




## ENERGY STORAGE SYSTEM SOLUTION



### Hefei Hefu Intelligent Energy Co.,Ltd

 6th floor, G3 Building B, Hefei Software Park Phase II

 +86 181 0560 2548

 [www.hfiepower.com](http://www.hfiepower.com)

 [info@hfiepower.com](mailto:info@hfiepower.com)

## Hefei Hefu Intelligent Energy Co.,Ltd

TO MAKE ENERGY STORAGE MORE INTELLIGENT AND LIFE MORE GREEN



## ABOUT HFIE

HFIE, a subsidiary of Anfu technology (stock code: 603031), has strategically expanded its presence in the new energy industry. The company positions itself as a global provider of comprehensive solutions for new energy power electronics and energy storage, aiming to become a high-tech company specializing in energy storage system integration and "generation-grid-load-storage" overall solutions.



MISSION

To make the energy storage more intelligent and life more green



VISION

Leading technology, putting customers first, committing itself to becoming an outstanding company



VALUE

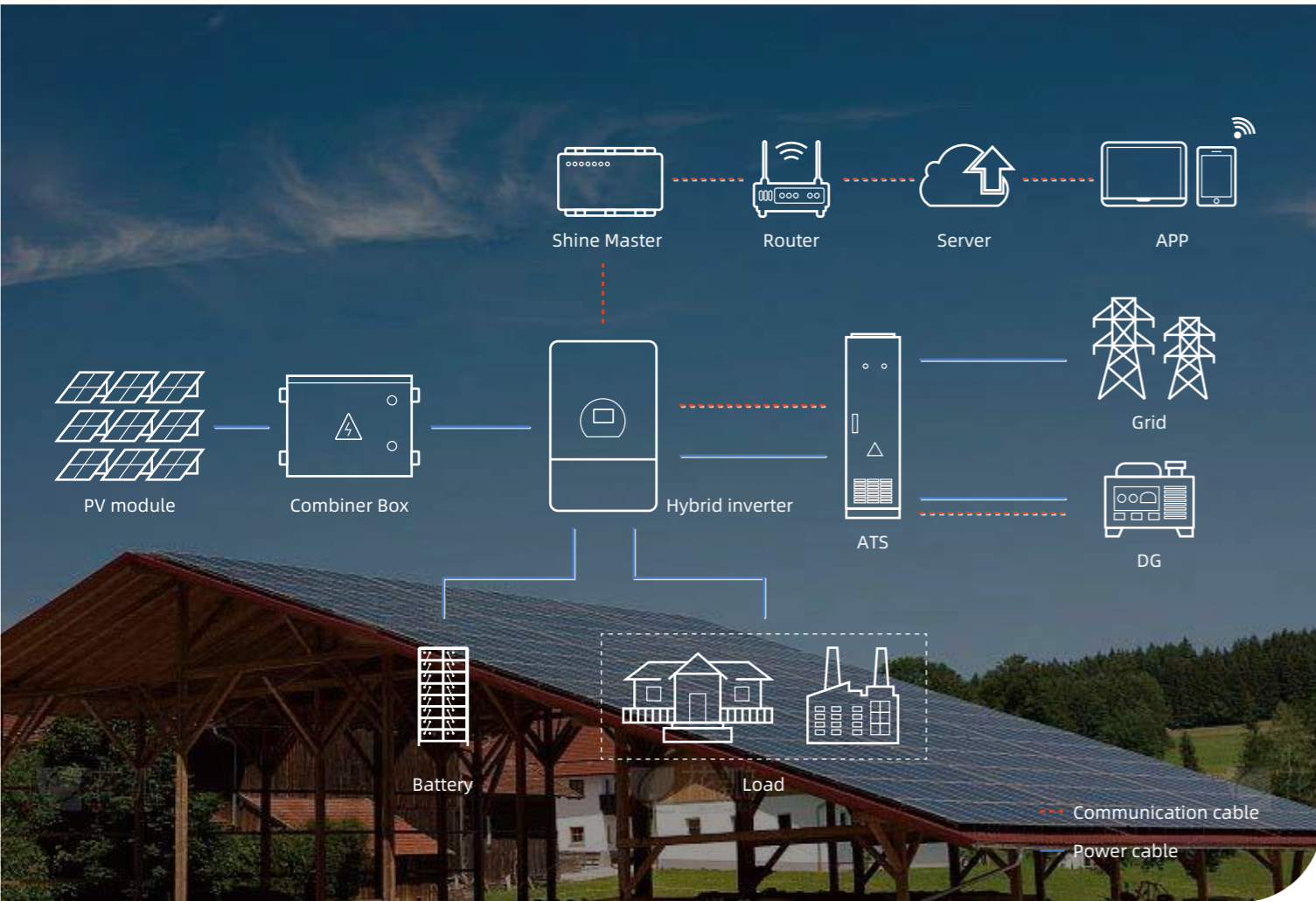
Co-creation, sharing, breakthrough, innovation

# GLOBAL FOOTPRINT

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Global business layout, local technical service  
team in key markets





### 50kW + 100kWh System Solution

Item	Product Model	Quantity	Description
PV	HFD72P-580N	84	N type, bifacial glass
Battery	High Voltage Box	1	High voltage box
	Battery Rack	1	Battery rack
	Battery 51.2V 280AH	7	Battery pack
PV Combiner Box	6 Input 6 Output	1	For multiple PV modules
Inverter	SUN-50K	1	50kw hybrid inverter
PV Cable	PV 1*4MM <sup>2</sup>	800	4mm <sup>2</sup> cable
MC4 Connector	STAUBLI EVO2 Connector	20	1000V/30A
Monitoring Device	WiFi	1	Data collector
Mounting System	Ground/Roof Mounting	1	Whole set for 50kw PV

### 30kW + 60kWh System Solution

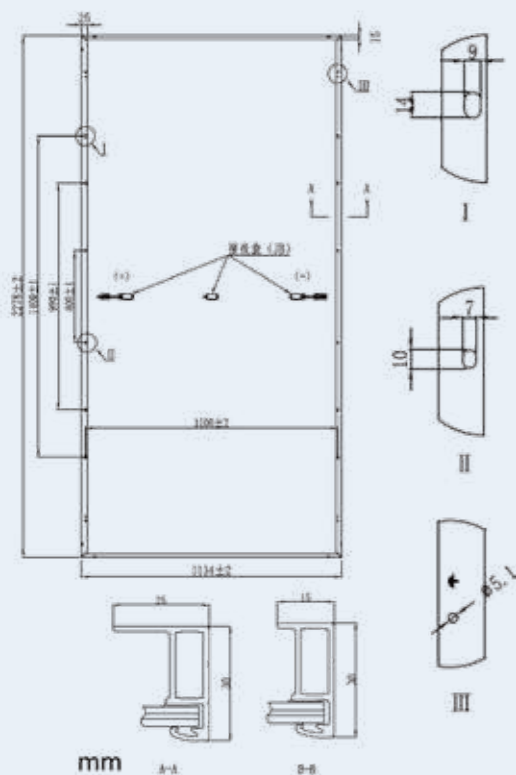
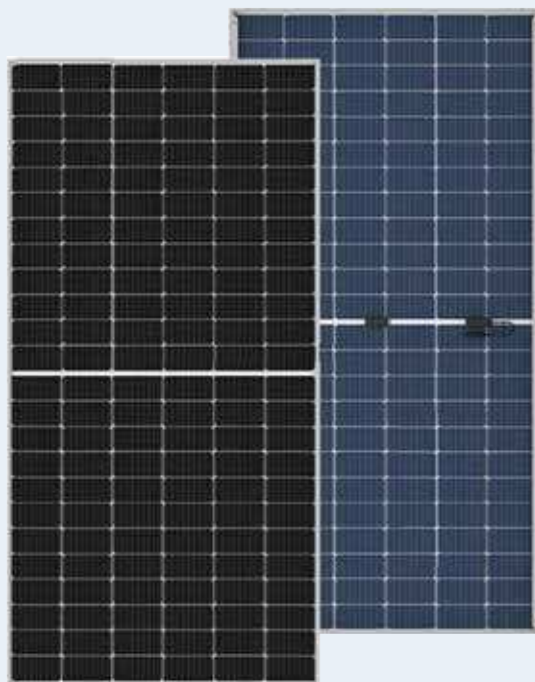
Item	Product Model	Quantity	Description
PV	HFD72P-580N	52	N type, bifacial glass
Battery	High Voltage Box	1	High voltage box
	Battery Rack	1	Battery rack
	Battery 51.2V 200AH	6	Battery pack
PV Combiner Box	4 Input 4 Output	1	For multiple PV modules
Inverter	SUN-30K	1	30kw hybrid inverter
PV Cable	PV 1*4MM <sup>2</sup>	400	4mm <sup>2</sup> cable
MC4 Connector	STAUBLI EVO2 Connector	10	1000V/30A
Monitoring Device	WiFi	1	Data collector
Mounting System	Ground/Roof Mounting	1	Whole set for 30kw PV

### Products Display



# HFD72P-xxxN(560-580W)

N-type/Bifacial Glass/144 Half-cells



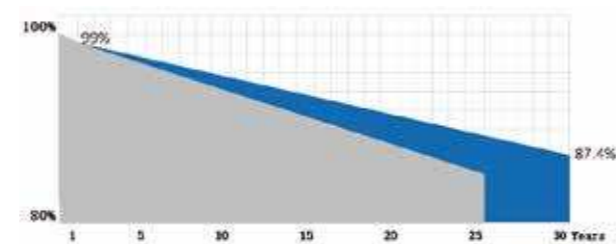
## Main Advantages

- SMBB main gate technology, higher module power
- Bifacial solar panels, significant power gain
- 2 rounds of 100% EL testing
- Lower power degradation for higher power output
- N-type bifacial, reduced PID effect
- Enhanced weather resistance for bifacial structure

## Comprehensive System and Product Certification

- IEC61215, IEC61730
- TUV, CE
- ISO 9001:2015
- ISO 14001:2015
- ISO 45001:2018

## Excellent Power Guarantee



### 30-year linear power output guarantee

12-year material and manufacturing process warranty, initial year power degradation not exceeding 1.0%, subsequent annual power degradation not exceeding 0.4%, at the end of the 30-year warranty period, the panel's power will not be lower than 87.4% of the nominal power. The power testing mentioned above is conducted under standard test conditions.

## Electrical Performance Parameters Under Standard Test Conditions

Maximum Power Output (W) 0~+5W	560	565	570	575	580
Maximum Operating Voltage (V)	42.43	42.61	42.83	43.01	43.22
Maximum Operating Current (A)	13.20	13.26	13.31	13.37	13.42
Open Circuit Voltage (V) ±3%	50.70	50.89	51.09	51.29	51.50
Short Circuit Current (A) ±3%	14.11	14.17	14.23	14.29	14.35
Conversion Efficiency	21.68%	21.87%	22.07%	22.26%	22.45%
Maximum System Voltage	1500V	1500V	1500V	1500V	1500V
Maximum Fuse Rating	30A	30A	30A	30A	30A
Backside Gain 5% (W)	582	588	593	598	603
Backside Gain 15% (W)	627	633	638	644	649
Backside Gain 25% (W)	672	678	684	690	696

## Temperature Parameters

Operating Temperature Range	-40~+85°C
Nominal Operating Temperature	45±2°C
Short Circuit Current Temperature Coefficient	0.042%/°C
Open Circuit Voltage Temperature Coefficient	-0.257%/°C
Maximum Power Temperature Coefficient	-0.300%/°C
Backside Ratio	80%±5%

## Mechanical Parameters

Module Dimensions	2278×1134×30mm
Module Weight	31.5kg±3%
Snow Load/Wind Load	5400/2400 Pa
Number of Solar Cells	144pcs
Glass Thickness	Bifacial 2.0mm
Junction Box	IP68, 3 diodes
Cable length	positive pole 250mm, negative pole 300mm
Connectors	HTC-16, IP68

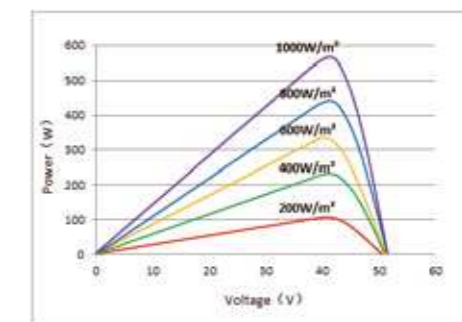
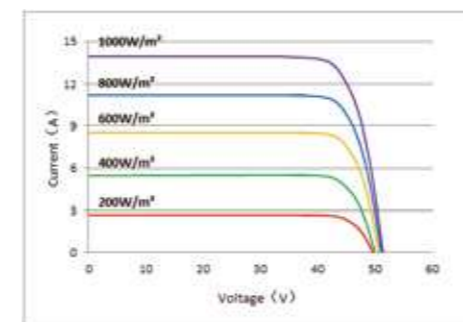
## Warranty Program

- 12-Year Technology and Material Quality Guarantee
- 30-Year Linear Power Output Guarantee

## Package Information

- Number of Modules per Pallet 36pcs
- Number of Modules per 40ft High Container 720pcs

## 580W Monocrystalline Module IV Curve



Standard Test Conditions  
Nominal Operating Temperature

Temperature 25°C  
Temperature 20°C

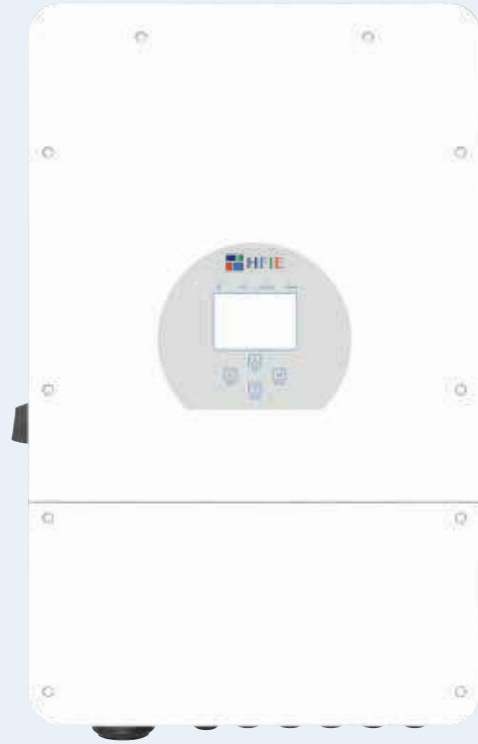
Irradiance 1000W/m²  
Irradiance 800W/m²

AM=1.5  
Wind Speed 1m/s



# Three Phase Hybrid Inverter

SUN-29.9/30/35/40/50K-SG01HP3-EU-BM3/4



100

Max.charging/discharging current of 100A

H

High voltage battery higher efficiency

6

6 time periods for battery charging/discharging

100

100% unbalanced output, each phase  
Max.output up to 50% rated power



DC couple and AC couple to retrofit existing solar system

10

Max.10pcs parallel for on-grid and off-grid operation, support multiple batteries parallel

Model	SUN-29.9K-SG01HP3 -EU-BM3	SUN-30K-SG01HP3 -EU-BM3	SUN-35K-SG01HP3 -EU-BM3	SUN-40K-SG01HP3 -EU-BM3	SUN-50K-SG01HP3 -EU-BM3
<b>Battery Input Data</b>					
Battery Type	Lithium-ion				
Battery Voltage Range (V)	160-800				
Max. Charging Current (A)	50+50				
Max. Discharging Current (A)	50+50				
Number of Battery Input	2				
Charging Strategy for Li-ion Battery	Self-adaption to BMS				
<b>PV String Input Data</b>					
Max. DC Input Power (W)	38870	39000	45500	52000	65000
Max. DC Input Voltage (V)	1000				
Start-up Voltage (V)	180				
MPPT Range (V)	150-850				
Full Load DC Voltage Range (V)	360-850	360-850	360-850	360-850	450-850
Rated DC Input Voltage (V)	600				
PV Input Current (A)	36+36+36	36+36+36	36+36+36	36+36+36+36	
Max. PV I <sub>sc</sub> (A)	55+55+55	55+55+55	55+55+55	55+55+55+55	
No.of MPP Trackers	3			4	
No.of String per Mpp Tracker				2	
<b>AC Output Data</b>					
Rated AC Output and UPS Power (W)	29900	30000	35000	40000	50000
Max. AC Output Power (W)	29900	33000	38500	44000	55000
AC Output Rated Current (A)	45.4/43.4	45.4/43.5	53.1/50.8	60.7/58	75.8/72.5
Max. AC Output Rated Current (A)	45.4/43.4	50/47.8	58.4/55.8	66.7/63.8	83.4/79.7
Max. Three-phase Unbalanced Output Current	60	60	60	70	83.3
Max. Continuous AC Passthrough (A)	200				
Peak P <sub>OW</sub> er (off grid)	1.5 time of rated power, 10s				
Generator input/Smart load /AC couple current (A)	45.4/200/45.4	45.5/200/45.5	53.1/200/53.1	60.7/200/60.7	75.8/200/75.8
Power Factor	0.8 leading to 0.8 lagging				
Output Frequency and Voltage	50/60Hz; 3L/N/PE 220/380, 230/400Vac				
Grid Type	Three Phase				
Total Harmonic Distortion (THD)	< 3% (of nominal power)				
DC current injection	< 0.5% I <sub>n</sub>				
<b>Efficiency</b>					
Max. Efficiency	97.60%				
Euro Efficiency	97.00%				
MPPT Efficiency	99.90%				
<b>Protection</b>					
Integrated	PV Input Lighting Protection, Anti-islanding Protection, PV String Input Reverse Polarity Protection, Insulation Resistor Detection, Residual Current Monitoring Unit, Output Over Current Protection, Output Shorted Protection, Surge Protection				
Output Over Voltage Protection	DC Type II / AC Type III				
<b>Certifications and Standards</b>					
Grid Regulation	VDE4105, IEC61727/62116, VDE0126, AS4777.2, CEI 0 21, EN50549-1, G98, G99, C10-11, UNE217002, NBR16149/NBR16150				
Safety EMC/Standard	IEC/EN 61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2				
<b>General Data</b>					
Operating Temperature Range (°C)	-40 ~ 60°C, > 45°C derating				
Cooling	Smart cooling				
Noise (dB)	≤65 dB				
Communication with BMS	RS485; CAN				
Weight (kg)	75				
Size (mm)	527Wx894Hx294D				
Protection Degree	IP65				
Installation Style	Wall-mounted				
Warranty	5 years				

# Lithium Ion Battery

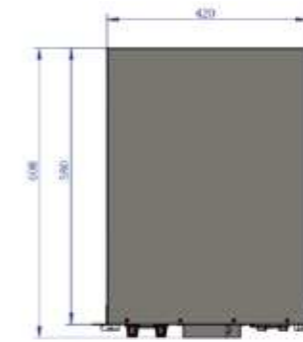
Battery mode: LV-IESS-RH14.336Aa-Unit

Product description: IFpP/71/173/204/[1P16S]M/-20+55/95

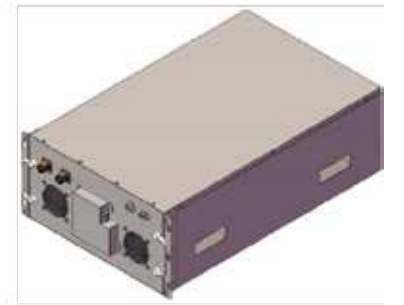
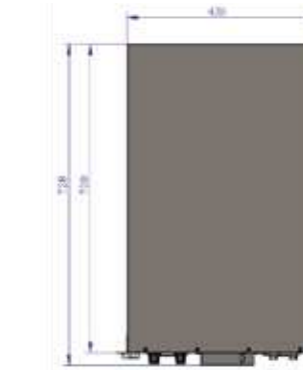


## Outward Appearance and Dimension

200Ah



280Ah



Model	LV-IESS-RH10.240Aa-Unit	LV-IESS-RH14.336Aa-Unit
Nominal Voltage(Vdc)	51.2	
Rated Capacity(A)	200	280
Battery Impedance(mΩ)	≤50	
Shipment Voltage(Vdc)	51.2-58.4	
Limited Charging Voltage(Vdc)	58.4	
Battery Weight(Kg)	95	115
Recommended Charging Method		
Ambient Temperature(°C)	0-15/15-55	
Relative Humidity	65±20%	
Charging Current	Max 0.5C	
Limited Charging Voltage(Vdc)	Max 58.4	
Cut-off Current of CV	0.025C	
Recommendation Charge/Discharge Current	0.5C 100A	0.5C 140A
Maximum Charge/Discharge Current	1.0C 200A	1.0C 280A
Discharge Cut-off Voltage(Vdc)	40	
Working Environment		
Operating Temperature	Charge 0~55°C/Discharge -20~55°C	
Storage Environment (50% state of charge)	≤3 Months -20~45°C/ > 3 Months 25±3°C	
Humidity	65±20%RH	



### Easy Installation

Simple structure, small footprint, flexible layout, easy installation operation and maintenance



### Safe & Reliable

Built-in fire control, temperature control, system warning function for multiple security



### Intelligent Control System

Can be connected to the local monitoring system for system control; In the event of an unexpected situation, it can be suppressed at the first time



### Convenient Operation

All equipment is integrated in the cabinet, only external wiring harnesses are connected on site, no secondary assembly is required; Transportation with battery modules is supported

# Installation Service



Address

**Steinstr.10B 30559 Hannover**



Service Time

**Mo-Fr: 08:00-17:00 Uhr**



Contact number

**+49 511 5910 6676**



E-mail

**info@hfie-energy.de**



Website

**<https://hfie-energy.de/>**





## Project Cases



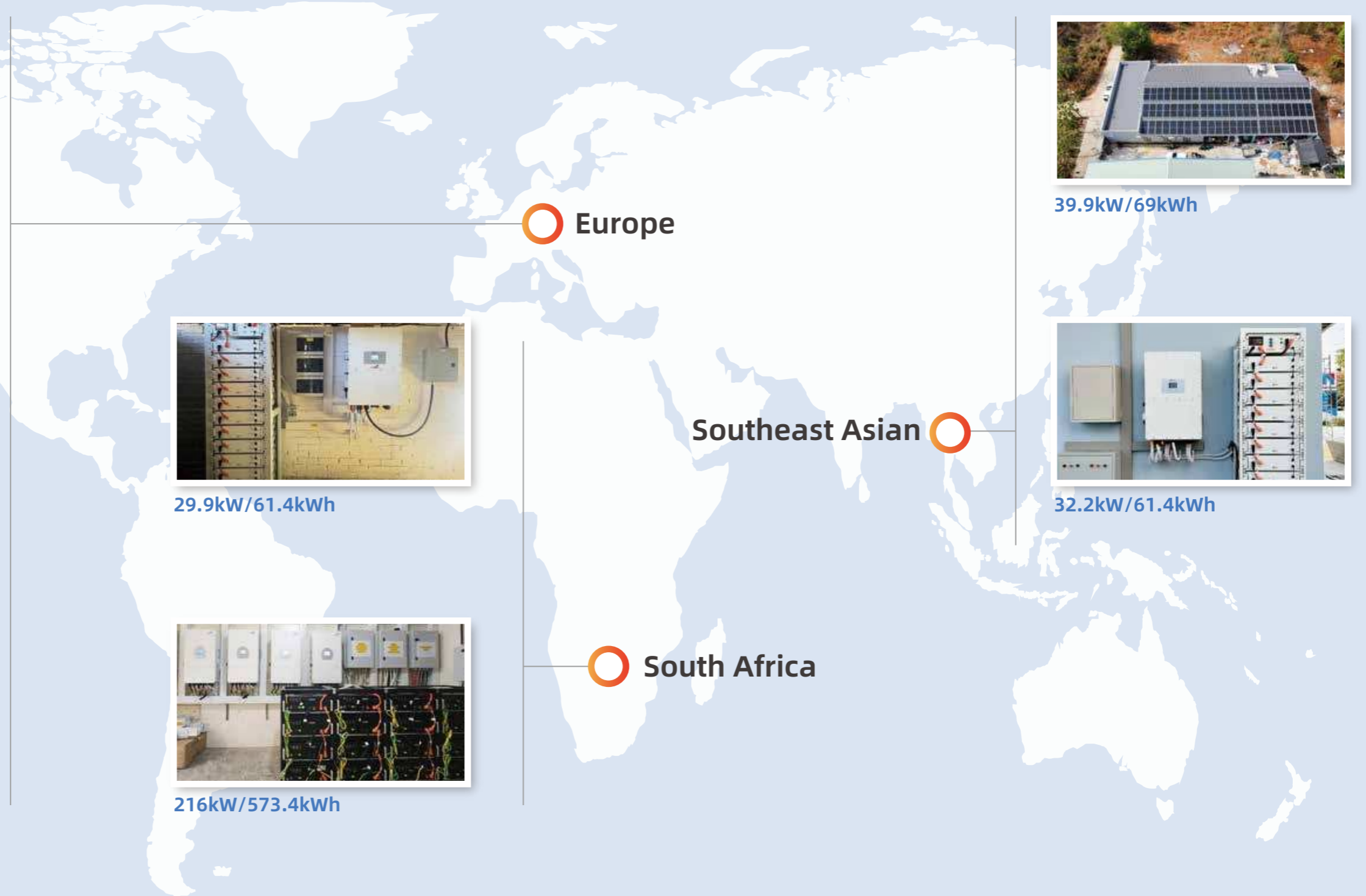
50.1kW/114kWh



29.6kW/61.4kWh



119.4kW/245.7kWh



39.9kW/69kWh



29.9kW/61.4kWh



32.2kW/61.4kWh



216kW/573.4kWh

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