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SOLUTIONS BY: Lexon Loyde, Inc

COMPANY PROFILE

Shreenath Smart Technologies Pvt. Ltd. [SSTPL] is a leading ISO 9001:2015 Certified Company. It's an all-round integrated energy solution provider.

SSTPL provides four solutions: utility energy storage solution, residential energy storage solution, commercial and industrial energy storage solution, integrated energy solution. It cooperates with power grid companies, overseas energy storage enterprises, scientific research institutions, electronics automation enterprises, ICT communication companies in building an integrated energy service platform together. Based in Gujarat, India, SSTPL has offices in New Delhi, Mumbai, Chennai, Hyderabad and Kolkata.

Being a developer and manufacturer of Li-ion battery packs, BMS and energy storage system initially, SSTPL is now strategically transforming into an integrated energy solution provider also, and aiming to become a leading player in new energy industry.

FOUR SOLUTIONS

Utility Scale Energy Storage Solution

- Black Start
- Peak Shifting
- T&D system upgrading deferral
- Voltage Control
- Frequency regulation

Commercial & Industrial Energy Storage Solution

- Peak Shifting
- Demand Charge
- Backup Power
- Demand response
- Grid Support

Residential Energy Storage Solution

- Back-up Power
- Renewable self-consumption
- Peak Shifting

Telecom Backup Power & UPS Solution

- UPS
- Communication base station
- Data center

UTILITY ENERGY STORAGE SOLUTION

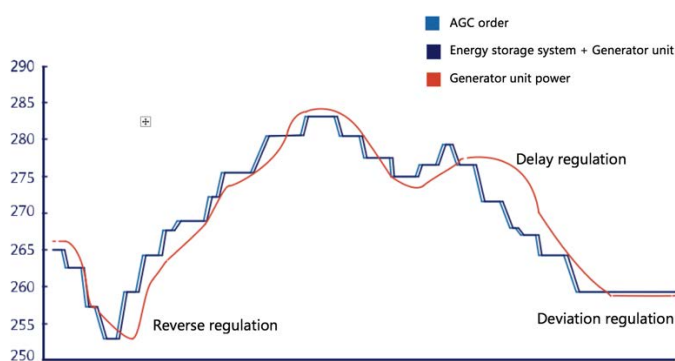
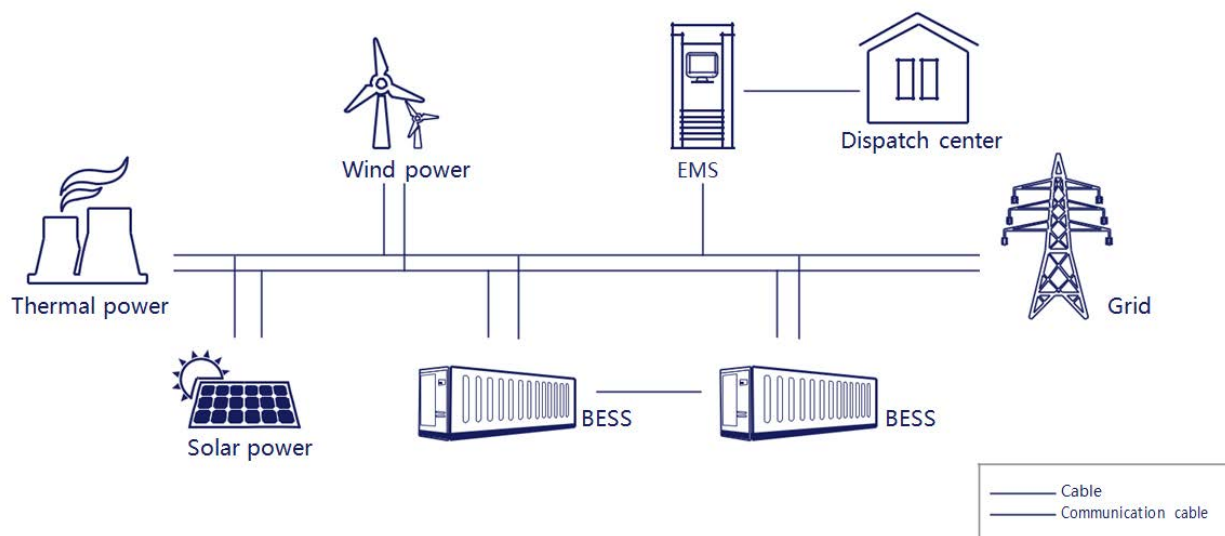
UTILITY ENERGY STORAGE SOLUTION—FREQUENCY REGULATION/PEAK SHIFTING

FREQUENCY REGULATION

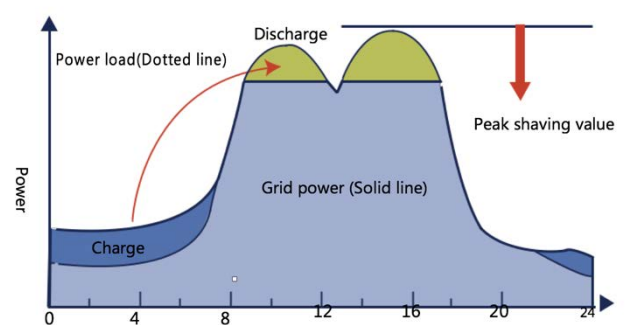
SSTPL frequency regulation system can assist power generation units in quick response to grid dispatch, realize active power support and ensure stable grid operation. SSTPL frequency regulation system features high power density, fast response, accurate power output, etc.

PEAK SHIFTING

SSTPL (peak shifting) can respond to grid dispatch and participate in grid peak shifting. It has features such as high energy density, fast response and high accuracy power control.



Frequency regulation

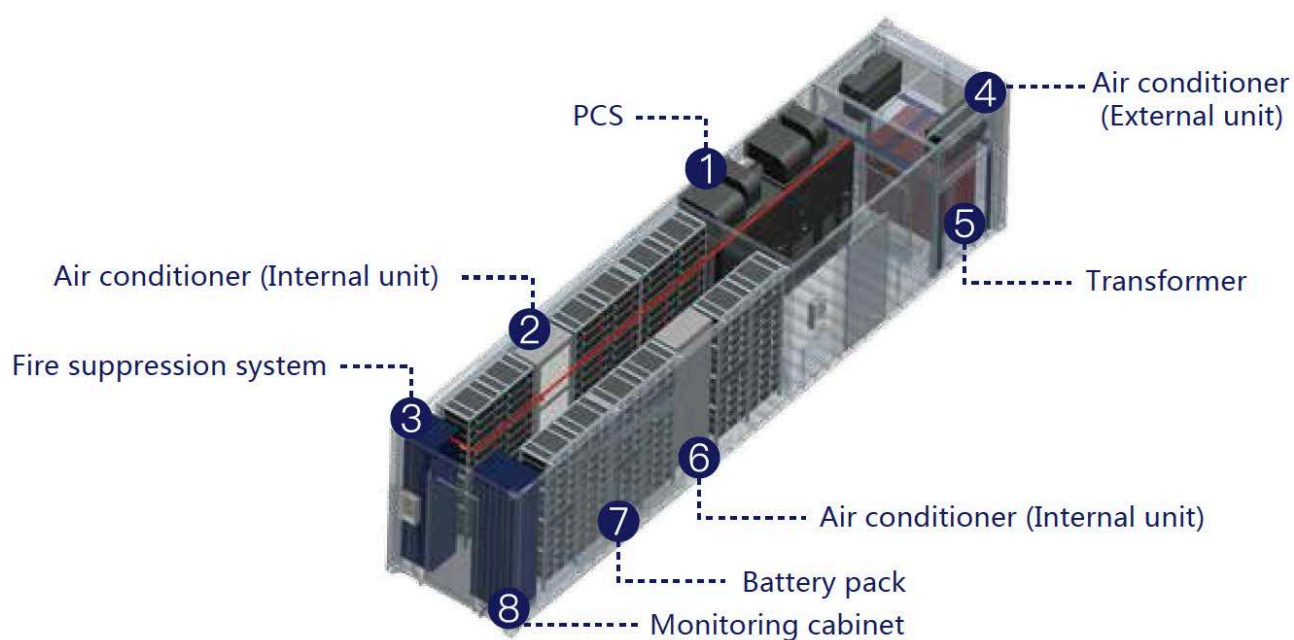


Peak shifting

APPLICATION Frequency Regulation, Peak Shifting, Reactive Power Support

UTILITY ENERGY STORAGE SOLUTION

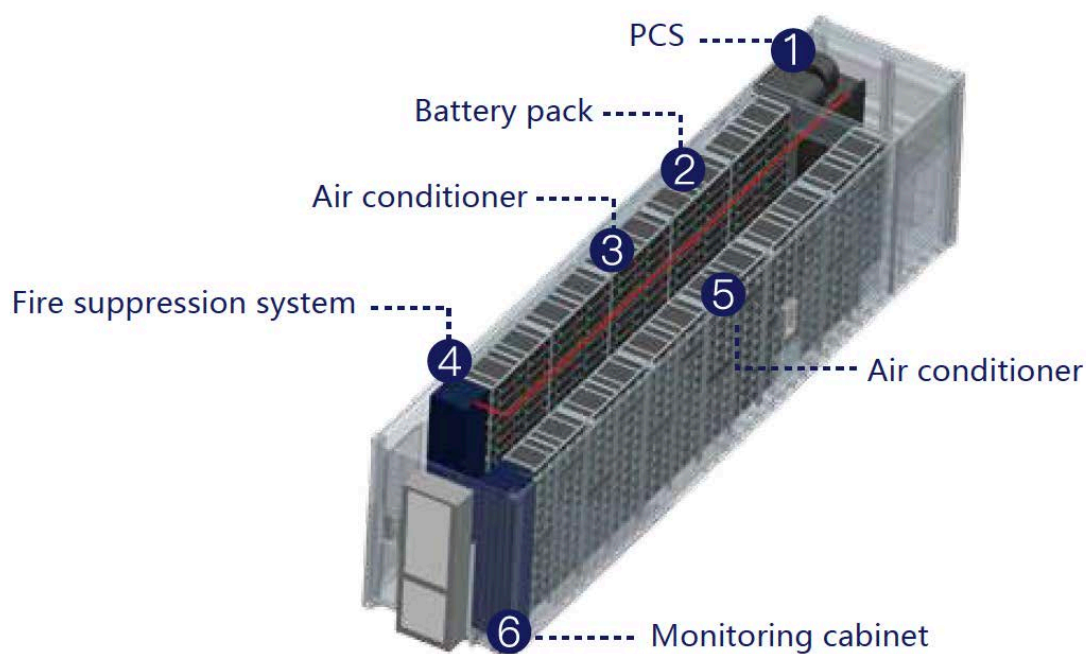
CONTAINERIZED ESS FOR FREQUENCY REGULATION



DESCRIPTION	SPECIFICATION	NOTES
Rated power	1000kW	AC side
Rated capacity	500kWh	AC side
Output wiring	Three-phase four-wire/Three-phase five-wire	
Rated output voltage	315Vac/400Vac	No transformer/With transformer
Output voltage range	85%Un~110%Un	
Rated output frequency	50Hz	
Frequency range	49.5Hz~50.5Hz	
THDI	< 3%	When rated power, voltage distortion < 1%
Power factor	-0.9~0.9	
DC components	< 5%	Rated power
Max. system efficiency	88%	With transformer
Storage temperature	-35℃~55℃	
Work temperature	-25℃~40℃	
Relative work humidity	5~95%	No condensation
Cycle life	2C charge/discharge	LFP>4000 cycle
Noise level	≤65dB	Measured from 1m away
IP level	IP54	
External communication interface	Ethernet	MODBUS (TCP/IP)
Container dimensions	12192*2438*2896mm	W*D*H

UTILITY ENERGY STORAGE SOLUTION

CONTAINERIZED ESS FOR PEAK SHIFTING



DESCRIPTION		SPECIFICATION	NOTES
Rated power		500kW	Long time operation
Rated capacity		1000kWh	AC side
Output wiring		Three-phase four-wire/Three-phase five-wire	
On-grid Mode	Rated output voltage	315Vac/400Vac	No transformer/ With transformer
	Output voltage range	85%Un~110%Un	
	Rated output frequency	50Hz	
	Frequency range	49.5Hz~50.5Hz	
	THDI	< 3%	
	Power factor	-0.9~0.9	
Off-grid with load	Rated output voltage	400V	With transformer
	Output voltage precision	< ±3%	Rated power
	THD	< 1%	Linear load
	Rated output frequency	50±2%Hz	
	Voltage variation range	< 10%	Resistance load 0%~100%
Max. system efficiency		88%	
Storage temperature		-35°C~55°C	
Work temperature		-25°C~40°C	Inside battery cabinet
Relative work humidity		5%~95%	No condensation
Noise level		≤65dB	Measured from 1m away
IP level		IP54	
External communication interface		Ethernet	MODBUS (TCP/IP)
Container dimensions		12192*2438*2896mm	W*D*H

C&I ENERGY STORAGE SOLUTION

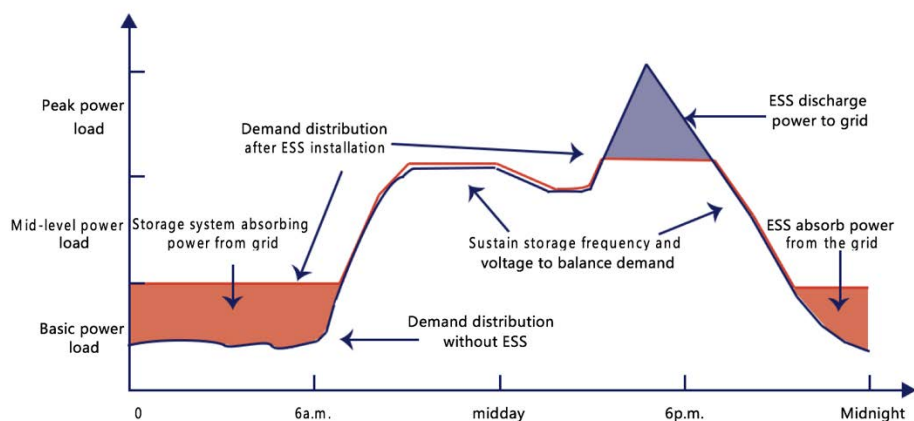
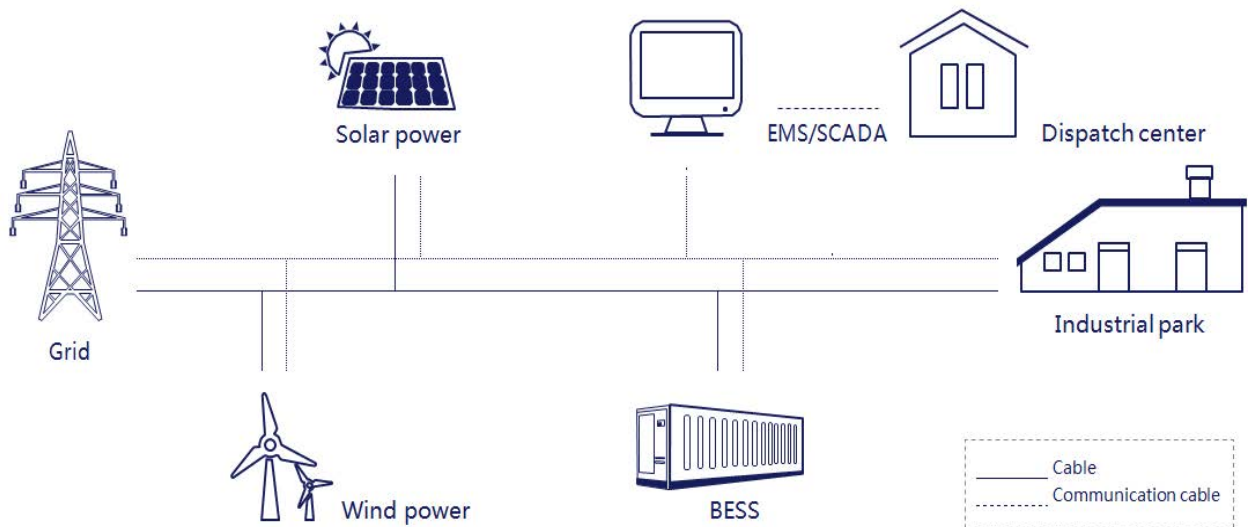
C&I ENERGY STORAGE SOLUTION (LARGE - SCALE 500KWH ~ 10MWH)

Customer side

SSTPL large-scale C&I energy storage system is capable of peak shifting and demand control at user side. This capability is to defer the investment in power distribution equipment capacity expansion, increase equipment utilization efficiency, reduce electricity bill and benefit from peak-valley arbitrage.

Micro-grid

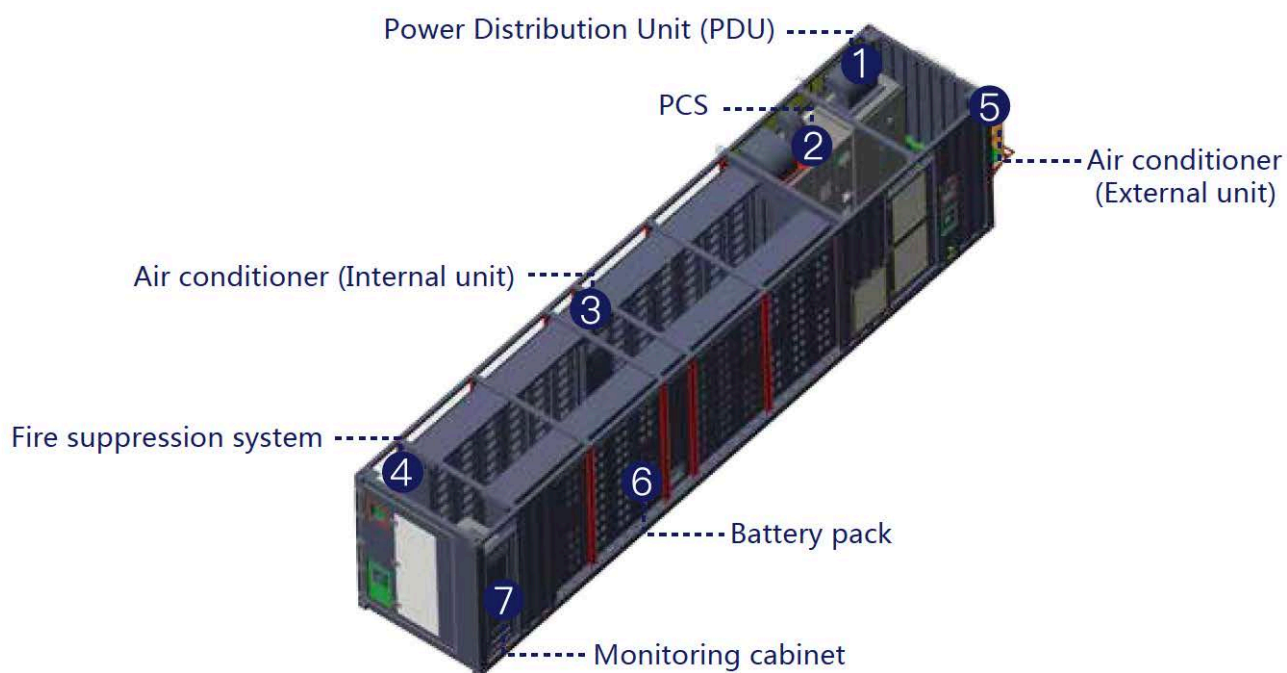
SSTPL large-scale C&I energy storage system can realize on/off grid mode automatic switching and maximize distributed energy efficiency through the control of EMS.



APPLICATION Peak shifting, Demand charge, Backup power, Black start, Emergency power supply, Voltage support, Output smoothing, Demand response management, Smart city, Remote area

C&I ENERGY STORAGE SOLUTION

C&I ENERGY STORAGE SOLUTION

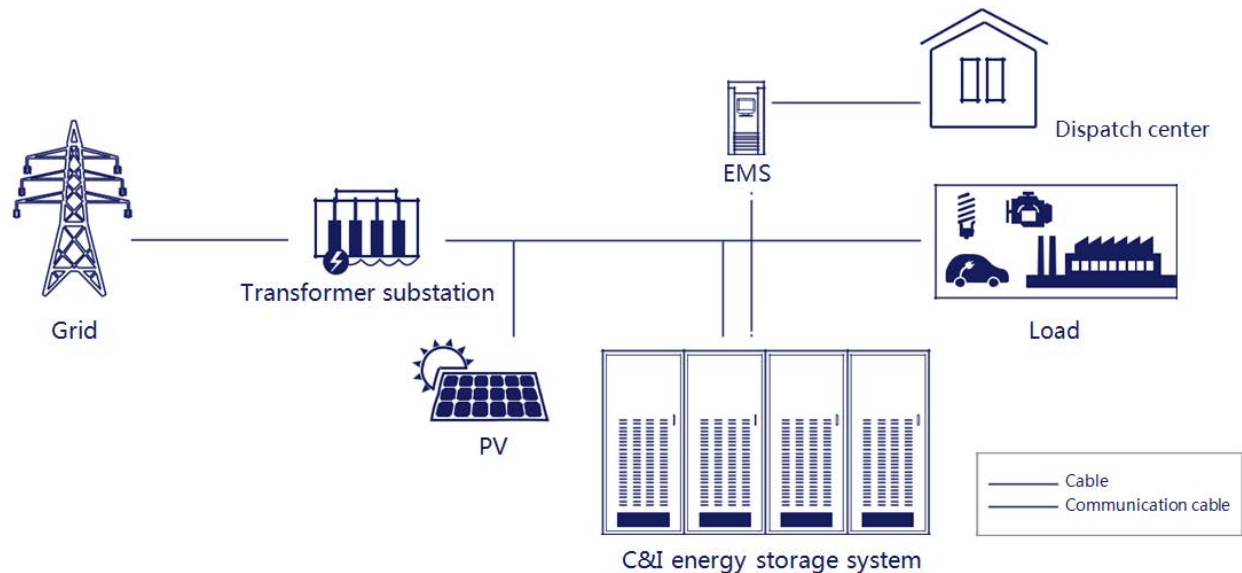


DESCRIPTION		SPECIFICATION	NOTES
Rated power		500kW	Long time operation
Rated capacity		1000kWh	AC side
Output wiring		Three-phase four-wire/Three-phase five-wire	
On-grid mode	Rated output voltage	315Vac/400Vac	No transformer/With transformer
	Output voltage range	85%Un~110%Un	
	Rated output frequency	50Hz	
	Frequency range	49.5Hz~50.5Hz	
	THDI	<3%	
	Power factor	-0.9~0.9	
Off-grid with load	Rated output voltage	400V	With transformer
	Output voltage precision	< ±3%	Rated power
	THD	< 1%	Linear load
	Rated output frequency	50±2%Hz	
	Voltage variation range	< 10%	Resistance load 0%~100%
Max. system efficiency		88%	
Storage temperature		-35℃~55℃	
Work temperature		-25℃~40℃	Inside battery cabinet
Relative work humidity		5%~95%	No condensation
Noise level		≤65dB	Measured from 1m away
IP level		IP54	
External communication interface		Ethernet	MODBUS (TCP/IP)
Container dimensions		12192*2438*2896mm	W*D*H

C&I ENERGY STORAGE SOLUTION

C&I ENERGY STORAGE SOLUTION (SMALL-SCALE 20KWH~200KWH)

SSTPL small-scale C&I energy storage system adopts a modular design, which is easy to deploy, integrate and expand. It can be installed flexibly according to the user's application and it can be widely used in various applications such as peak shifting, demand charge, etc.



Configuration

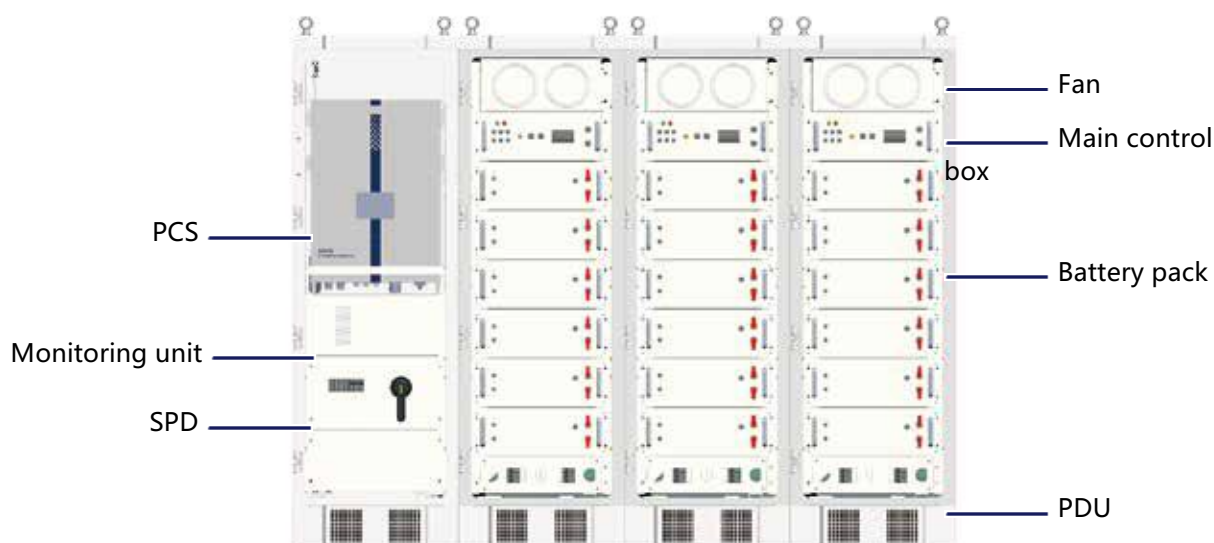
This table provides PCS and battery system configuration recommendation for reference.

224kWh								●
192kWh							●	●
160kWh						●	●	●
140kWh					●	●	●	
120kWh					●	●		
112kWh				●	●			
96kWh				●				
80kWh			●	●				
72kWh			●					
60kWh			●					
56kWh		●						
48kWh		●						
40kWh		●						
28kWh	●							
24kWh	●							
20kWh	●							
Energy System†	10kW	20kW	30kW	50kW	50kW	100kW	100kW	100kW
PACK →	1x	2x	3x	4x	5x	6x	7x	8x

APPLICATION Large/medium community, C&I building, Public areas

COMMERCIAL & INDUSTRIAL ENERGY STORAGE SOLUTION

SMALL C&I ENERGY STORAGE SOLUTION



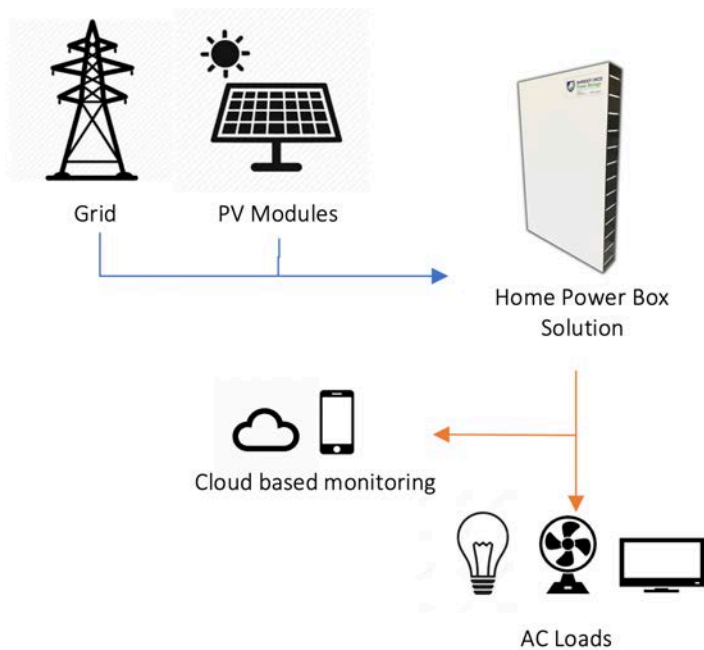
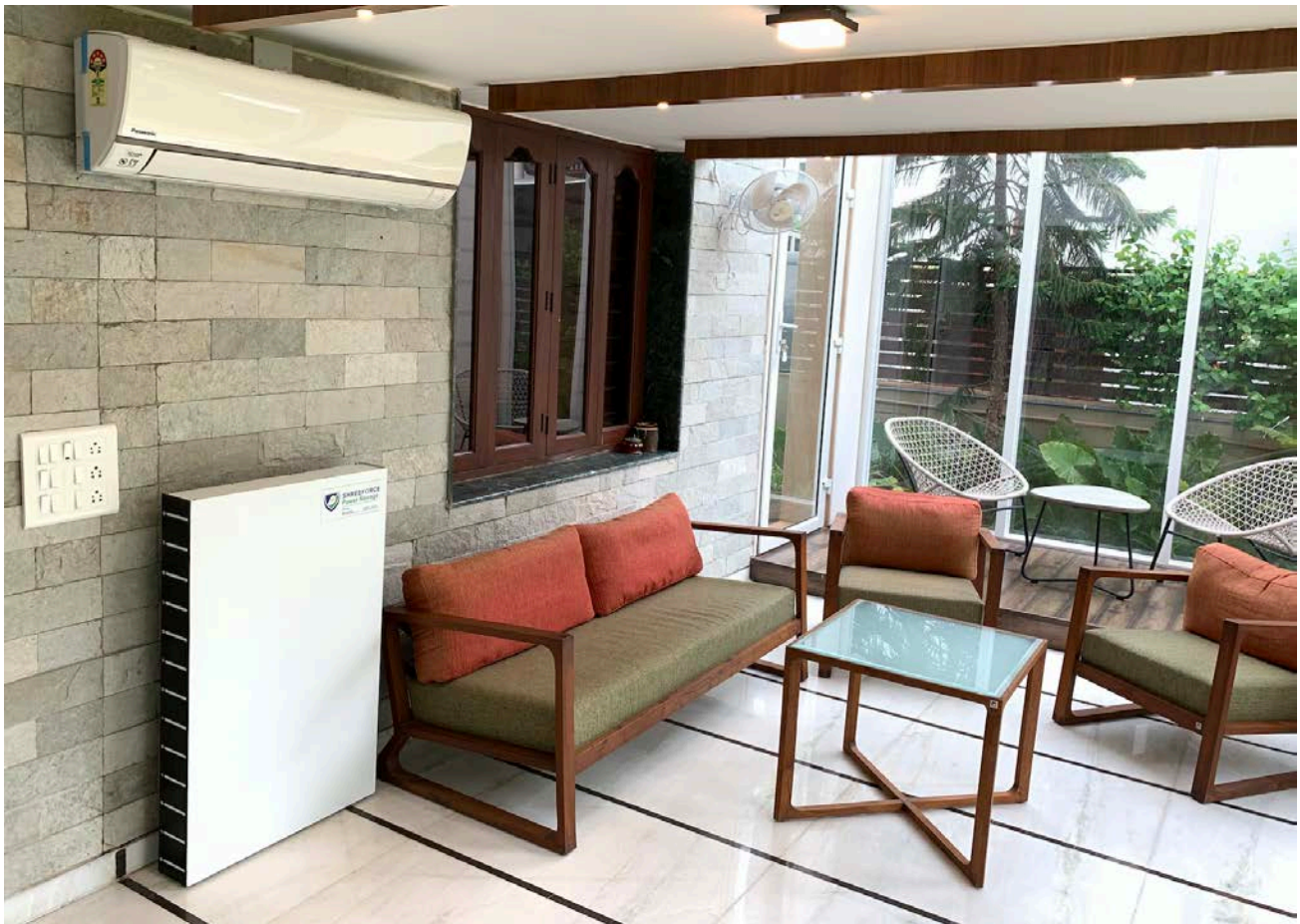
DESCRIPTION	SPECIFICATION	NOTES
Rated system energy	59kWh	100%DOD
Usable energy	53kWh	90%DOD, Allow slight adjustment
Rated charging power	30kW	Maximum 33kW
Rated discharging power	30kW	
Nominal DC voltage	512Vdc	5 battery packs (maximally 7) in serial connection
DC voltage range	448~584Vdc	
Nominal output voltage	480Vac	
Nominal output frequency	60Hz	
Max. discharge current	90A	PCS current restraint
Max. charge current	90A	PCS current restraint
Standard charging	23A(0.2C) to 584V CC/CV	
Cycle life	4000 round trips @ 25°C	80%DOD
Battery cabinet connection	5S3P	5S3P, max7S8P
Work temperature	0~50°C	
Storage temperature	-20~55°C	
System ventilation	Forced air cooling	Support direct air and air conditioning
System IP level	IP54	
Allowed altitude	<2000m	
Environment humidity	≤95%RH (Non-Condensing)	
BMS	CAN(internally) and RS485, Ethernet (externally)	
Communication protocol	CAN2.0, Standard MODBUS Protocol	
Cabinet dimensions(H*W*D) (With PCS)	1850/2400/840mm(Minimum installation discharge)	
System weight	≤1250kg	
Service life	10years(<1cycle/day charge and discharge)	
Optional accessories	LCD touch, external operating power etc.	

*Technical parameters refer to 30kW/60kWh ESS

RESIDENTIAL ENERGY STORAGE SOLUTION

RESIDENTIAL ENERGY STORAGE SOLUTION

Home Power Box can provide electricity whenever there is a power outage and can be charged by either using the grid or solar panels.



Home Power box

Dedicated to your energy independence

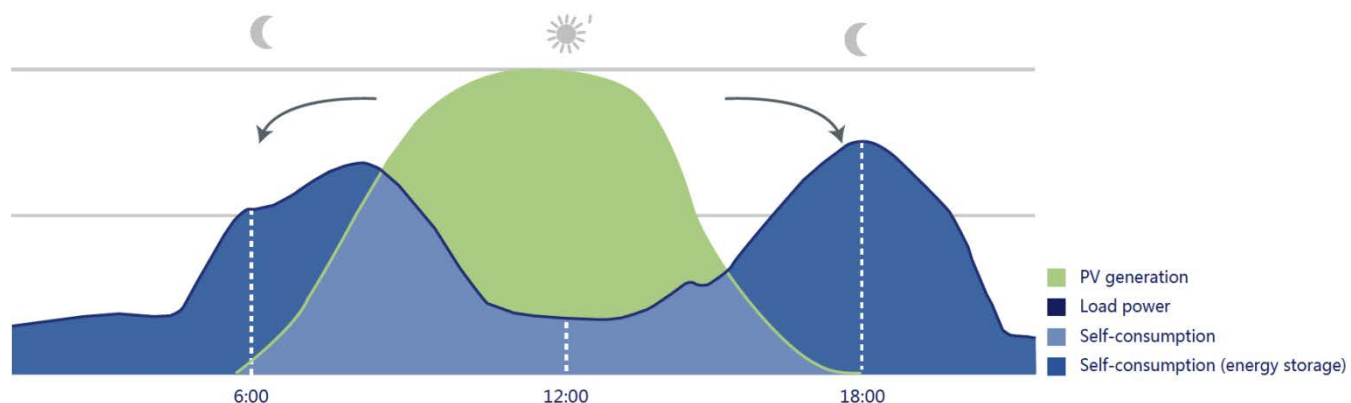
- Zero Maintenance
- Energy savings
- No noise, heating, vibrations or sound
- Zero emissions
- Aesthetically appealing
- 24-hour clean energy supply
- Modular design, easy to scale up
- Automatically on/off-grid switch
- Real-time monitoring at anywhere
- Fast, easy installation

APPLICATION

Energy saving household, back-up power for elevators, hospitals, houses, apartments, remote areas lacking electricity and numerous other applications

RESIDENTIAL ENERGY STORAGE SOLUTION

RESIDENTIAL ENERGY STORAGE SOLUTION



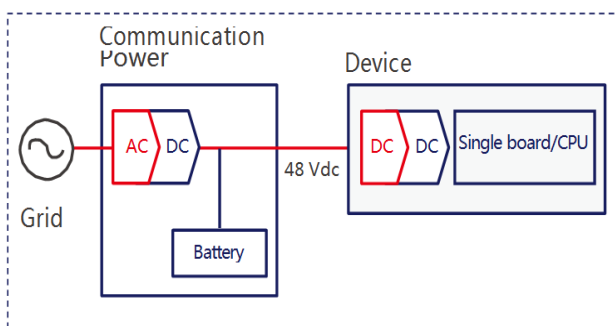
PRODUCT NAME	HOME ENERGY STORAGE BATTERY PACK
Product Model	Lithium Iron Phosphate (LiFePO4)
Battery Type	7.6KWh (51.2 V150Ah)
Nominal Voltage	51.2 V
Voltage Range	40-58.4 V
Continuous Charge & Discharge Current	100A
Operation Temperature	-20-60°C
Depth of Discharge (DOD)	85 % DOD (Settable)
Storage Temperature	-20-45°C
Dimension	1000*634*146mm
Net Weight	100Kg
Communication Port	RS485/RS232/CAN
BMS Protection	Overcurrent, Overvoltage, Under voltage, Short Circuit, Over Temperature
Parallel Connection Quantity	3-8 units
Installation Way	Wall-mounted or Floor-standing

TELECOM TOWER BACKUP POWER & UPS SOLUTION

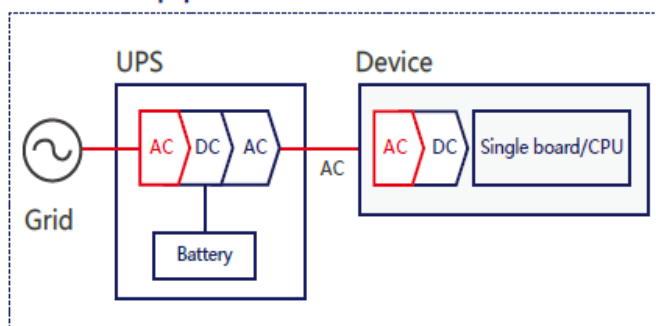
TELECOM BACKUP POWER & UPS SOLUTION

SSTPL Telecom Tower Backup Power & UPS Solution aims to provide reliable and efficient distributed storage for emergency backup power and uninterruptible power distribution by using lithium battery storage products with high energy density, high power density and high-temperature resistance; Replacing the lead-acid storage battery in the original telecom tower with lithium battery storage products; Using lithium battery storage products with long cycle life to provide high-performance indoor and outdoor storage solution for telecom tower and communication base station.

Telecom Backup power solution



UPS backup power solution



FEATURES



Reliable

Highly reliable pack design, multi-level reliability testing: cell-cell pack-battery pack



Simple

Smart BMS, lithium battery system can replace lead-acid battery pack without having to customize UPS



Convenient

Modular design avails independent maintenance, plug-in operation, new and old battery compatible

ADVANTAGES:

- Abundant resources of battery cells, cover all needs of network energy application
- Intelligent technology and application engineering in combination, highly integrated
- Direct power supply and effective power back up

TELECOM TOWER BACKUP & UPS POWER SOLUTION

APPLICATION

Centralized power supply



● Large scale data center

Sectionalized power supply mini module



- Container data center
- Modular data center

Communication base power supply



● Communication base

PRODUCTS SERIES



Telecom Tower Backup Module



Data Center Power Station

TYPE	48V50AH	48V75AH	48V100AH
Rated Voltage	48V	48V	48V
Energy	2.4KWh	3.84KWh	4.8KWh
Communication Port	RS485/RS232	RS485/RS232	RS485/RS232
Weight	<32Kg	<42Kg	<56Kg
IP Grade	IP20	IP20	IP20
Dimension (W*D*H)	482.6*476*132mm	482.6*455*176mm	482.6*526*176mm
Working Temperature	-20 ~65 °C	-20 ~65 °C	-20 ~65 °C