

An aerial photograph of a vast solar farm. Rows of blue photovoltaic panels stretch across a green field towards a line of trees and distant hills. The sun is shining brightly in a blue sky with scattered white clouds, creating a lens flare effect over the center of the image.

BLUESUN 1WM/2MWH **ENERGY STORAGE SYSTEM**



Mission

Enable green energy to create a zero-carbon ecology



Vision

To become a world-class leader in energy technology innovation



Value

Adhere to the right innovation practice and smooth

CHAPTER

01

Technical Proposal

02

Product Sepcification

03

System function

01 System Configure



The system application scenario is solar energy storage system self-using.

1MW/2MWh

The requirement for the battery system is 1 MW
2 MWh available.

400V

The system will output 400 V
AC voltage.



For this system, we provide the a all-in-one
Liquid cooling battery as proposal.

Initial Configuration	
PV power	1MW
Energy storage system	2MWH
AC power output	1MW

01 Main device List



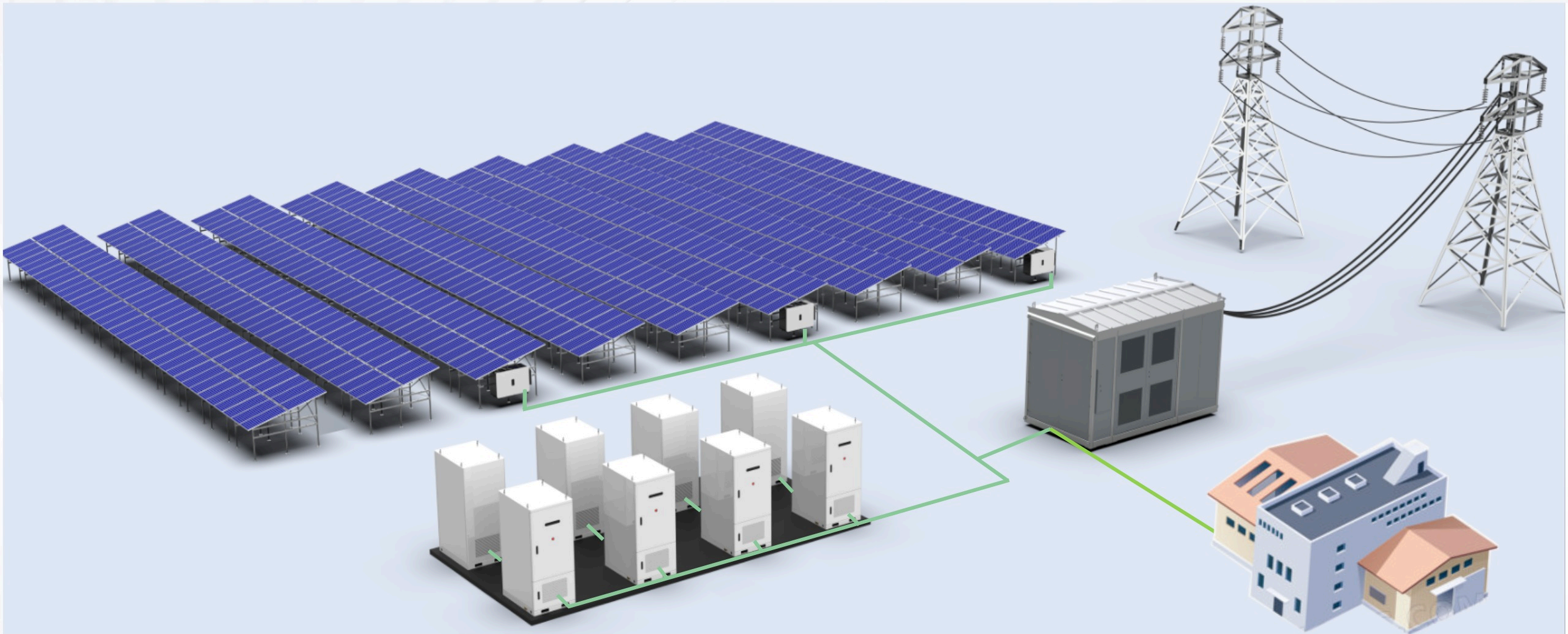
Specification		Qty	Unit	Item
PV panel 610W solar panel	Half cell topcon	1638	piecess	
DC combiner box	12 lines in and 12 lines out	8	pieces	
Solar panel rack		1	set	
ON-grid string inverter 125KW		8	pieces	
125KW/261KWH energy storage system cabinet	166.4V 314AH lithium battery moudle including BMS	5	pieces	
	High voltage control box	1	piece	
	Liquid cooling machine	1	piece	
	125KW PCS	1	piece	
	Fire protection system	1	set	

01 Degradation Table

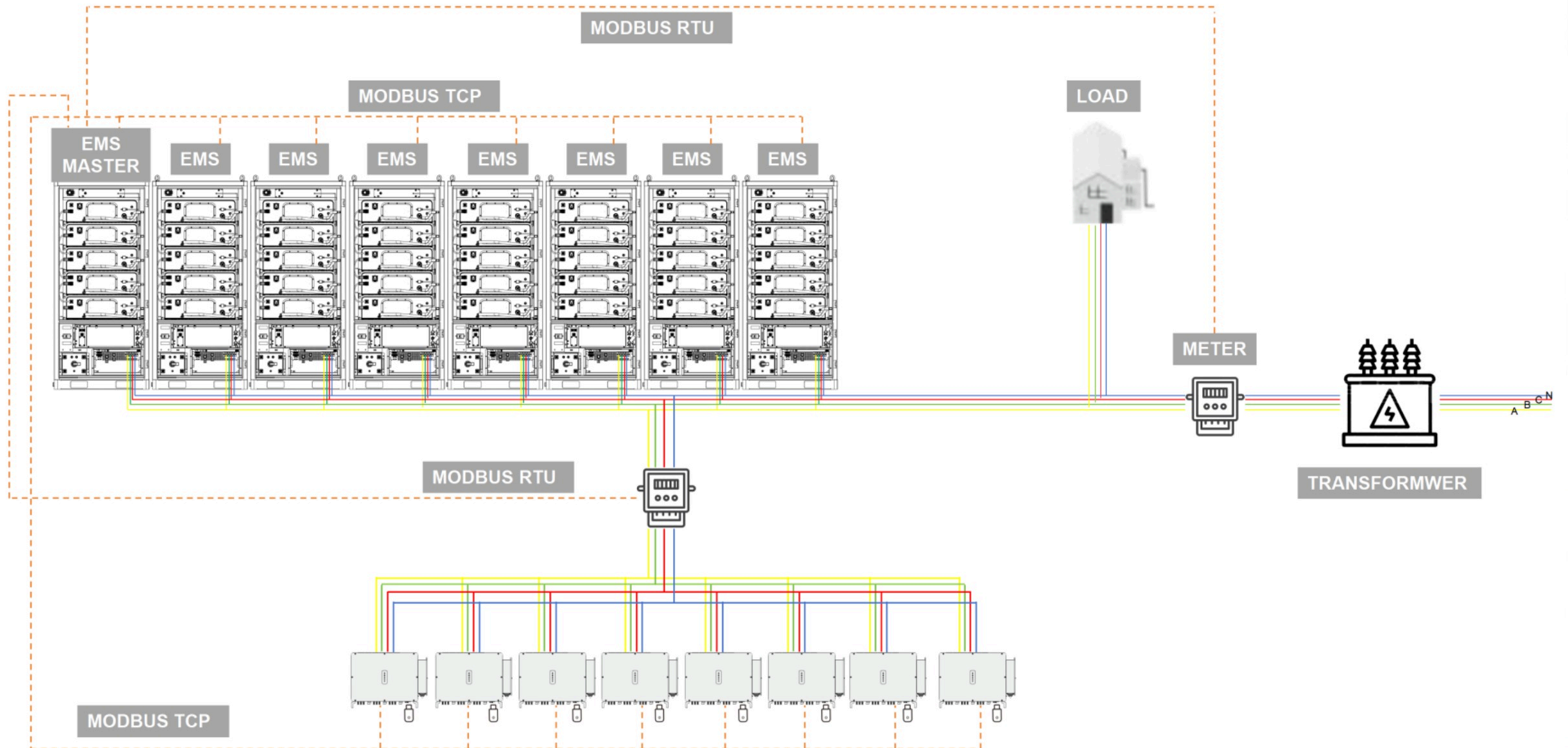
BATTERY SIZING CALCULATION AND CAPACITY PROFILE FOR 10YEARS (FOR 1 MW / 2.08MWh BESS)

Year	Designed Gross Battery Capacity	Degradation for 1 Cycle/day)	AC Output Efficiency	Total AC Usable Cap.(MWh)
Year 0	2.08	98.40%	85.06%	1.77
Year 1	2.08	92.01%	83.05%	1.72
Year 2	2.08	88.03%	82.26%	1.71
Year 3	2.08	85.32%	81.57%	1.69
Year 4	2.08	84.06%	80.95%	1.68
Year 5	2.08	82.75%	80.35%	1.67
Year 6	2.08	81.57%	79.78%	1.66
Year 7	2.08	80.35%	79.22%	1.64
Year 8	2.08	79.13%	78.66%	1.63
Year 9	2.08	77.91%	78.12%	1.62
Year 10	2.08	76.69%	77.57%	1.61

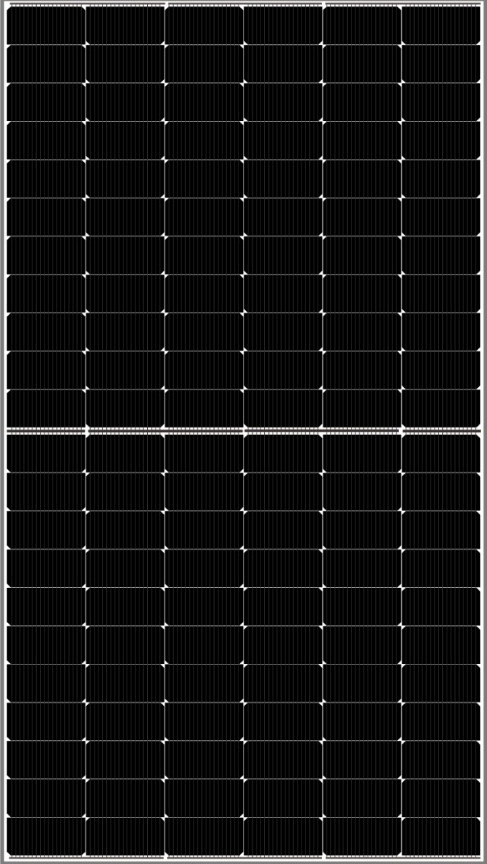
01 Installation oversee



01 Schematic diagram



02 PV panel



Module Type	BSM610M10-78HNH	
	STC	NMOT
Maximum Power(Pmax/W)	610	461
Operating Voltage	50.34	48.05
Operating Current (Imp/A)	15.47	12.50
Open–Circuit Voltage (Voc/V)	41.58	39.02
Short–Circuit Current (Isc/A)	14.66	11.83
Moudle Efficiency ηm(%)	23.61	
Power Gain	5%	
Maximum Power (Pmax/W)	641	
Module Efficiency(η/%)	24.79	
Power Gain	15%	
Maximum Power (Pmax/W)	671	
Module Efficiency(η/%)	25.98	
Cell Type	N–type Topcon	
Cell Arrangement	132(6*22)	
Weight	32.5kg	
Module Dimensions	2278*1134*30mm	
Maximum System Voltage	1500V DC(IEC)	
Operating Temperature	–40°C~ +85°C	
Maximum Series Fuse	30A	
Static Loading	Snow Loading: 5400Pa/ Wind Loading: 2400Pa	

02-1 125KW ON-grid string inverter



Model	BSM125K-B	
Input(DC)	Max.DC Voltage	1100V
	Max.Input Current Per MPPT	40A
	Max.Short-circuit Current Per MPPT	60A
	Start Voltage	350V
	MPPT Voltage Range	200-1000V
	Nominal Voltage	650V
	Number of MPPT	8
	Strings Per MPPT	2
Output(AC)	Nominal AC Output Power	125KW
	Max. AC Output Power	125kVA
	Nominal AC Voltage	230V/400V,3W+PE,3W+N+PE
	AC Grid Frequency Range	50Hz / 60Hz(±5Hz)
	Max. Output Current	181.2A
	Power Factor(φ)	0.8leading-0.8lagging
	Max. Efficiency	98.7%
Efficiency	Euro Efficiency	98.3%
	Dimensions W x H x D	965mm*700mm*355mm
	Weight	85kg

02 125KW/261KWH ENERGY STORAGE SYSTEM



125KW 261KWH ENERGY STORAGE SYSTEM			
NO	Item		Specification
Battery Side			
1	Configuration		1P260S
2	Rated Energy		261kWh
3	Rated Voltage		832VDC
4	Voltage Range		728~936VDC
5	Charging/Discharging Current	Rated	157A
		Maximum	314A
6	General Parameters	Size	1005(L)*1320(W)*2200(H)
		Weight	2.5T
		IP Level	IP66
		Cooling mode	Liquid Cooling
		Communication agreement	CAN
		Coolant	50% Ethylene glycol aqueous solution
AC Side (Grid Connection)			
Rated Voltage(V)		230/400	
AC Output Type		(3W + N + PE) three-phase four line	
Rated Output Power(KW)		125	
Rated Grid Frequency(Hz)		50/60	
AC Side (off-grid)			
Rated Output Voltage		230/400	
Rated Output Power		125	
Maximum Apparent Power (KW)		138	
Maximum Output Current (A)		200	

03 System Function



· PV absorption

Under the current situation, the installed capacity of photovoltaics in the region has reached saturation. During the peak period of photovoltaic power generation, it has an impact on the power grid. Therefore, it is necessary to equip with corresponding energy storage facilities to mitigate the instability of photovoltaic power generation. This set of systems can effectively absorb the electricity generated by photovoltaics during the peak period of photovoltaic power generation and supply power to users through energy storage during the peak period of electricity consumption.

· Peak Shaving and Valley Filling

The local power grid has different electricity prices corresponding to each time period. By using energy storage devices, the battery can be charged from the power grid when the electricity price is at a low stage. And when the electricity price rises to a high stage, the electricity stored in the battery can be discharged for the use of property owners. In this way, the property owners can benefit from the price difference of electricity

Making energy storage simple

Learn more about Bluesun

 www.bluesunpv.com

 info@bluesunpv.com

 Follow us on LinkedIn

