7. 0.9KV_400KW 直流耦合+绿电直连 AC-SST 储能直流固态变压器

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 voltge
7	GSE-0.9KV-AC-SST-400KW	416 KW	400 KW	0.9KV
		有效输电距离 Effective power transmission distance =2kM		
		整机重量 Weight =800KG ±10% 宽*深*高 Width*Depth*Heigth =105*160*160 CM 最大并机扩展运行能力 maxiumum 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 pwer 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 electicity technology**
  代替隔墙售电，提高新能源电力远距离组网传输充的效率和效益本
  Instead of partition power sales, improving the efficiency and benefit of long-distance transmission of new energy power.


GSE 晖盛能源
绿电直连直流固态变压器
GSE 晖盛能源
绿电直连直流固态变压器

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 pwer 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

0.9K~1.5Vdc, 2~5km, directly connected green electicity 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

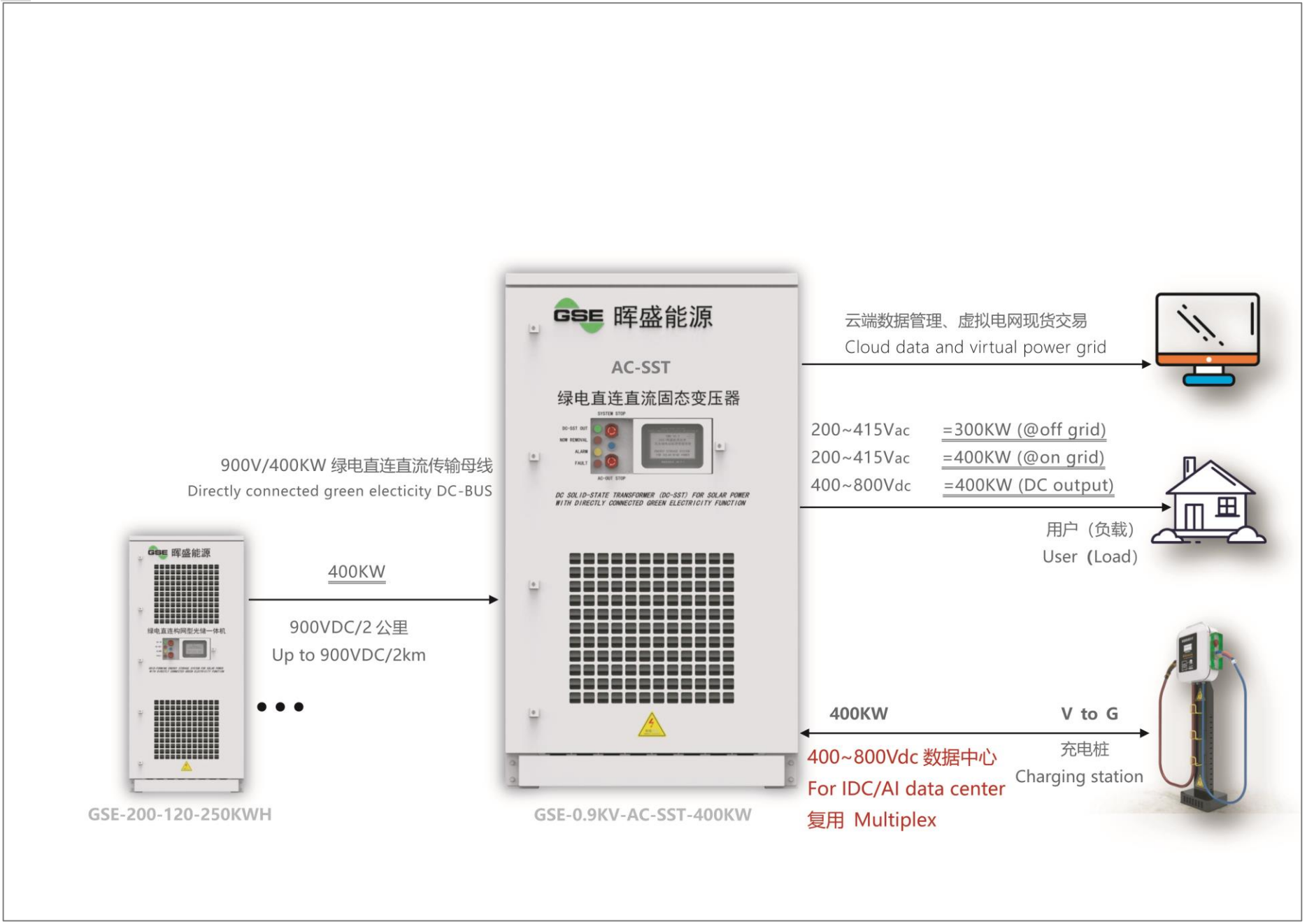
front plug modular design technology，built-in HV-converter

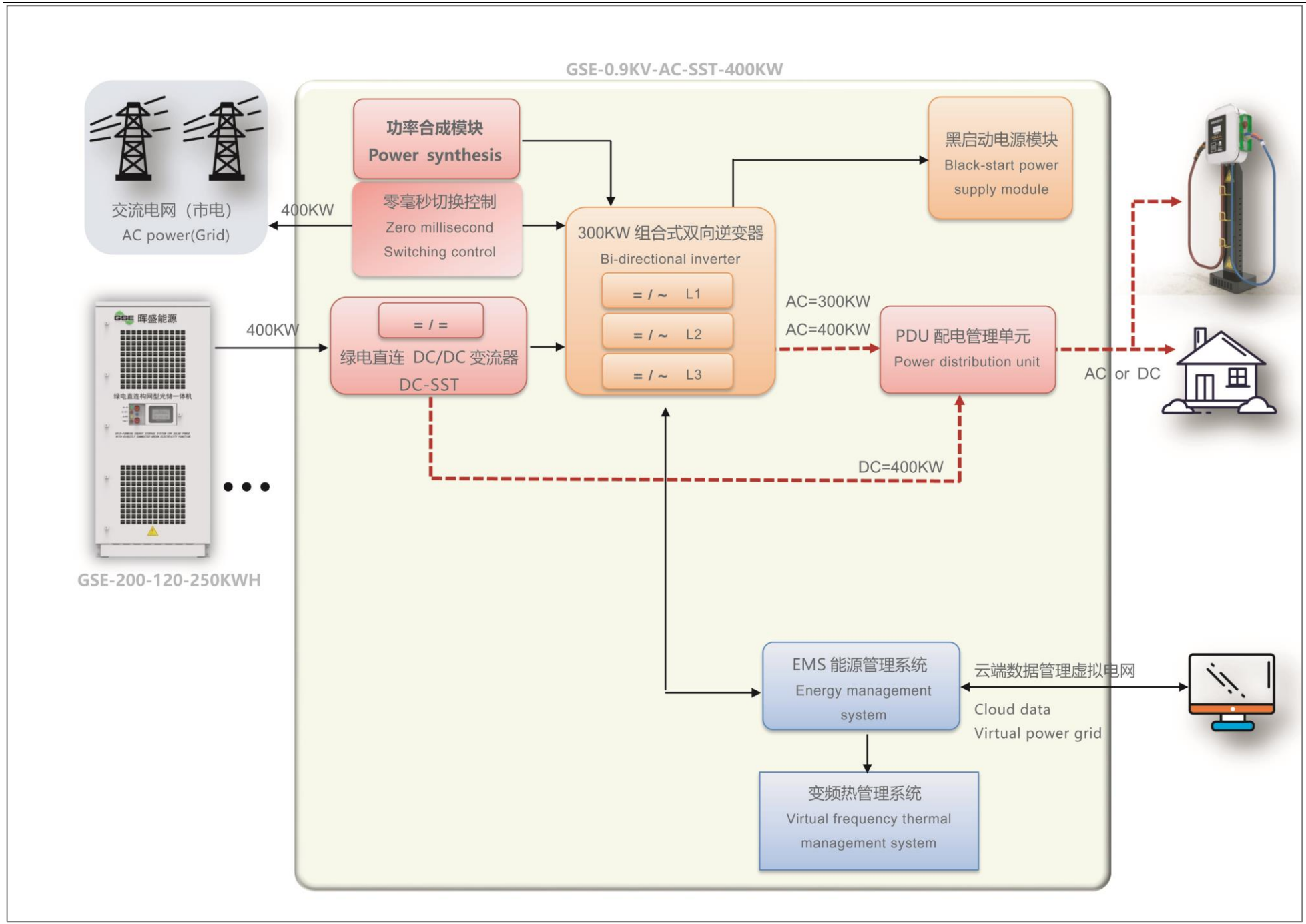
绿电直连 AC-SST 储能固态变压器，反面集成配电柜、汇流柜、计量柜

Directly connected green electricity AC-SST for energy storage system

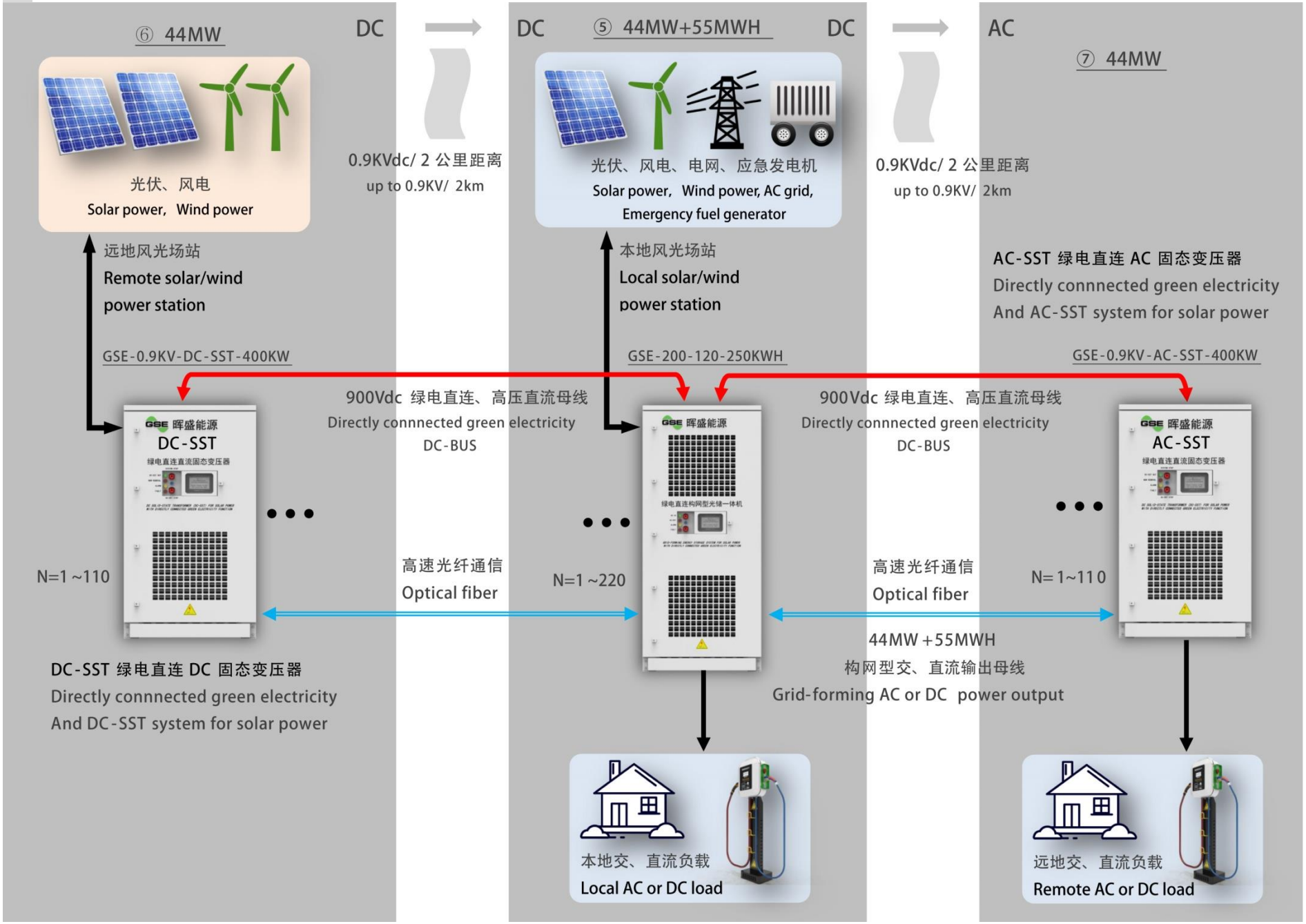
reverse integrated distribution cabinet, busbar cabinet, metering cabinet

7. 400KW AC-SST 系统应用连接图 System application connection diagram




GSE-0.9KV-AC-SST-400KW
交流电网（市电）
AC power(Grid)
400KW
功率合成模块
Power synthesis
零毫秒切换控制
Zero millisecond
Switching control
300KW 组合式双向逆变器
Bi-directional inverter
= / ~ L1
= / ~ L2
= / ~ L3
黑启动电源模块
Black-start power
supply module
400KW
= / =
绿电直连 DC/DC 变流器
DC-SST
AC=300KW
AC=400KW
PDU 配电管理单元
Power distribution unit
AC or DC
DC=400KW
GSE-200-120-250KWH
EMS 能源管理系统
Energy management
system
云端数据管理虚拟电网
Cloud data
Virtual power grid
变频热管理系统
Virtual frequency thermal
management system

7. AC-SST 绿电直连技术 Directly connected green electicity technology



7. 0.9KV_400KW 绿电直连 AC-SST 技术参数表 Technical parameters table about our All In One hybrid system

型号 MODEL	GSE-0.9KV-AC-SST-400KW
综合主要性能 Main comprehensive specifications	
绿电直连输入最大功率 Directly connected green electricity maximum input power	0.9KVDC, 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, 400KW
宽*深*高 Width*Depth*Height	105*160*160CM
整机重量 Weight	800KG ±15%
最大系统效率 System maximum efficiency	
变流模式 DC/AC output	99.1% (max)
变流模式 DC/DC output	99.5% (max)
系统综合特性 System comprehensive specifications	
工作噪音 Acoustic level	<50 dB
工作/推荐环境温度 Operating /Recommend operating temperature	-20℃～50℃ / -10℃～40℃
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）
功能配置 Function configuration	
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。

7. 0.9KV_400KW 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=200~900V，最佳功率点下光伏输入电压=700~800V，系统直流母线电压=900V
Solar effective input voltage =200~900V, MPPT (for maximum power) input voltage=700~800V, System DC-BUS voltage=900V

类型 1：54 片串联电池片， 395~470W Type1: Photovoltaic cell chip unit=54	每个光伏组串=12~22 片太阳能板串联(250 ~874V) Per PV string=12~22solar panels in series	每个光伏组串 MPPT 输入电压=742V Per PV string MPPT input voltage=742V	每个光伏组串最大功率= 10.34KW Per PV string=10.34KW (max)
系统光伏最大输入 =2x9x2= 36 个光伏组串 =372KW System solar power maximum input 2x9x2=36 PV strings =372KW			

类型 2：60 片串联电池片，490~650W Type2: Photovoltaic cell chip unit=60	每个光伏组串=10~20 片太阳能板串联(250 ~882V) Per PV string=10~20 solar panels in series	每个光伏组串 MPPT 输入电压=737V Per PV string MPPT input voltage=737V	每个光伏组串最大功率= 13KW Per PV string=13KW (max)
系统光伏最大输入 =2x8x2=32 个光伏组串 =416KW System solar power maximum input =2x8x2=32 PV strings =416KW			

类型 3：66 片串联电池片，600~720W Type3: Photovoltaic cell chip unit=66	每个光伏组串=9~18 片太阳能板串联(250 ~873V) Per PV string=9~18 solar panels in series	每个光伏组串 MPPT 输入电压=729V Per PV string MPPT input voltage=770V	每个光伏组串最大功率= 12.96KW Per PV string=12.96KW (max)
系统光伏最大输入 =2x8x2=32 个光伏组串 =414KW System solar power maximum input =2x8x2=32 PV strings =414KW			

类型 4：72 片串联电池片，525~630W Type4: Photovoltaic cell chip unit=72	每个光伏组串=10~17 片太阳能板串联(250 ~898V) Per PV string=10~17 solar panels in series	每个光伏组串 MPPT 输入电压=767V Per PV string MPPT input voltage=813V	每个光伏组串最大功率= 10.71KW Per PV string=10.71KW (max)
系统光伏最大输入 =2x9x2=36 个光伏组串 =384KW System solar power maximum input =2x9x2=36 PV strings =384KW			

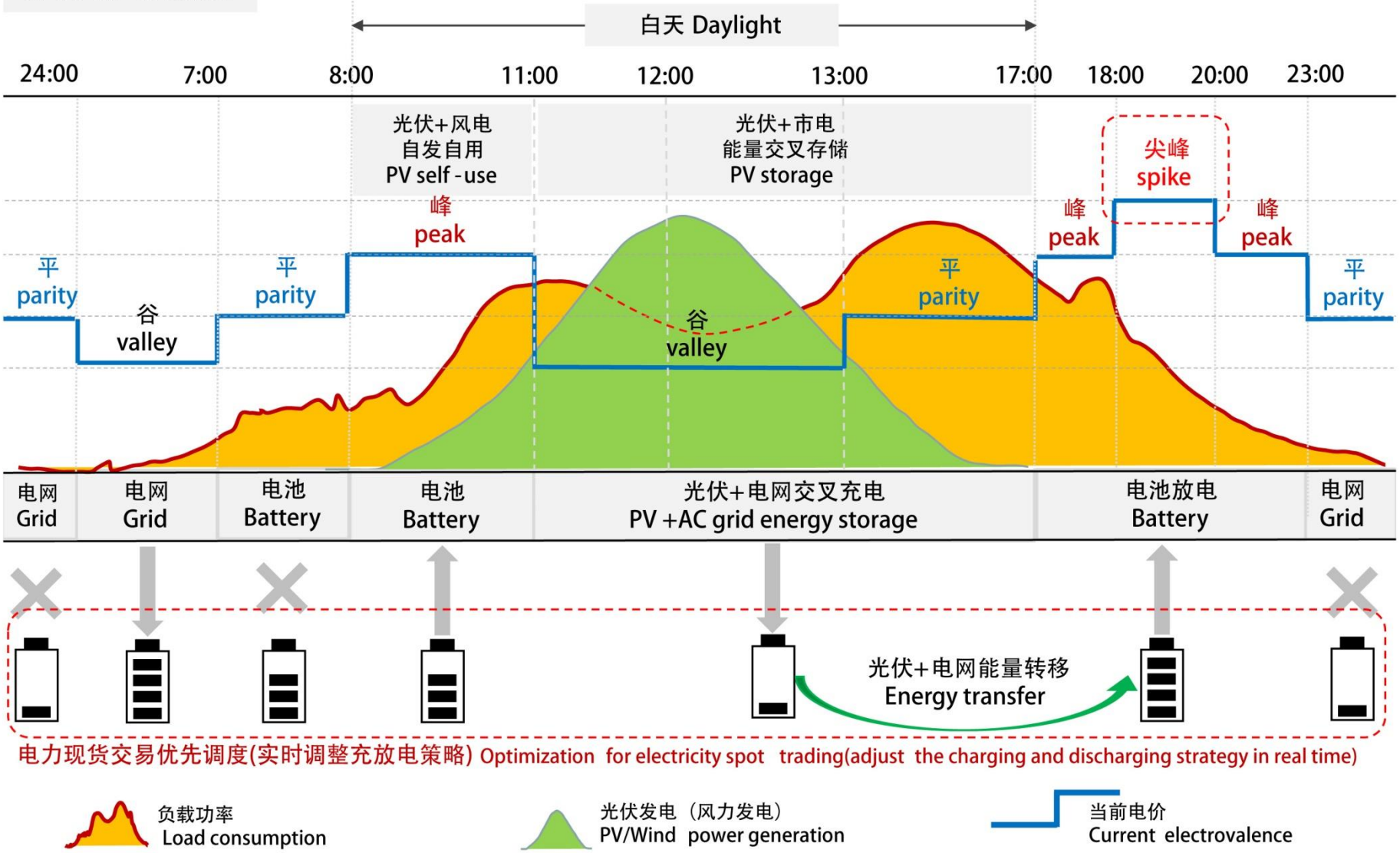
类型 5：78 片串联电池片，615~640W Type5: Photovoltaic cell chip unit=78	每个光伏组串=9~15 片太阳能板串联(250 ~856V) Per PV string=9~15solar panels in series	每个光伏组串 MPPT 输入电压=702V Per PV string MPPT input voltage=749V	每个光伏组串最大功率= 9.6KW Per PV string=9.6KW (max)
系统光伏最大输入 =2x9x2=36 个光伏组串 =344KW System solar power maximum input =2x9x2=36 PV strings =344KW			

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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山西省 举例
Shanxi (2024)
2~6、9~11 月份
2~6、9~11 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)