Parasol Elite Power

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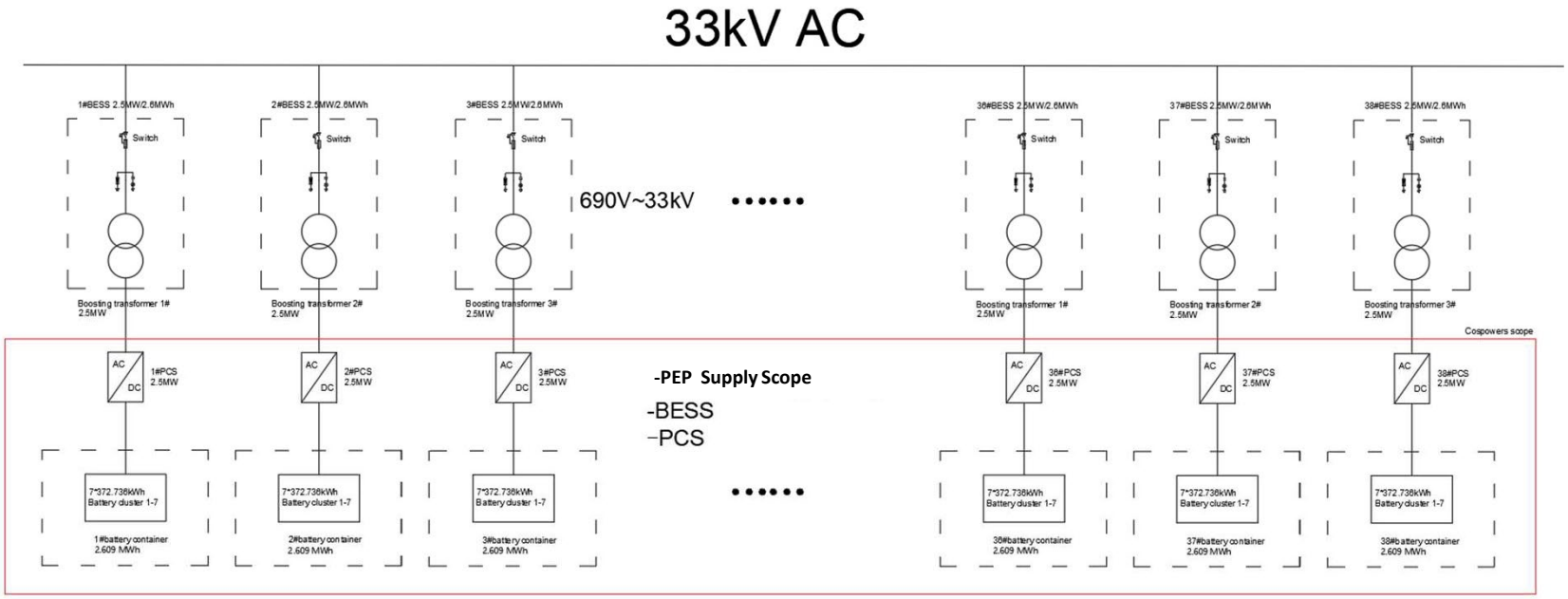
94MW/94MWh LFP BESS

Parasol Elite Power (PEP) Battery Energy Storage System with Liquid Cooling

Product Overview

94kW/94kWh system project requirement could be consisted 38 Nos 2.609MWh DC LFP ESS and 38 Nos 2.5MW PCS. Total capacity is 99.142MWh/95MW.

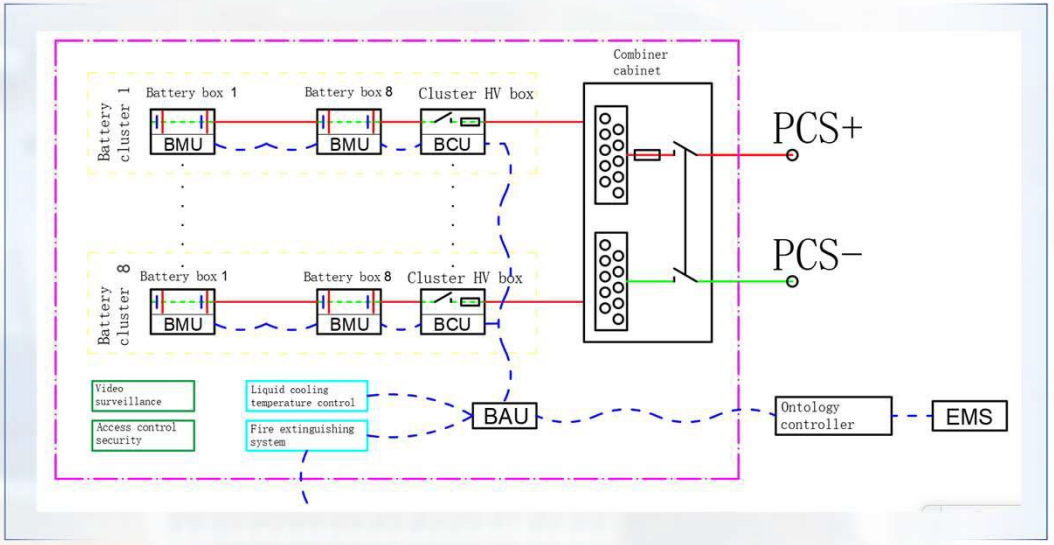


System Topology Diagram

DC Battery Cabinet

PEP’ s 2.609 MWh LFP ESS includes an energy storage lithium battery (including BMS battery management system), liquid cooling temperature control system, security lighting and monitoring system, firefighting system, power distribution system, etc. The designed voltage level of the battery compartment is 1500, the rated voltage of the battery system is 1331.2VDC, and the ESS is designed according to the 1P charging and discharging power. The energy storage battery is integrated into a single 20-foot non-walk-in container (or prefabricated cabin). This solution requires only simple infrastructure to complete one-stop installation. Only power cables and secondary communication cables need to be connected on-site, which is convenient and fast, reducing engineering difficulty and saving costs.

DC Side Topology Diagram



List of Units

Battery parameters	
Cell	3.2V/280Ah, LFP
System battery configuration	1P416S is a cluster, a total of 7clusters
Battery rated energy	2.609MWh
Battery voltage range	1164.8V ~ 1476.8V (Cell 2.8 ~ 3.55V)
Rated discharge power	1P/2500 kW
DC side parameters	
Number of DC circuits	1 route
DC bus maximum voltage (V)	1500V
DC side maximum current (A)	2240
DC voltage working range (V)	800~1500
AC grid connection parameters	
Maximum input apparent power (kVA)	2750
Maximum input active power (kW)	2500
Maximum continuous input current(A)	550V, 3P3W
Maximum continuous input current(A)	2886A
Rated input frequency (Hz)	50/60

List of Units

System	
Floor space size (length × width)	6058×2438mm
Weight and dimensions	About 33T, L6058*W2438*H2896mm
Protection level	IP54
Operating environment temperature range	-30℃ ~ 50℃
Working altitude	≤2000m (>2000m will be customized separately)
Battery thermal management system	liquid cooling
Fire Fighting System	Fire extinguishing system (aerosol), explosion-proof exhaust system and emergency water sprinkler
External system communication interface	Support RS485, Ethernet, CAN

LFP Battery Overview

Cell

Capacity	280 Ah
Cell Specification	280Ah, LFP
Rated Voltage	3.2V
Operating Voltage	2.5-3.65V (limit range)
Operating Voltage	cell 2.8～3.55 (recommended use range)
AC Internal Resistance	≤0.25mΩ
Charging Temperature Range	0~55℃
Discharge Temperature Range	-20~55℃
Rated Charging/ Discharging Rate	1P (25±2℃)
Cell Dimensions	72.1*174*204.4±0.5
Weight kg	5.5

Module

Item	Specification
Rated Capacity	280Ah, 1P@25℃
Rated Voltage	166.4V
Group Mode	1P52S
Voltage Range	145.6-184.6V
Rated Energy KWh	46.592kWh
Allowable Operating Temperature Range ℃	Charging: 0～55; Discharging: -20～55
Cooling Mode	Liquid cooling
Dimensions(L*W*H)mm	1118*780*254 (±2mm)
Weight Kgc	< 340
Com method	485/CAN

Cluster

Item	Specification
Rated voltage	1331.2 V
Rated capacity Ah	280 Ah @25±2℃
Group Mode	1P52S-8S-7P
Rated energy kWh	372.736 kWh@25±2℃
Rated charging and discharging power kW	372.736 kW
Charge and discharge energy efficiency	≥95% (1P)
Allowable operating temperature range ℃	Charging: 0～55; Discharging: -20～50
Com method	CAN
Operating voltage range	1164.8～1476.8 V (cell 2.8～3.55)
Weight kg	About 3000

PCS -1500V

DC parameters	
Max. Dc	1500vdc
DC Voltage Range	800~1500v
Max. DC Current	2750A
Auto- Buffering	Yes
On-grid AC Output	
Rated Power	2500kw
Max. Output Power	2750kva
Rate Grid Voltage And Range	690vac; -15%~10%(adjustable)
Rated Frequency	50hz/60hz
Max. Output Current	2886A
Power Factor	> 0.99 ; 1(lead) ~ -1(lag)
Thdi	< 3% (Rated Power)
Off-grid Output Feature	
Rated Output Voltage	6900vac
Voltage Distortion (thdu)	< 1.5% (linear Loads)
Max. Output Current	2886a
Rated Frequency	50hz/60hz
Efficiency	
Max.Efficiency	99.03%
System Parameters	
Dimension (W×H×D)	2150×2365×1290m
Weight	2900kg
Protection Level	IP55
Allowable Ambient Temperature	-35~60℃ (derating While Above 45℃)
Cooling Method	Air Cooling
Allowable RH	0~100% (no Condensation)
Allowable Altitude	5000m (derating While Above 3000m)
Communication Parameters	
Communication Interface	RS 485, ethernet

Containers and Auxiliary Systems - Cabinet

Built to Endure

This cabinet system is designed with exceptional durability for harsh environments. It offers comprehensive protection against:

Anti-Corrosion: The protective layer is customized based on your project site's specific temperature, humidity, and salt spray levels. This ensures that the container's appearance, mechanical strength, and resistance to corrosion meet performance standards for 15 years.

Fire Extinguishing: Flame retardant materials, thermal insulation, and interior/exterior finishes are incorporated throughout the container shell.

Water-Proof: The design prevents water accumulation on the top, leaks, and seepage. Rain stays out, and no water enters from the bottom.

Anti-Dust (including wind and sand): Standard, easily replaceable ventilation filters are installed at air inlets and outlets of both the container and equipment. This effectively prevents dust infiltration, even during strong winds and sandstorms.

Shock and Vibration: The container and its internal equipment are engineered to withstand transportation and earthquake stresses without deformation, malfunctions, or post-vibration issues.

UV Radiation: Materials inside and outside the container are UV-resistant to prevent property degradation and heat absorption.

Protection Level	IP54	**Anti-corrosion Level**	C3-C5
Rockwool Thickness	50 mm	**Paint Film Thickness**	≥180 μm
Rockwool Specification	80 kg/m³	**Fire Resistance Time**	1.5 h

System Configuration Table

S/N	Product Name	Parameters	Unit	Qty	Remark
1	**DC Side Of Energy Storage System**	**2.609MWh**	**Setc**	**38**	**Composed of one 20-foot battery cabin, each battery cabin has an energy of 2.609MWh**
1.1	Cluster	1331.2 Vdc	Set	7	Each cluster contains 8 battery modules, 1 cluster battery high-voltage box, corresponding battery racks and cables, etc.
1.1.1	Module (PACK)	1P52S/280 Ah	Pcs	8	Including BMU, battery cells, liquid cooling plate, MSD, etc.
1.1.2	Cluster High Voltage Box	1500 V	Pcs	1	Contains BCU, fuse, precharge contactor, etc.
1.2	DC Convergence	1500 V	Set	1	Contains BAU, fuses, etc.
1.3	Thermal Management System	Refrigeration Capacity 45kW	Set	2	Liquid cooling thermal management
1.4	Fire Fighting System	/	Set	1	Fire extinguishing system (Aerosol), explosion-proof exhaust system and emergency water sprinkler
1.5	20 Feet Container	6058*2438* 2896mm	Set	1	Including auxiliary control system monitoring, UPS, power distribution, lighting, etc.
2	**PCS**	**2.5MW**	**Set**	**38**	**38 Nos 2.5MW PCS**