

NSR

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ENERGY PRO

NSR ENERGY STORAGE CABINET

Technical Description



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Scenarios for BESS

A **Battery Energy Storage System (BESS)** is good for a variety of critical applications in energy management and power systems. Here's what it's most commonly used for:

1. Energy Arbitrage

- **Buy low, sell high:** Stores energy from the Grid when electricity prices are low (off-peak) and discharges it when prices are high (peak demand), optimizing cost savings or profits>

2. Grid Stability & Support

- **Frequency regulation:** Quickly injects or absorbs power to maintain grid frequency, to stabilize the utility Grid.
- **Voltage support:** Helps maintain proper voltage levels on the grid.

3. Renewable Energy Integration

- **Smooths intermittent supply** from solar or wind farms. Produced energy can be stored in the Energy storage systems and used when there is demand. Transmission fee and electricity fee can be minimized.
- **Stores excess renewable energy** for use when the sun isn't shining or the wind isn't blowing.
- **Local Solar Power Storage**

Storing energy from local renewable sources—like solar panels or wind turbines—into battery systems enables efficient load shifting.

Batteries allow surplus solar energy generated during the day to be stored and used at night, reducing reliance on grid power. This not only enhances energy independence but also supports cost savings through combined benefits of solar energy storage, peak load shaving, and demand charge reduction

Scenarios for BESS

4. Backup Power / Reliability

- Acts like a **UPS (Uninterruptible Power Supply)** for critical facilities like hospitals, data centers, or telecom.
- **Microgrids:** Supports local energy networks, especially in remote or disaster-prone areas.

5. Peak Shaving

- **Peak Load Shaving**
- Peak load shaving is an effective strategy for facilities that need to quickly reduce electricity usage for short time periods. This is commonly achieved by activating on-site generation systems or battery storage units.
- By setting a peak demand threshold, batteries can automatically limit power draw during high-load periods.
- This approach helps lower demand charges, especially for facilities with variable energy usage patterns.

6. Decarbonization / Emissions Reduction

- Enables higher penetration of renewables.
- Reduces reliance on fossil fuel peaker plants.

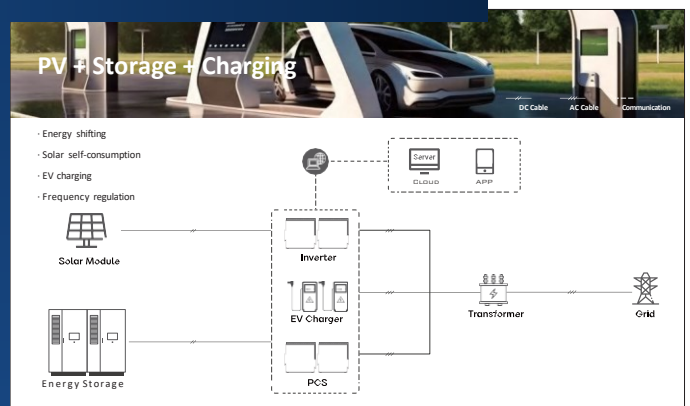
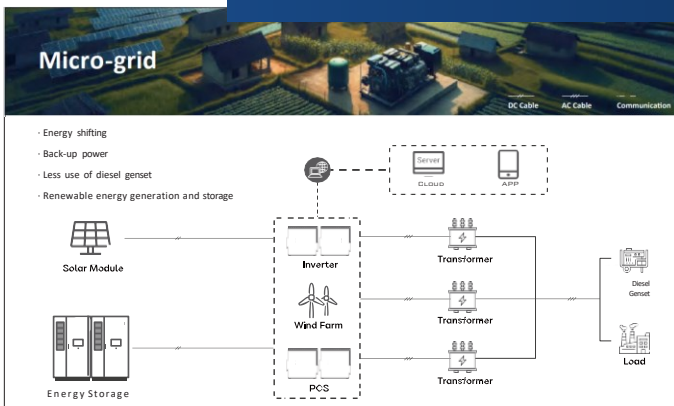
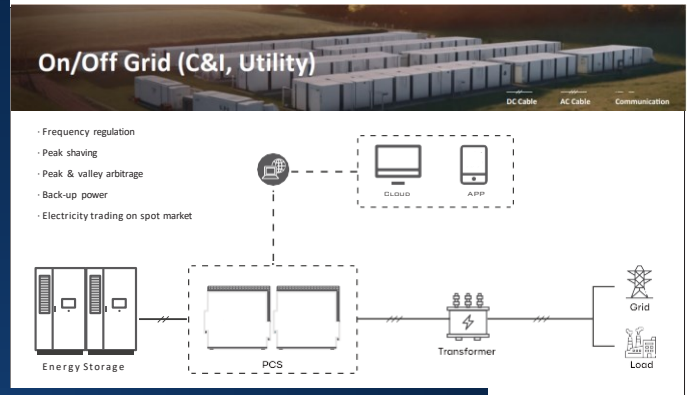
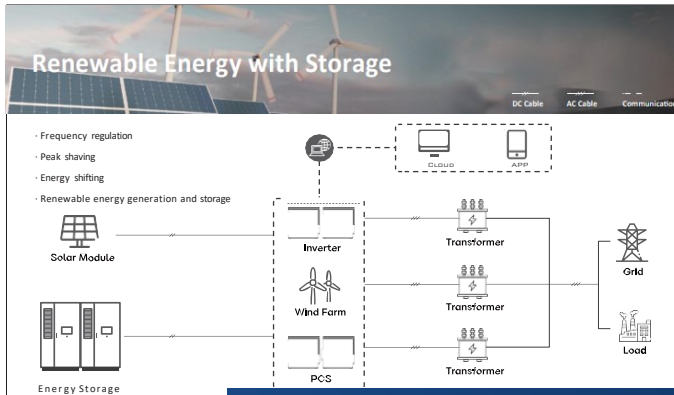
7. Deferring Infrastructure Upgrades

- By managing load and storage locally, utilities can **delay or avoid costly upgrades** to substations or transmission lines.

Example Use Cases:

- **Utilities:** Load balancing, frequency control.
- **Commercial buildings:** Lowering electricity bills.
- **Residential homes:** Power backup, solar energy storage.
- **Electric vehicle charging stations:** Manage demand surges and grid impact.

Return in invest in typical scenarios is between 4-5 Years when using Solar and BESS co-located.



Solutions



Energy Cost Savings



Renewable Integration



PV-ESS-Charging



Micro grids



ZBESS-C

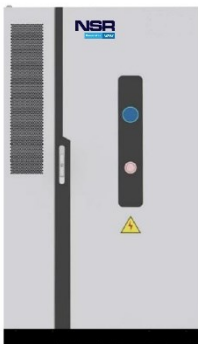
NSR 215-2H

- Safe & Reliable
- Cost-efficient
- Flexible Deployment
- Smart Management

ALL-IN-ONE ESS Cabinet

NSR 215L-A-EU 105kW / 215kWh | 0.5C

Battery Data		AC data		General Data	
Cell type	LFP	Rated AC power	105 kW	DOD	95%
Rated capacity	280 Ah	Rated AC voltage	400 Vac	Noise	≤75dB
Serial-parallel type	1P240S	Rated AC frequency	50/60 Hz	Protection degree	IP 55 (Battery room&PCS room)
Rated capacity per pack	43.008 kWh	Rated AC current	152 A	Cooling method	Liquid cooling/ heating
Pack number	5	Max. AC current	167 A	Fire suppression system	Aerosol
System rated energy capacity	215.04 kWh	AC wiring type	3W/N+PE	Operating temperature range	-19 ~ 55° C (> 45° C derating)
Rated DC voltage	768 V	Power factor	-1 ~ 1	Relative humidity	5% ~ 95% RH
Rated DC voltage range	672~864 V			Max.working altitude	2000 m
Rated DC current	140 A			Display	Web/ LED
				COM interfaces	RS485/ Ethernet
				Dimensions (L*W*H)	1330*1370*2270 mm
				Weight	2450±50 kg



ZBESS -H Battery Cabinet

NSR 372-2H C372L-D-EU 372kWh | 0.5C

- Safe & Reliable
- Cost-efficient
- Flexible Deployment
- Smart Management



Z PCS 200kW

PCS and Battery Cabinet Solution

Battery Data		General Data	
Cell type	LFP	DOD	95%
Rated capacity	280 Ah	Noise	≤75dB
Serial-parallel type	1P416S	Protection degree	IP 55 (Battery room)
Rated capacity per pack	46.592 kWh	Cooling method	Liquid cooling/ heating
Pack number	8	Fire suppression system	Aerosol
System rated energy capacity	372.736 kWh	Operating temperature range	-19 ~ 55° C (> 45° C derating)
Rated DC voltage	1331.2 V	Relative humidity	5% ~ 95% RH
Rated DC voltage range	1164.8~1497.6 V	Max.working altitude	2000 m
Rated DC current	140 A	Display	Web/ LED
		COM interfaces	RS485/ Ethernet
		Dimensions (L*W*H)	1330*1370*2270 mm
		Weight	3550±50 kg



ZBESS-I ALL-IN-ONE ESS Cabinet

I 156-1H 150kW / 156kWh | 1C

- Low costs
- Safe & reliable
- Flexible
- Efficient

Model	NSR-I01-90KN-94	NSR-I01-100KN-104	NSR-I01-110KN-114	NSR-I01-120KN-125	NSR-I01-120KN-135	NSR-I01-150KN-156
Battery data						
Cell type	LFP					
Rated capacity	102 Ah					
Serial-parallel type	2P144S	2P160S	2P176S	2P192S	2P208S	2P240S
Rated capacity per pack	10.444 kWh					
Pack number	9	10	11	12	13	15
System rated energy capacity	93.996 kWh	104.44 kWh	114.884 kWh	125.328 kWh	135.772 kWh	156.66 kWh
Rated DC voltage	460 V	512 V	563 V	614 V	665 V	768 V
Rated DC voltage range	403~518 V	448~576 V	492~633 V	537~691 V	582~748 V	672~864 V
AC Data						
Rated AC power	90 kW	100 kW	110 kW	120 kW	120 kW	150 kW
Rated AC voltage	400 Vac					
Rated frequency	50/60 Hz					
Rated AC current	129 A	144 A	158 A	173 A	173 A	216 A
AC wiring type	3W/N+PE					
Power factor	-0.8 ~ 0.8					
General Data						
DOD	95%					
Noise	≤75dB					
Protection degree	IP 54					
Cooling method	Intelligent fan cooling					
Fire suppression system	Novec 1230 + Aerosol					
Operating temperature range	-30 ~ 60 ° C (> 45° C derating)					
Relative humidity	0% ~ 95% RH (non-condensing)					
Max.working altitude	2000 m					
Display	LED + Touch Screen (Optional)					
COM interfaces	WiFi + LAN+4G					
Dimensions (L*W*H)	1500*1600*2200 mm					
Weight	2290±50 kg	2375±50 kg	2460±50 kg	2545±50 kg	2630±50 kg	2800±50 kg



Energy Cost Savings



Renewable Integration



Continuous Power



Grid Enhancement

NSR-P 1300-1H ALL-IN-ONE ESS Container

P1313L1H-A-EU 1.26MW/ 1.313MWh | 1C

Battery Data	
Cell type	LFP
Rated capacity	285 Ah
Serial-parallel type	6P240S
Rated capacity per pack	43.776 kWh
Pack number	6*5
System rated energy capacity	1313.28 kWh
Rated DC voltage	768 V
Rated DC voltage range	672~864 V
Rated DC current	1710 A
AC Data	
Rated AC power	1260 kW
Rated AC voltage	400 Vac
Rated frequency	50/60 Hz
Rated AC current	1818 A
Max. AC current	2004 A
AC wiring type	3W/ N+PE
Power factor	-0.85 ~ 1
General Data	
DOD	90%
Noise	≤80dB
Protection degree	IP 54
Cooling method	Liquid cooling/ heating
Fire suppression system	Aerosol
Operating temperature range	-30 ~ 55 °C (> 45°C derating)
Relative humidity	5% ~ 95% RH
Max.working altitude	2000 m
Display	Web/ LED/ LCD
COM interfaces	RS485/ Ethernet
Dimensions (L*W*H)	6058*2438*2591 mm
Weight	18±0.5 T

NSR-P 3400-2H Battery Container

P3440L2H-B 3440kWh | 0.5C

Battery Data	
Cell type	LFP
Rated capacity	280 Ah
Serial-parallel type	10P384S
Rated capacity per pack	43.008 kWh
Pack number	10*8
System rated energy capacity	3440.64 kWh
Rated DC voltage	1228.8 V
Rated DC voltage range	1075.2~1382.4 V
General Data	
DOD	95%
Noise	≤80dB
Protection degree	IP 55
Cooling method	Liquid cooling/ heating
Fire suppression system	Aerosol
Operating temperature range	-30 ~ 50 °C (> 45°C derating)
Relative humidity	0% ~ 95% RH (non-condensing)
Max.working altitude	3000 m
Display	Web
COM interfaces	Modbus TCP/IP
Dimensions (L*W*H)	6058*2438*2896 mm
Weight	33.5±0.5 T

NSR-P 3700-1H

Battery Container

P3794L1H-B 3794kWh | 1C

Battery Data	
Cell type	LFP
Rated capacity	285 Ah
Serial-parallel type	10P416S
Rated capacity per pack	94.848 kWh
Pack number	10*4
System rated energy capacity	3793.92 kWh
Rated DC voltage	1331.2 V
Rated DC voltage range	1164.8~1497.6 V
General Data	
DOD	95%
Noise	≤80dB
Protection degree	IP 55
Cooling method	Liquid cooling/ heating
Fire suppression system	Aerosol
Operating temperature range	-30 ~ 50 °C (> 45°C derating)
Relative humidity	0% ~ 95% RH (non-condensing)
Max.working altitude	3000 m
Display	Web
COM interfaces	Modbus TCP/IP
Dimensions (L*W*H)	6058*2438*2896 mm
Weight	35±0.5T

NSR-P 5000-2H

Battery Container

P5015L2H-A-EU 5015kWh | 0.5C

Battery Data	
Cell type	LFP
Rated capacity	314 Ah
Serial-parallel type	12P416S
Rated capacity per pack	104.499 kWh
Pack number	12*4
System rated energy capacity	5015.96 kWh
Rated DC voltage	1331.2 V
Rated DC voltage range	1164.8~1497.6 V
General Data	
DOD	95%
Noise	≤80dB
Protection degree	IP 55
Cooling method	Liquid cooling/ heating
Fire suppression system	NOVEC 1230 /Aerosol (optional)
Operating temperature range	-30 ~ 50 °C (> 45°C derating)
Relative humidity	0% ~ 95% RH
Max.working altitude	3000 m
Display	Web
COM interfaces	RS485/CAN/Ethernet
Dimensions (L*W*H)	6058*2438*2896 mm
Weight	41 T



NSR Energy Storage Cabinet

Photographs are for illustrative purposes only and may not reflect final specification.

All information in this document is substantially correct at time of printing and may be altered subsequently. Final weight and dimensions will depend on completed specification.

