

FOR SAFE AND BETTER USE OF EVERY kWh

LEADING A CARBON-NEUTRAL LIFE AND
ENLIGHTENING THE WORLD'S FUTURE

XI'AN WEIGUANG ENERGY TECHNOLOGY CO., LTD

🌐 www.weiguangenergy.com

📍 Bldg. 5-6, No. 3 Biyuan Second Rd., High-Tech Zone,
Xi'an, Shaanxi

☎ 400-868-6988



Leader of Electric Energy Router for Energy Internet

CONTENTS

About Us	02
Our Culture	06
Our Business	07
Our Ability	08
Our Solution	10
Our Service	27

OUR COMPANY



WeiGuang Energy Technology Co., Ltd. (WG ENERGY), headquartered in Xi'an, China, is a member of BPG. The company was jointly founded by a renowned leadership team and distinguished professors in the field of power electronics.

Driven by the vision of “LEADER OF ELECTRIC ENERGY ROUTER FOR ENERGY INTERNET,” we specialize in the research and development of next-generation power electronic equipment centered around Solid-State Transformers (SST). Our mission is to accelerate the intelligent upgrade of energy infrastructure and provide cutting-edge solutions for the construction of new power systems and the global pursuit of carbon neutrality.

Our core portfolio spans power electronic battery packs, PCS, solid-state transformers, and integrated solutions for energy storage systems (ESS), EV charging, and AC/DC hybrid distribution networks.



Xi'an Jiaotong University

WG STOCKHOLDER

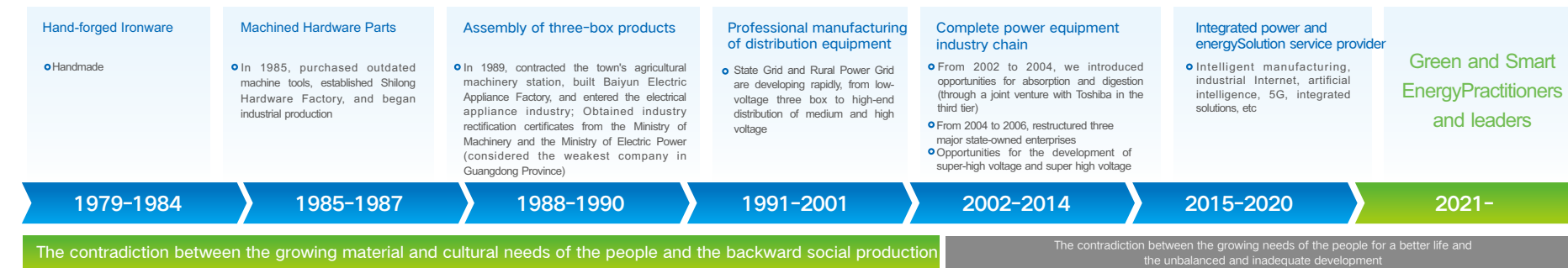
Baiyun Electric Group Co., Ltd. (referred to as "Baiyun Electric Group") has been deeply engaged in the power energy field since its establishment in 1979, focusing on green and smart energy, providing integrated solutions for source-grid-load-storage and energy-saving carbon reduction technologies. The group is headquartered in Guangzhou and owns 17 industrial bases across the country. Its products and services cover clean energy generation, flexible transmission, intelligent substation distribution, smart electricity usage, and more, forming industry-leading solutions in smart urban rail transit, smart water affairs, smart healthcare, smart metallurgy, new energy, digital industries, port shore power, smart low-carbon buildings, smart low-carbon factories, and smart low-carbon parks. The voltage levels range from 0.4kV to 1100kV, making it one of the enterprises with the most comprehensive product chains in the domestic industry.

Baiyun Electric Group and its subsidiaries are recognized as national innovative enterprises and national technology innovation demonstration enterprises. They have established a nationally accredited enterprise technology center, testing center, and post-doctoral research workstation. The group has received numerous awards, including two special prizes for national scientific and technological progress, one first prize, one second prize, four China Patent Awards, and has been honored by the State Grid as a "Special Contribution Unit for Ultra-High Voltage."

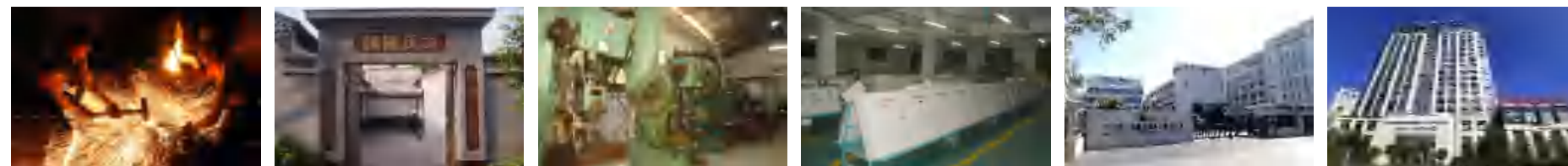


Enterprise Development History

45 years dedicated to the electrical industry and we have become a leading enterprise in China's power equipment manufacturing.



The history of BPG's development in sync with the reform and opening up is a history of continuous improvement, innovation. and reform



Industrial distribution

100+
National sales performance

1000+
International Sales&Service Personnel

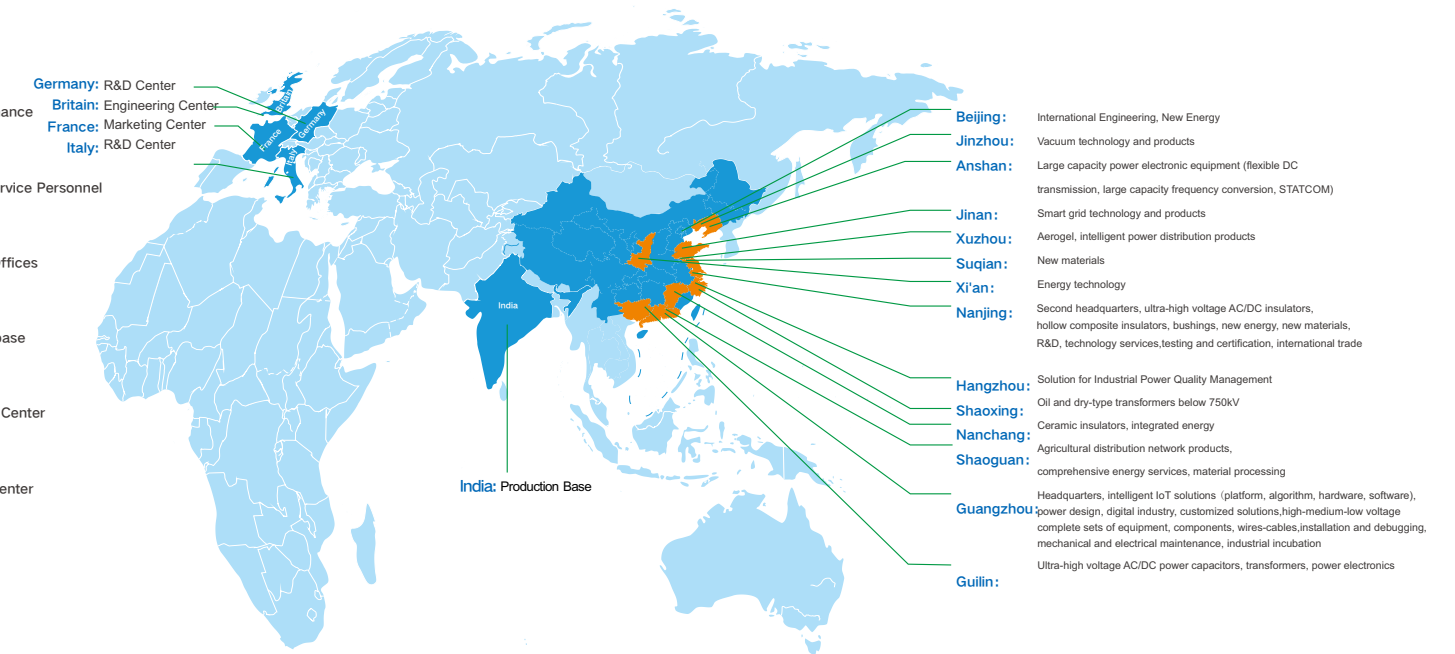
7
Overseas Branches&Offices

1
Overseas production base

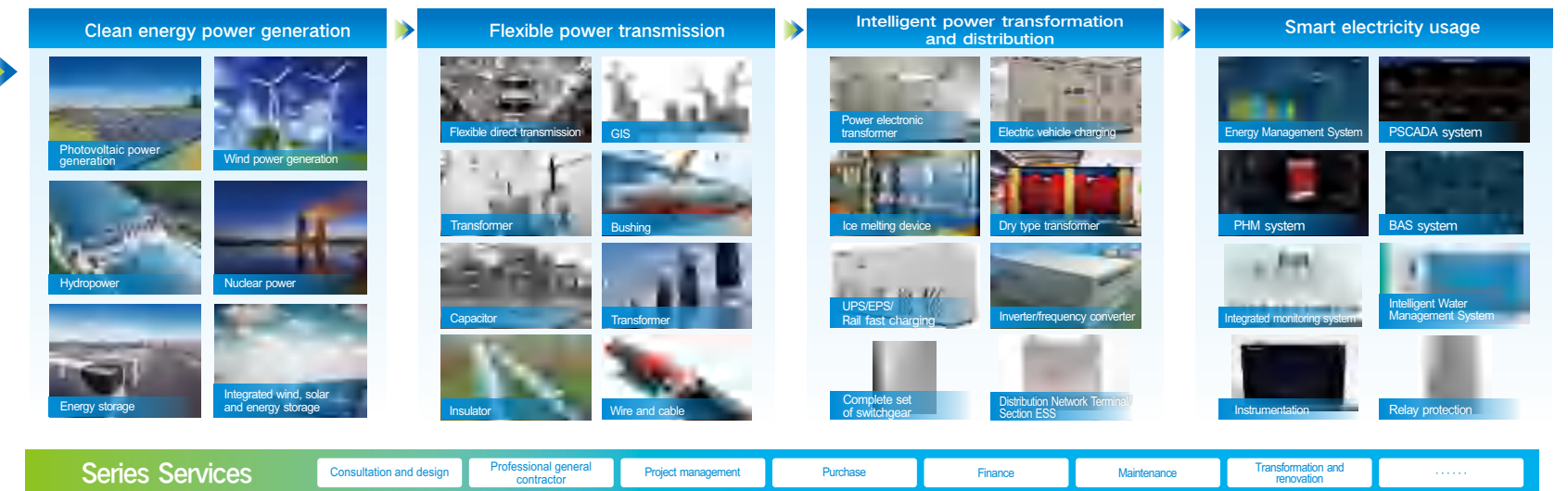
1
Overseas Engineering Center

1
Overseas Marketing Center

2
Overseas R&D Center



Core ability



I WG CULTURE

MISSION

Leading a Carbon-Neutral Life and Enlightening the World's Future

VISION

Leading the power electronic equipment and integrated energy solution.

VALUES

Perseverance · Pragmatism · Innovation · Responsibility

I WG STRATEGY

Focus on the "123 + X" strategy, continue to contribute to the world's leading products and solutions for the zero-carbon life of all mankind.

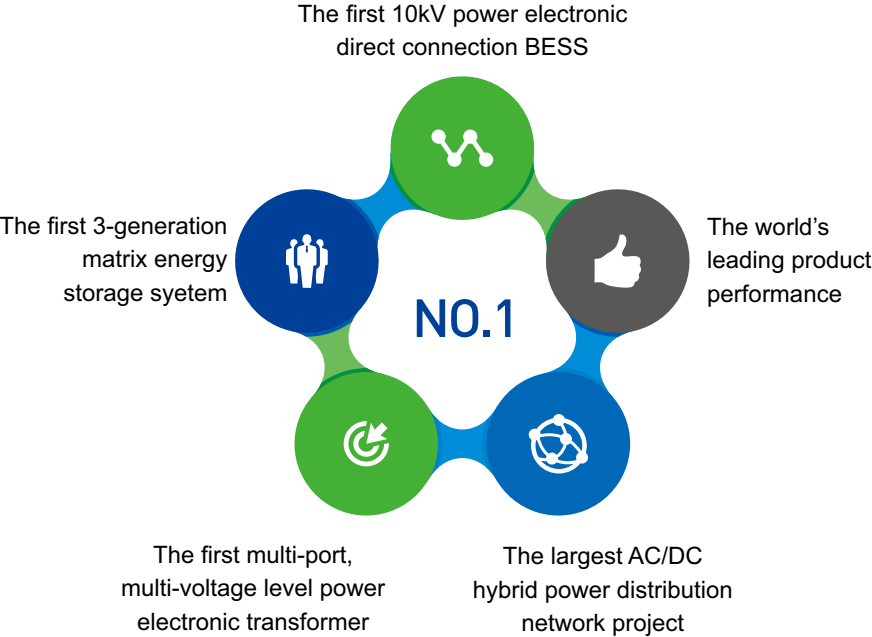


OUR ABILITY

R&D AND INNOVATION ABILITY

We have more than 60 industry-renowned technical experts, forming a core technology team with more than 85% of master's and doctoral degree holders, including 8 PhDs. The team has long been focused on the development and overall solutions of core equipment such as photovoltaic, energy storage, flexible DC, AC/DC hybrid distribution network, smart microgrid, etc. It is one of the few in the industry that possesses multiple projects' core technologies, trans-voltage level power electronic equipment R&D teams, completing several "world first" and "international leading level" engineering or equipment development.

The company has completed the development of products such as PCS, BMS, modular battery controller, matrix energy storage system, power electronic transformer, smart management cloud platform, and has applied for nearly 100 invention patents, ranking first (the highest score in the field) in the 12th China Innovation and Entrepreneurship Competition (Shaanxi District) and the 3rd Shaanxi Qinchuang Science and Technology Innovation and Entrepreneurship Competition.



MANUFACTURE AND DELIVERY CAPABILITIES



We have 380V/10kV/35kV full voltage range experimental capabilities, and qualified ability for the manufacturing, assembly, commissioning of PCS, DCDC converter, BMS, battery packs, power electronic transformer and integrated energy storage products. We have over 6500m² for the

1st stage workshop guarantee more than yearly production of 1GWh.



IWG PRODUCT

For safe and better use of every kWh 09 | 10

Power electronic products

E²D100

Modular-level battery controller



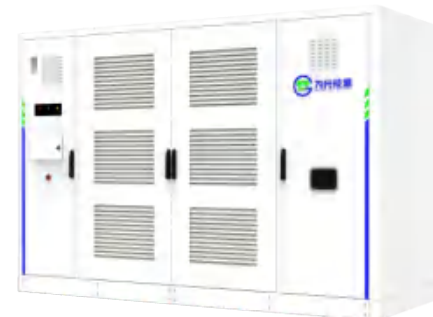
E²C3000

Virtual centralized PCS



SST5000

Solid state transformer



E²C2000

String type PCS



E²Think

Smart Management Cloud Platform



Series of power electronic products can be widely adapted to fields such as energy storage, charging, and distribution networks

System integration products

E²T2500/5000

Combined converter-booster



E³Matrix

Third generation matrix energy storage cabinet



E⁴Matrix-ES

SST direct hanging energy storage matrix



E²Stack

Liquid cooled battery compartment



E⁴Matrix-SC

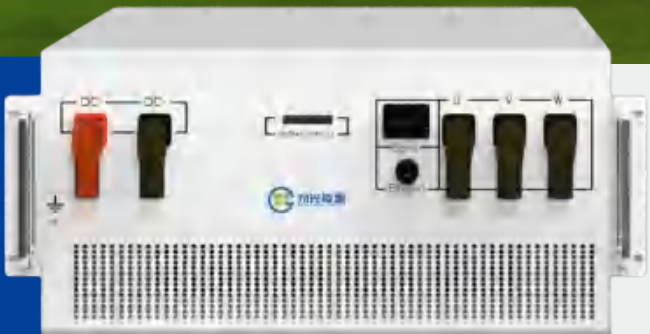
SST direct hanging super-charging matrix



System integration products can be widely used in scenarios such as source grid side energy storage, C&I energy storage, section energy storage, electric vehicle super-charging, and new distribution networks

Power Conversion System-E²C2000

Power Conversion system is the key interface between the power grid and energy storage battery. It helps to convert the power in and out of the batteries by charging and discharging the energy storage battery system.



Safety and reliability

- ◆ High protection degree (IP66);
- ◆ Smart sub-zone heat dissipation, appropriate operation condition for components;
- ◆ Support protections such as DC reverse connection and system grounding, etc;
- ◆ Interaction with BMS and EMS for multi-dimensional fault protection

Advanced performance

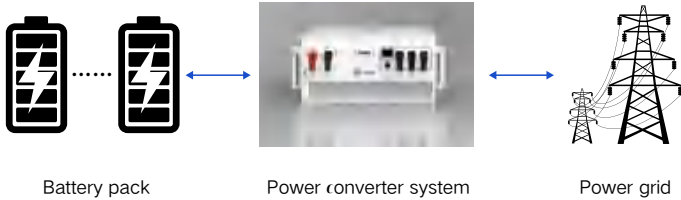
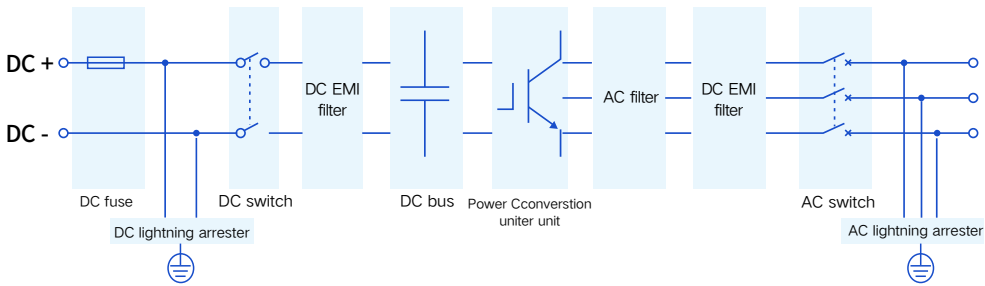
- ◆ Quick charge / discharge transfer within 30ms;
- ◆ Quick dispatch response within 30ms;
- ◆ High / low voltage ride through operation with a strong adaptability to the power grid;
- ◆ Full voltage range operation with long-term overload capability
- ◆ 1.2 times maximum overload capability

High efficiency

- ◆ ANPC topology with high efficiency ; Hybrid vector modulation algorithm,
- ◆ improving the overall operation efficiency; Extremely low standby loss

Various functions

- ◆ VSG, VF and PQ operation modes supported;
- ◆ Flexible power dispatching strategy supported, such as intelligent charge/ discharge and planned charge / discharge;
- ◆ Four-quadrant operation, active / reactive power full load output



Technical Parameters

Product model	E²2000-P117	E²2000-130	E²C2000-P186	E²C2000-P210
DC side				
Max. DC voltage	1000V	1000V	1500V	1500V
DC operation voltage range	600V~1100V	600V~1100V	1000V~1500V	1000V~1500V
Rated DC voltage	768V	768V	1331V	1331V
Max. continuous DC power	132kW	147kW	205kW	231kW
AC side				
Rated capacity	117kVA	120kVA	186kVA	210kVA
Rated AC voltage	400Vac	400Vac	690Vac	690Vac
Rated AC current	169A	188A	156A	176A
Max. continuous AC power	119kW	147kW	205kW	221kW
AC operation voltage range	±10%			
AC frequency	50/60HZ			
Current THD	<3% @ rated power			
Power factor	>0.99@ rated power			
Power factor	-1~+1 continuously adjustable			
DC current component	<0.5% at rated power			
General parameters				
Connection method	IT			
Max. efficiency	98.5%	99.01%		
Cooling method	Intelligent forced air cooling			
Protection degree	Ip66			
Dimension(W*H*D)	770mm*1100mm*220mm		630mm*900mm*285mm	
Weight	95kg			
Working Operation temperature	-25℃~+60℃(>50℃ derating)			

Module-Level Battery Controller E²D100

E²D100 deeply integrate the power electronic technology and control technology, to eliminate the capacity loss and potential safety risk caused by the inconsistency of battery cells after packing. E²D100 power electronic converter innovatively integrated with the battery management unit (BMU) to bring extra value such as self SOX equalization and EIS-based active failure warning in addition to conventional battery charge/discharge management.

E²D100 also provides various modes, such as full-power operation, efficient ECO connection and online failure bypass, which can be enabled automatically according to the operation requirement, improving the cost-effectiveness and reliability in all conditions. The full-power operation mode supports constant current, constant power and constant voltage charge / discharge, suitable for various battery type.



Hybrid Switch Multi-Management Design In-depth Refinement

Fine Grain Control: Utilizing multiple module-level battery controllers to divide the cells within the cabin into several groups for independent charge and discharge management, achieving deep refinement;
Strong compatibility: Compatible with mainstream LFP cells from 280Ah to 325Ah, also suitable for Na+ cells and cells mix-usage, freedom the supply chain management.

Online automatic shift of multimodal operation

Multimodal operation: Various operation modes such as full-power operation, efficient ECO connection and online failure bypass;
Customized regulation management: Intelligent battery-level multi-variable regulation technology of current, voltage, power, SOC, temperature, etc., actively improving the consistency of the entire cluster of battery cells and ensuring the best performance of all battery packs;
Dual-bypass optimization: A maximum efficiency of 99.5% in the efficient ECO connection mode; Online bypass under battery fault conditions, support a maximum tolerance of 37% of the total battery modules run out.

Active monitoring

Deep integration: Power electronic converter is deeply integrated with the battery management unit (BMU) for the sake of easy monitoring and Fine control;
Thorough-Full scans: The EIS scanning is achieved by injecting a wide range frequency current into the battery module, detail parameter is acquired for potential failure warning.

Parameters

Model	E²D100
Dimensions (width * height * depth)	280*130*1005mm
Voltage range on the battery side	89.6V~115.2V
Rated current on the battery side	157A
Rated power on the battery side	16.08kW+16.08kW
Voltage range on the busbar side	179.2~280V
Voltage ripple	<3%
Maximum charging efficiency in PWM mode	98.5%
Maximum discharge efficiency in PWM mode	98.5%
Maximum efficiency in ECO mode	99.5%
Charge discharge conversion time	≤50ms
Weight	≤25kg
Overload capacity	Long-term operation at 1.1 times rated power

Over temperature protection Yes

The 3rd Generation Matrix Energy Storage System E³Matrix



E³Matrix energy storage system consists of E²D100, E²C2000, thermal management system and fire protection system, suitable for industrial and commercial application as well as grid side energy storage scenario.



Throughout the entire service life, the available electricity quantity, overall efficiency and full investment based internal rate of return (IRR) can be increased by 34%, 2.5% and 35% (relative value), respectively.

High safety

Independent battery module power control, active EIS scanning and potential abnormal parameter warning through big data offer an active safety management. Pack-level independent six-in-one fire protection monitoring, Aerosol + backup water fire protection support a precise and rapid fire protection.

Long service life

Pack-level independent liquid cooling and module-level active thermal balancing methods achieve maximum temperature difference of 2 , improving the system cycle number by 25%. The service life of the fan is extended through the intelligent temperature cooling algorithm. Adopting IGBT packaging technology with high thermal stability to improve reliability.

Higher quantity utilization

Fine management of module-level SOC through the battery controller enables over 7% electricity quantity increase in one charge/ discharge cycle. The active variable frequency liquid cooling and the parallel connection of piping between packs can help to greatly improve the heat dissipation efficiency and reduce the self power-consumption by 30%. By adopting the ANPC topology + hybrid vector modulation algorithm, the charge/discharge efficiency can be increased by 1%.

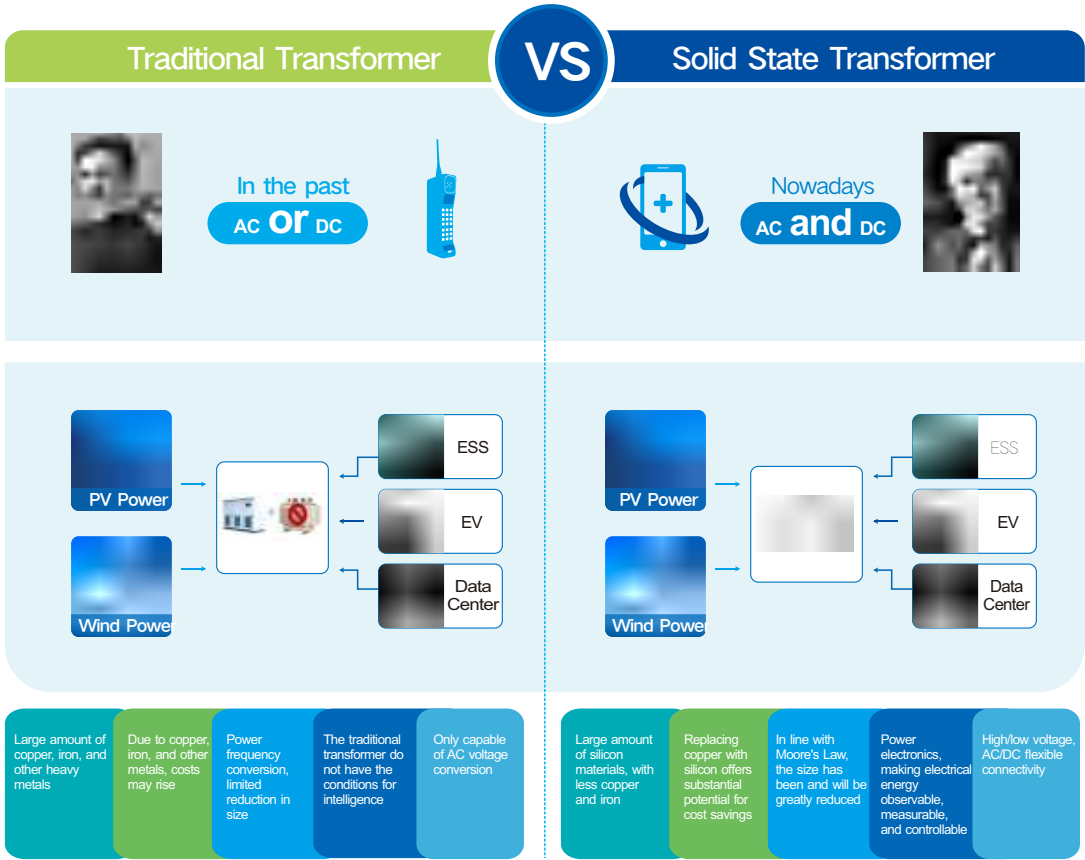
Higher revenues

Modular cabinet design greatly reduce the occupied area and shorten the commission time, reduce the initial investment. E²Think enables intelligent O&M, panoramic monitoring and less human labor.

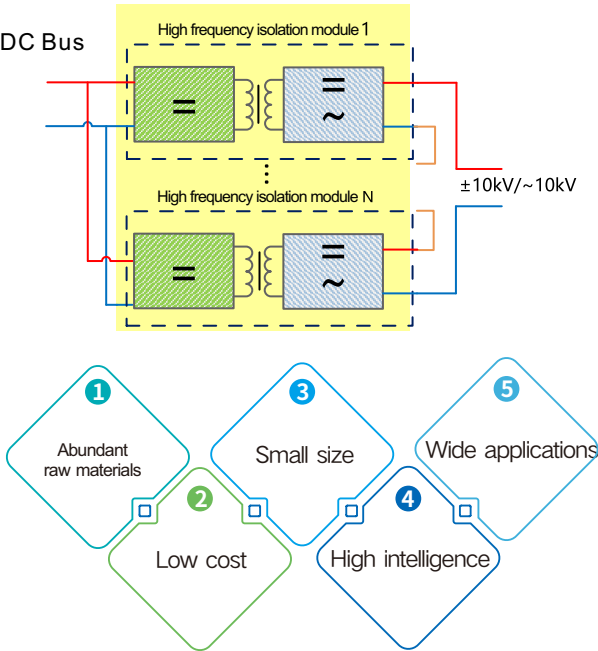
Technical Parameters

Model	E ³ Stack-C1000-257 I	E ³ Stack-C1000-385 I
Type of battery cell	314Ah	314Ah
Pack capacity	64.3kWh	64.3kWh
System capacity / packing method	257kWh	385kWh
Rated power	130kVA	210kVA
Rated AC voltage	400V	690V
DC voltage range	600Vdc~1000Vdc	1000Vdc~1500Vdc
Fire protection system	Aerosol + water fire protection+active safety	
Dimension(W*H*D)	1220mm*1570mm*2100mm	1560mm*1500mm*2440mm
Cooling method	Liquid-cooling for battery, air cooling for PCS	
Protection degree	IP54	

Solid State Transformer, SST



The Solid State Transformer is based on the core concept of Power Electronic Building Block (PEBB), generally adopting a modular series-parallel topology to achieve flexible access for different voltage levels, capacity grades, and forms of electrical energy. This facilitates flexible configuration in various scenarios. The topology is as follows.



- High efficiency conversion(98.5%)
- Intelligent online redundancy(N+X)
- High power density(Increase by 80%)
- Low-latency response (reduced by 40%)
- High-frequency electrical isolation

Technical paramerters

Rated power	1MW/1.25MW/1.5MW/2.5MW/3.0MW
Rated grid voltage	AC10kV/DC±10kV
Rated output voltage	DC750V/800V
Max. efficiency	98.50%
Current THD	< 1%@Rated power
Redundancy	N+X (X As required)
Module power	≥70kW
Module voltage	≥1500V (High-voltage side voltage)
Module switching frequency	≥20kHz
Utilization rate of 3rd-generation semiconductors	≥50%
Dimensions(W*D*H)	3600*1500*2400mm

AI Data center

AI Data center

AIDC Power supply solution

High efficiency

The maximum efficiency is $\geq 90.8\%$.
Increase by more than 5%

Save footprint

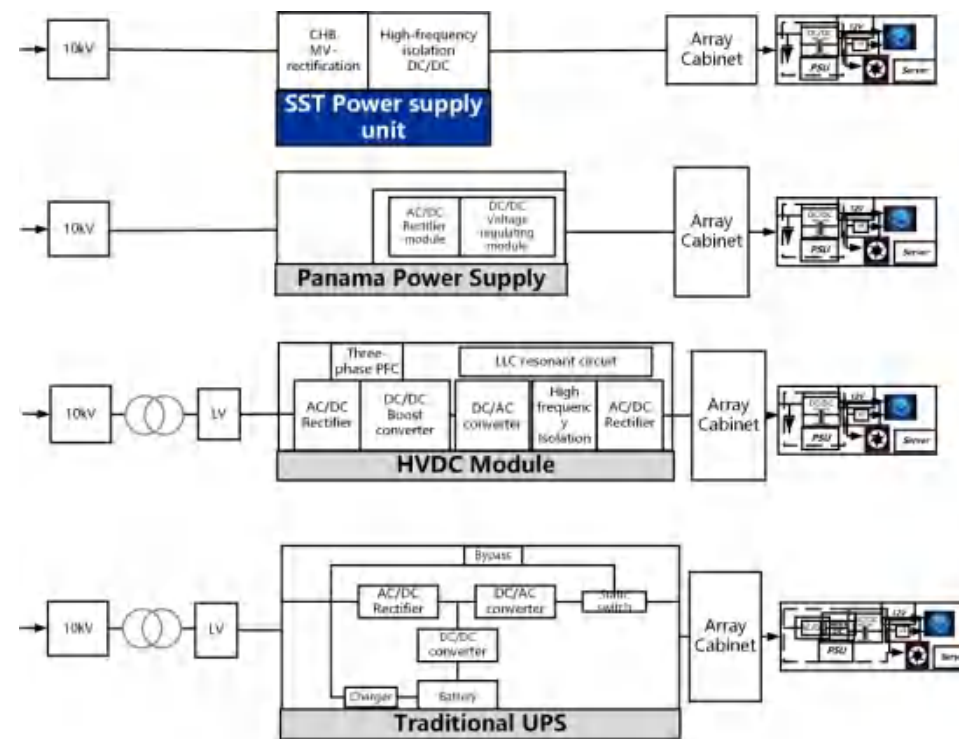
Reduce land occupation by **65%**

Quick installation

Reduce the installation and commissioning period by **75%**

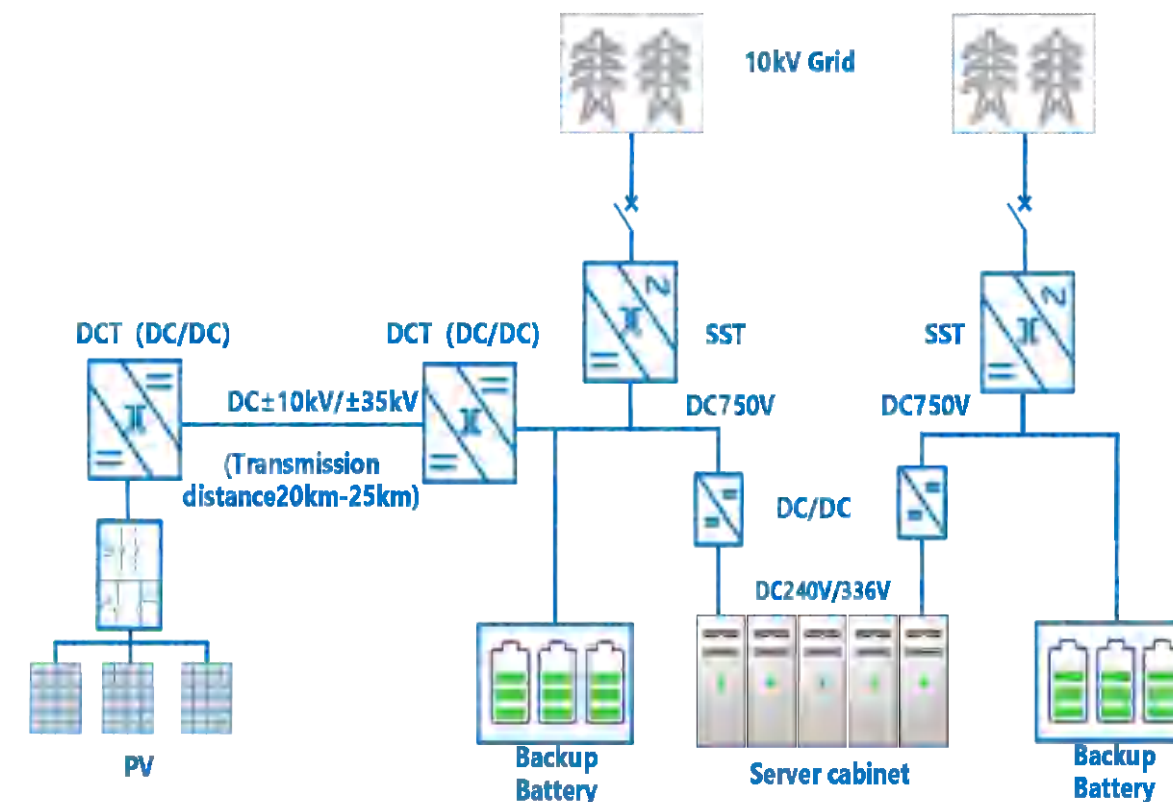
Low copper content

SST copper content reduction $\geq 90\%$
Busbar copper content reduction $\geq 67\%$



Green electricity DC supply

- Solar storage of green electricity for direct supply, reducing carbon emissions and saving costs
- Direct current transmission has high efficiency, large capacity and long transmission distance
- DC architecture, high stability, off-grid operation, low power consumption



EV Charging station

Charging Station SST Direct Connection Solution

Extremely comprehensive

All functions of power storage, charging and conversion are included, and all types of flexible vehicle adaptability are supported

Superior efficiency

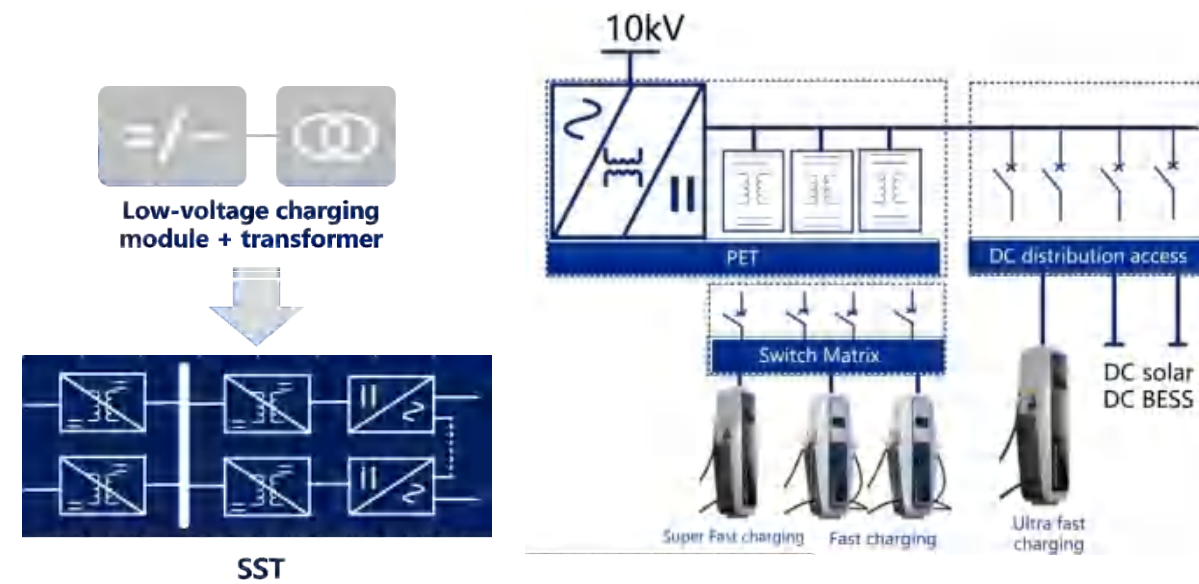
Maximum efficiency $\geq 97.5\%$, with an improvement of more than 5%

Ultra-fast charging

Supports MW-level ultra-fast charging, enabling a range of 100 kilometers in just 1 minute

Minimalism

The land occupation is reduced by **15%**, the power supply capacity is saved by **20%**, and the capacity of the conversion equipment is decreased by **38%**



Intelligent Energy Storage Management Cloud Platform-E²Think

Flexible interconnection

Support IOT technology, various interfaces, massive data real-time monitoring, remote control, OTA upgrade and cloud-edge architecture, realizing station deployment and cloud management.

Panoramic monitoring

Digital twin technology adopted for zero blind zone monitoring, accessible for battery cells, PCS, fire protection, cooling system and metering, support panoramic display and mronitoring.

Multi-dimensional safety management

The cloud computing and AI technology is applied to achieve the active safety management, abnormal warning and online diagnosis of battery cells, ensuring the equipment safety; The RSA encryption technology is also adopted to guarantee the data safety.

Intelligent operation

Flexible operation strategy of energy storage system is applied based on the electricity market, consumption demand and battery status to achieve a maximum revenue; The multi-dimensional analysis of batteries based on the big data technology, and the self-calibration of SOC can help to reduce the O&M costs.



Mobile terminal App



Stational terminal App

APPLICATIONS OF SST



Selected Project Cases

APPLICATIONS OF BESS



Selected Project Cases

PARTNER

» Some of partners «



OUR SERVICE

X 0

Customized integrated solutions
Technical support from our doctoral expert team

Free economic calculation and financial analysis
Helpful reference for your investment decision

4h

Response

24h

General maintenance

Regional

Sales Office

Regional

Warehouse

Regional

After-sales team

We are ready to provide our best service to every customer sincerely, professionally and wholeheartedly.

☎ Service number 400-868-6988

🌐 www.weiguangenergy.com