station, covering an area of 18 square metres.

Successfully operated for 210 days; Solid State OPzV Batteries have been started to be applied to energy storage systems in Indonesia and other overseas.

2013

Acquisition of state-owned storage battery factory (founded in 1958) in Hengyang,mainly produced explosion-proof Coal machine and forklift batteries, possesed of 70% domestic market.

2018

Established Ritar Power (Vietnam) Company Limited.

Became the largest storage battery factory in Vietnam.

2020

RITAR Sustainable Battery Supporting Industrial Park and Rich Power Lithium Battery PACK Line Project Grand Opening.

2021

Solid State OPzV Battery Battery Selected by Hunan Provincial Government Green Energy Procurement Catalogue and were used in a large number of energy storage systems in China.

2022

Hengyang RITAR Solid State OPzV Battery energy storage system power station was successfully connected to the grid and put into operation.

The specification is 500kW/216MWh; Comprehensive Layout of National Customer Side and Power Side Energy Storage.

2023

Hengyang Rich Power Co., Ltd.Lithium battery development andmanufacturing base grand opening.

Annual Solid State OPzV Battery project exceeds 5GWh

2024

Passed the safety validation of 'Study on Combustion and Explosion Hazardous Characteristics of Solid State Lead Battery' by Tianjin Fire Research Institute;Participated in editing the Group Standard for Solid State Lead Battery for Energy Storage;Meet the stringent requirements for batteries in the General Rules for the Design of Buildings on Industrial Buildings;Meet the requirements for safe energy storage of batteries in the Standard Atlas for the Design and Installation of Optical Storage and Direct Flexibility Systems for Buildings.

INTELLIGENT & SAFE ENERGY STORAGE SYSTEM SOLUTIONS

Introduction of Solid State OPzV Battery

Ultimate Security

Sustainable development

ECO friendly

Highly economical

Tubular Positive Electrode Plate

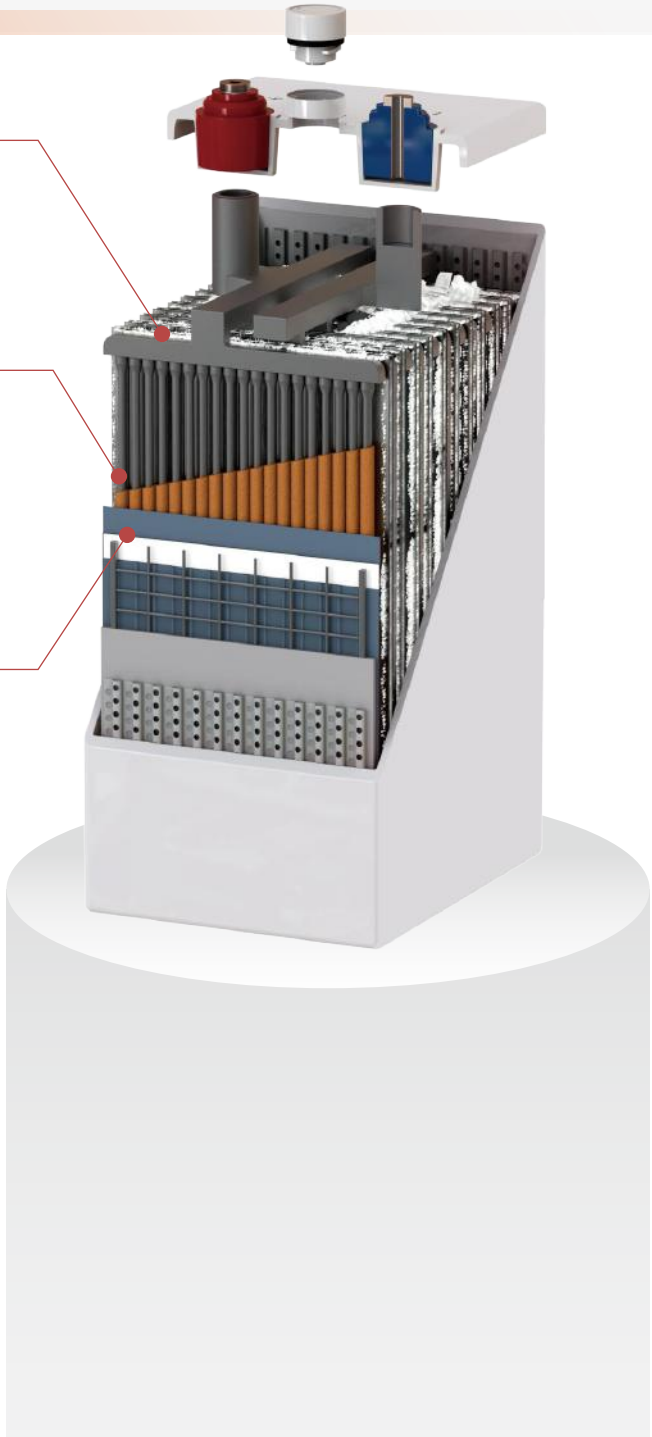
- Die-cast into tubular pole plates by using 10 MPa pressure.
  Dense surface, high corrosion resistance and substantially longer life.

Silica Nanofibre Solid Electrolytes

- Adopt nano-level fumed silica solid electrolyte, stable capacity, low decay rate; Solid State OPzV Battery does not catch fire or explosion, no liquid, no leakage, harmless to human body.
  Dense surface, strong corrosion resistance, and greatly extended life span. Corrosion resistance, and the life span is greatly extended.

Imported Separators with Nano SiO2 PVC

- Imported PVC nano-SiO_2 coated composite separator with large pore rate and low resistance.
  Non-combustibility, low smoke rate, bright fire combustion process to form a high-carbon bubble structure, becoming an excellent thermal insulator, thus preventing the internal combustion.
  In addition, it has larger electrolyte storage space and affinity, excellent reaction performance in the oxygen cycling process with excellent cycle life.
  Patented wattle structure, no electrolyte shedding at the end of use.



Solid State OPzV Battery Model Specifications

Battery Type	Rated Voltage (v)	Rated Capacity (v)	Battery Size				Terminal Options
		C10/1.80VPC	L/mm	W/mm	H/mm	OAH/mm	
OPzV12-60	12	60	260	169	211	216	F11(M6)
OPzV12-80	12	80	328	172	215	220	F12(M8)
OPzV12-100	12	100	407	177	225	225	F12(M8)
OPzV12-120	12	120	483	170	241	242	F12(M8)
OPzV12-140	12	140	532	207	214	219	F12(M8)
OPzV12-160	12	160	532	207	214	219	F12(M8)
OPzV12-180	12	180	522	240	219	224	F10(M8)
OPzV12-200	12	200	521	268	220	225	F14(M8)
OPzV2-200	2	200	103	206	355	390	F10(M8)
OPzV2-250	2	250	124	206	355	390	F10(M8)
OPzV2-300	2	300	145	206	355	390	F10(M8)
OPzV2-350	2	350	206	206	470	505	F10(M8)
OPzV2-420	2	420	145	206	470	505	F10(M8)
OPzV2-500	2	490	166	206	470	505	F10(M8)
OPzV2-770	2	770	210	254	470	505	F10(M8)
OPzV2-600	2	600	145	206	645	680	F10(M8)
OPzV2-800	2	800	191	210	645	680	F10(M8)
OPzV2-1000	2	1000	233	210	645	680	F10(M8)
OPzV2-1200	2	1200	276	210	645	680	F10(M8)
OPzV2-1500	2	1500	275	210	795	830	F10(M8)
OPzV2-2000	2	2000	399	214	770	805	F10(M8)
OPzV2-2500	2	2500	487	212	770	805	F10(M8)
OPzV2-3000	2	3000	576	212	770	805	F10(M8)

SOLID-STATE LEAD BATTERY ENERGY STORAGE SYSTEM

RITAR International Solid State OPzV Batteries
15kWh Energy Storage Cabinet

- Small footprint and high degree of integration.
- 4 charging modes available: solar only, utility priority, solar priority, hybrid charging.
- Advanced MPPT technology with tracking efficiency up to 99.9%.
- Reduced cost of no-loading loss.

RITAR International Solid State OPzV Batteries
40kWh Energy Storage Cabinet

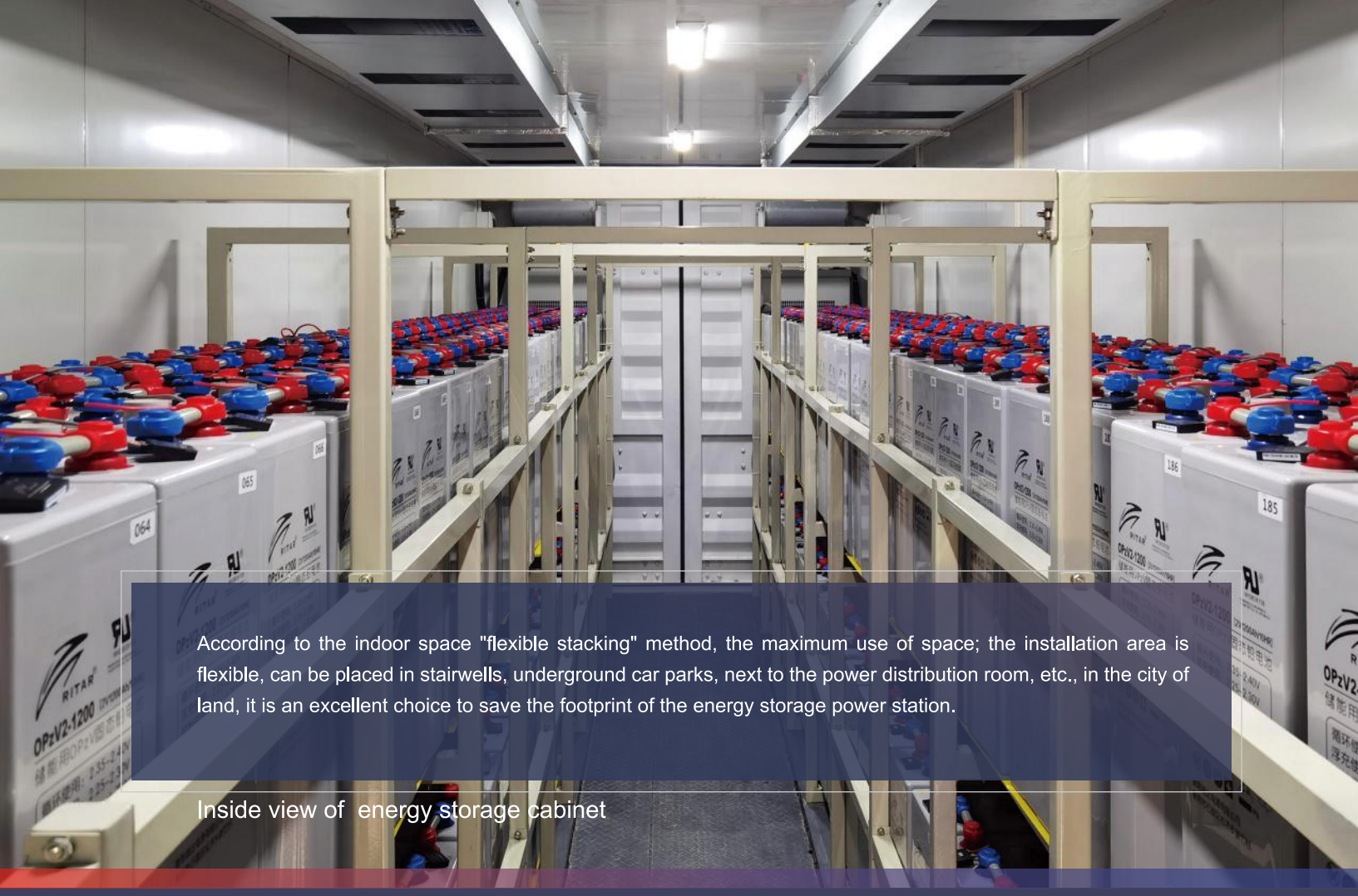
- Adopting Solid State OPzV Battery, the product is intrinsically safe, no fire and no explosion.
- Economical, long cycle life, 80% DOD more than 3500 times.
- Standardised, modular and systematic design concepts.

RITAR International Solid State OPzV Batteries
216kWh Energy Storage Cabinet

- High degree of integration, meticulous control logic, independent single cluster battery without loop current, reduce power loss.
- Interleaved three-level topology, high equivalent switching frequency, low ripple, more stable system.
- With a number of protection functions, 360 ° all-round protection.

RITAR International Solid State OPzV Batteries
Large Megawatt-scale Energy Storage

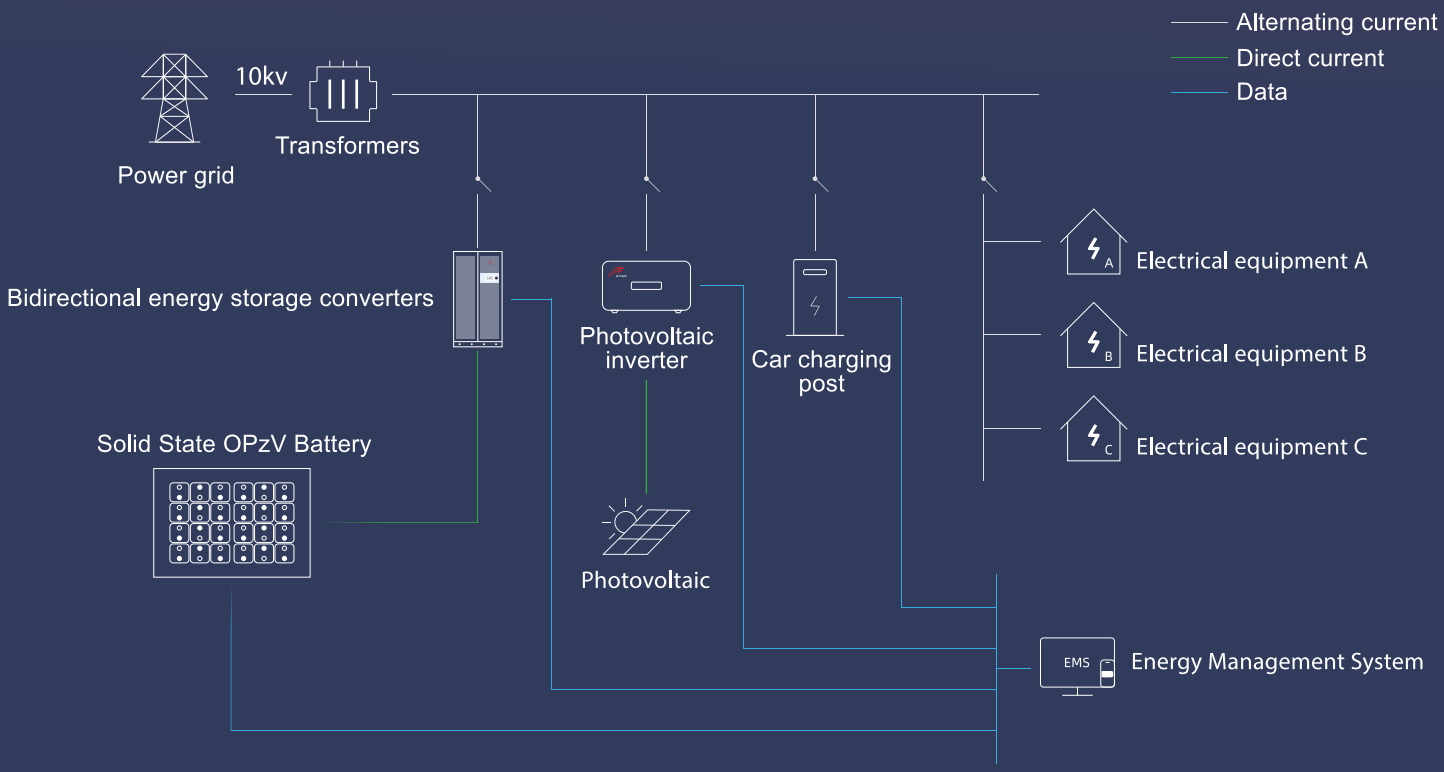
- The system is equipped with a complete battery management system, which adopts a three-level management structure, including battery, battery pack level and system level, to achieve comprehensive control, management and protection of the battery system to ensure the safe and stable operation of the battery system.



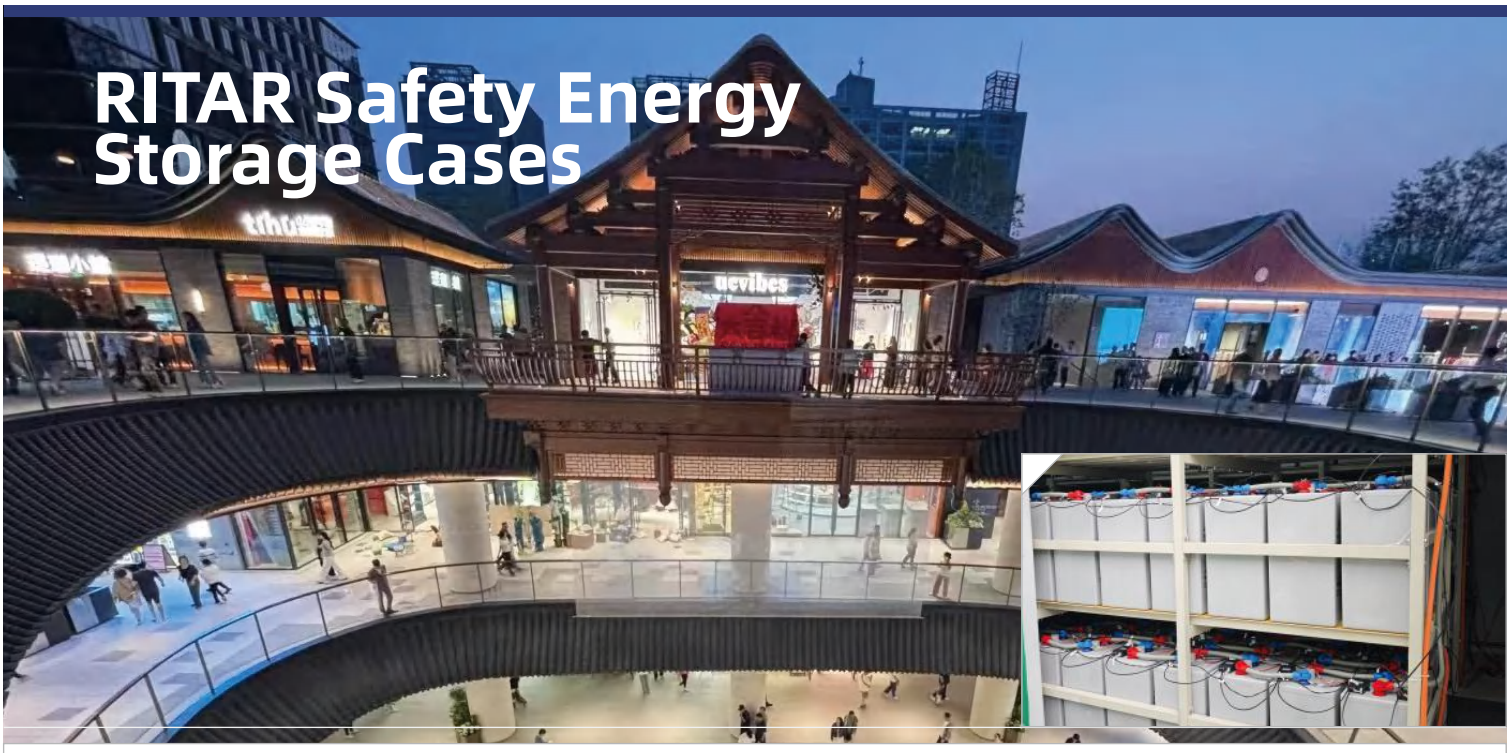
According to the indoor space "flexible stacking" method, the maximum use of space; the installation area is flexible, can be placed in stairwells, underground car parks, next to the power distribution room, etc., in the city of land, it is an excellent choice to save the footprint of the energy storage power station.

Inside view of energy storage cabinet

Solid State OPzV Battery energy storage system topology diagram



RITAR Safety Energy Storage Cases



User-side energy storage for commercial office buildings

Beijing, China
China Construction Zero Carbon Building Light Storage Direct Flexibility Project

Functional Utility: Peak shaving and valley filling, optical storage integrated system

Product Model: OPzV-2V 420Ah

Project Time: Commissioning in May 2025

User-side energy storage for commercial office buildings

China Guangdong - Dongguan Guanyi Energy Storage Project

Functional utility: peak shaving and valley filling

Product Model: OPzV-2V 770Ah

Project time: Commissioned in September 2024

User-side energy storage for commercial office buildings

China Guangdong - Dongguan Weifeng Electronics Energy Storage Project

Functional utility: peak shaving and valley filling

Product Model: OPzV-2V 770Ah

Project time: Commissioned in September 2024

User-side energy storage for commercial office buildings

China Suzhou- SuJie Electric (Nanjing) Energy Storage Project

Functional utility: optical storage direct flexible

Product Model: OPzV-2V 770Ah

Project Time: Commissioned in August 2024

User-side energy storage for commercial office buildings

China Henan - Jiyuan Yuyang Lake Water Supply Plant Energy Storage Project

Functional utility: optical storage direct flexible

Product Model: OPzV-2V 700Ah

Project Time: Commissioned in July 2024

User-side energy storage for commercial office buildings

China Shanghai - Baosen Energy Energy Storage Project

Functional utility: peak shaving and valley filling

Product Model: OPzV-2V 770Ah

Project Time: Commissioned in 2024

User-side energy storage for commercial office buildings

China Hunan - Changsha Aeon Dreamland Energy Storage Project

Functional utility: peak shaving and valley filling

Product Model: OPzV-2V 770Ah

Project Time: Commissioned in 2024

User-side energy storage for commercial office buildings

China Shenzhen - Zhihui Plaza Luohu District Project

Functional Utility: Peak shaving and valley filling, optical storage integrated system

Product Model: OPzV-2V 430Ah

Project Time: Commissioned in October 2022

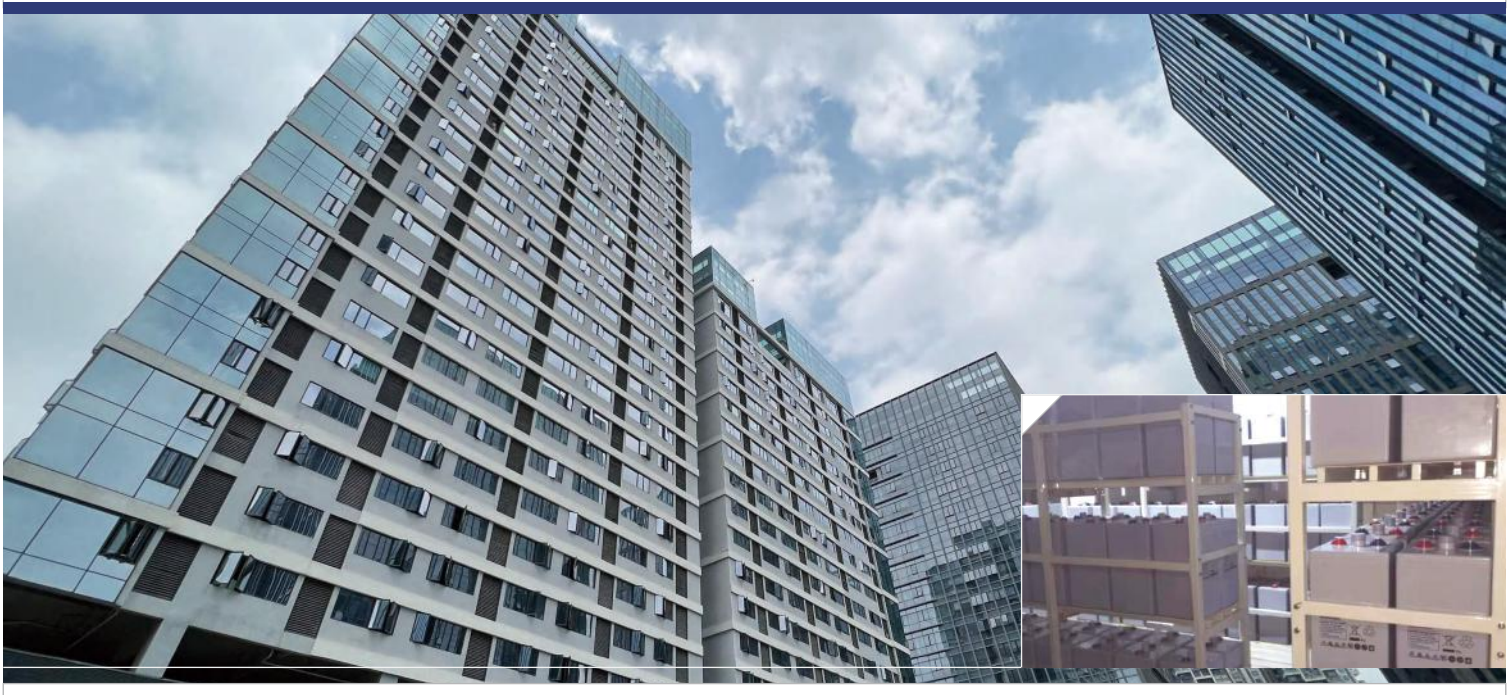
Commercial and industrial customer-side energy storage

China Shenzhen - Phoenix City Luohu District Project

Functional Utility: Peak shaving and valley filling, optical storage integrated system

Product Model: OPzV-2V 300Ah

Project Time: Commissioned in January 2024



User-side energy storage for commercial office buildings

China Changsha - Dongcheng Building Project

Functional Utility: Peak shaving and valley filling

Product Model: OPzV-2V 770Ah

Project Time: Commissioned in May 2023

User-side energy storage for commercial office buildings

China Shenzhen - OCT Nanshan District Project

Functional Utility: Peak shaving and valley filling

Product Model: OPzV-2V 770Ah

Project Time: Commissioned in December 2022

User-side energy storage for commercial office buildings

China Shenzhen - Guowei Station Project

Functional Utility: Peak reduction and valley filling

Product Model: OPzV-2V 300Ah

Project Time: Commissioned in January 2024

Commercial and industrial customer-side energy storage

China Jiangmen - Panasonic Electronic Energy Project

Functional Utility: Peak shaving and valley filling

Product Model: OPzV-2V 770Ah

Project Time: Commissioned in December 2023

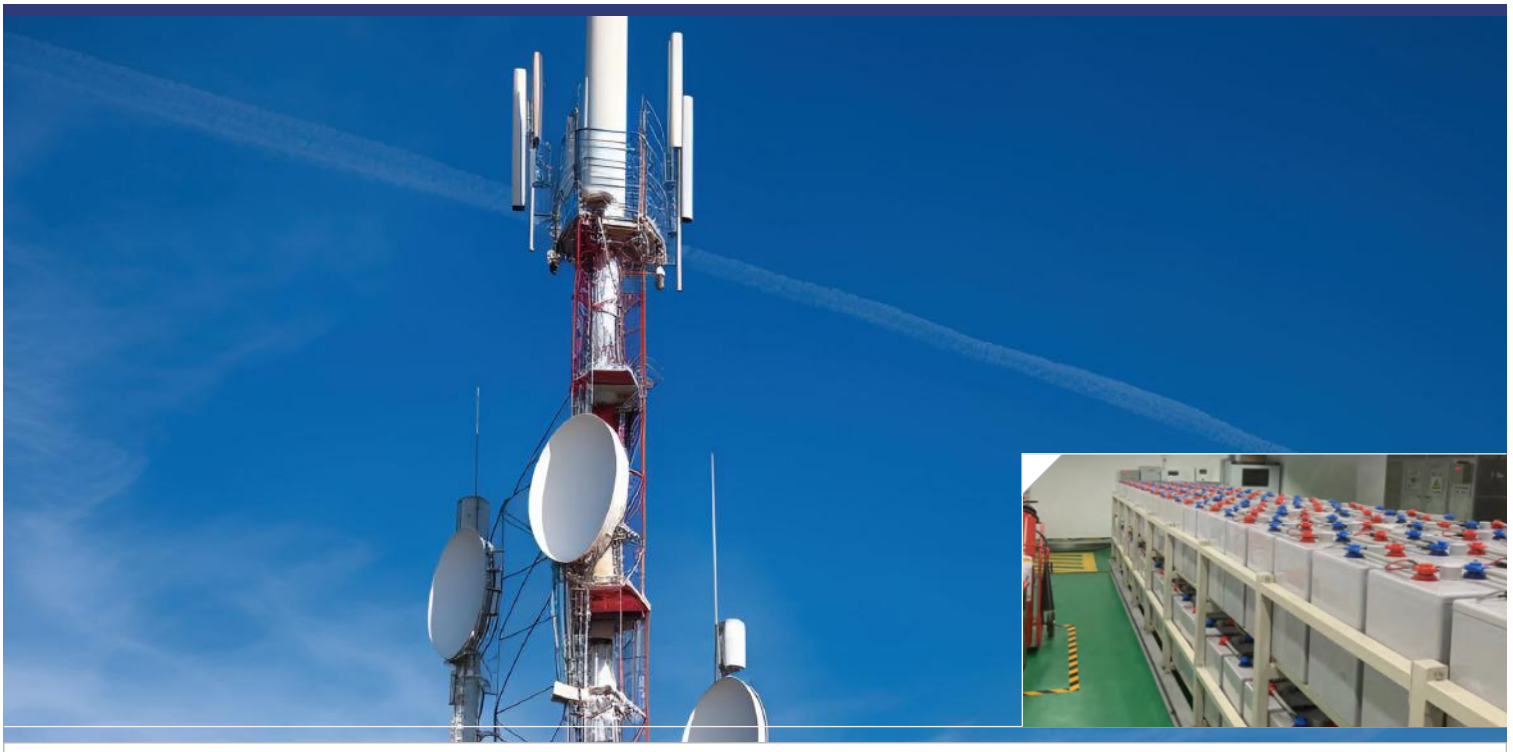
Data centre energy storage

China Foshan - Kepler Data Centre Project

Function Utility: Emergency power preservation

Product Model: OPzV-2V 770Ah

Project Time: Commissioned in November 2023



Communication base station energy storage

China Dongguan - Dongcheng District 5G Base Station Project

Function Utility: Emergency power preservation

Product Model: OPzV-2V 770Ah

Project Time: Commissioned in November 2023

Commercial and industrial customer-side energy storage

China Shenzhen - Luohu Cuihu Zero Carbon Park Project

Functional Utility: Optical storage direct flexible

Product Model: OPzV-2V 770Ah

Project Time: Commissioned in November 2023

Commercial and industrial customer-side energy storage

China Shanghai - 8MWh Energy Storage Plant for Brazilian Pavilion at the World Expo Project

Functional Utility: Peak shaving and valley filling, emergency power preservation

Product Model: OPzV-2V 770Ah

Project Time: Commissioned in April 2010

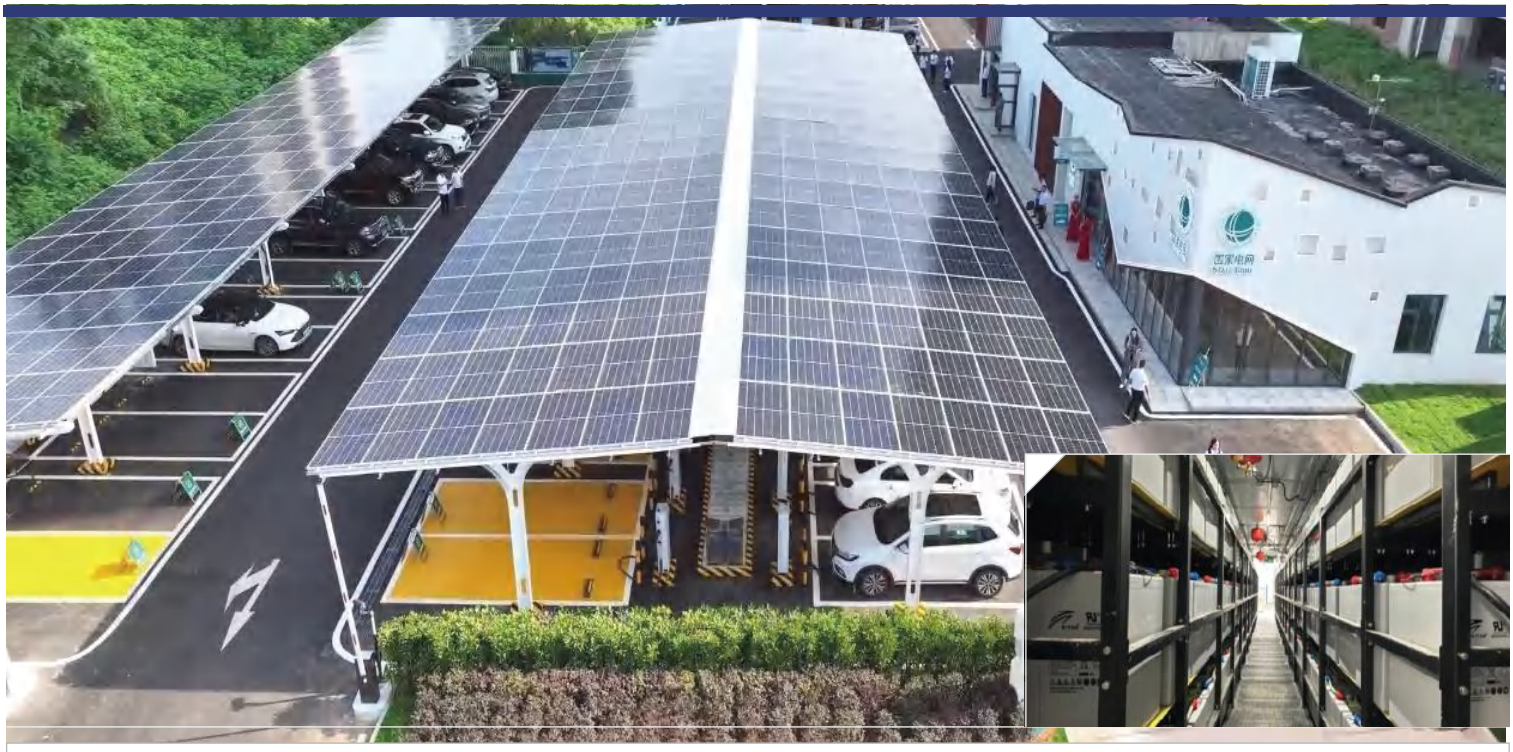
Commercial and industrial customer-side energy storage

China Hunan - Hengyang Ritar Industrial Park Project

Functional Utility: Peak shaving and valley filling, emergency power preservation

Product Model: OPzV-2V 1500Ah

Project Time: Commissioned in November 2023



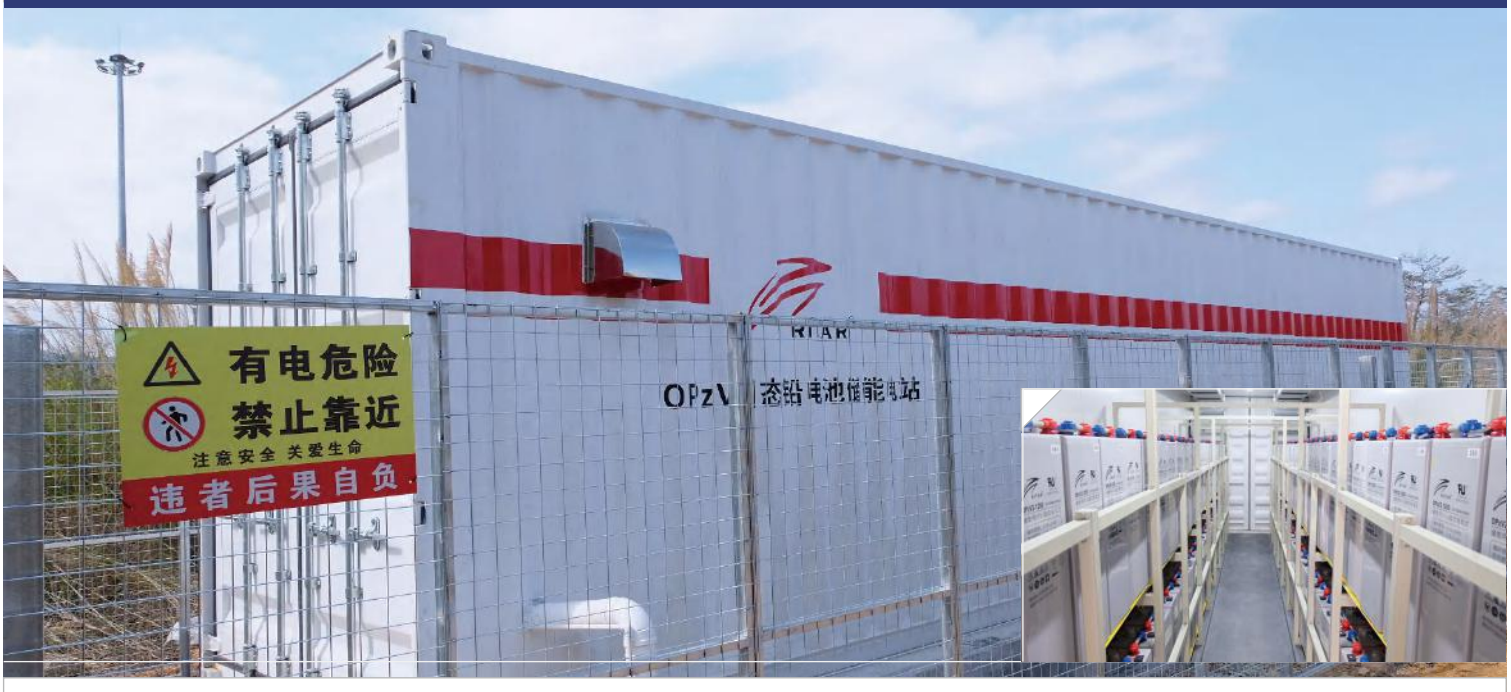
Commercial and industrial customer-side energy storage

China Hunan - State Grid Linghu Optical Storage Direct and Flexible Charging Project

Functional Utility: Peak shaving and valley filling, emergency power preservation

Product Model: OPzV-2V 770Ah

Project Time: Commissioned in June 2023



Commercial and industrial customer-side energy storage

China Guangdong - Shanwei Chaohui Expressway Luhe Service Area Project

Function Utility: Emergency power preservation

Product Model: OPzV-2V 1200Ah

Project Time: Commissioned in February 2021

Commercial and industrial customer-side energy storage

China Tianjin - Eleven Science and Technology Institute Car Park Project

Functional Utility: Peak shaving and valley filling, emergency power preservation

Product Model: OPzV-2V 770Ah

Project Time: Commissioned in April 2022

Commercial and industrial customer-side energy storage

China Shandong - Yingkou CNOOC Energy Storage Plant Project

Function Utility: Peak reduction and valley filling

Product Model: OPzV-2V 1200Ah

Project Time: Commissioned in March 2022

Commercial and industrial customer-side energy storage

China Hunan - Yongqing Environmental Hengyang Energy Storage Plant EPC Project

Functional Utility: Peak shaving and valley filling, emergency power preservation

Product Model: OPzV-2V 1500Ah

Project Time: Commissioned in February 2023

Commercial and industrial customer-side energy storage

China Shenzhen - International Low Carbon City Future Building 'Optical Storage and Direct Flexibility' Demonstration Project

Functional utility: optical storage direct flexible

Product Model: OPzV-2V 770Ah

Project time: Commissioned in October 2018

User-side energy storage for commercial office buildings

China Hunan - Changsha Herbalife Energy Storage Project

Functional utility: shaving and valley filling, emergency power preservation

Product Model: OPzV-2V 500Ah

Project Time: Commissioned in December 2023

Commercial and industrial customer-side energy storage

China Shenzhen - CJK Construction Engineering Project

Functional Utility: Peak shaving and valley filling, emergency power preservation

Product Model: OPzV-2V 500Ah

Project Time: Commissioned in April 2024

User-side energy storage for commercial office buildings

China Dongguan - Dalang Independent Energy Storage Plant Project

Functional Utility: Peak shaving and valley filling, emergency power preservation

Product Model: OPzV-2V 770Ah

Project Time: Commissioned in April 2022

Utility customer-side energy storage

Palestine - Gaza Solar and UPS Energy Storage Project

Functional utility: Optical storage direct flexible

Product Model: OPzV 2-800, OPzV 2-1500

Project time: Commissioned in July 2024

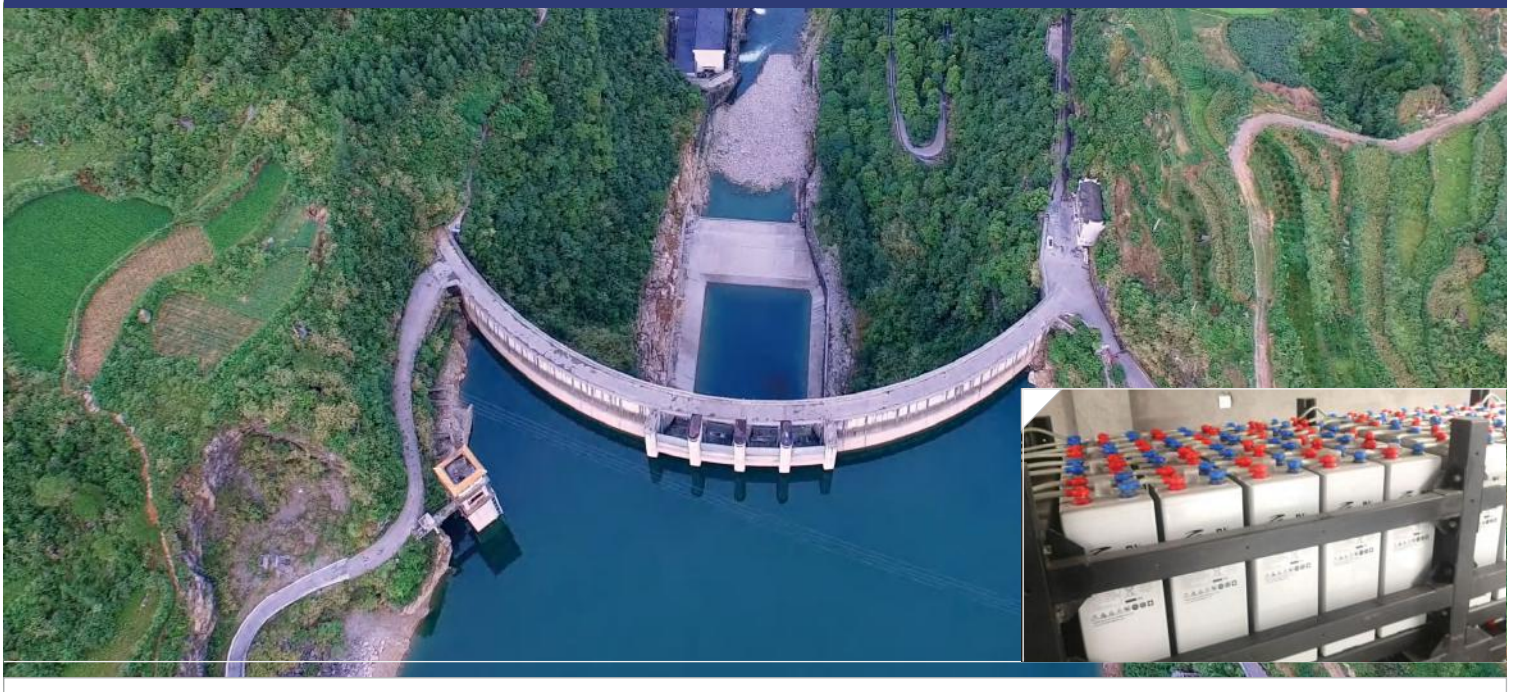
Data centre energy storage

USA - Energy Storage and Data Centres Project

Function Utility: Emergency power preservation

Product Model: OPzV-2V 800Ah

Project Time: Commissioned in 2009



Utility customer-side energy storage

Nepal - Hydroelectric Power Plant Optical Storage Project

Functional Utility: Peak shaving and valley filling, emergency power preservation

Product Model: OPzV-2V 1000Ah

Project Time: Commissioned in June 2023

Wind farms, wind energy storage

Spain - Navaros Wind Energy Storage Project

Functions Utility: Peak reduction and valley filling

Product Model: OPzV-2V 2000Ah

Project Time: Commissioned in November 2023

Utility customer-side energy storage

South Africa - Power, Grid Peak Energy Storage Systems Project

Functions Utility: Peak shaving and valley filling, emergency power preservation

Product Model: OPzV-2V 3000Ah

Project Time: Commissioned in May 2022

Data centre energy storage

Philippines (Global) - National Telecommunications Energy Storage and Data Centre Project

Function Utility: Emergency power preservation

Product Model: OPzV-2V 3000Ah, OPzV-2V 2000Ah

Project Time: Commissioned in January 2011

Utility customer-side energy storage

Indonesia - Telecommunication Base Station Project

Functions Utility: Emergency power preservation

Product Model: OPzV-2V 2000Ah, OPzV-2V 1000Ah, OPzV-2V 800Ah, FT12-100S, FT12-150D

Project Time: Commissioned in April 2010

Utility customer-side energy storage

Yemen - Solar Energy Storage Project

Function Utility: Emergency power preservation

Product Model: OPzV 2V 2500Ah, OPzV-2V 2000Ah, OPzV-2V 1500Ah, OPzV-2V 1000Ah, OPzV-2V 800Ah

Project Time: Commissioned in August 2021

Utility customer-side energy storage

South America - Panama PV Storage Project

Function Utility: Emergency power preservation

Product Model: OPzV-2V 1000Ah

Project Time: Commissioned in May 2022

Data centre energy storage

Thailand - Utility Power Project

Function Utility: Emergency power preservation

Product Model: OPzV-2V 800Ah

Project Time: Commissioned in July 2009

Utility customer-side energy storage

Germany - NDA Tanzania Household Solar System Project

Function Utility: Emergency power preservation

Product Model:OPzV-2V 1000Ah

Project Time: Commissioned in September 2021

Data centre energy storage

Yemen - Hospital Data Centre Project

Function Utility: Emergency power preservation

Product Model: OPzV-2V 1000Ah, OPzV-2V 2000Ah

Project Time: Commissioned in November 2020

Utility customer-side energy storage

South Africa - City Power Johannesburg Project

Function Utility: Emergency power preservation

Product Model: OPzV-2V 1500Ah

Project Time: Commissioned in June 2020

Commercial and industrial customer-side energy storage

Botswana - Solar Energy Storage Project

Function and utility: Emergency power preservation

Product Model: OPzV2-2000

Project Time: Commissioned in November 2023

Utility customer-side energy storage

Mali - Photovoltaic Energy Storage Project

Function and utility: Emergency power preservation

Product Model: OPzV2-2000

Project Time: Commissioned in July 2024

Commercial and industrial customer-side energy storage

Oaxaca - Photovoltaic Energy Storage Project

Function and utility: Emergency power preservation

Product Model: OPzV2-2000

Project Time: Commissioned in November 2023

Utility customer-side energy storage

Thailand - National Electricity Authority Conventional Energy Storage Project

Function and utility: Emergency power preservation

Product Model: OPzV2-2000

Project Time: Commissioned in July 2024