

## 9. 1.5KV\_700KW 直流耦合+绿电直连 AC-SST 储能固态变压器

DC coupling+DC Solid-State Transformer (AC-SST) for energy storage system with directly connected green electricity function

一体机型号(单机版) Model(stand-alone)	绿电直连最大输入直流功率 Directly connected green electricity input maximum DC power	绿电直连最大输出交、直流功率 Directly connected green electricity output maximum AC or DC power	直流电力传输电压 DC power transmission voltage
9 GSE-1.5KV-AC-SST-700KW	724 KW	700 KW	1.5KV
有效输电距离 Effective power transmission distance =5kM			
整机重量 Weight =1000KG ±10% 宽*深*高 Width*Depth*Heigth =105*160*190 CM 最大并机扩展运行能力 maximum parallel number=110 台			

- ✓ **100%自主研发，全场景多种能源同时接入** Full independent R&D, full-scene, and the multiple energy can be accessed at the same time
- ✓ **真正的构网型光储系统** A real grid-forming system for solar power with energy storage
  - 可快速形成区域微电网，减小对电网的依赖，也可高效支撑电网的稳定
  - It can quickly form a regional micro-grid, reduce the dependence on power grid, and it can also effectively support the stability of the power grid.
- ✓ **直流耦合+绿电直供技术** DC coupling+Directly connected green electricity technology
  - 代替隔墙售电，提高新能源电力远距离组网传输的效率和效益本
  - Instead of partition power sales, improving the efficiency and benefit of long-distance transmission of new energy power.



## **直流耦合技术 无需光伏(风电)逆变器 真正杜绝光伏逆流返送电网问题**

DC coupling technology, solar /wind /fuel generator /charging station /energy storage system (All in one)

The solar countercurrent and reverse transmission to grid problem can be truly eliminated

## **零毫秒切换电力电子技术 高效支撑半导体工厂、AI 算力中心电力供应安全**

Zero millisecond switching power electronics technology, it can quickly form a regional micro-grid, reduce the dependence on power grid, and it can also effectively support the stability of the semiconductor plant and AI computer center

## **真正的构网型设计 200KW~44MW 风光储混合逆变器模块技术**

### **高效支撑大型矿区、零碳园区电力供应安全**

200KW~44MW, A real hybrid and grid-forming inverter technology (solar power + wind power +energy storage)

It can effectively support the stability of the large mining area and zero carbon industrial park

## **0.9~1.5KV 高压直流 2~5 公里级 绿电直连 直流耦合能量调度与调配技术**

0.9~1.5KVdc, 2~5km, directly connected green electricity and DC-coupling technology for energy scheduling and allocation

## **VPP 虚拟电网接入管理与控制 AI 自动决策功能**

Virtual power plant management and control, with AI automatic decision-making function

# 绿电直连 AC-SST 储能固态变压器，正面插拔式模块化设计技术, 高压变流器

Directly connected green electricity AC-SST for energy storage system  
front plug modular design technology, built-in HV-converter



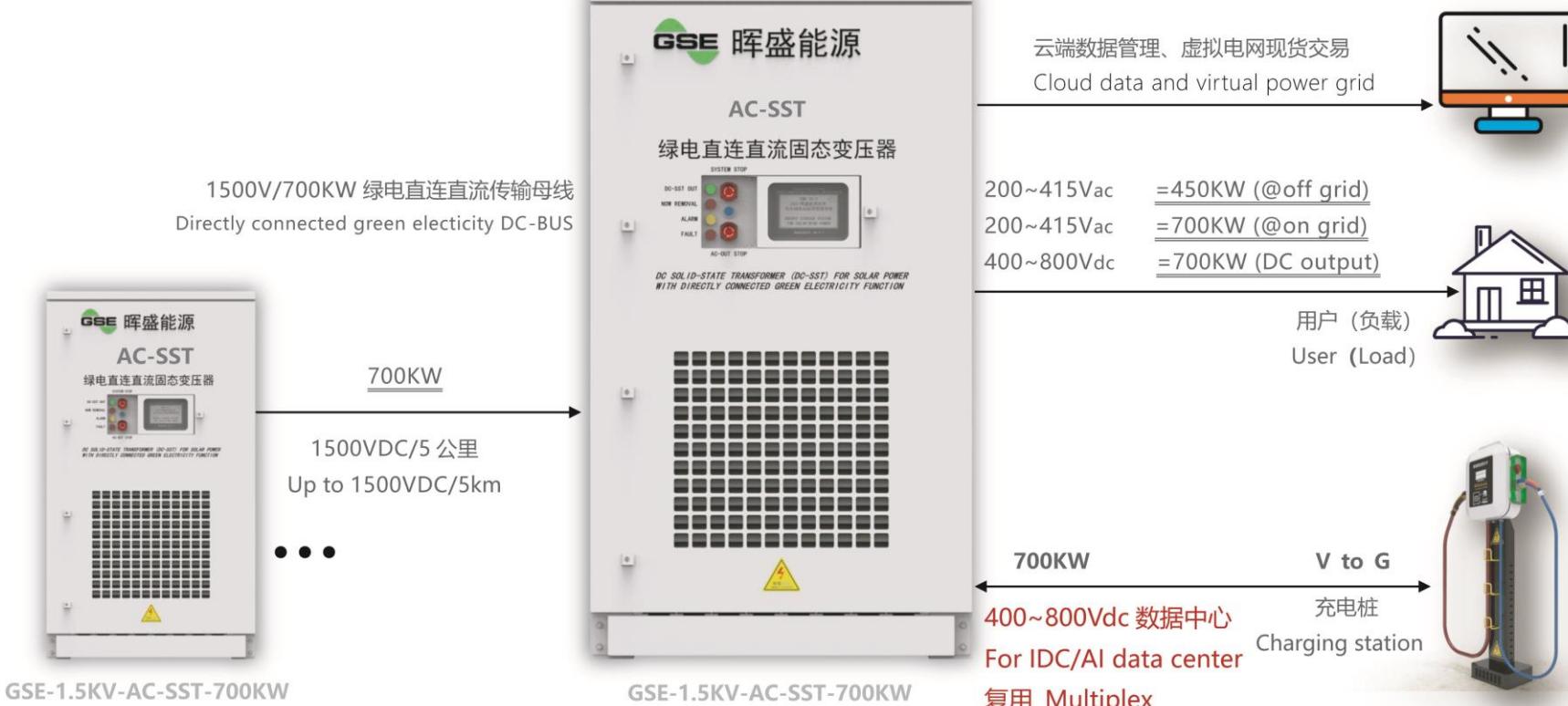
# 绿电直连 AC-SST 储能固态变压器，反面集成配电柜、汇流柜、计量柜

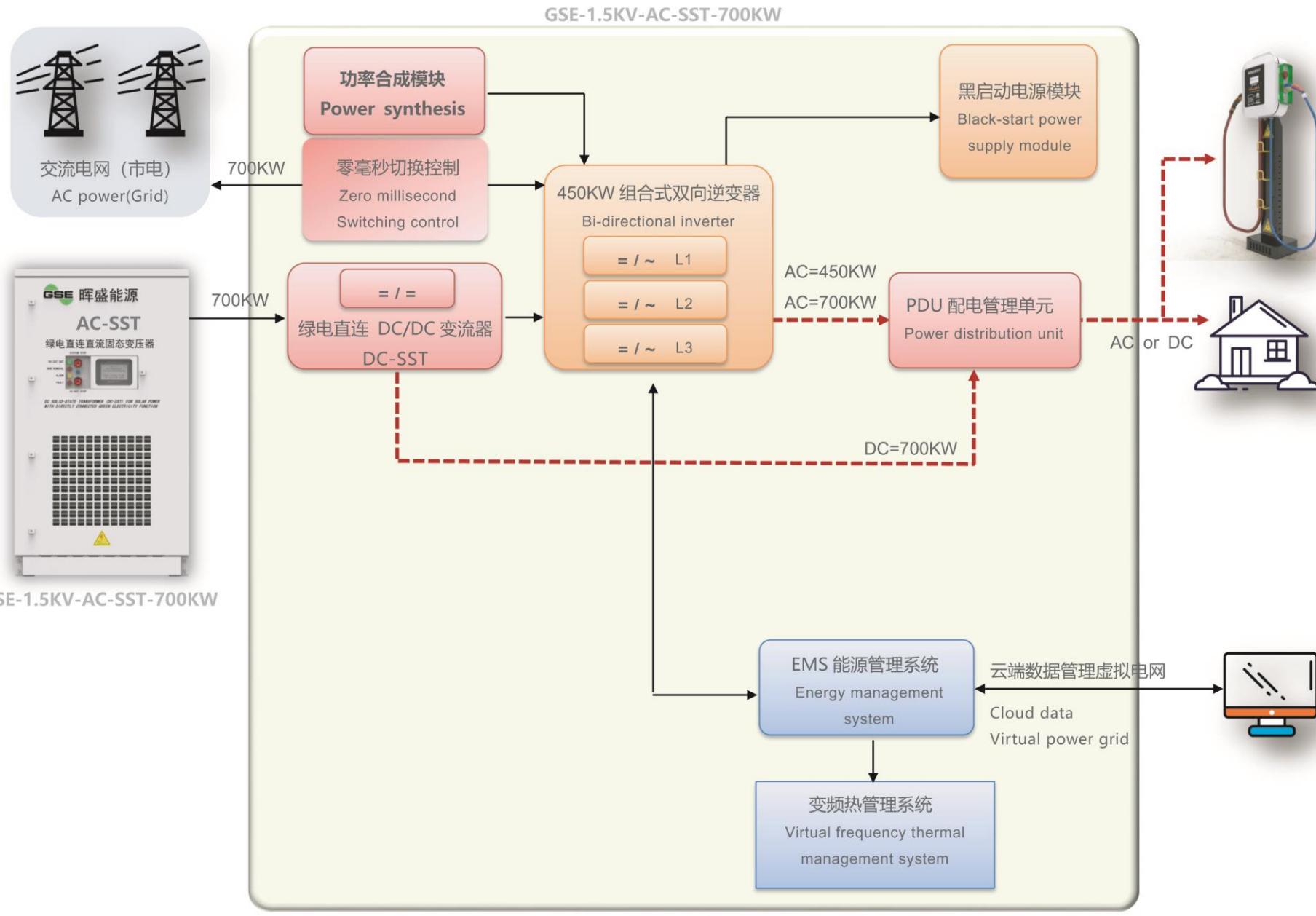
Directly connected green electricity AC-SST for energy storage system

reverse integrated distribution cabinet, busbar cabinet, metering cabinet

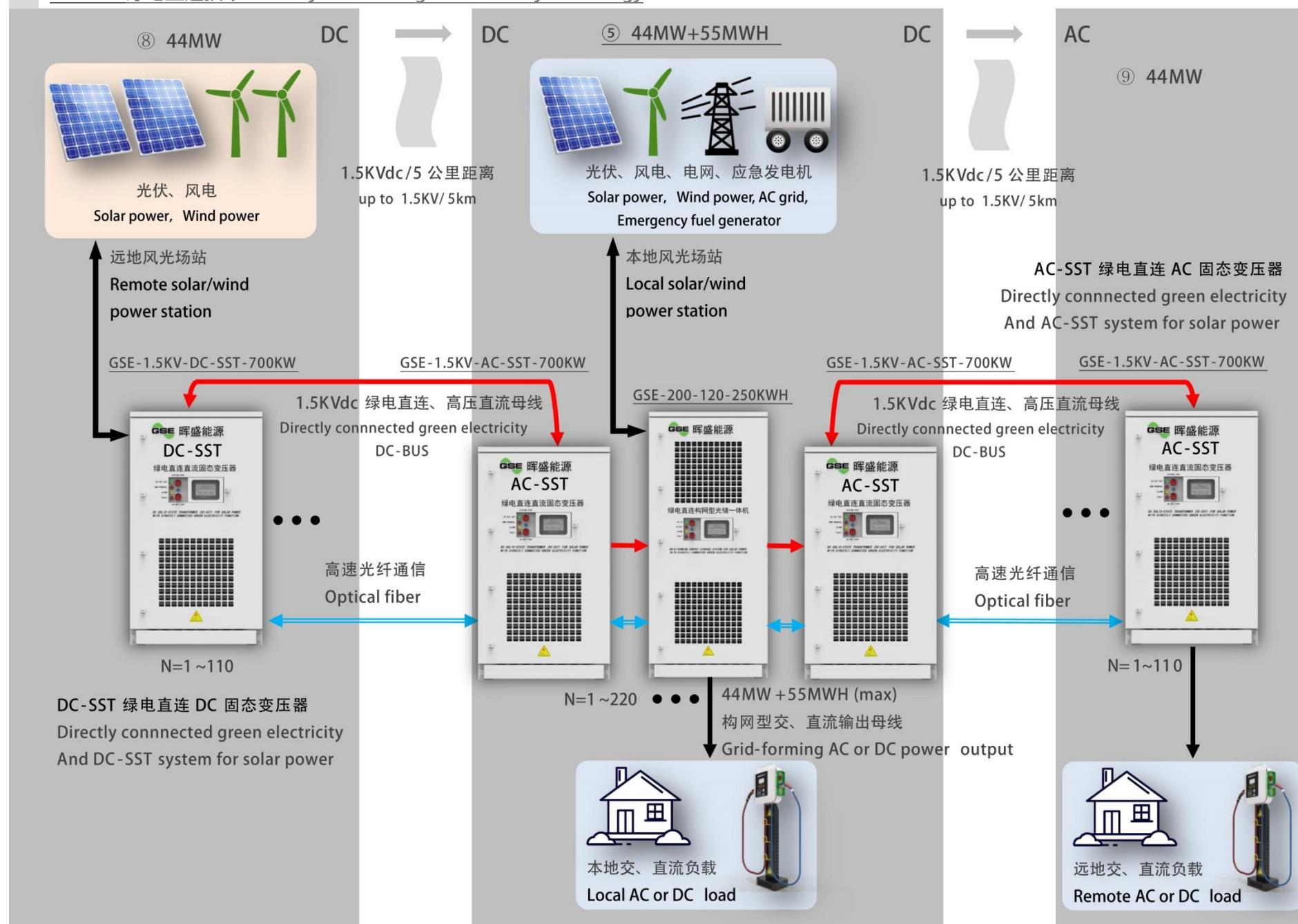


## 9. 700KW AC-SST 系统应用连接图 System application connection diagram





## 9. AC-SST 绿电直连技术 Directly connected green electricity technology



## 9. 1.5KV\_700KW 绿电直连 AC-SST 技术参数表 Technical parameters table about our All In One hybrid system

<b>型号 MODEL</b>		<b>GSE-1.5KV-AC-SST-700KW</b>
<b>综合主要性能 Main comprehensive specifications</b>		
绿电直连输入最大功率 Directly connected green electricity maximum input power		1.5KVDC, 416KW
绿电直连输出最大功率 Directly connected green electricity maximum output power		200/210/220V, 380/400/415V 50/60HZ, 700KW
宽*深*高 Width*Depth*Height		105*160*190CM
整机重量 Weight		1000KG ±15%
<b>最大系统效率 System maximum efficiency</b>		
变流模式 DC/AC output		99.1% (max)
变流模式 DC/DC output		99.5% (max)
<b>系统综合特性 System comprehensive specifications</b>		
工作噪音 Acoustic level		<50 dB
工作/推荐环境温度 Operating /Recommend operating temperature		-20°C ~ 50°C / -10°C ~ 40°C
工作湿度 Operating humidity		10% ~ 90% 不结露不结冰 non condensation and ice-free
最大海拔高度 Maximum altitude		3000m (max)
系统冷却方式 System cooling mode		变频风冷 Variable frequency air cooling
最大并机运行数量 Maximum number of parallel together		110
系统防护等级 Degree of system protection		IP65 (可在室外恶劣环境下直接安装使用 Adapt to various harsh working environment for outdoor installation)
<b>功能配置 Function configuration</b>		
EMS 显示屏 LCD(HMI)		7/10 英寸触摸屏 7 /10 inch high performance TFT touch screen
EMS 数据存储能力 Data storage capability		64GB
EMS 可配置通信接口 Configurable communication interface		光纤(Optical fiber) / RS485 / CAN-BUS / Ethernet / GPRS / WIFI / LoRa /NB-IOT
EMS 通信协议 Communication protocol		Modbus RTU / Modbus TCP / IEC 61850 / DNP3
EMS 虚拟电网接入控制响应时间 Response time for virtual power grid		0.5ms
系统绝缘与电池漏液检测 System insulation and battery leakage detect		YES
系统消防保护 System fire protection		YES
系统动力与环境管理 System power and environmental management		YES
PDU 配电管理 Power distribution unit		YES
电网与用户负载功率预测 Power grid and user load power prediction		YES

备注：本手册技术参数仅做参考，如有变动，恕不提前通知，请以实际发货的产品手册为准，实际发货的技术参数不低于表中的各项参数。

## 9. 1.5KV\_700KW 绿电直连 AC-SST 连接外部光伏组件配置表

### AC-SST configuration table for solar panels

光伏输入有效电压范围=300~1500V, 最佳功率点下光伏输入电压=1000~1250V, 输出直流母线电压=1500V

Solar effective input voltage =300~1500V, MPPT (for maximum power) input voltage=1000~1250V, System output DC-BUS voltage=1500V

类型 1: 54 片串联电池片, 395~470W Type1: Photovoltaic cell chip unit=54	每个光伏组串=15~32 片太阳能板串联(300 ~1271V) Per PV string=15~32solar panels in series	每个光伏组串 MPPT 输入电压=1081V Per PV string MPPT input voltage=1081V	每个光伏组串最大功率= 15.04KW Per PV string=15.04KW (max)
系统光伏最大输入 =2x9x2= 36 个光伏组串 =540KW System solar power maximum input 2x9x2=36PV strings =540KW			

类型 2: 60 片串联电池片, 490~650W Type2: Photovoltaic cell chip unit=60	每个光伏组串=12~30 片太阳能板串联(300 ~1323V) Per PV string=12~30 solar panels in series	每个光伏组串 MPPT 输入电压=1107V Per PV string MPPT input voltage=1107V	每个光伏组串最大功率= 19.5KW Per PV string=19.5KW (max)
系统光伏最大输入 =2x9x2=36 个光伏组串 =702KW System solar power maximum input =2x9x2=36 PV strings =702KW			

类型 3: 66 片串联电池片, 600~720W Type3: Photovoltaic cell chip unit=66	每个光伏组串=11~28 片太阳能板串联(300 ~1358V) Per PV string=11~28 solar panels in series	每个光伏组串 MPPT 输入电压=1136V Per PV string MPPT input voltage=1136V	每个光伏组串最大功率= 20.16KW Per PV string=20.16KW (max)
系统光伏最大输入 =2x9x2=36 个光伏组串 =714KW System solar power maximum input =2x9x2=36 PV strings =724KW			

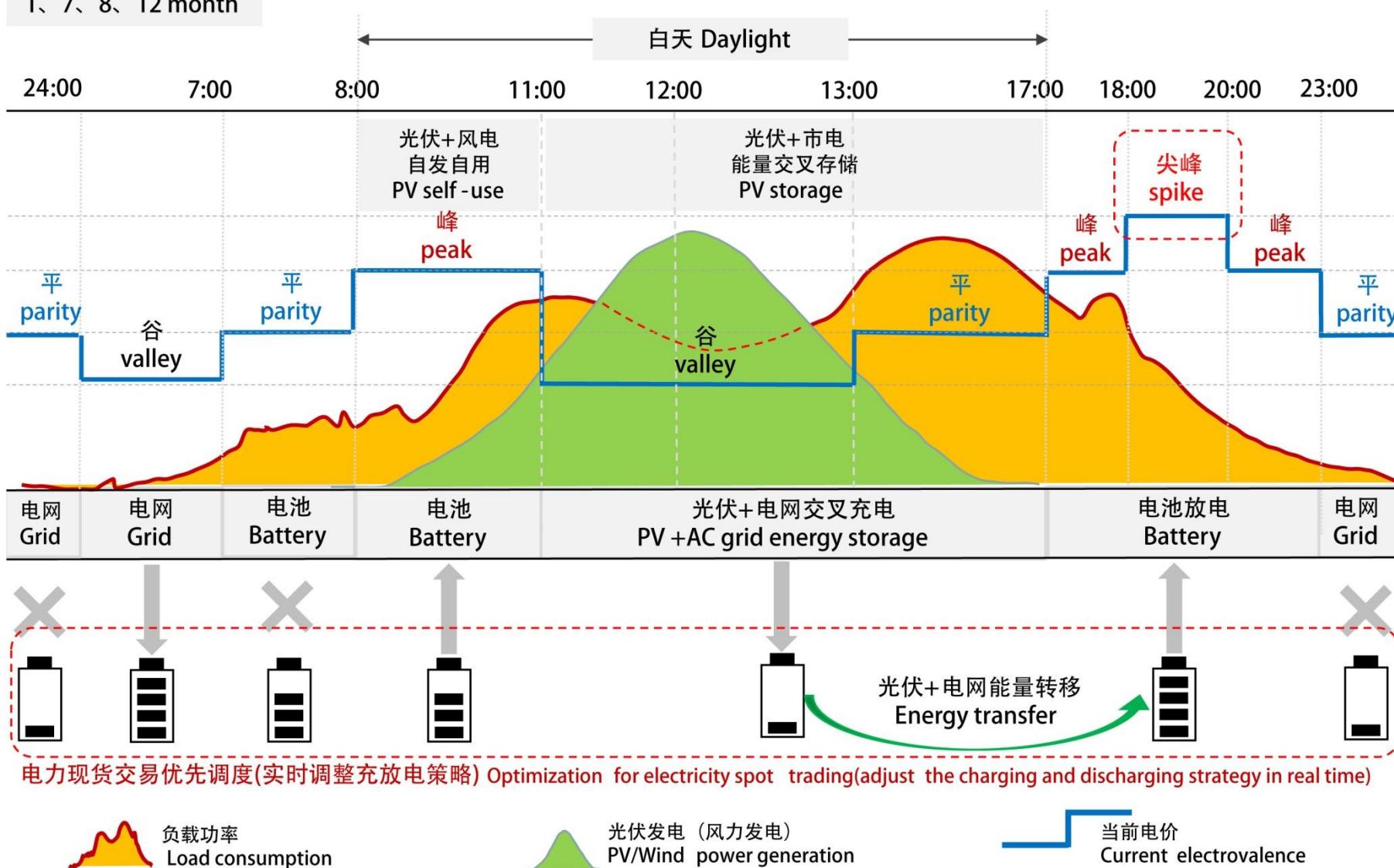
类型 4: 72 片串联电池片, 525~630W Type4: Photovoltaic cell chip unit=72	每个光伏组串=12~27 片太阳能板串联(300 ~1359V) Per PV string=12~27 solar panels in series	每个光伏组串 MPPT 输入电压=1220V Per PV string MPPT input voltage=1220V	每个光伏组串最大功率= 17.01KW Per PV string=17.01KW (max)
系统光伏最大输入 =2x9x2=36 个光伏组串 =612KW System solar power maximum input =2x9x2=36 PV strings =612KW			

类型 5: 78 片串联电池片, 615~640W Type5: Photovoltaic cell chip unit=78	每个光伏组串=11~25 片太阳能板串联(300 ~1423V) Per PV string=11~25solar panels in series	每个光伏组串 MPPT 输入电压=1172V Per PV string MPPT input voltage=1172V	每个光伏组串最大功率= 16KW Per PV string=16KW (max)
系统光伏最大输入 =2x9x2=36 个光伏组串 =576KW System solar power maximum input =2x9x2=36 PV strings =576KW			

## 晖盛能源技术（上海）有限公司 Green-shine energy (Shanghai) Co., Limited

山西省 举例  
Shanxi (2024)  
1、7、8、12月份  
1、7、8、12 month

绿电直连 构网型光储一体机 虚拟电网中能量调度自动控制软件算法  
Energy dispatch control algorithm for virtual power grid (VPP system for solar power with energy storage)

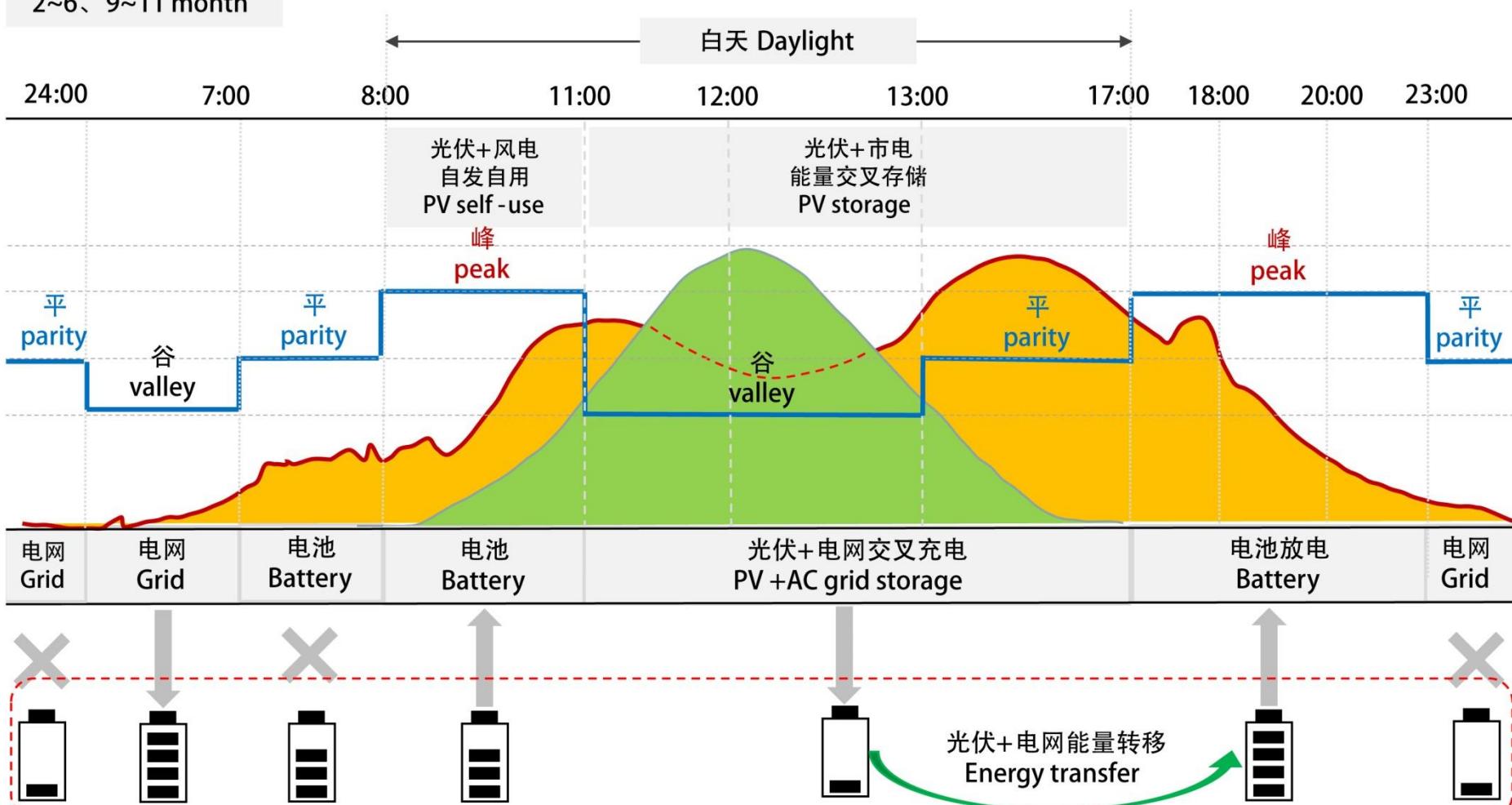


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2~6、9~11月份  
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Energy dispatch control algorithm for virtual power grid (VPP system for solar power with energy storage)



负载功率 (电网负荷)  
Load or grid consumption

光伏发电 (风力发电)  
PV/Wind power generation

当前电价  
Current electrovalence