

BIVIS Energy Storage System



BIVIS

- Three Decades of Battery Packaging Industry Expertise
- Partnerships with Leading Cell Suppliers (e.g., Toshiba, Panasonic, LG, Samsung)
- Green Energy Product Development
- Energy Storage Site Implementation and Construction
- ESS System Planning and Design
- Power Energy Utilization Monitoring and Efficiency Enhancement



BIVIS

C&I ESS



Specification-107kWh



Item	Specification
Nominal Capacity	107.52 kWh
Cell Specification	3.2V/280Ah
Module Specification	17.92 kWh
Operating Voltage Range	342–432 V
Charge/Discharge Power	0.5P
PCS Power	50kW
IP Protection	IP54
Corrosion Protection Class	C4
Cooling Method	Air cooling
Communication Interface	Ethernet; CAN
Dimensions	1050 x 2085 x 1371 mm
Weight	≈1,500 kg
Certifications	IEC,UL

Specification-261 kWh



Item	Specification
Nominal Capacity	261.25 kWh
Configuration	1P260S
Cell Specification	3.2V/314Ah
Operating Voltage Range	728~923 V
Charge/Discharge Power	0.5P
PCS Power	125 kW
IP Protection	IP54
Pack-level Fire Protection	Hot Aerosol
Cooling System	Liquid Cooling
Cycle Life	≥6400
Dimensions	1360*1385*1900 mm
Weight	≈2.35t
Certifications	IEC 62619, JIS 8715-2, IEC 61000-6-2/4; IEC60730 CNS62619

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Specification-417 kWh



Item	Specification
Nominal Capacity	417.996kWh
Configuration	1P416S
Operating Voltage Range	1164.8~1476.8V
Max Continuous Charge/Discharge Current	≥170A
System Operating Power	200 kW
PACK-Level Fire Suppression Material	Condensed Aerosol
IP Protection	IP54
AC Power Supply Requirements	220 VAC 50/60 Hz
Cycle Life	≤6400
Dimensions	1360 × 1385 × 2400 mm
Weight	≈3.7t
Certifications	IEC 62619, JIS 8715-2, IEC 61000-6-2/4; IEC60730 CNS62619

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Containerized ESS



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Specification-5MWh



Item	Specification
Nominal Capacity	5.01 MWh
Configuration	12P416S
Cell Specification	3.2V/314Ah
Operating Voltage Range	1164.8~1476.8 V
Charge/Discharge Power	0.5P/0.25P
IP Protection	IP 54
Cell Balancing Method	Active Balancing
Pack-level Fire Protection	Perfluorohexanone / Aerosol
Cooling System	Liquid Cooling
Cycle Life	6,400 Cycles
Dimensions	6058*2438*2896 mm
Weight	≈44t
Certifications	IEC/UL/NFPA/UN38.3

Specification-6.25MWh



Item	Specification
Nominal Capacity	6.25 MWh
Configuration	8P416S
Cell Specification	3.2V/588Ah
Operating Voltage Range	1164.8~1476.8 V
Charge/Discharge Power	0.5P
IP Protection	IP 54
Cell Balancing Method	Active Balancing
Pack-level Fire Protection	Aerosol / Water Fire Suppression
Cooling System	Liquid Cooling
Cycle Life	12,000 Cycles
Dimensions	6058*2438*2896 mm
Weight	≈43t
Certifications	IEC/UL/NFPA/UN38.3

Adventures-Cell

No.	0.5P Capacity		Energy Efficiency		Energy Efficiency		Cycle Life at 25°C 0.5P/70%	Cycle Life at 45°C 0.5P/70%
	Discharge Capacity	Efficiency	0.5P	1.0P	5°C	45°C		
GF314Ah	324.69	95.16%	95.21%	92.77%	87.18%	96.31%	8000	3800
G-314Ah	313.40	94.28%	93.53%	89.90%	86.15%	96.47%	8000	3800
Y-314Ah	319.41	94.20%	94.06%	90.91%	85.04%	96.83%	8800	3800
H-314Ah	327.45	94.54%	94.87%	92.21%	87.17%	96.88%	7000	3800

Adventures-BMS

Item	Active Balancing	Passive Balancing
Balancing Efficiency	High	Low
Balancing Speed	Fast	Slow
Heat Generation	Low	High
Battery Lifespan	High	Low
O&M Cost	Low	High

Advantages



- **Safe and Reliable Battery Materials**
 - ✓ Full LFP cell integration with high-stability separators.
 - ✓ Active liquid cooling and directional pressure relief to delay thermal runaway.

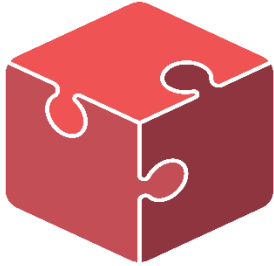


- **Active Electrical Safety**
 - ✓ 3-level linkage protection with automatic high-voltage disconnect.
 - ✓ Millisecond-level arc-extinguishing fuses and reliable E-stop signal chain.



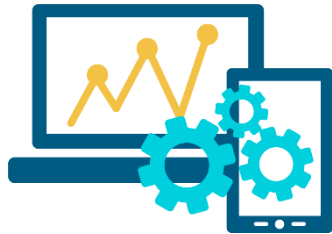
- **High Efficiency Enhancement**
 - ✓ 94%+ energy efficiency; 25% higher volumetric efficiency.
 - ✓ 35% better land utilization and 17% increase in available energy.
 - ✓ Balancing efficiency improved by 5x.

Advantages



- **Modular Design for Easy Deployment**

- Flexible configurations tailored to diverse site requirements.
- Clear documentation simplifies installation and O&M.



- **Comprehensive Integration & Communication**

- Highly integrated components for precise control and monitoring.
- Seamless coordination via multiple standard protocols.



- **High-Efficiency Liquid Cooling**

- Advanced thermal management for superior stability and safety.
- Ensures consistent performance during high-load operations.

Specification Comparison(314Ah Cell)

	BIVIS (417kWh)	CATL (EnerC 400kWh+)	Hithium (314Ah 系統)	Huawei(LUNA2000-200kWh+)
Rated Energy	417.996 kWh	407~420 kWh (EnerC+)	372~417 kWh	200~215 kWh
Cell Config.	1P416S	1P416S or 1P448S	1P416S	String optimization
C-Rate	0.5P (LDES Optimized)	0.5P / 1P	0.5P	0.5P / 1P
Cycle life	8,000	8,000	8,000	6,000
Cooling	Liquid Cooling	Liquid Cooling	Liquid Cooling	Air/Liquid (Model-dep.)
Balancing	Active (BMS Advantage)	Mainly Passive	Mainly Passive	Smart String Active
Fire Safety	Condensed Aerosol	FK-5-1-12 / Water	Gas / Water Sprinkler	Gas (FK-5-1-12)
Certification	IEC 62619, JIS 8715-2	JIS 8715-2, UN38.3	JIS 8715-2, IEC	JIS 8715-2, J-PAS

System Grid-tied Deployment Advantage:

Compact multi-unit configuration provides superior spatial flexibility compared to large 5MWh containers, making it ideal for Japan's fragmented terrain.

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Operation, Maintenance & Degradation Management Comparison

	Traditional Passive Balancing System	BIVIS 417kWh Active Balancing System
Balancing Principle	Dissipates energy via resistor heat discharge, converting it into waste heat	Lossless energy transfer with extremely high efficiency
Impact on Degradation	Localized heat accumulation accelerates cell aging	Low-heat environment maintains chemical stability of cells
Capacity Retention Rate	Faster degradation, requiring early battery capacity replenishment	Gentle degradation, delaying major CapEx for capacity replenishment
Maintenance Requirements	Voltage imbalance increases with aging, requiring manual on-site intervention	System automatically corrects voltage imbalance, resulting in low O&M costs
Monitoring & Early Warning	Difficult to accurately capture minor voltage drifts	Real-time monitoring of balance levels, providing early warning for anomalies