

8. 1.5KV_700KW 直流耦合+绿电直连 DC-SST 光伏直流固态变压器

DC coupling+DC Solid-State Transformer (DC-SST) for solar power with directly connected green electricity function

| 一体机型号(单机版) Model(stand-alone) | | 光伏 / 风电 最大直接输入功率 Solar/wind direct input maximum power | 绿电直连最大输出直流功率 Directly connected green electricity output maximum DC power | 直流电力传输电压 DC power transmission voltge |
|----------------------------------|------------------------|--|---|--|
| 8 | GSE-1.5KV-DC-SST-700KW | 724 KW | 700 KW | 1.5KV |
| | | 有效输电距离 Effective power transmission distance =5kM | | |
| | | 整机重量 Weight =600KG ±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.



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

绿电直连光伏 DC-SST 固态变压器，正面插拔式模块化设计技术，高压变流器

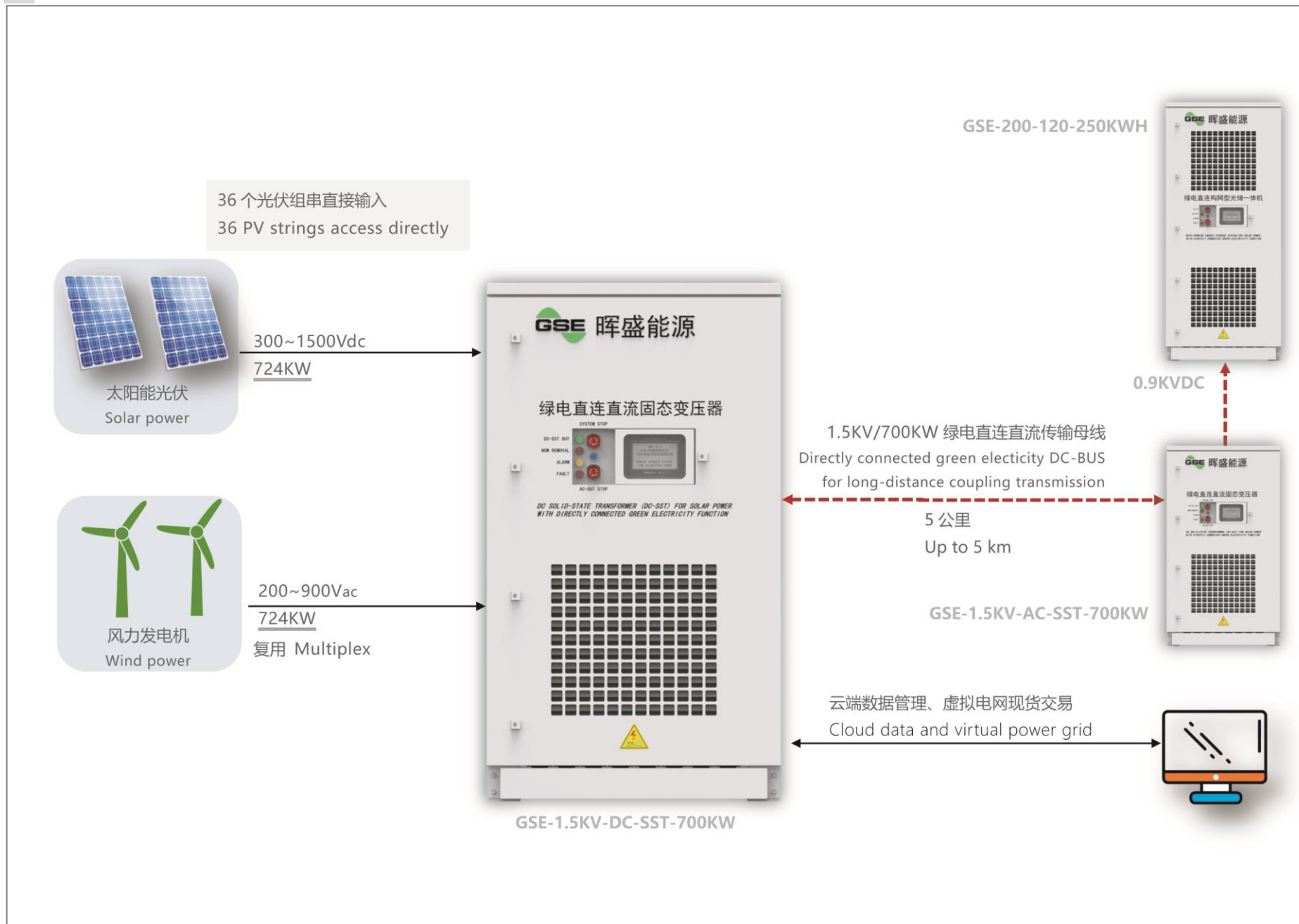
Directly connected green electricity DC-SST for solar power
front plug modular design technology, built-in HV-converter

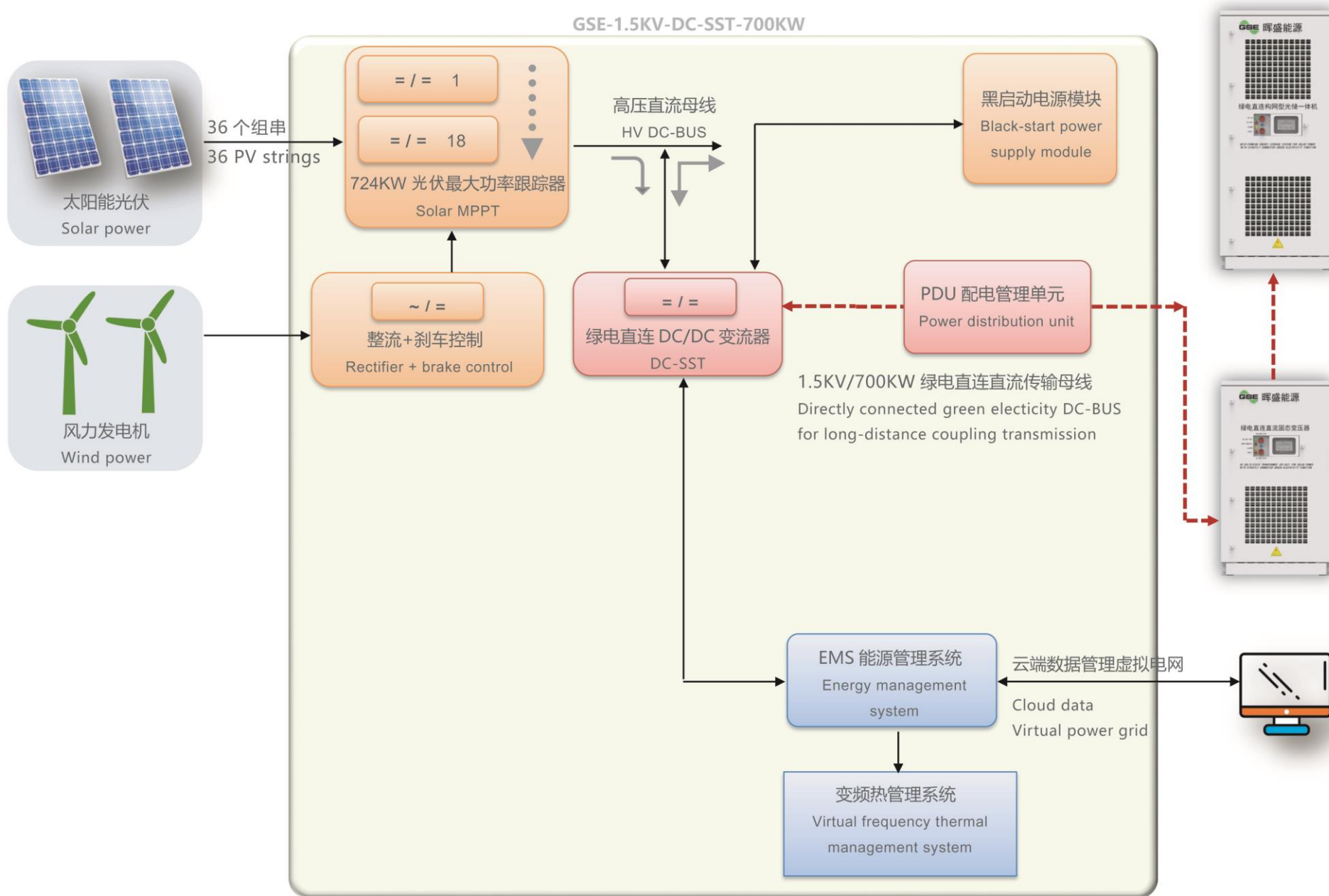


绿电直连光伏 DC-SST 固态变压器，反面集成配电柜、汇流柜、计量柜
Directly connected green electricity DC-SST for solar power,
reverse integrated distribution cabinet, busbar cabinet, metering cabinet

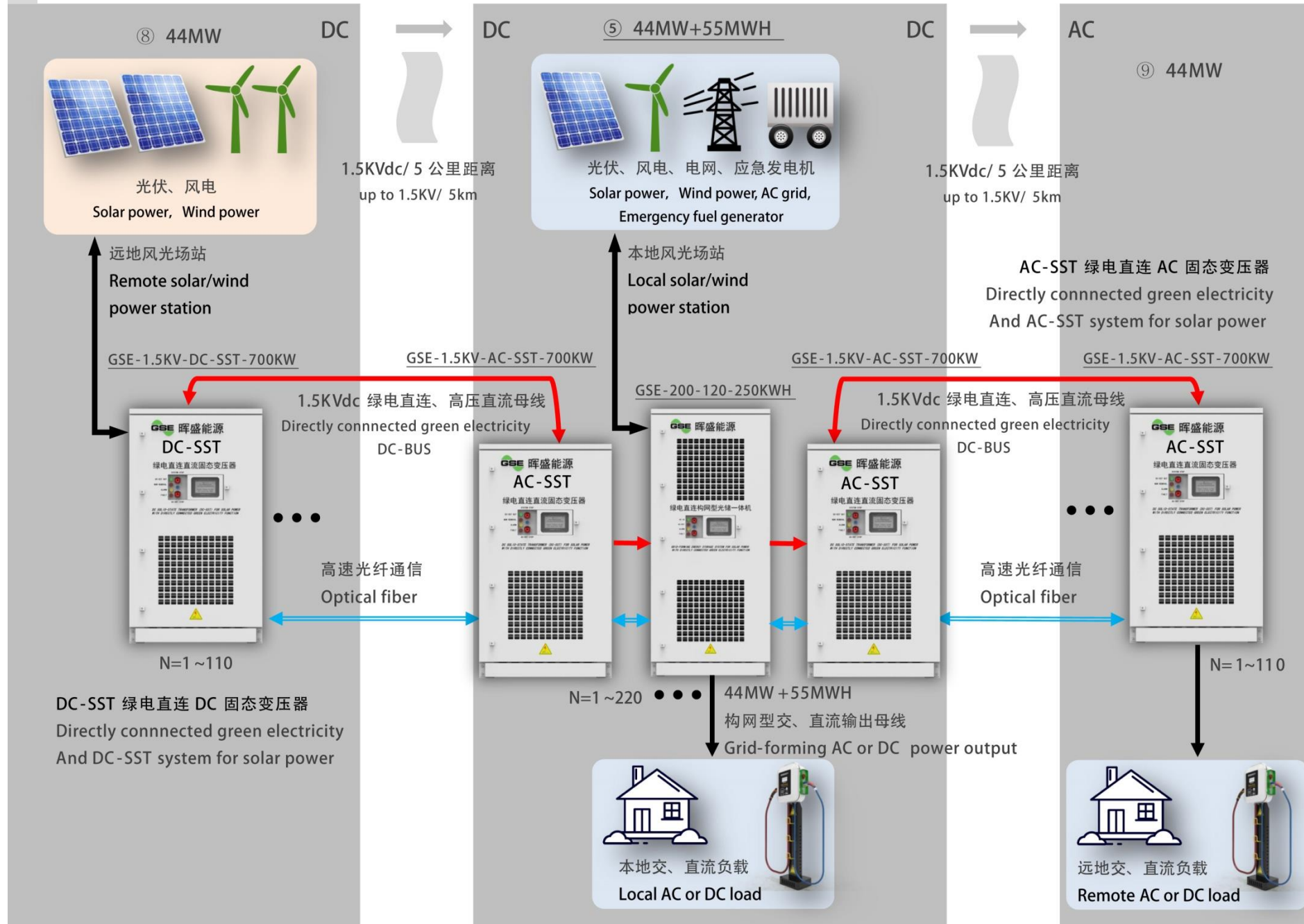


8. 700KW DC-SST 系统应用连接图 System application connection diagram





8. DC-SST 绿电直连技术 Directly connected green electricity technology



8. 1.5KV_700KW 绿电直连 DC-SST 技术参数表 Technical parameters table about our All In One hybrid system

| 型号 MODEL | | GSE-1.5KV-DC-SST-700KW |
|---|--|--|
| 综合主要性能 Main comprehensive specifications | | |
| 光伏输入最大功率 Solar input maximum power | | 724KW |
| 绿电直连输出最大直流功率 Directly connected green electricity maximum output DC power | | 1.5KV, 700KW |
| 宽*深*高 Width*Depth*Height | | 105*160*160CM |
| 整机重量 Weight | | 800KG ±15% |
| 光伏变流器参数 Solar converter | | |
| MPPT 输入电压范围 MPPT input voltage | | 300~1500V |
| MPPT 满载输入电压 MPPT input voltage in full load | | 1000~1250V |
| MPPT 适配光伏组件 Matching PV panel | | 390~720W |
| MPPT 每个组串最大输入功率 MPPT input maximum power per PV string | | 20KW |
| MPPT 最大跟踪效率 MPPT maximum tracking efficiency | | 99% |
| MPPT 最大转换效率 MPPT maximum conversion efficiency | | 99.4% |
| 逆变器模块选配输入 Optional input for inverter | | 风力、水力 Wind power, hydro power |
| 风力、水力发电机输入交流电压 Wind power, hydro power input AC voltage | | 200~900Vac |
| 最大系统效率 System maximum efficiency | | |
| 光伏变流模式 Solar input → Converter → 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。

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1.5KV_700KW 绿电直连 DC-SST 连接外部光伏组件配置表

DC-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 | | | |

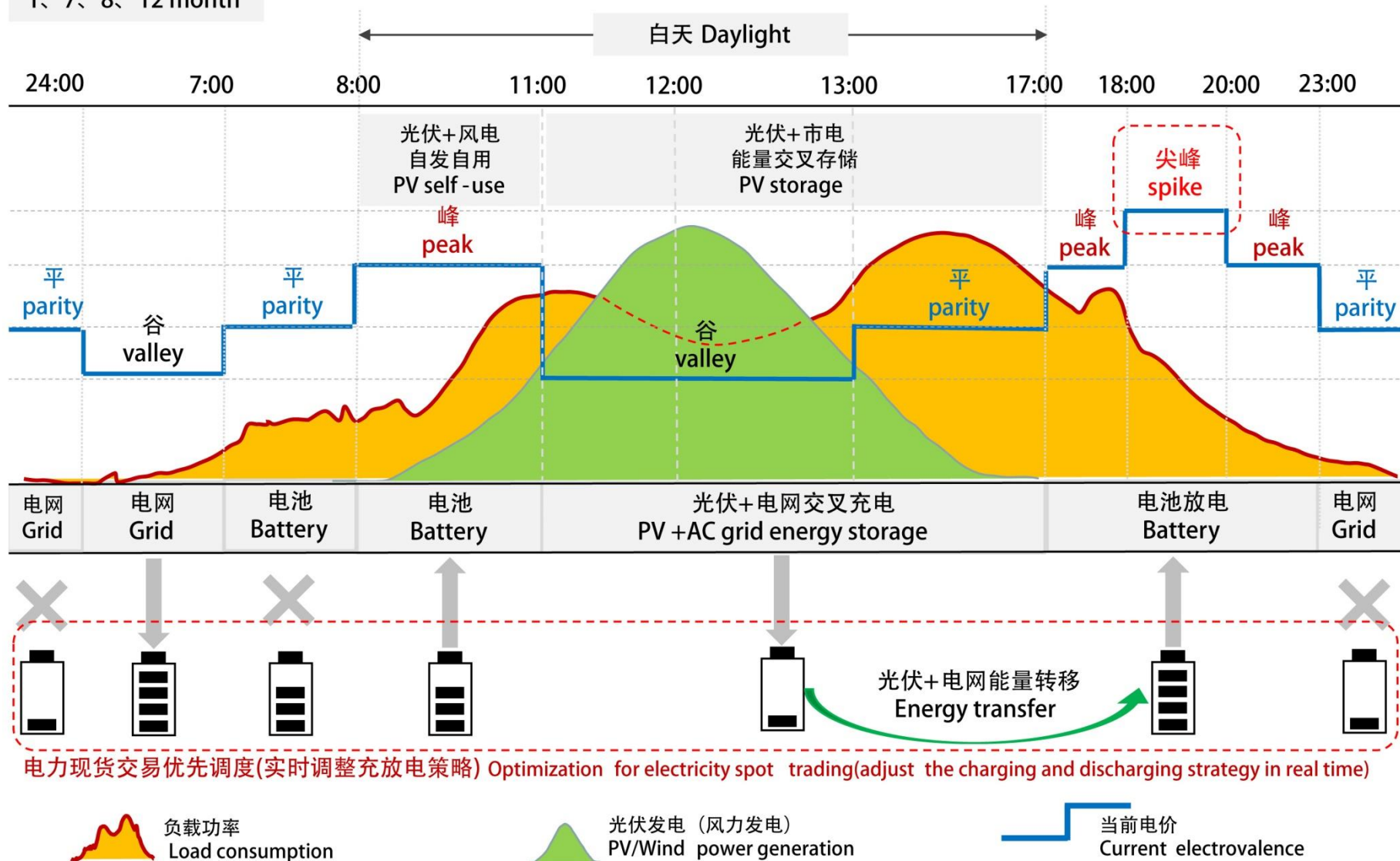
| | | | |
|---|--|--|--|
| 类型 4: 72 片串联电池片, 525~630W Type4: Photovoltaic cell chip unit=72 | 每个光伏组串=12~27 片太阳能板串联(300 ~1359V) Per PV string=12~27 solar panels in series | 每个光伏组串 MPPT 输入电压=1220V Per PV string MPPT input voltage=1220V | 每个光伏组串最大功率= 17.01KW Per PV string=17.01KW (max) |
| 系统光伏最大输入 =2x9x2=36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

