

International Provider of EV Charging Solutions
and New Electricity System Solutions



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[Version:202604]



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**ENDLESS INNOVATION,
COLLECTIVE GROWTH**



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INTELLIGENT MANUFACTURING IN CHINA

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PART

ENDLESS INNOVATION, COLLECTIVE GROWTH

**FOCUSING ON INNOVATION
INTELLIGENT MANUFACTURING IN CHINA**

Smart energy and China intelligent manufacturing
Focusing on innovation in the development process
Enterprise positioning and future layout
Enterprise vision and living up to our mission

▶ SMART ENERGY & CHINA INTELLIGENT MANUFACTURING



I Company Profile

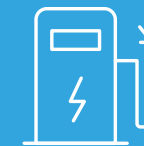
Shenzhen Winline Technology Co., Ltd., founded in 2007, is a global provider of EV charging solutions and next-generation power system solutions. Headquartered in Shenzhen, China, Winline Technology operates a comprehensive office, research, and manufacturing facility covering 60,000 square meters in Changshu, Jiangsu Province. To better serve clients worldwide, Winline Technology has established a branch office in Berlin, Germany in 2022.

We focus on the R&D and manufacturing of electric vehicle charging module, EV charger, high voltage direct current (HVDC) power supply, battery energy storage system (BESS), smart microgrid devices and intelligent energy management systems. This is to enhance power utilization and efficiency conversion in the field of new energy.

With nearly 1,000 employees, nearly 300 of whom are expertise engineers in R&D, Winline Technology adheres to the philosophy of "endless innovation, collective growth", having obtained over 180 authorized invention patents in China and 20 international patents under the Patent Cooperation Treaty (PCT). We are the contributing member of national standardization of EV charging module and EV charger in China. Also, Winline Technology participated in formulation of the unified CHAOJI high power DC fast charging

standard by China Electricity Council and Japan Electric Vehicle Fast Charger Association (CHAdeMO). Winline Technology has obtained certification for the ISO 9001 Quality Management System, IATF 16949 Automotive Quality Management System, ISO 14001 Environmental Management System, ISO 45001 Occupational Health and Safety Management System, as well as the Intellectual Property Management System. The company has also received CNAS laboratory accreditation. Its products are certified by authoritative organizations including CB, CE (European Union), TÜV Rheinland (Germany), UL, CCC, CGC, and China Electric Power Research Institute. Thanks to its superior quality and full regulatory compliance, Winline Technology's products have achieved widespread application and high recognition in the market.

By the end of 2025, our products have served electric vehicles in over 50 countries and regions worldwide, spanning China, Europe, South Korea, Southeast Asia, Central Asia, the Middle East, North America, Australia, Africa, and others. Winline Technology is dedicated to providing smarter charging solutions and microgrid management system solution for global users, collaborating with partners worldwide to realize our shared vision of "making energy smarter, making the Earth better."



R&D manufacturer of module power supplies
and charging stations



Overall solutions of electric vehicle charging
stations



Solution provider of HVDC system



Energy storage and microgrid system solution
provider

➤ FOCUSING ON INNOVATION IN
THE DEVELOPMENT PROCESS

2011

- First self-developed 500kW PV inverter grid-connected for power generation

2016

- First high-power DC charger released
- Strategic partnership with Shenzhen Bus Group established

2020

- World's first 40kW charger module released

2022

- R&D and manufacturing base in Changshu started construction
- Recognized as module power engineering center of Guangdong province
- Winline Technology branch office in Germany established

2024

- R&D and manufacturing base in Changshu completed and opened
- Sheet metal manufacturing base in Nantong put into operation
- First invention patent granted by overseas authority

2007

Winline Technology established

2014

- Recognized as China National High-tech Enterprise

2018

- NXR series constant power charger module released

2021

- Winline Technology (Changshu) Co., Ltd. established

2023

- The number of authorized invention patents surpassed 100

2025

- Release of the self-developed 60kW/80kW charging module based on single-stage topology conversion technology
- Automated module production line has officially gone into operation
- Global launch of a megawatt-class charging system (MCS) with power up to 3MW



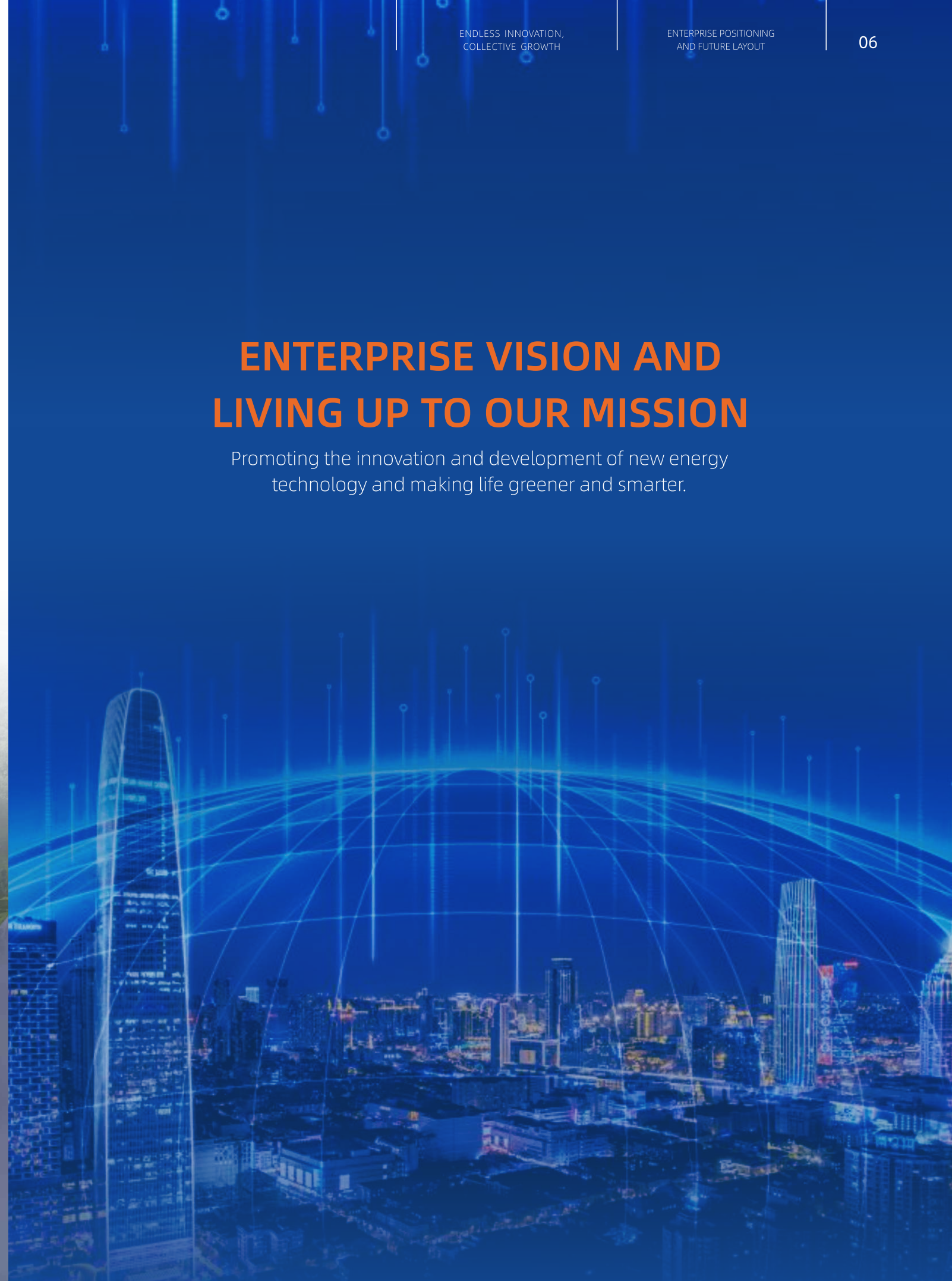
► ENTERPRISE POSITIONING AND FUTURE LAYOUT

International Provider of EV Charging Solutions &
New Electricity System Solutions



ENTERPRISE VISION AND LIVING UP TO OUR MISSION

Promoting the innovation and development of new energy
technology and making life greener and smarter.



PART

ENDLESS INNOVATION, COLLECTIVE GROWTH

Attracting Talents Industry Benchmark

Innovative Winline and talents gathering
Ingenious Winline and quality benchmark
Innovative Winline and talents coming together
Innovative Winline driven by technology
Smart Winline and win-win cooperation

► PROFESSIONAL WINLINE AND SMART ENERGY

High-standard laboratory and high-level industry-universities-research cooperation to build a solid force for enterprise development



Winline adheres to the customer-oriented R & D concept, and has built a R & D management system throughout the product life cycle, covering these professional departments such as software, hardware, structure, electrical, testing and trial production departments.

Winline has built a mature and advanced general technology platform around the research and development of power electronic power supply equipment. With the help of the technology platform, the research and development department can quickly respond to customer needs, and launch customized products in a short time.

Winline Technology has successfully passed the rigorous evaluation by the China National Accreditation Service for Conformity Assessment (CNAS), obtaining the CNAS Laboratory Accreditation Certificate (Registration No.: CNAS L23694). This accreditation endows us with advanced testing and verification capabilities, providing authoritative assurance for product reliability and technological leadership.

Winline maintains continuous R&D investment to provide financial support for the development of R&D system. After years of technological innovation, Winline has core technologies such as charging module, charging station, HVDC power supply, gridconnected inverter, energy storage inverter, microgrid management system, charging station operation and maintenance platform, etc.

Winline collaborates extensively with renowned universities and research institutions such as Zhejiang University, China Southern Power Grid, and China Electric Power Technology Group, fostering industry-academia-research exchanges and continuously enhancing its capacity for independent innovation.

Winline has been recognized as module power engineering research centre of Guangdong province of the Year 2022.

Winline has multiple testing laboratories built in accordance with CNAS standards

Liquid cooling

Salt spray

Simulation

Environment

Electromagnetic compatibility

Safety

.....

Winline has a large Number of power electronic Testing equipments

Equipment models
50 + kinds

Equipment quantity
500 + sets

Winline has five Practical system Test platforms

Reliability testing platform for components

Test platform of charging station system

Test platform of microgrid system

Test platform of HVDC

Test platform of smart energy system

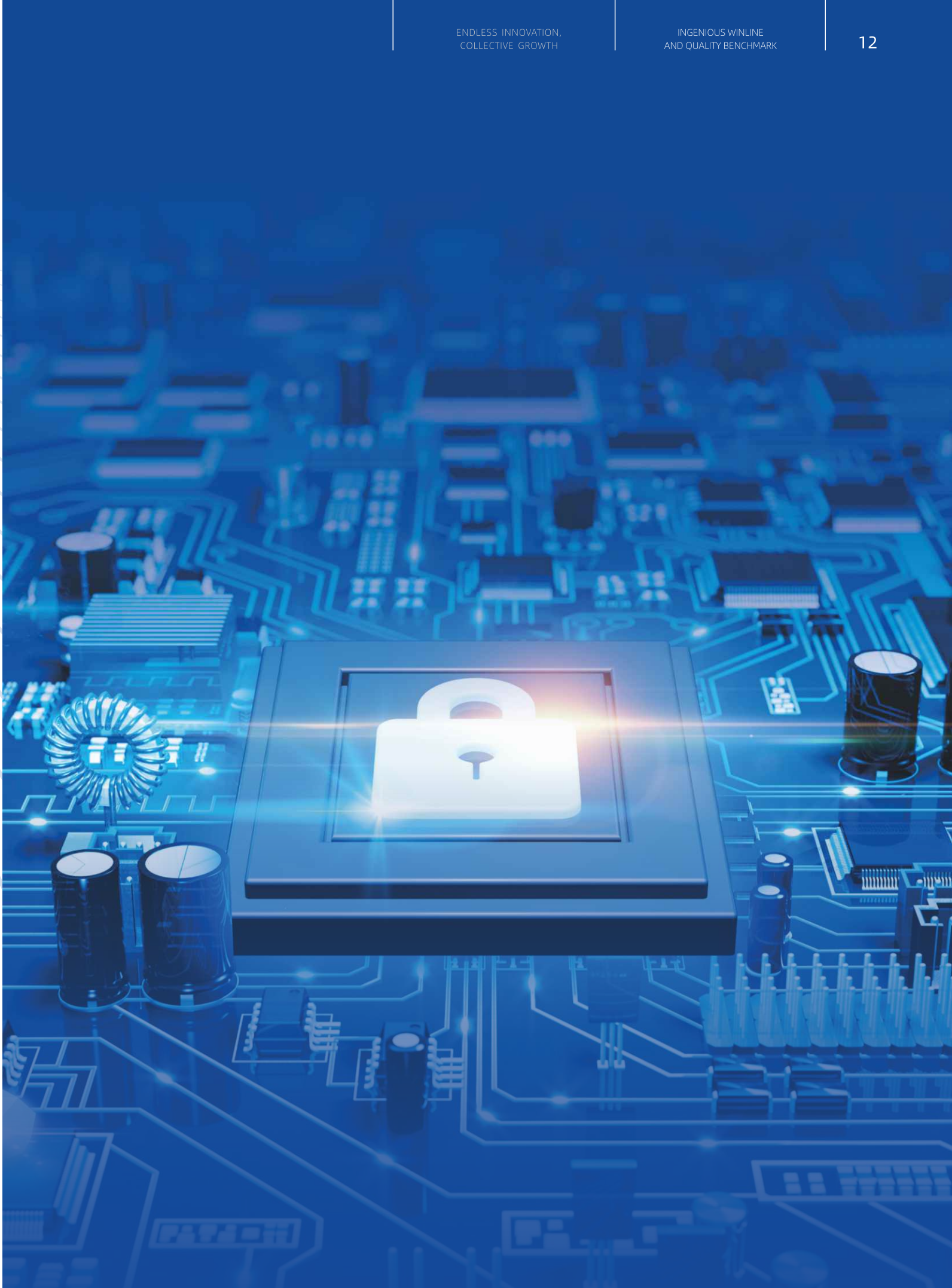
INGENIOUS WINLINE AND QUALITY BENCHMARK

Leading and participating in the formulation of international and domestic industry standards, and pursuing the initiative of technical standards

Winline Technology has participated in the formulation of a number of Chinese national and industrial standards for charging module power supplies and charging stations, as well as the drafting of high-power charging joint standards between China and Japan.

On August 28, 2018, China Electricity Council and Japanese CHAdeMO signed a memorandum of understanding on technology and standards cooperation in the field of electric vehicle charging facilities in Beijing. The two parties carried out communication and coordination in the international standardization of charging facilities, focusing on promoting cooperation in the field of high-power charging of electric vehicles. Winline Technology participated in the preparation and drafting of unified standards related to charging technology between China and Japan.

No.	Standard items	Codes
1	On-site testing instruments of AC charging spot for electric vehicles	GB/T 43191-2023
2	Digital communication protocols between off-board conductive charger and electric vehicle	GB/T 27930-2023
3	10kV AC input DC output uninterruptible power supply system for information and telecommunication	YD/T 4006-2022
4	Off-board conductive charging modules for electric vehicles	Energy 20220396
5	Communication protocols between power conversion system and battery management system Part 1: CAN communication protocol	T/CIAPS0006—2020
6	Modbus communication protocols between three-phase power conversion system and supervising system	T/CIAPS0007—2020
7	Green and low-carbon product assessment — Solar energy storage and charging in integrated energy systems	T/SGIPA 028—2023
8	Green and low-carbon enterprise evaluation technical requirements	T/SGIPA 027—2023
9	Technical requirements for carbon footprint assessment of electric vehicle charging equipment	T/SQIA 121—2025
10	Greenhouse gases - Quantitative methods and requirements for carbon footprint of products - Charging equipment	T/CPQS ZC004—2025
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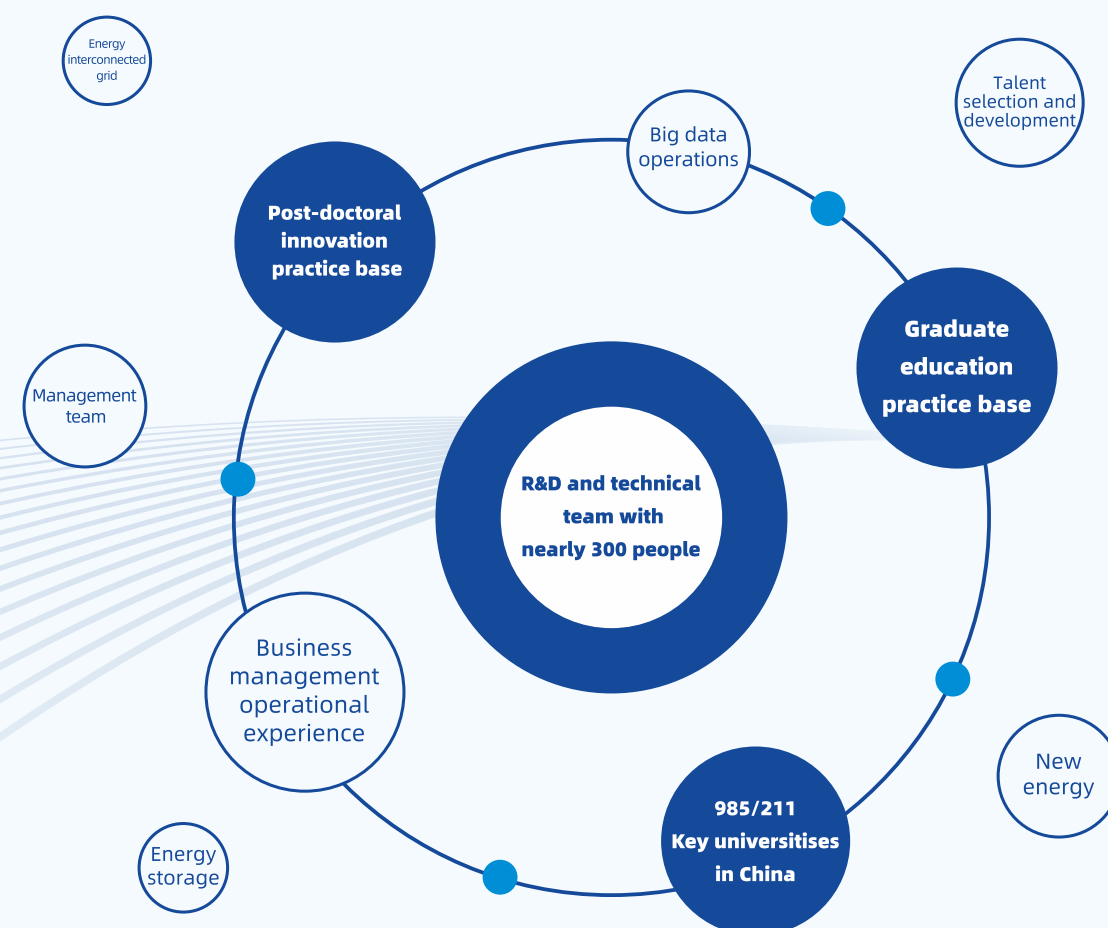


▶ INNOVATIVE WINLINE AND TALENTS COMING TOGETHER

Having a top team in the industry to achieve
super first-class R & D and manufacturing base

Winline has set up a R & D and technical team with nearly 300 people, most of which come from famous enterprises in the world and "985 / 211" key universities in China. All of them have rich experience in new energy, energy storage, high voltage DC power supply or energy Internet or fields related to big data operation. The management team members are complementary in knowledge and ability, and have strong management knowledge, skills and operation experience in the industry.

Winline has established a comprehensive mechanism for talent selection, development, team building, performance assessment, and incentives, which operates effectively. Also, Winline set up a Shenzhen Postdoctoral Innovation Practice Base and maintains long-term cooperation with renowned universities such as Zhejiang University.



► INNOVATIVE WINLINE DRIVEN BY TECHNOLOGY

More than **180** patents and national certificates confirm
the rapid development of the enterprise



► INNOVATIVE WINLINE DRIVEN BY TECHNOLOGY

Applied for **450+** intellectual property rights.

Granted **180+** Chinese invention patents.

Applied for more than **20** PCT international patents.



▶ SMART WINLINE AND WIN-WIN COOPERATION

Working together with strategic partners to create a
bright future in smart energy industry



PART

ENDLESS INNOVATION, COLLECTIVE GROWTH

Smart Energy Guiding the Further Development



Charging module production line

Field 1: Application of new energy vehicles

Field 2: Energy storage series

Field 3: HVDC power supply system

Field 4: New generation power system

NEW ENERGY VEHICLE APPLICATION

Power Modules

PRODUCTS DISPLAY



Time-saving



Energy-saving



Worry-free



Intelligent

Covering unidirectional/bidirectional, charging/energy storage/V2G, and data center scenarios, with high efficiency, high power density, and high reliability as the core, meeting high-end power supply needs in new energy charging, energy storage, data centers, and other fields.

Unidirectional AC/DC Charging Module Power Supply

- High conversion efficiency
- High power density, excellent heat dissipation
- Ultra-wide voltage range
- High reliability



UXR100080S
80kW/1000V Next-Generation Ultra-High Power Fully Potting High-Protection Charging Module



UXR100060S
60kW/1000V High-Efficiency High-Power Density Fully Potting Charging Module



UXR100060
60kW/1000V High-Power Fully Potting High-Protection Charging Module



UXR100050S
50kW/1000V High-Power Fully Potting High-Protection Charging Module



UXR100040S
40kW/1000V High-Power Density Potting Charging Module



UXR100040G
40kW/1000V Class B EU/US Standard High-Protection Charging Module



LCR100040A
40kW/1000V Liquid-Cooled DC Charging Module



UXR1K030H
30kW/1000V State Grid Size High-Power Density Charging Module



UXR100030G
30kW/1000V Overseas High-Performance Potting Charging Module

Unidirectional DC/DC Charging Module Power Supply

- High Conversion Efficiency
- Isolated Safety Protection
- Fast Dynamic Response
- Compatible with 200-1500V



UXC150030
40kW/1500V Isolated Unidirectional DC/DC Charging Module



UXC100040
40kW/1000V Isolated Unidirectional DC/DC Charging Module

Bidirectional AC/DC V2G Module Power Supply

- High Conversion Efficiency
- Supports Grid-Tied, Rectification, and Off-Grid Multi-Mode Operation
- High Power Quality
- Equipped with APF Function



UXG1K022
22kW Bidirectional AC/DC V2G Module



UXG1K007HP
7kW/1000V Independent Air Duct Bidirectional AC/DC Module

Bidirectional DC/DC Charging & Discharging Module Power Supply

- High Efficiency
- High Reliability
- Fast Forward/Reverse Switching
- Ultra-Wide Dual-End Voltage Range



UXC150030B
40kW/1500V Isolated Bidirectional DC/DC Storage & Charging Module



UXC95050B
20kW/950V Isolated Bidirectional DC/DC Charging & Discharging Module

Data Center Module Power Supply

- High Efficiency
- High Reliability
- Advanced Circulating Current Suppression Technology
- Intelligent Monitoring & Remote Operation and Maintenance



NXR240125
30kW Panama Data Center Power Supply Module

Low-Voltage High-Current Unidirectional AC/DC Charging Module Power Supply

- Low-Voltage High-Current Output Capability
- Compact Structure & Efficient Heat Dissipation
- High Reliability



UXR100200
20kW/200A DC Charging Module



NXR100200
20kW/200A DC Charging Module

NEW ENERGY VEHICLE APPLICATION

Charging series / battery swapping series

PRODUCTS DISPLAY



320-1600kW
Split-Type DC Charging System

1600-3200kW
Split-Type DC Charging System



800kW
Split-Type Bidirectional Charging & Discharging System (V2G)

360-960kW
Split-Type DC Charging System (Global Version)



60-480kW Integrated DC Charger
80-400kW Integrated DC/DC Charger
60-220kW V2G Charger
30-40kW Integrated DC Charger (Global Version)
50-480kW Integrated DC Charger (Global Version)
120-240kW Integrated DC Charger (Global Version)
50-400kW Integrated DC Charger (Global Version)

CORE ADVANTAGES

 Withstand harsh environment	 Charging efficiency	 Standby energy saving
 Applicable to all types of vehicles	 Application scenarios	 Efficient and stable heat dissipation
 Simple structure and layout	 Waterproof and dustproof	 UI customization
 VIN intelligent recognition	 Flexible power distribution	 Excellent noise reduction

NEW ENERGY VEHICLE APPLICATION

Construction and Operation Scheme of Electric Charging Park

PROJECTS INTRODUCTION

PV-Storage-Charging-Usage AC/DC Microgrid Solution

Photovoltaic shed power generation

Using shed to generate electricity produces sustainable green energy with economic benefits, which is energy-saving and environmental-friendly.

Charging system

High efficiency charging system with DC bus architecture through PCS and bi-directional DCDC system

Energy storage system

Energy can be stored in batteries. Charging batteries in off-peak period and discharging in peak period can reduce charging cost.

Controllable Load

Real-time intelligent monitoring and control of controllable loads improve energy utilization efficiency and ensure the stable operation of microgrids



Photovoltaic power generation



Smart charging



Battery energy storage



Controllable load



PROJECTS ADVANTAGES

AC/DC Microgrid

Standards Formulation

Energy Management System

Operation Management



NEW ENERGY VEHICLE APPLICATION

Construction and Operation Scheme of Electric Charging Park

PROJECTS INTRODUCTION



► ENERGY STORAGE SERIES

► PRODUCTS DISPLAY



Energy Storage Inverter(PCS)
30kW~60kW~125kW
500kW~630kW



Energy Storage Cabinet
AC/DC Energy Storage Cabinet (Air-cooled)
60kW-121kWh/120kW-215kWh/125kW-241kWh

AC/DC Energy Storage Cabinet (Liquid Cooled)
120kW-215kWh/125kW-261kWh

DC/DC Energy Storage Cabinet
120kW-215kWh



Microgrid Product
PCS Conversion and DC Distribution Control Cabinet
DC Integrated PV-Storage-Charging Charger

► PROJECTS INTRODUCTION

PV-Storage-Charging Demonstration Project at Shenzhen Xili Taxi Home

500kW/1000kWh echelon utilization energy storage system of retired battery

Storage Project at Zhangjiajie Economic Development Zone Entrepreneurship Park

500kW/1000kWh energy storage system

Microgrid Energy Storage System in Xuancheng, Anhui

500kW/1000kWh echelon utilization

PV-Storage-Charging Microgrid System in Trinidad and Tobago, Central America

100kW/510kWh energy storage system

China Southern Power Grid Electric · South China Digital Valley PV-Storage-Charging-Discharging Demonstration Project

125kW/215kWh DC/DC Energy Storage Cabinet

PV-Storage-Charging Demonstration Project in Yunnan

250kW/120kWh energy storage system

Jordan PV-Storage-Charging DC Microgrid Demonstration Project

120kW/215kWh DC/DC Energy Storage Cabinet

Daya Bay PV-Storage-Charging Integrated Demonstration Project

10 Units of 120kW/215kWh Energy Storage Cabinets

➤ HVDC POWER SUPPLY SYSTEM

➤ PROJECTS INTRODUCTION

HVDC (high-voltage direct current) power supply, also known as DC UPS, is a new uninterrupted and highly reliable power supply system designed for IT equipment. Compared with the traditional AC UPS, it has the advantages of high efficiency, high reliability, energy saving, convenient maintenance and low cost, etc.



CONVENIENCE



HIGH
EFFICIENCY



LOW COST



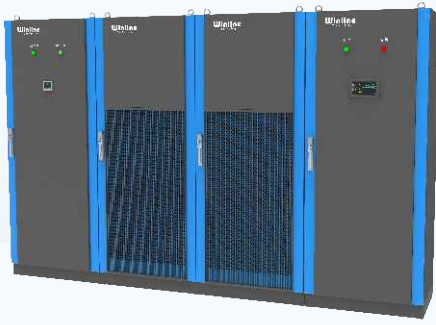
HIGH
REALIBILITY



HVDC combined power supply system



HVDC modular interface system



HVDC discrete power supply system



Rock system

➤ ADVANTAGES OF HVDC

Six core advantages of HVDC in cloud computing data center



High efficiency

The system architecture is simple and efficient



Convenience

It is most convenient to cut over and maintain in the life cycle



Low fault rate

Fault rate of back-end IT equipment is reduced



Low cost

The cost of access is low for new energy



Best reliability

The most reliable modular design



Availability

Battery availability is 100%

► New Electricity System

Smart Operation Platform of Virtual Power Plant

Overview

The platform utilizes advanced communication, device control, and other technologies to aggregate a vast array of distributed new energy resources, energy storage facilities, and flexible loads into a "Cloud-Edge-Endpoint" smart IoT system. This system enables the Internetization of distributed resources. It further employs optimization computing, AI prediction, scheduling response, Cloud-Edge integration, blockchain, and other technologies. Geared towards the electricity power market operation model, the platform provides unified scheduling management and coordinated optimization for the smart IoT system. By fully leveraging the aggregation advantages of distributed resources, it realizes the Virtual Power Plant function of the smart IoT system, thereby achieving market profitability.

Platform Functions

1. Smart IoT and Customer Management: Features a "Cloud-Edge-Endpoint" smart IoT system with multidimensional device monitoring and connectivity, integrated intelligent computing and control framework. It includes modules for resource data integration, response terminal management, blockchain, communication management, customer management, and aggregator management.
2. Real-time Monitoring and Control: Provides real-time monitoring and control of Virtual Power Plant operational data to achieve digitalized resource scheduling and management. Modules include Aggregation- Service-Cockpit, monitoring of resource operation data, CEP Cloud-Edge interaction, and control execution of resources.
3. Trading Decision-making: Aims to maximize the benefits of Virtual Power Plant trading based on electricity power market operation models, policies, and settlement mechanisms. Modules include price and load forecasting, deviation management, profit optimization, and demand response trading.
4. Dispatch Optimization: Uses dynamic quantization results of resource response capabilities and employs AI and optimization algorithms to achieve resource dispatch optimization. Modules include execution strategy management, decomposed dispatch optimization analysis, and day-ahead power forecasting.
5. Energy Efficiency Management: Enhances energy efficiency utilization and reduces carbon emissions through online energy consumption monitoring and statistical analysis. Modules include online energy consumption monitoring, energy consumption statistical analysis, energy efficiency benchmarking, energy efficiency analysis, and energy-saving strategies.
6. Settlement and Evaluation: Provides a multi-level, multi-configuration settlement and evaluation system for various trading types according to Virtual Power Plant policies. Modules include bill management, service and response subsidy management, and power purchase and sales settlement management.

The types of power trading in which Virtual Power Plants can participate, along with their basic profit-making activities, and the functional modules provided by this platform

1. Grid Demand Response Business: Includes modules for demand response management, trading strategy management, and day-ahead response declaration.
2. Renewable Energy Trading Business: Includes modules for energy trading management, power sales strategy management, power sales package management, and market price forecasting.
3. User-Side Peak & Valley Balancing Business: Includes modules for Peak and Valley Balancing mechanism marketing management.
4. Frequency Regulation & Peak Load Shifting and Valley Filling Ancillary Services Business: Includes modules for ancillary services marketing management.

Cooperation Models

1. SaaS Services: Provide SaaS (Software as a Service) solutions and charge service fees.
2. Managed Services: Offer edge gateway IDC (Internet Data Center) services and managed services based on functional modules.
3. Virtual Power Plant Setup Services: Sell customized combinations of Virtual Power Plant hardware and software, and offer licenses for software module usage.
4. Edge Gateway Sales and Access Services: Sell edge gateways and provide access services for edge gateways.
5. Consulting Services: Provide consulting on Virtual Power Plant technology and trading knowledge.
6. Electricity-Power Package Offerings: Offer energy-saving oriented electricity-Power packages.
7. Edge Monitoring Terminal Sales: Sell edge monitoring terminals and provide access services.

► GLOBAL BUSINESS NETWORK

Shenzhen Winline's power modules, EV chargers, energy storager products,etc. have been sold to over 50 countries and regions worldwide.

