



**中国电气装备**

China Electrical Equipment

**许继电气股份有限公司**

XJ ELECTRIC CORPORATION

**XJ**  
**ELECTRIC**

DELIVERING CLEAN ENERGY TO  
ILLUMINATE COUNTLESS HOMES



**PIONEER**  
in Electrical Innovation

**ENGINE**  
of Energy Transition

**PRACTITIONER**  
of Ecological Solution

Building a World-Leading Electrical Equipment  
Manufacturer and Power System Service Provider





# Profile

# Company



XJ Electric Corporation, affiliated to China Electrical Equipment Group Co., Ltd., is a leading enterprise in the power equipment industry in China and focuses on five core businesses of UHV, smart grid, new energy, electric vehicle charging and battery swapping, rail transit and industrial intelligence, and vigorously develops emerging businesses such as hydrogen energy, advanced energy storage, smart microgrid, intelligent operation and maintenance, and power IoT. Its products are widely used in all aspects of the power system.

Income  
**17** billion  
( CNY )

Asset  
**22** billion  
( CNY )

International  
Standards  
**508** tems

Total  
Employees  
**7,000**

Shenzhen  
Stock Exchange  
Stock Code  
**000400**





# Divisions in China

- ◆ Headquarters in Xuchang
- ◆ Industrial bases in Xuchang, Zhuhai, Jinan, Chengdu, and Harbin
- ◆ R&D centers in Beijing, Shanghai, Xi'an, Zhengzhou, Xuchang, and Harbin



# R&D Capacity

## Three Core Basic Technologies

Information-based  
Automation Control  
Technology

Power Electronics  
Technology

Primary Equipment  
Design and Manufacturing  
Technology

**4.7%**  
Investment in  
R&D

## Standardization Technical Committee

- ◆ International Electrotechnical Commission/Technical Committee 85 ( IEC/TC85 )
- ◆ National Standardization Technical Committee on Electrical Measuring Instruments ( SAC/TC104 )
- ◆ IEEE PES China Chapters Council Standards Committee

**2200<sup>+</sup>**  
Senior  
Engineers

## Standard Formulation

**900<sup>+</sup>**  
items

Participated in the revision  
of standards at all levels

**100<sup>+</sup>**  
items

International standards  
(with lead authorship in 9)

**360<sup>+</sup>**  
items

National standards  
(with lead authorship in 113)

**240<sup>+</sup>**  
items

Industry standards  
(with lead authorship in 62)

## CNAS Accredited Laboratories

- ◆ China Quality Supervision and Inspection Center for Electrical Measuring Instruments ( approved by TÜV Rheinland )
- ◆ Electric Vehicle Charging Technology Laboratory in XJ Power Co., Ltd.
- ◆ Henan XJ Metering Co., Ltd. Central Laboratory
- ◆ XJ Electric Co., Ltd. High-Voltage Test Center



± 1100 kV UHV DC Insulation Test Hall



# Marketing



CGE (Chile)



MEA (Thailand)



ENEL (Italy)



SEC (Saudi Arabia)



EEU (Ethiopia)



ENDE (Angola)



BRIDGING POWER & PROGRESS  
NGCP (Philippine)

XJ is accelerating its international development, and has extended its presence in Southeast Asia, South Asia, Central Asia, Africa, South America, the Middle East, and Europe, among other markets. XJ's products have been successfully deployed in over 60 countries and regions worldwide. Through the provision of premium quality products and comprehensive technical services, XJ has established a strong and positive reputation in the international market, garnering widespread recognition and acclaim from customers across the globe.







INTELLIGENT

# Manufacturing Capability

5<sup>+</sup>  
Intelligent Factories

100<sup>+</sup>  
Main Production Lines

30<sup>+</sup>  
Automated Production Lines



Automatic Production Line of Energy Meters





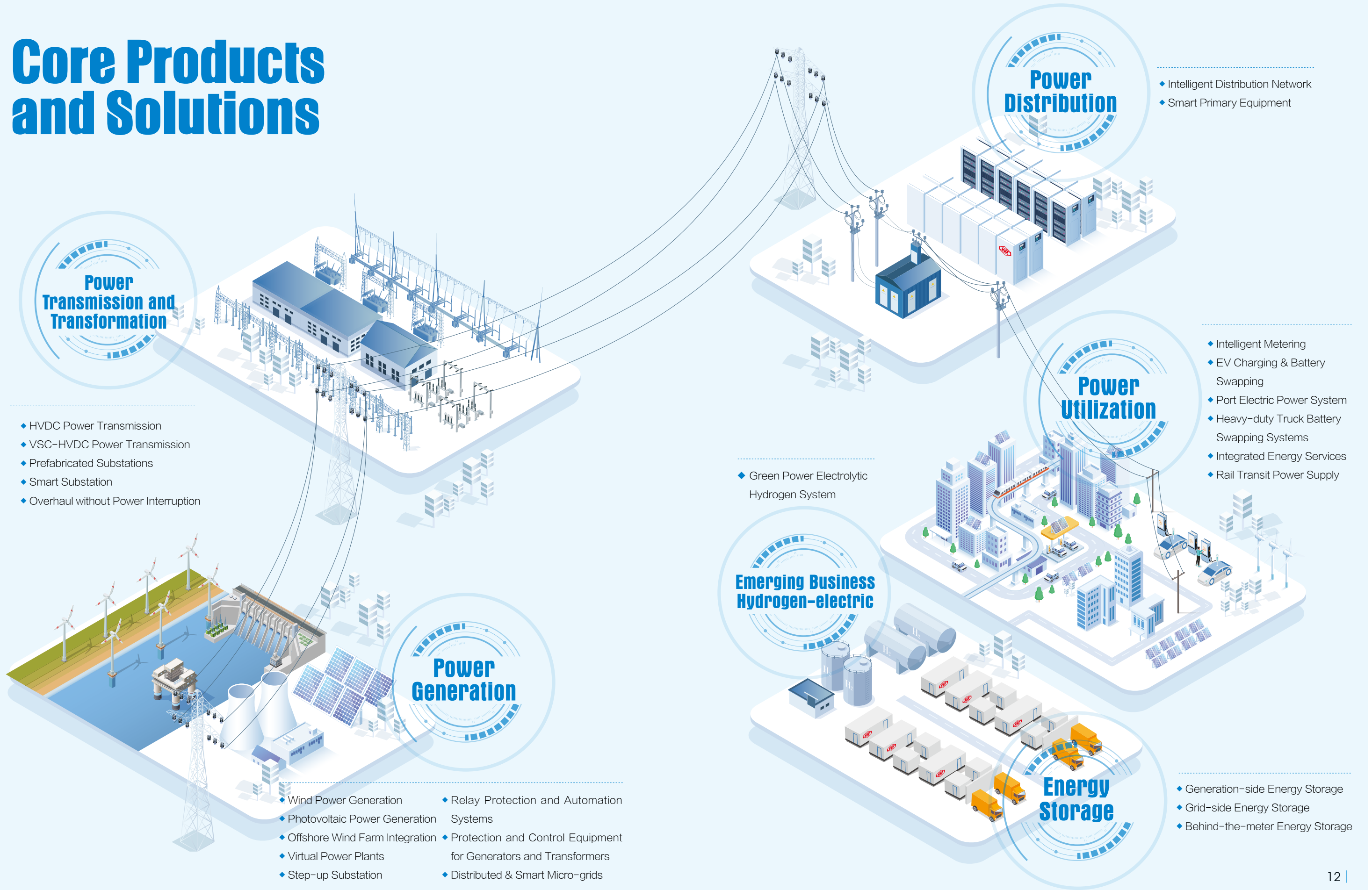
# Quality Management

- ◆ XJ possesses professional qualifications including power engineering design, EPC contracting, operation and maintenance services, testing and measurement, information system integration, and import & export.
- ◆ XJ actively promotes international certifications for its products. A total of 13 product categories, encompassing more than 70 different models, such as meters, switchgear, transformers, photovoltaic inverters, transmission line protection devices, and others, have successfully passed international testing and certifications by renowned organizations like KEMA, TÜV, and CESI.





# Core Products and Solutions





# 01

## Power Generation



◇ XJ is competent to provide the following solutions and products in the field of power generation

Hydropower

Thermal Power Generation

Wind Power Generation

Nuclear Power Generation

PV Power Generation

Offshore Wind Power Transmission

### ◇ Core Products

- DC Control and Protection Device
- Prefabricated Cabin
- Prefabricated Substation
- Switchgear
- Gas Insulated Switchgear
- DC Power Supply
- Dry-type Transformer
- Reactor
- Arc Suppression Coil
- VSC-HVDC Converter Valve
- Inverter
- Power Conversion System (PCS)
- Reactive Power Compensation Device

## Intelligent PV Power Station Solution

XJ offers customers the integrated one-stop operation service covering resource development, consulting and design, investment and construction, as well as EPC general contracting, supply of electrical equipment complete sets, power plant operation and maintenance services, etc.

### Asia's Largest

Xiongan High-speed Railway Station

Roof PV Power Generation Project



## VSC-HVDC Transmission for Offshore Wind Power

Based on its deep research of offshore wind farm modeling, grid support control strategy and fault ride-through control strategy, XJ has developed the core equipment such as VSC-HVDC converter valve and control and protection systems specifically designed for offshore wind power transmission applications.



COMPACT



RELIABLE



MODULAR



PREFABRICATED



LOW ENERGY CONSUMPTION

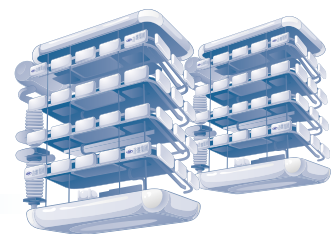
Three Gorges Rudong Offshore Wind Power VSC-HVDC Transmission Project







# Power Transmission and Transformation



## ▶▶ Converter Valve for UHV/HV DC Power Transmission

XJ can provide DC converter valves, water cooling equipment and valve control protection equipment for UHVDC and HVDC transmission projects of  $\pm 1100\text{kV}$  and below.

XJ has participated in the construction of all UHVDC transmission projects within China and has extended its reach abroad with applications in the Matiari - Lahore  $\pm 660\text{ kV}$  HVDC transmission project in Pakistan and the back-to-back DC project in Van, Turkey.



### ▲ World's First

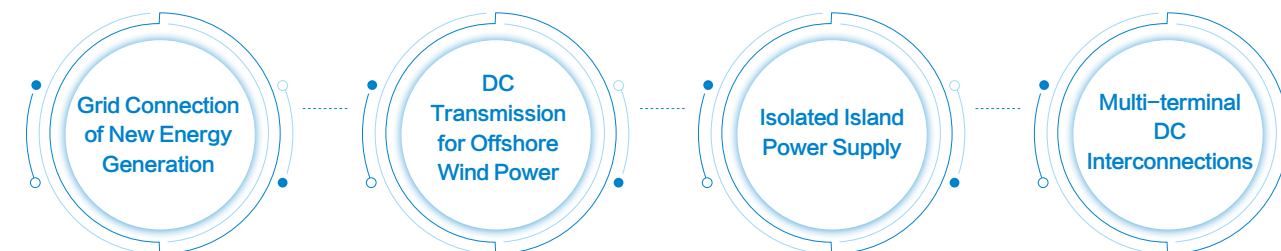
Hybrid Cascade UHVDC Transmission Project

Baihetan - Jiangsu  $\pm 800\text{ kV}$  UHVDC Transmission Project

## ▶▶ Converter Valve for VSC-HVDC Transmission

In the field of VSC-HVDC transmission and DC grids, XJ possesses proprietary intellectual property rights for its HVIV3000 series of VSC-HVDC converter valves and core HVDC circuit breaker installations, among other complete sets of essential equipment portfolios.

XJ's technologies have seen extensive applications in areas such as grid connection of new energy generation, DC transmission for offshore wind power, isolated island power supply, and multi-terminal DC interconnections. In the domain of VSC-HVDC transmission, XJ holds a leading position within the industry.



### The World's Largest Asia's First

Rudong Offshore Wind Power Converter Station

VSC-HVDC Converter Valve

### The World's First Set

$\pm 500\text{ kV}$  1500 MW VSC-HVDC Converter Valve for VSC-HVDC Power Grid

Zhangbei VSC-HVDC Power Grid Demonstration Project







## DC Control and Protection



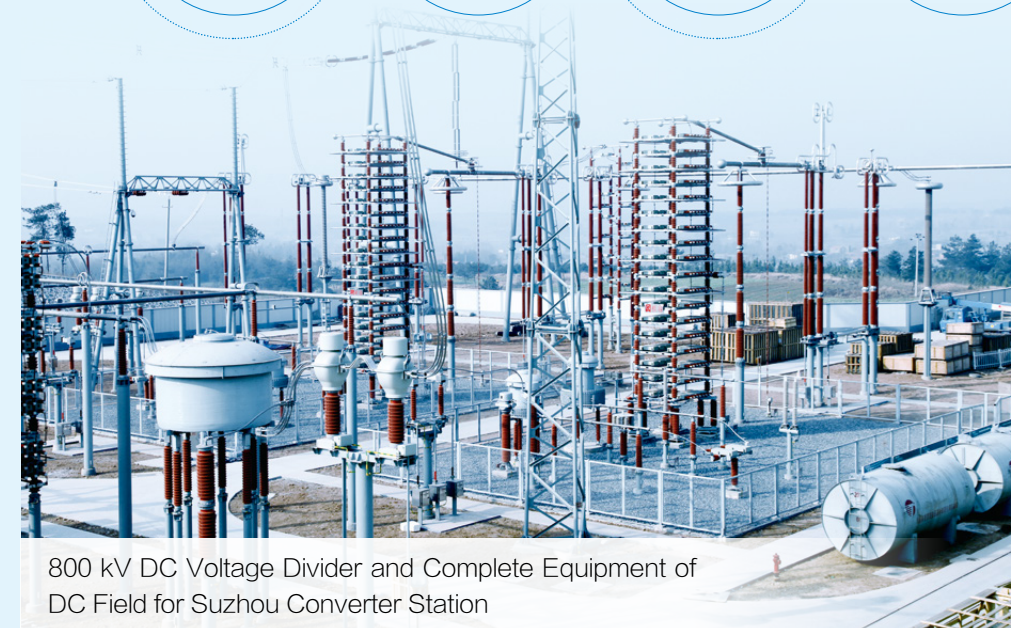
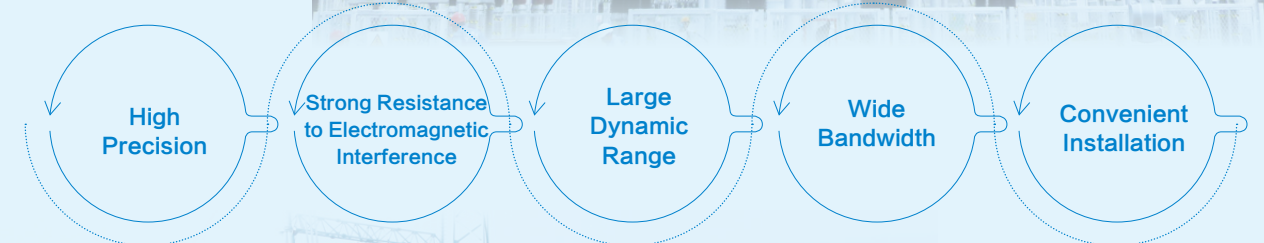
XJ owns a complete set of DC control and protection equipment series, namely DPS-3000 and DPS-5000, featuring fully independent intellectual property rights. These devices are designed to meet the requirements of UHVDC transmission lines rated  $\pm 1100$  kV and below, HVDC transmission, as well as VSC-HVDC transmission projects.

### Successful Applications

- $\pm 800$  kV Northern Shaanxi - Wuhan UHVDC Transmission Project
- $\pm 800$  kV Yunnan - Guangdong UHVDC Transmission Project
- $\pm 660$  kV Ningdong - Shandong HVDC Transmission Project
- $\pm 660$  kV Pakistan Matiari - Lahore HVDC Transmission Project
- $\pm 500$  kV Yunnan - Guizhou Three Terminals Interconnection Project
- $\pm 420$  kV Chongqing - Hubei VSC-HVDC Back-to-back Interconnection Project

## DC Field Measuring Equipment

It is primarily applied in the UHVDC domain for high-speed acquisition of electrical quantities such as current and voltage. It meets the demands of direct current primary data required by protective relays, valve control systems, and fault recorders within DC transmission systems.



800 kV DC Voltage Divider and Complete Equipment of DC Field for Suzhou Converter Station

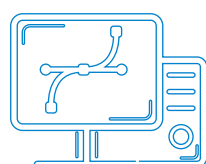
### Successful Applications

- Yangzhou - Zhenjiang  $\pm 200$  kV DC Transmission Project
- Longdong - Shandong  $\pm 800$  kV UHVDC Transmission Project
- Ningxia - Hunan  $\pm 800$  kV UHVDC Transmission Project
- Hami - Chongqing  $\pm 800$  kV UHVDC Transmission Project

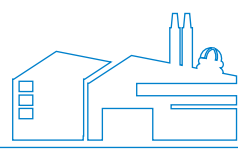


## Prefabricated Cabin-type Substation

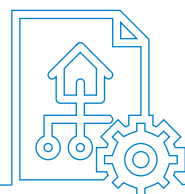
It is widely used in the construction of substations across power grid stations, renewable energy generation booster stations, traction substations for railway transportation, and industrial and mining substations. It has been used in markets such as Ethiopia, Argentina, and Chile.



**STANDARDIZED  
DESIGN**



**FACTORY  
PREFABRICATION**



**INTEGRATED  
CONSTRUCTION**

### International

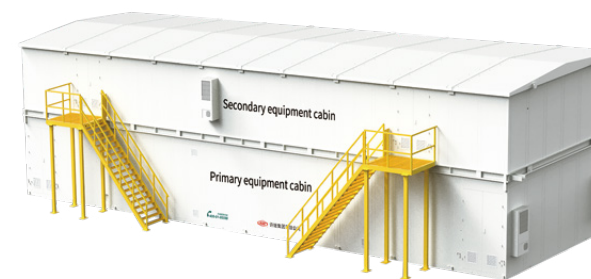
Addis Ababa Prefabricated Cabin, Ethiopia



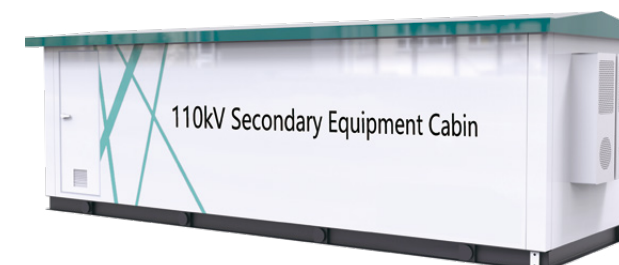
### Successful Applications

- 750 kV Substation in Shapotou, Ningxia
- 220 kV Step-up Substation of 50 MW Wind Power Project in Jinhu, Jiangsu Province
- 330 kV Substation in Nanshuo, Qinghai
- 220 kV Substation in Dashi, Chongqing
- 220 kV Substation in Yunxian County, Hubei Province
- 110 kV Substation in Zhongshan, Guangdong Province

Primary Equipment Cabin



110 kV Secondary Equipment Cabin



### In China The Highest Voltage Level Prefabricated Substation

State Grid – Ningxia Shapotou 750kV Substation



Industry – Nanchuan Industrial Park Substation



Rack-mounted Prefabricated Cabin Project



New Energy – China Resources Alxa Substation



# 03

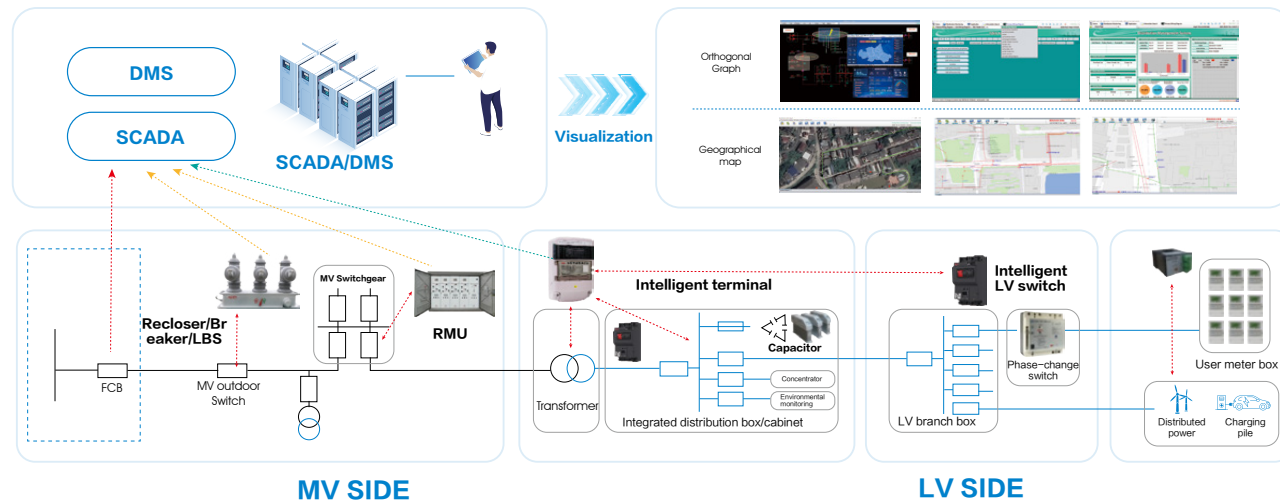
## Power Distribution



### Intelligent Distribution Network Solution

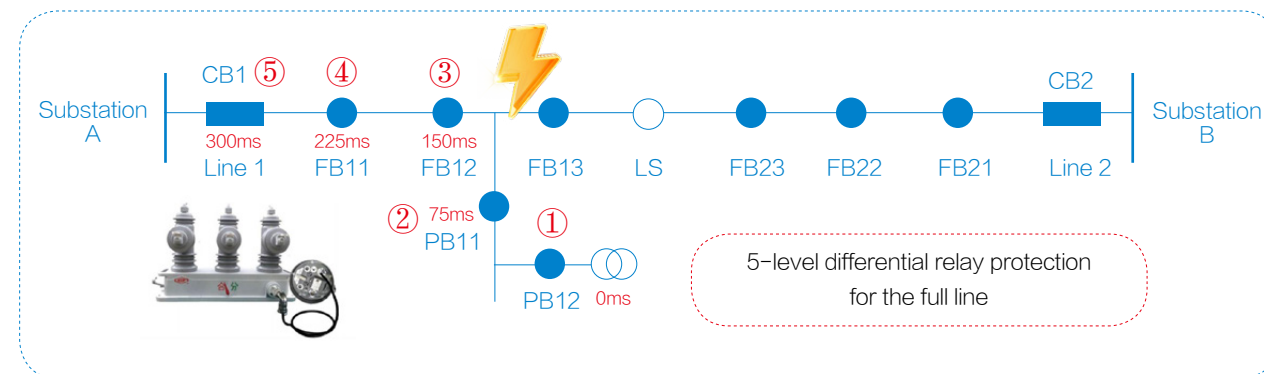
XJ covers distribution switch, intelligent controller, and SCADA system. It has supplied more than 300,000 sets of various medium-voltage switches and ring main units and more than 200 sets of systems covering 60% cities in China to meet the application requirements under high altitude, extreme temperature and heavy lightning impulse conditions.

Covering  
**60%**  
of China's cities

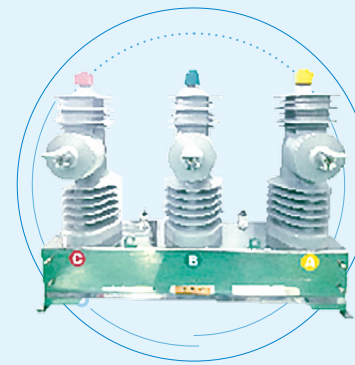


### Solutions to Reduce Power Outages

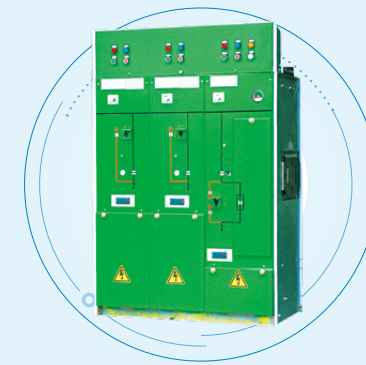
Relying on the fast opening characteristics of XJ switches, feeder line multi-level differential protection, ms level fault location and isolation, and power restoration can be realized on site without communication and SCADA.



### Power Distribution Products



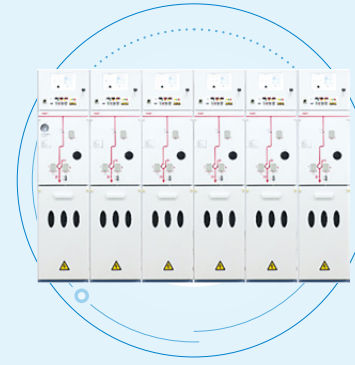
Pole-mounted Switch



GISELA1 Series Ring Main Unit



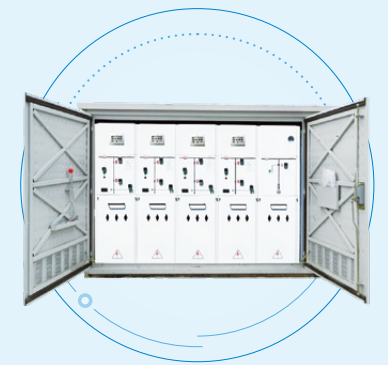
SF<sub>6</sub> Load-break Switch (LBS)



VSR3A Environmentally Friendly Gas Insulated RMU



VSR4 Environmentally Friendly Solid Insulated RMU



Complete Equipment of Ring Main Unit



RTU in Switchgear of Substation and Distribution Room



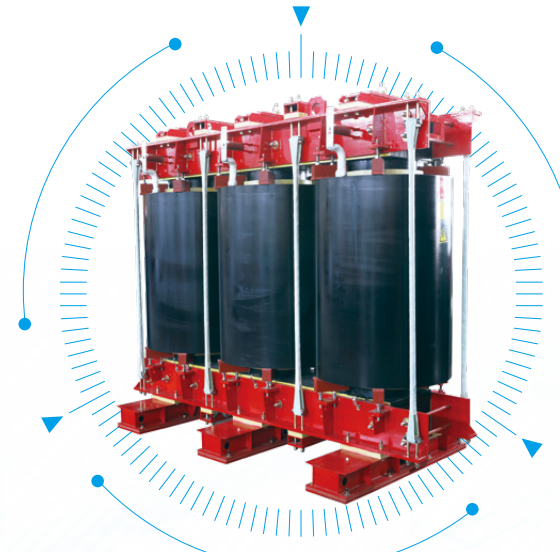
Pole-mounted Switch FTU



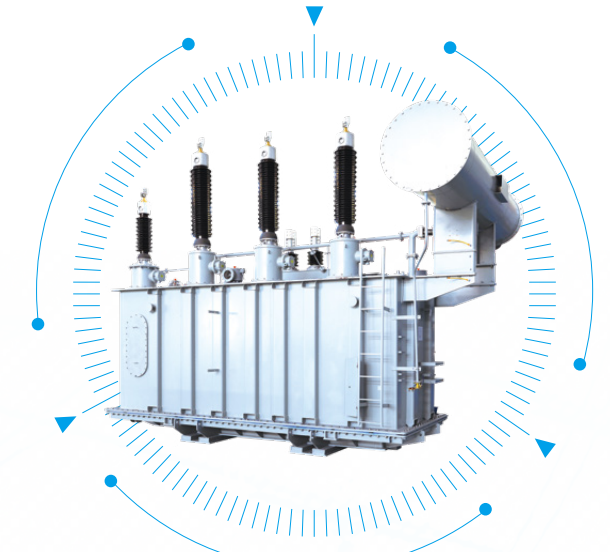
## Intelligent Primary Equipment

XJ can provide users with a range of equipment, including 220 kV and below oil-immersed power transformers, GIS, HGIS, MV series switchgears, switchgear components, dry-type transformers, combined wind-solar transformers, reactors, arc-suppression coil, and LV AC and DC switchgears.

Products are widely applied in sectors such as power grid, transportation, metallurgy, petroleum, chemical engineering, coal, and are exported to numerous countries and regions across Southeast Asia, Africa, and Europe.



10kV-35kV Dry-type Transformers



10kV-220kV Oil-immersed Transformers



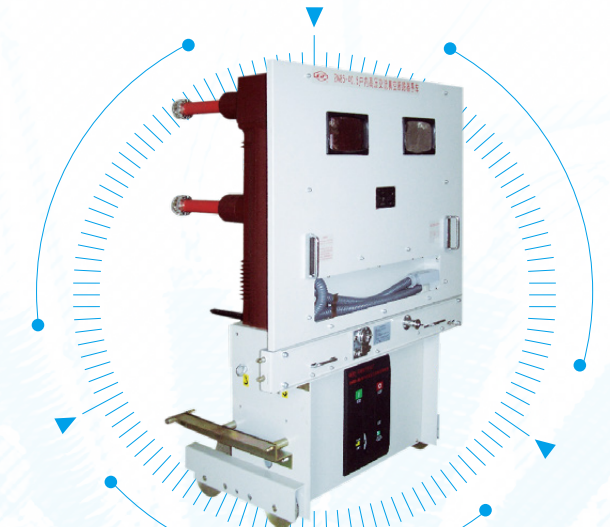
ZHW12-40.5kV Hybrid Gas-insulated Metal-Enclosed Switchgear (HGIS)



KYN Series Metal-clad Switchgears



VX3 Vacuum Circuit Breakers



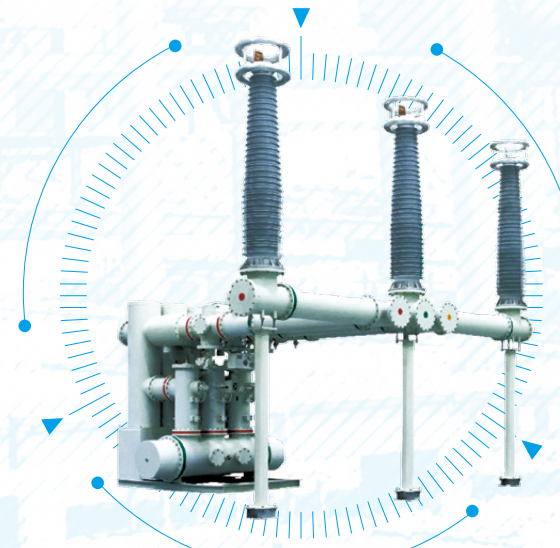
ZN85-40.5 Indoor High-voltage Vacuum Circuit Breakers with Solid Insulation



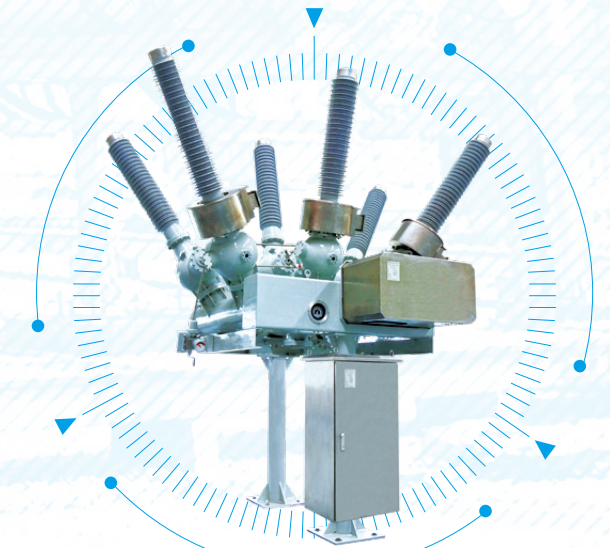
SGC1 Air-insulated Switchgears



KEM Series Gas Insulated Switchgear



GIS-252kV Gas-insulated Metal-Enclosed Switchgear (GIS)



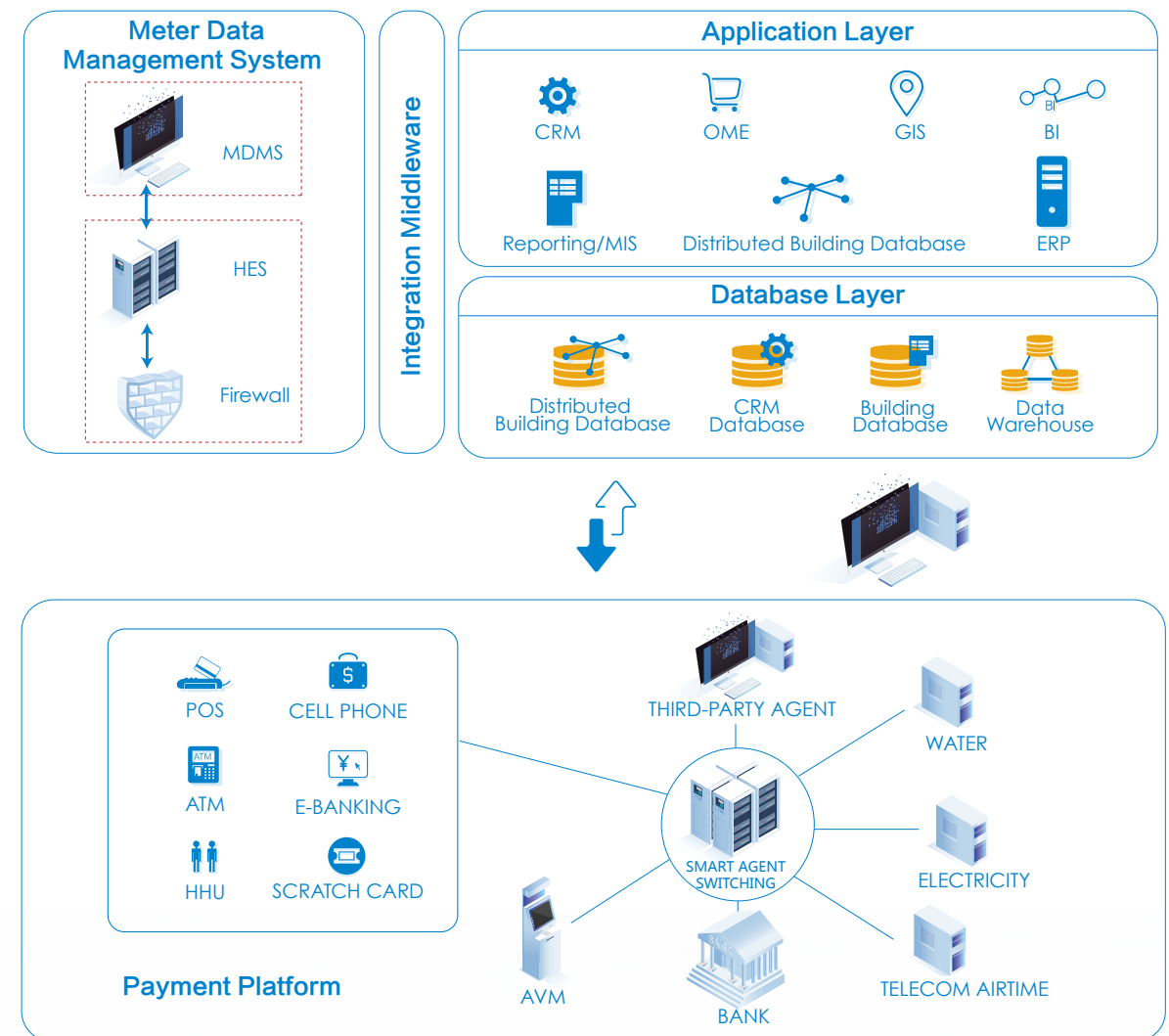
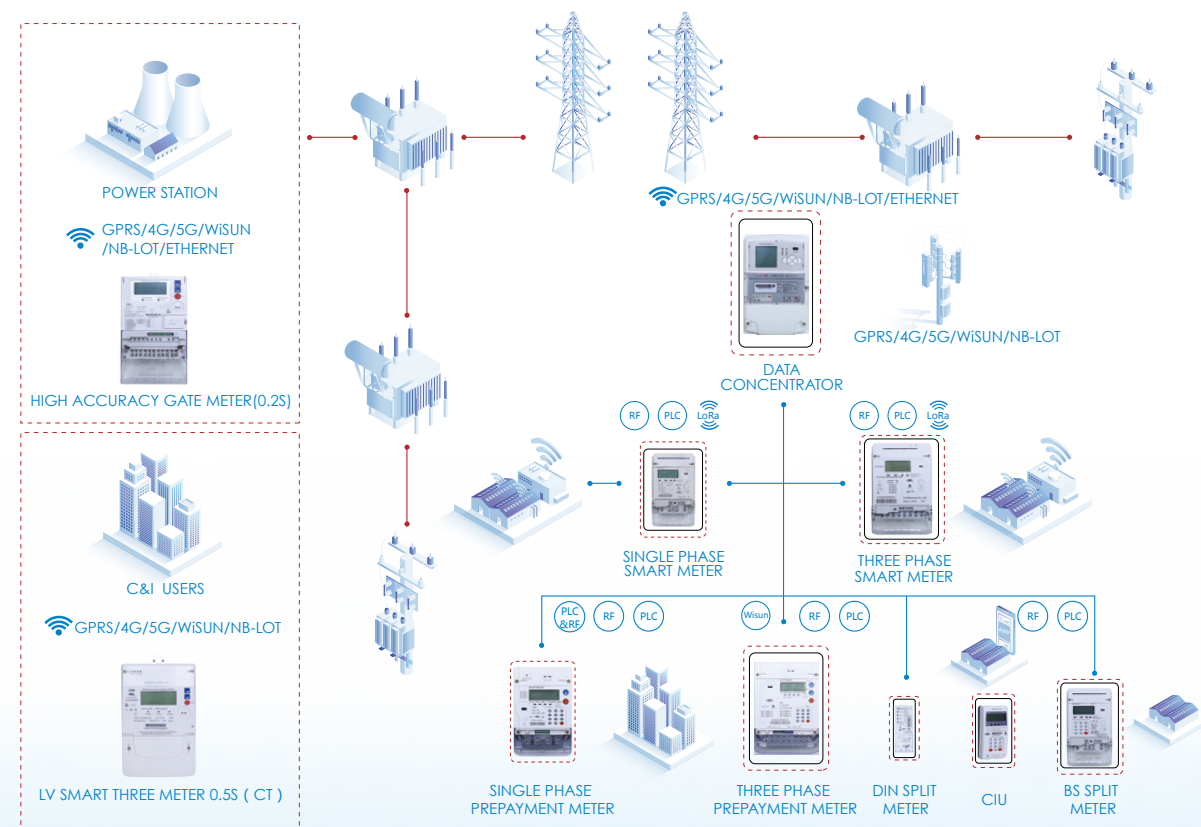
ZF48-145kV Gas-insulated Metal-Enclosed Switchgear (GIS)





## Smart Metering Solutions

AMI is a complete network combining system for measuring, collecting, storing, analyzing and using user power information. The AMI system is the infrastructure of the smart grid, supporting the functions of two-way communication, real time electricity data, prepayment and so on. It is the trend of the future development of intelligent measurement.



## Successful Applications

XJ's AMI products have been supplied in batches to Chile, Ethiopia, Vietnam, Thailand and other countries, and several localized meter factories have been built.





# 05

## EV Charging



### EV Charging Solution

Annual production capacity of  
**40,000** sets of AC/DC chargers

Annual production capacity of **220** sets  
of complete charging and swapping station  
equipment

XJ independently develops nine major categories of over 40 product models, including AC and DC EV chargers, tailored to various vehicle types and charging scenarios. Offering end-to-end intelligent charging and swapping solutions, XJ provides customers with comprehensive services, ranging from network planning, scheme design, equipment integration, EPC turnkey packages, to O&M services.



iZCJ36  
AC/AC 7kW  
Charger



iZCJ33 AC/AC  
7kW/11kW/22kW  
Charger



iZCJ33 AC/AC  
7kW/11kW/22kW  
Charger



iZCJ33 AC/AC  
7kW/11kW/22kW  
Charger



iEVSC31 AC/DC  
30kW Low-power  
Series



iEVQC31 AC/DC  
60kW - 90kW Integrated  
Machine Series



iEVQC33 AC/DC 60kW -  
180kW Integrated Machine  
Series



iEVC8200 AC/DC  
240kW - 480kW Group  
Control Series

Shandong Jinan High-speed  
Railway East Station Bus Parking  
Lot High-power Charging System



Solar-storage-charge Integrated Charging Station in Xiong'an New District Civic Center Parking Lot





# Energy Storage



## Prefabricated Energy Storage System Solution

10<sup>+</sup> GWh

Cumulative Supply of Energy Storage PCS

200<sup>+</sup>

Cumulative Participation in the Construction of Energy Storage Power Stations

15<sup>+</sup> GW

Annual PCS Capacity

Prefabricated energy storage systems are a commonly utilized configuration for large-scale energy storage projects, integrating features such as lithium iron phosphate battery packs for energy storage, power conversion systems (PCS), transformers, battery management systems (BMS), energy management systems (EMS), and interconnected fire control systems. These systems boast high levels of integration, large energy density, and versatility across a variety of applications.

Haixi Autonomous State Multi-energy Complementary Integrated Optimization Demonstration Project  
Energy Storage Power Station



## Behind-the-meter Distributed Energy Storage System Solution

A distributed energy storage system consists of distributed power sources, energy storage units, distribution units, loads, and monitoring and management units, forming an autonomous system capable of self-control, protection, and management. This system can operate both in a grid-connected mode, synchronously with the larger power grid, or independently in off-grid mode. Under the supervision of an energy management unit, it balances power supply to the internal loads, ensuring system stability and continuous power delivery.



Zhenjiang Industrial Park PV Storage Microgrid

## Energy Storage Products



CBL221-2500 Liquid-cooled Power Conversion System (PCS)



CBL220-2500/CBL220-3250/  
CBL220-3560 Power Conversion System (PCS)



5MW Energy Storage Converter  
Booster Cabin



Modular Power Conversion System  
Booster Cabin



CBL231-62.5/CBL231-100/CBL231-135  
Power Conversion System (PCS)



CBL233-50/CBL233-80DC  
Converter



HCPCS20 series HV Direct-  
mounted Power Conversion  
System (PCS)



EEC-418/220-L Energy Storage  
Integrated Machine



07

## Smart Microgrid



### Microgrid Solutions

XJ provides core technologies, products and complete sets of systems such as microgrid controller, microgrid energy management system and microgrid system integration and has the EPC general contracting capability of smart microgrid system.

### Successful Applications

- Longyangxia Hydro-Solar Hybrid Microgrid Demonstration Project
- Zuhai Wanshan Island Microgrid Demonstration Project
- Nanji Island Microgrid Demonstration Project
- Roof PV Power Generation Project of Xiongan Station Building on Beijing-Xiongan Intercity Railway



Xiongan Green and Intelligent Microgrid Demonstration Project



Distributed Power Supply and Microgrid Control Management System



Zhejiang Nanlu Island Microgrid Demonstration Project

08

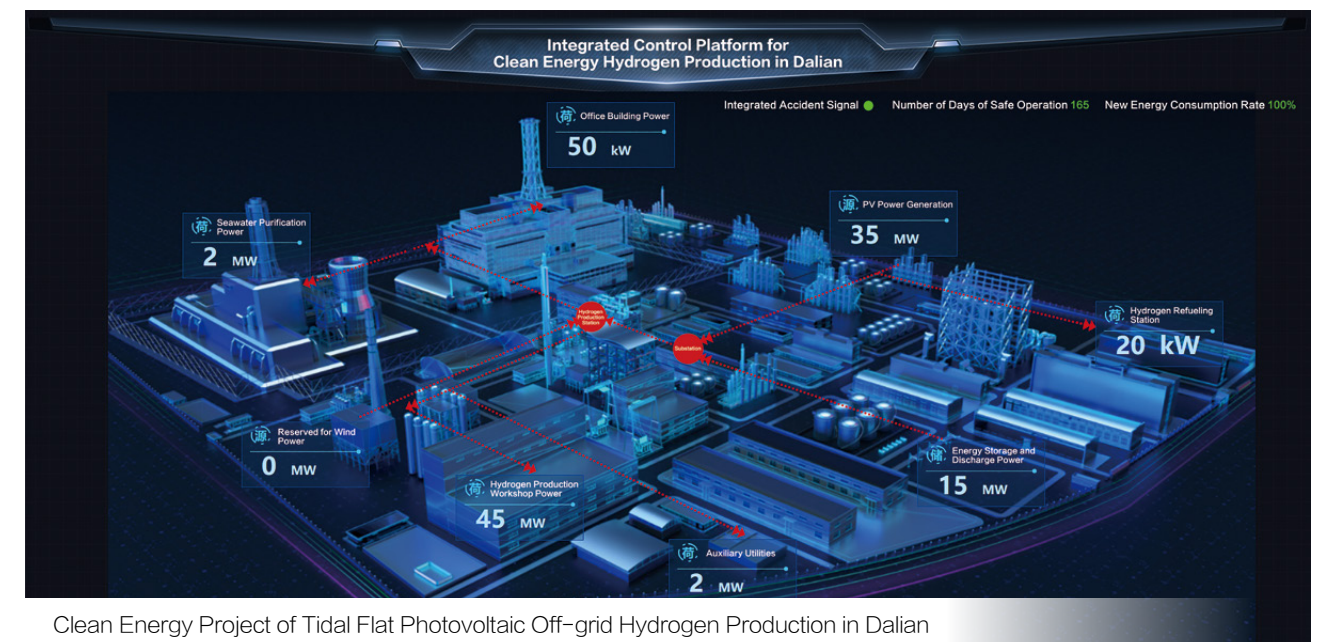
## Emerging Business Hydrogen-electric



Hydrogen energy is a signification option for future green energy transition, so XJ has successfully developed core products such as hydrogen production monitoring system and hydrogen production power supply system.

### Green Power Electrolytic Hydrogen System

Green power electrolytic hydrogen system is a combination of wind power generation, solar power generation and hydrogen production by water electrolysis, which can realize a green full life cycle of hydrogen energy, and also better new energy consumption. XJ can also provide the power supply system for new energy off-grid and hydrogen production, and control system, O&M system for hydrogen production from new energy sources.



Clean Energy Project of Tidal Flat Photovoltaic Off-grid Hydrogen Production in Dalian

### Hydrogen Production Power Supply

As the hydrogen-electricity coupling interface of hydrogen production system, the hydrogen production power supply provides reliable DC power supply for electrolytic bath on the one hand, and realizes flexible interaction with power grid on the other.



2MW Hydrogen Production Power Supply Product with IGBT



# Typical Performance

## Power Transmission and Transformation

- $\pm 660$  kV Matiari - Lahore HVDC Transmission Line in Pakistan
- 600MW Back-to-back Converter Station in Van, Turkey
- EPC Project of 81MW Heavy Oil Power Generating Plant in Athi River, Kenya
- Turnkey Project of Multi-Purpose Diesel Engine Works of Union of Myanmar
- Electrical EPC Project of Nam Na II  $3 \times 22$  MW Hydropower Project in Vietnam
- GDHA 500kV Power Transmission and Transformation Project in Ethiopia
- Southern Extension of National Electricity Grid Power Transmission Project of Ethiopian Electric Power (EEP)
- MEKIN Hydropower Station and NY Substation in Cameroon
- Substation in Cabinda province, Angola
- San Gabán Hydropower Project in Peru
- 110 kV Substation in Thachto, Vietnam
- Khadori Hydropower Plant in Georgia
- 22 kV Switching Station and Distribution Network in Vientiane Saysettha Development Zone, Laos
- Power Plant 2 in Ekibastuz, Kazakhstan
- TPI PP Waste-To-Energy Plant in Thailand



Power Transmission and Transformation Line in Djibloho, Equatorial Guinea



$\pm 660$  kV Matiari - Lahore HVDC Transmission Line in Pakistan



Montenegro North-south Highway Construction Project



110 kV Substation in Kazakhstan



81MW Heavy Oil Power Generating Plant in Athi River, Kenya



## Power Distribution and Utilization, and Rail Transit

- ◎ AMI System and Smart Meter Project (Phase I) of CGE, Chile
- ◎ AMI System and Smart Meter Project (Phase II) of CGE, Chile
- ◎ MV Metering Project of Enel, Italy
- ◎ Single-phase Meter Supply, Burkina Faso
- ◎ Smart RMU Supply to SEC, Saudi Arabia
- ◎ Bulk Procurement of Distribution Network Parts and Equipment Supply for 70 Mini-Grids, Ethiopia
- ◎ Construction for LV Secondary Network Regularization and Supply of Pre-paid Meters, ENDE- Empresa Nacional de Distribuição de Angola
- ◎ Supply of connection materials, ready-boards and pre-paid metres, Uganda Rural Electricity Access Project (UREAP), Rural Electrification Agency, Uganda
- ◎ Electricity Meter Supply, Bangladesh
- ◎ Rail Transit Orange Line Project in Lahore, Pakistan
- ◎ Laos-China Railway Project



Ring Main Unit Project in Saudi Arabia



AMI Meter Project of CGE, Chile



ARENA LV Distribution Network Power Quality Management Demonstration Project in Australia

## New Energy, Charging and Battery Swapping

- ◎ BorWin6 Offshore Wind Power VSC-HVDC Transmission Project in Germany
- ◎ BESS Energy Storage Project in Chile
- ◎ Electrical Supply Project of 70MWp Solar Power Station in Lesotho
- ◎ LMA PV Storage Power Generation Project in Argentina
- ◎ Wind and PV Energy Storage Project in Tajikistan
- ◎ Calatrava Wind Power HV Transmission Project in Philippines
- ◎ Supply of Electric Vehicles Charging System (EVCS) for Electric Buses, Operation and Maintenance Project in Singapore
- ◎ EV Charger Supply, Thailand




Electric Bus Charging Station Project of Land Transport Authority of Singapore



Control Cabin of PV-Storage Power Generation Prefabricated Cabin Project in Argentina



A faint, light blue world map is visible in the background, centered behind the contact information.

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