ESS Smart Energy Storage and Management System

Innovative Energy Solutions · Enabling Flexible Energy Dispatch

- Grid-connected Energy Storage for Power Trading Platforms
- Obligatory and Behind-the-Meter Energy Storage for High Power Users
- Distributed Energy Solutions Combining Photovoltaic and Energy Storage
- EV Charging and Energy Storage Solutions

BILLION Watts

Energy Storage System Introduction

Why Choose Billion Watts?

- One-stop renewable energy service integrating solar, energy storage, and energy management.
- Deeply engaged in heavy electricity users and the behind-the-meter energy storage market, assisting enterprises in fulfilling renewable energy obligations.
- Expert bidding and asset management on Taiwan Power Company’ s energy trading platform, ensuring optimized performance and long-term stable returns.
- Integrated financial and consulting capabilities to create high-yield and bankable energy assets.
- Focused on energy transition strategies, delivering compliant, cost-saving, and revenue-generating turnkey solutions.
- Built on the trusted “Made in Taiwan” brand, offering dual assurance of local technical support and global reliability.

Products and Services

Energy Storage Batteries and BMS System

- High safety LFP battery cells certified to VPC, CNS62619, and UL9540A standards
- Liquid cooling technology with thermal management system to ensure optimal operating temperature
- Active fire detection and suppression system
- Cell monitoring and protection system

Engineering, Procurement and Construction (EPC)

- Electromechanical engineering (high voltage switchgear) project design
- Power interconnection (distribution panels and transformers)
- Civil engineering construction
- Integrated communication testing and O&M services

Power Conditioning System (PCS)

- Taiwan local suppliers ensure maintenance services
- Compliant with IEC 62477 and UL 1741 international standards
- Supports multiple communication protocols including Modbus TCP/RTU and IEC 61850
- Achieves DC/AC conversion efficiency up to 98%

Aggregator Management Services

- Operated by qualified traders who have passed the assessment
- Reference Taipower and other power generation data for precise judgment and decision-making
- Intuitive operations enable rapid order placement and bidding
- Ensure execution efficiency and system dispatch rate

Cloud Monitoring Platform – ESS 5.0

- Multi-site cloud integration with single sign-on access for real-time status
- Instant display of battery level and power, making operating status clear at a glance
- Automatic alert notification, fast reporting of abnormal events
- Supports historical data and trend analysis to optimize operational decisions
- API integration connecting Taipower and corporate internal platforms

Energy Storage Insurance Services

- Lifting collisions and falls
- Fire/Explosion
- Third-party liability: spread of fire and pollution
- Business income loss
- Battery performance degradation and warranty risk (Uninsurable Risk)

Advantages

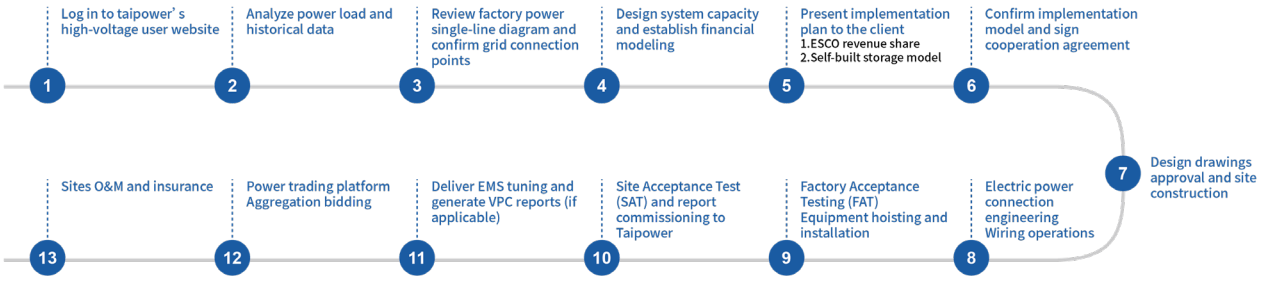
- Modular design and local manufacturing ensure lead time and stable quality
- High-efficiency liquid-cooled LFP battery cells, balancing lifespan, safety, and energy density
- Intelligent EMS with predictive dispatching, enabling peak shaving and dynamic balancing
- Supports various energy storage applications, including energy shifting, aggregation, and output smoothing
- High-efficiency liquid-cooled LFP battery cells, balancing lifespan, safety, and energy density
- Intelligent EMS with predictive dispatching, enabling peak shaving and dynamic balancing

EPC Project Management

Government Policies Driving Corporate Energy Transition Goals

The global momentum toward net-zero emissions is accelerating, and carbon pricing has become a core policy for governments to control emissions and drive decarbonization — officially marking the beginning of the carbon pricing era. Under Taiwan's 2050 Net-Zero roadmap and 12 strategic initiatives, renewable energy is set to exceed 60% of total generation — with energy storage emerging as the cornerstone of the nation's energy transition. Billion Watts has long been deeply engaged in Taipower ancillary services and enterprise-side applications, with extensive experience spanning front-of-meter grid-connected systems and behind-the-meter corporate energy storage solutions. The former enhances grid dispatch efficiency and power stability, while the latter helps enterprises achieve peak shaving, reduce electricity price volatility, and strengthen operational resilience.

Behind-the-Meter Energy Storage Project Management Process



Energy Storage Site Construction Process

1 Project Preparation

Site survey, land lease, Taipower grid connection application, and system preparation and application

2 Energy Storage System Design & Planning

Contract signing, electrical and civil engineering design, project management coordination, and procurement of key equipment

3 Civil Construction Works

Layout, weeding and land preparation, site excavation, grounding system and piping works, RC foundation in equipment area

4 System Engineering and Testing

Low-voltage and high-voltage power system engineering, EMS network monitoring system integration, equipment positioning, and pre-commissioning tests

5 Final Acceptance & Handover

Acceptance test items, system activation testing, relevant data acceptance, Taipower electricity delivery, education and training

6 O&M Team Handover

After-sales service, site operation and maintenance, spare parts procurement, and replacement operations

User-Side Energy Storage Applications

Obligatory Energy Storage for Major Electricity Users

Under the net-zero carbon emissions global trend , carbon fees, renewable energy certificates (RECs), and electricity market trading systems are being fully implemented. According to Article 12 of Taiwan’ s Renewable Energy Development Act, enterprises with a contract capacity of 5,000 kW or above are designated as major electricity users and are required to fulfill a 10% renewable energy obligation.
The core objective of this policy is to encourage large power consumers to share the responsibility of energy transition by installing renewable energy or energy-saving equipment, thereby improving energy efficiency, reducing peak demand, and achieving the dual goals of carbon reduction and grid stability.

Major Electricity Users May Fulfill Obligations via One (or a Combination) of the Following Four Methods

Compliance Method	Calculation Formula	Advantages Analysis
Self-Built Renewable Energy Facilities	Obligated capacity = Contract capacity × 10%	**▶ Requires a large installation area** The generated electricity is for self-consumption only and cannot be sold. Compared with energy storage systems, sufficient site space is required to install devices with adequate capacity.
Purchase of Green Power or Renewable Energy Certificates (RECs)	Annual Purchase Quota = Mandatory Equipment Capacity x Annual Sales Power per kW of Selected Renewable Energy Category	**▶Relatively high cost with significant price volatility** Adequate green power must be purchased annually to meet the obligation. Procurement costs fluctuate with market conditions, leading to variable pricing.
Installation of Behind-the-Meter Energy Storage Systems	Installed capacity = Mandatory Equipment Capacity × Minimum discharge duration (2 hours)	**▶Combines cost savings, multiple revenue opportunities, and compact installation needs.** Combines cost savings, multiple revenue opportunities, and compact installation needs. Through peak shaving and load shifting, users can lower energy costs and earn extra income by joining Taipower’ spinning reserve and demand response programs.
Pay Compensation	Annual Payment Amount = Mandatory Equipment Capacity x 2,500 kWh/kW x 4 NTD/kWh (Compensation Rate)	**▶Highest cost and no carbon reduction benefit** Paying compensation is not a carbon-reducing action and cannot be counted as a company's ESG achievement.

※ Actual costs and benefits are subject to government policy adjustments and implementation conditions.
The above information is for reference only.

Renewable Obligation Users – Energy Storage Load Adjustment Measures

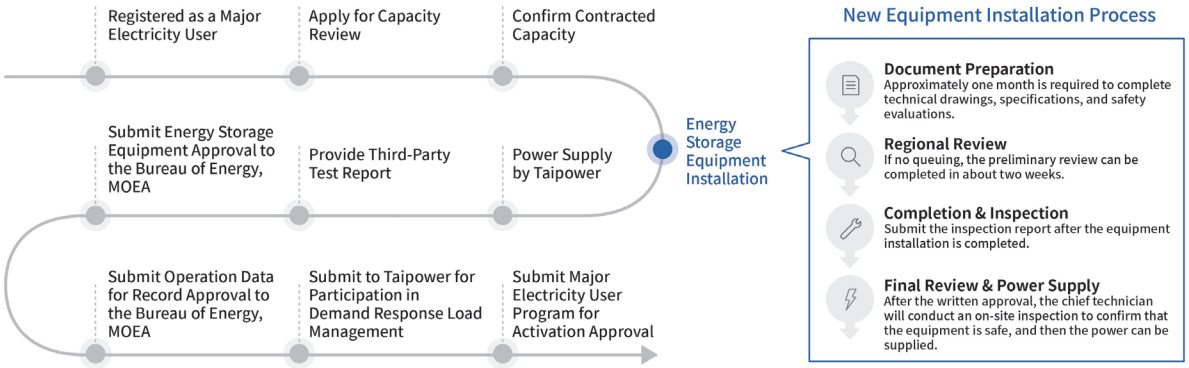
Energy storage systems installed by major electricity users can discharge for 2 hours daily from 6 PM to 8 PM on all weekdays throughout the year (excluding off-peak days), limited to once per day, and energy storage must not be scheduled for charging during the discharge period. Participation is voluntary, with one of two plans applicable, and currently, two plans are being considered.

Obligated Hours Type

Set an obligated hours system (400 hours); if the obligated hours are exceeded, an electricity bill reduction of 10 NT dollars per kWh can be provided.

Progressive Feedback Type

No obligated hours are set; electricity bill reductions are given progressively based on the number of discharge hours: 1 NT dollar per kWh for up to 150 hours, 2 NT dollars per kWh for 151 to 400 hours, and 5 NT dollars per kWh for over 401 hours.



Behind-the-Meter Energy Storage Revenue Sources

Revenue Sources

- **Time-of-Use Tariff:** Generate profit through peak and off-peak electricity price arbitrage.
- **Taipower Energy Trading Platform:** Participate in ancillary service and reserve bidding.
- **Major Electricity User Demand Response Incentives** Major electricity users can participate in the 'Obligated Energy Storage Adjustment Measures for Renewable Energy Users' under both the obligated hours type and the cumulative feedback type.
- **Other demand response incentives (recognized through case assessment):** Both major electricity users and non-major electricity users can participate in the "Planned Electricity Saving Adjustment Measures" under the daily time-slot type and the monthly 8-day selection type.

Revenue Models

General Users (Contract Capacity < 5,000KW)	Major Electricity Users (Contract Capacity ≧ 5,000KW)
1. Time-of-Use Tariff	1. Time-of-Use Tariff
2. Time-of-Use Tariff + Ancillary Service Bidding	2. Time-of-Use Tariff + Ancillary Service Bidding
3. Time-of-Use Tariff + Ancillary Service Bidding + Other Demand Response Incentives	3. Time-of-Use Tariff + Ancillary Service Bidding + Other Demand Response Incentives
	4. Time-of-Use Tariff + Major User Demand Response Incentives

Application Solutions & Revenue Models

Portfolio of energy storage application solutions for different business models		Solution 1	Solution 2	Solution 3
		Spinning Reserve + Price Arbitrage Plan (24-hour Type)	Spinning Reserve + Contract Capacity Suppression Optimization Plan	Demand Response + Price Arbitrage (Obligated Capacity for Major Electricity Users)
Energy Storage Application	Time-of-Use Tariff Transfer/ Allocation (Arbitrage)	✓	✓	✓
	Demand Response	✓	✓	✓
	Fulfilling Contracted Obligation (e.g., Major User Quota)			✓
	Reducing Contract Capacity (Avoiding Penalties)		✓	
Revenue Model	Basic Electricity Cost Reduction		✓	
	Transfer/Reduction of Energy Charges	✓	✓	✓
	Demand Management Incentives		✓	✓
	Spinning Reserve Ancillary Service	✓	✓	
Recommended Users		Manufacturing and semiconductor industries with high electricity usage throughout the day	Fields with intermittent and seasonal load increases (e.g., service and retail industries)	Those meeting the large consumer criteria who have potential to participate in demand response

C&I Energy Storage Applications

Billion Commercial & Industrial Energy Storage System

Fusio One 100kW/215kWh

- Pack IP67 protection, system IP54 protection
- Independent cabinet design with built-in smoke and temperature sensors, featuring aerosol-based fire suppression for rapid fire coverage
- All-in-one design enables easy installation, transport, and flexible configuration
- Modular configuration with integrated PCS, BMS, and EMS design
- Real-time health monitoring and operating status tracking
- Refined thermal management ensures optimal battery operating temperature
- Compact footprint enhances configuration flexibility and supports parallel connection of multiple cabinets for system expansion

Fusio One 100kW/215kWh

DC Parameter

- System Capacity: 215 kWh
- Battery Type: LFP 3.2V / 280Ah
- Battery Pack Configuration: 1P48S, 43 kWh
- Battery Pack Protection Rating: IP67
- Battery System Configuration: 1P240S
- Rated Energy: 215 kWh
- Rated Voltage: 768 VDC
- Voltage Range: 672 ~ 876 VDC
- Charge/Discharge Rate: ≤ 0.5C
- Depth of Discharge (DoD): 0 ~ 95%
- Cooling Method: Liquid Cooling

AC Parameter

- Rated Power: 100 kW
- Rated Grid Voltage: 400 VAC
- Permitted Grid Voltage Range: 320 ~ 460 VAC
- Rated Grid Frequency: 50 / 60 Hz
- Total Harmonic Distortion (THDi): ≤ 3%
- DC Component: ≤ 0.5%
- Wiring Method: Three-phase four-wire (3L+N+PE)
- Cooling Method: Smart Air Cooling

General Specifications

- Dimensions (WxHxD): 1,000 × 2,280 × 1,350 mm
- Degree of Protection: IP54
- Max. Operating Altitude: 4,000m (derating > 2,000m)
- Operating Temperature Range: -20° C ~ 55° C (derating > 45° C)
- Operating Humidity: 0% ~ 95% (non-condensing)
- Fire Protection System: Fire detection (temperature, pressure, smoke) + Aerosol fire extinguishing
- Communication Interface: Ethernet
- Wiring Method: Entering and exiting from below

Compliance Standards

- Battery Module: IEC62619, UN38.3, UL9540A
- PCS Module: IEC61000, IEC62477

Fusio Nex 125kW/261kWh

- Module-level and system-level active fire detection and suppression devices enhance product safety.
- Battery pack IP67 protection, system IP54 protection.
- Integrated PCS, BMS, and EMS design
- Optional MPPT and STS modules provide flexibility for various application scenarios
- Modular battery cabinet design allows scalable configuration for 2-, 4-, 6-, or 8-hour charge/discharge configurations
- Active balancing BMS improves cell consistency and extends battery cycle life
- Liquid-cooling thermal management ensures the battery operates within the optimal temperature range
- Equipped with local EMS for real-time operation monitoring

Type	BESS	Bat	PCS	STS	MPPT	UPS	Application Section
T	Grid-Connected	v	v			▲	Time-of-Use Arbitrage, Demand Response, Spinning Reserve
B	Backup	v	v	v		v	Backup Power, Critical Facility Backup
S	Off-Grid PV + ESS	v	v		v	v	PV Self-consumption, Off-grid Operation, Islanded Operation
H	Hybrid	v	v	v	v	v	Peak Shaving & Valley Filling, Smart Grid Integration, Resilient ESS

▲ Optional

Fusio Nex-H 125kW/261kWh

Grid AC

- Rated Voltage: 400 Vac
- Voltage Range: 340 Vac ~ 460 Vac
- Voltage Configuration: 3W+N+PE
- Grid Frequency : 50 Hz / 60 Hz ± 2.5 Hz
- Rated Current: 180 A
- Power Factor: 0.99 / -1 ~ 1

Load AC

- Rated Output Power: 125 kW (Grid-connected) / 100 kW (Off-grid)
- Voltage Range: 340 Vac ~ 460 Vac
- Frequency : 50 Hz / 60 Hz ± 2.5 Hz
- Rated AC Current: 180 A
- Voltage Configuration: 3W+N+PE
- Power Factor: 0.99 / -1 ~ 1
- Overload Capability: 110% @ Ambient Temperature ≤ 40 ° C

MPPT (DC/DC)

- Rated Power: 62.5 kW × 2 Sets
- MPPT Inputs: 4 strings × 2 Sets
- Max. PV Current: 50 A
- PV Input Voltage Range: 350Vdc ~ 1,000Vdc
- MPPT Voltage Range: 150 Vdc ~ 1,000 Vdc
- DC/DC Voltage Range: 600V ~ 1,000V

STS

- Rated Voltage: 400 Vac
- Operating Voltage : 340 Vac ~ 460 Vac
- Rated Power: 300 kVA
- Rated Current: 433 A
- Grid/Off-grid Switching Time: ≤ 20 ms

Battery

- Rated Energy: 261 kWh
- Nominal Voltage: 832 Vdc
- Voltage Range: 728 Vdc ~ 936 Vdc
- Cell Configuration: 1P260S
- Max. Charge/Discharge Current: 180 A
- Self-discharge Rate: ≤ 3% / month
- Battery Round-trip Efficiency: ≥ 94%
- Charging Temperature : 0° C ~ +55° C
- Discharging Temperature : -20° C ~ +55° C
- Cooling Method: Liquid Cooling
- SOC Estimation Accuracy: ≤ 5%

General Specifications

- Max. Conversion Efficiency: ≥ 87%
- Communication Interface: RJ45
- Protocol: Modbus TCP, CAN bus
- Operating Temperature: -30°C ~ 60°C
- Humidity: 0% ~ 95% (non-condensing)
- Storage Temperature: -20° C ~ +35° C
- Degree of Protection: IP54
- Anti-corrosion Grade: C5
- Max. Operating Altitude: 3,000 m
- Fire Protection System: Temperature Detection, Smoke Detection, Combustible Gas Detection, and Aerosol Fire Suppression
- Electrical Cabinet Dimensions：706x1,310x 2,200mm (W*D*H)
- Battery Cabinet Dimensions：998x1,310x2,200mm (W*D*H)
- Overall Dimensions：1,704x1,310 x 2,200mm (W*D*H)
- Electrical Cabinet Weight：598Kg (T)、625Kg (B)、695Kg (S)、710Kg (H)
- Battery Cabinet Weight：2,500Kg
- Total Weight：3,210Kg

Compliance Standards

- PCS：IEC 61000, IEC 62477
  BAT：IEC 62619, IEC 60730, UN38.3

Billion Commercial & Industrial Energy Storage Cabinet

Liquid-Cooling Battery Energy Storage Cabinet
Fusio 215 – 344 kWh

Active Safety

- System-level aerosol firefighting
- Pack IP67 protection, system IP55 protection
- Highly integrated: including thermal management system, fire protection system, BMS, etc.

Compact & Flexible

- Compact footprint and high power density, enabling configuration flexibility
- System integrated design, flexible transportation & fast installation
- Support parallel connection of multiple cabinets

Smart & Efficient

- Real-time health & work status tracking
- Refined thermal management, ensures optimal battery operating temperature
- System energy efficiency ≧94%

Model	Fusio 215kWh	Fusio 258kWh	Fusio 344kWh
Cabinet Configuration	1P240S	1P288S	1P384S
Number of Modules	5	6	8
Nominal Energy	215 kWh	258 kWh	344 kWh
Nominal Voltage	768 VDC	921 VDC	1228 VDC
Operating Voltage	600 ~ 876 VDC	720 ~ 1051 VDC	960 ~ 1401 VDC
Total Weight (ton)	≦ 2.6 T	≦ 2.9 T	≦ 3.5 T

Fusio 215kWh-344kWh

Cell

- Cell Chemistry Type：LFP
- Nominal Capacity：280 Ah (0.5P, 25°C)
- Nominal Energy：896 Wh (0.5P, 25°C)
- Nominal Voltage：3.2V

Module

- Module Configuration：1P48S
- Nominal Capacity：280 Ah (0.5P、25°C)
- Nominal Energy：43 kWh (0.5P、25°C)
- Nominal Voltage：153.6V

Cabinet

- System Energy Efficiency：≧ 94%
- Nominal Charge/Discharge Rate：0.5P
- BMS Communication：CAN
- Noise Level：≦ 75dB
- Thermal Management：Liquid Cooling
- Coolant：50%Water & 50%Glycol
- Coolant Volume：~11L
- IP Level：IP55
- Operation Temperature：-30°C ~50°C
- Storage Temperature：-20°C ~ 35°C (suggested)
- Dimensions (L x W x H)：1,300 x 1,300 x 2,350 mm

Compliance Standards

- IEC62619、IEC60730-1、UL1973、UL9540A、UN38.3

Liquid-Cooling Battery Energy Storage Container

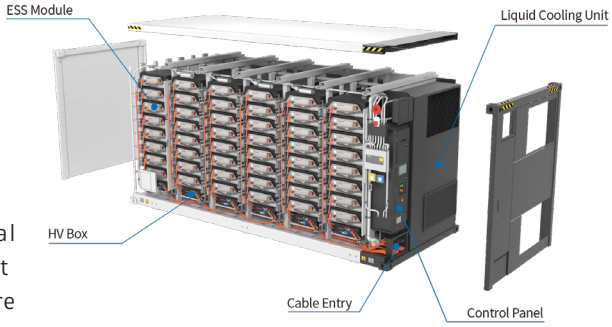
Fusio 5.015 MWh

Integration & Flexibility

- Pre-configured and tested to minimize on-site labor and shorten project duration
- Up to 4 containers connected in 1 PCS, supporting 2–8 h applications
- Flexible layout supports back-to-back and side-by-side installation

High Safety

- Liquid cooling for high thermal stability
- Multi-stage active fire protection system
- LFP cells with high cyclic lifetime
- Dedicated cell monitoring and protection system



Levelized Cost of Storage

- Excellent thermal management ensures optimal operating temperature and improves energy throughput
- Highly integrated: including thermal management, fire protection, and battery management systems

IEC 62619
International Battery Management System Standard

IEC 62477
Electrical Equipment Safety Regulation Standard

IEC 63056
Lithium Battery Safety Standard

IEC 61000
Electromagnetic Compatibility Standard

UN 38.3
International Transit Safety Test

UL 1973
Battery Energy Storage System Performance Standard

UL 9540A
Battery Energy Storage System Fire Safety Test

Fusio 5.015MWh

General Specifications

- Battery Type：LFP314-2P52S
- No. of Battery Modules：48 (6 x 8)
- Configuration：12P416S
- Cooling Method：Liquid Cooling
- BMS Communication：CAN, RS485, Ethernet
- Gravimetric：＞ 111 Wh/kg
- Volumetric：＞ 117 Wh/l
- Application Altitude：≦ 4,000 m

Electrical Specifications

- Nominal Voltage：1,331.2 V
- Operating Voltage：1,123.2 ~ 1,497.6 V
- Nominal Energy：5,015.96 kWh
- Nominal Charge/Discharge Rate：0.5 P / 0.5 P
- Round Trip Efficiency：＞ 94 %

Mechanical Specifications

- Dimensions (L x W x H)：6,058 x 2,438 x 2,896 mm
- Weight Container (20 ft.)：＜ 45,000 kg
- Protection Level：IP55

Temperature Range

- Operating：-30°C ~ 55°C
- Storing (recommended)：-20°C ~ 35°C

Compliance Standards

- IEC 62619, IEC 62477, IEC 63056, IEC 61000, UL 1973, UL 9540A, UN 38.3

Residential Energy Storage

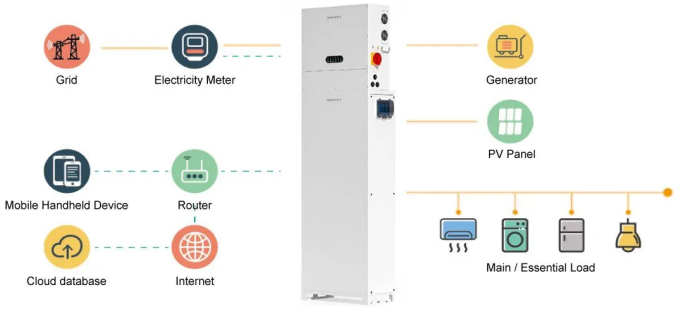
PS20 Residential / Commercial Energy Storage System

- 5-Year Warranty in Taiwan
- Elegant Design & Easy Installation：Modular design allows up to 8 units of energy storage systems to be connected in parallel
- 11.5 kW High Power Output：Meets both residential and commercial application needs
- High Safety：Certified with UL9540 system-level safety standard
- Smart Management：UI APP interface

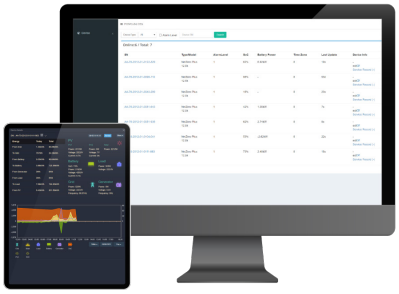
Side View

PS20 11.5kW/20kWh

- Solar Input：Maximum Power 2 x 8.5 kWp
- Grid Input：Rated Power @220V 11.5 kW
- Generator Input：Compatible with solar and grid
- Rated Voltage：Single-phase three-wire 110 / 220 V
- Maximum Current：52 A
- Expandable Units：8 Units (160kWh)
- Enclosure Protection：Entire Unit IP65
- Safety Features：Fast Shutdown, Surge Protection, Anti-Islanding, Over-temperature Protection, Overcurrent Protection, Ground Fault Isolation

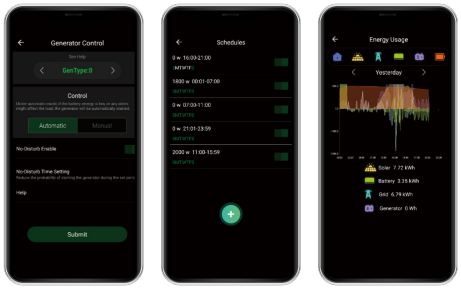


Cloud Monitoring and Energy Management



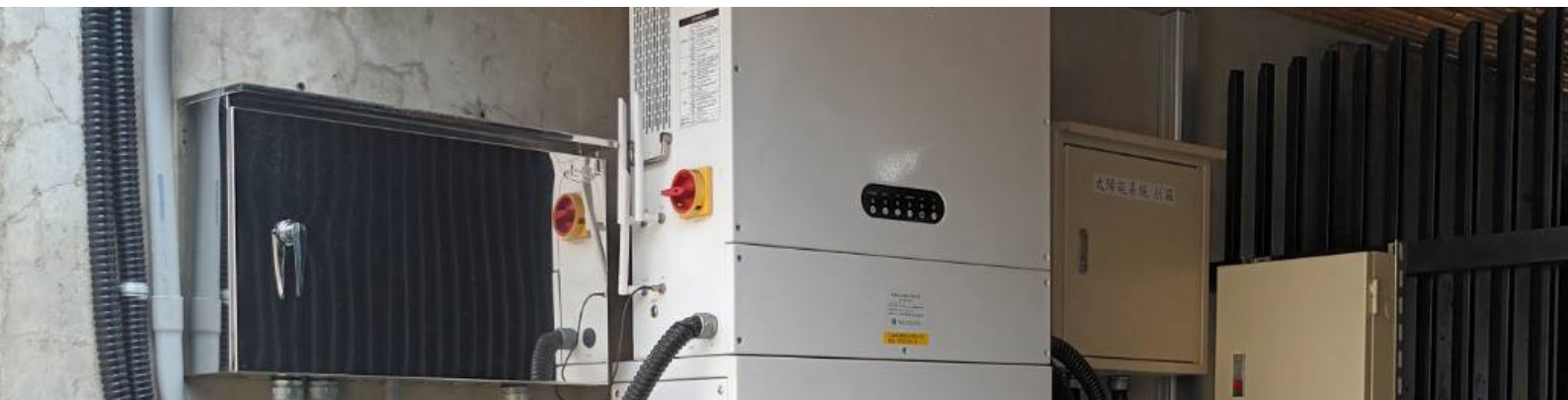
Cloud Monitoring System

Online Support and Maintenance



Cloud Energy Management APP

Real-time App Monitoring and Customized Energy Management



EV Charger

AC EV Charger

- Designed, developed, and manufactured in Taiwan
- 4.3-inch screen display, clear execution status
- RFID identity recognition, easy operation
- Flexible choice for "Instant Charging" during peak hours
  Patent Number：New Model No. M646619
- Wall-mounted or pedestal installation, widely applicable
- Compatible with EV-EMS EnergyManagement System

BH-2000

Power Output and Input

- Output Power：7kW
- Output Current：32A
- Input Rated Voltage：220Vac
- Input Rated Frequency：50 / 60Hz
- Output Rated Voltage：220Vac
- Charging Connector Type：Type1 (SAE J1772) / Type2 (IEC 62196-2)
- Charging Cable Length：16 ft. (standard) / 23 ft. (optional)
- Number of Connections：1

Protection Mechanisms

- Overvoltage / Undervoltage / Over Current / Short Circuit / Ground Fault / Over-Temperature / Surge Protection：Yes
- Leakage Protection：RCD TypeA

User Interface & Control

- Ethernet：LAN (standard) / Wi-Fi (optional)
- Backend Protocol：OCPP
- LCD Monitor：4.3 inch LCD
- Operational Identification：RFID
- Status Indicators：Power, Network, Charging
- Emergency Button：On/Off
- Operation Modes ：Rapid Charging / Smart Charging, Load Balancing

Operating Environment

- IP/IKRating：IP55 / IK08
- Operating Temperature：-4° F ~ 122° F (-20° C ~ 50° C)
- Humidity：5 ~ 95% non-condensing
- Altitude：＜ 2000m
- Cooling：Natural Cooling
- Standby Power：＜ 2W

Mechanical Specifications

- Dimensions (W x H x D)：240/350/130 mm
- Weight：5.5kg

Compliance Standards

- Meets CNS15511-1 Standard

EV-EMS EV Charger Management System

1. Real-time charging pile information display
2. Charging history record query
3. Monthly charging cost statistics download
4. Optimized charging strategy
5. Charging distribution for charging piles

Industrial Computer
Processor：Intel Core i5 quad-core or above
Memory：32G-DDR4*2
Hard Disk：SSD*1+HDD*1 (adjust based on charging pile quantity)
Operating system：Linux Ubuntu 18.04

Smart Charging Mode
Price concession charging in off-peak hours

Rapid Charging Mode
Ensure instant charging in peak hours

Smart DC EV Charger 120-240K

Smart & Efficient

- 95% energy conversion efficiency with 240 kW high power output
- Optional dual charging connectors (CCS1 & CCS2)
- Supports dual-gun simultaneous charging to eliminate range anxiety

Active Safety

- Complies with IP55 protection level, air cooling heat dissipation

Intelligent Charging

- 7-inch LCD display for real-time charging status visualization
- Supports OCPP communication protocol and multiple communication functions
- Integrated RFID reader for authentication and payment

BEVC 120-240K

AC Input Parameter

- Input Voltage：3P+N+G 380Vac ± 15%
- Input Frequency：50Hz / 60Hz
- Power Factor：≧ 0.99
- Efficiency：≧ 95%

DC Output Parameter

- Output Voltage Range：DC 200Vdc ~ 1000Vdc
- Output Current Range ：0 ~ 250A
- Output Power：120KW /180KW / 240KW
- Output Voltage Tolerance：≦ ±0.5%

User Interface

- LED Indicator：Charging (A), Charging (B), Power, Error
- LCD Display：7" LCD touchscreen
- Button：Emergency stop button
- Activation：Mobile APP、RFID card

Communication Interface

- Communication Protocol：OCPP 1.6J
- Communication Mode：Ethernet (Standard) / 4G LTE & WIFI (Optional)

Appearance & Operation Condition

- Connector Type：Dual CCS1 connectors or Dual CCS2 connectors or Single CCS1 connnector + Single CCS2 connector (Adaptable)
- Cable Length：5M(Standard) / 7M(Optional)
- Cooling Method：Air cooling
- Operation Temperature：-30° C ~ +50° C
- Storage Temperature：-40° C ~ +60° C
- IP Rating：IP55

Safety Protection

- SPD Protection：Yes
- Protection：Output overvoltage, output overcurrent, input undervoltage, phase loss, overtemperature, AC surge, voltage limiting, current limiting, ground fault, insulation monitoring, emergency stop
- Emergency Button：Push button

Mechanical Specifications

- Dimensions(mm)：700(W) * 530(D) * 1700(H)
- Weight：＜ 300KG

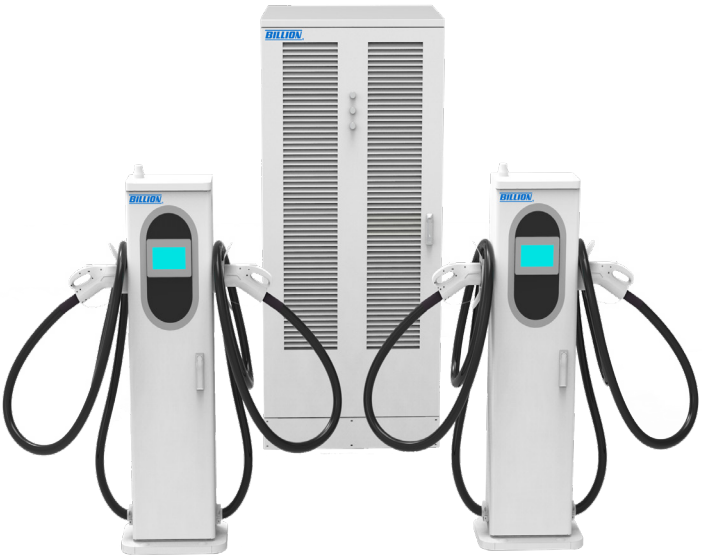
Compliance Standards

- VPC(CNS15511-1, CNS1511-23, CNS15511-24, CNS15511-21-2)

Smart DC EV Charger 480K

High-Efficiency Design

- Optimized for high-power fast-charging stations, ensuring maximum performance
- Three-phase PFC circuit (Power Factor 0.99) minimizes energy loss
- High-frequency power modules use soft-switching to enhance conversion efficiency
- Innovative module dormancy and rotation ensure efficiency under varying loads



Active Safety

- Remote OTA fast and stable upgrades
- Intelligent monitoring and fault protection ensure safe charging
- IP54 for various outdoor environments

Smart Charging

- LCD screen displays real-time charging status, time, and cost
- Digital current-sharing enhances stability and interference resistance
- Supports multiple charging modes: time-based, quantity-based, and cost-based

BEVC-480K

AC Input Parameter

- Input Voltage：3P+N+G 380Vac ± 15%
- Input Frequency：50Hz / 60Hz
- Power Factor：≧ 0.99
- Efficiency：≧ 95%

DC Output Parameter

- Output Voltage Range：DC 200Vdc ~ 1000Vdc
- Output Current Range ：5 ~ 1600A
- Output Power：480KW
- Output Voltage Tolerance：≦ ±0.5%

User Interface

- LED Indicator：Power, Protection, Error
- LCD Display：7" LCD touchscreen
- Activation：Mobile APP、RFID card

Appearance & Operation Condition

- Communication Protocol：OCPP 1.6J
- Communication Mode：Ethernet (Standard) / 4G LTE (Optional)

Appearance & Operation Condition

- Connector Type：Optional quantity of CCS1 and CCS2 (Up to 8 charging connectors)
- Cable Length：5M
- Cooling Method：Air Cooling
- Operation Temperature ：-20°C ~ +50°C
- IP Rating：：IP54

Safety Protection

- Protection：Charging Connector Temperature Detection, Overvoltage, Under Voltage, Overload, Short Circuit, Ground, Over Temperature, Low Temperature, Insulation Monitoring, Reverse Polarity, Surge, Emergency Stop, Leakage
- Emergency Button：Push button

Mechanical Specifications

- Power Cabinet Dimension (mm) ： 1000(W)*800(D)*2000(H)
- Charging Dispenser Dimension (mm)： 450(W)*300(D)*1800(H)
- Power Cabinet Weight：＜ 660KG
- Charging Dispenser Weight：＜ 125KG

Compliance Standards

- VPC(CNS15511-1, CNS1511-23, CNS15511-24, CNS15511-21-2) Expected by 2025Q4

Energy Storage Management and Monitoring System

Energy Management System

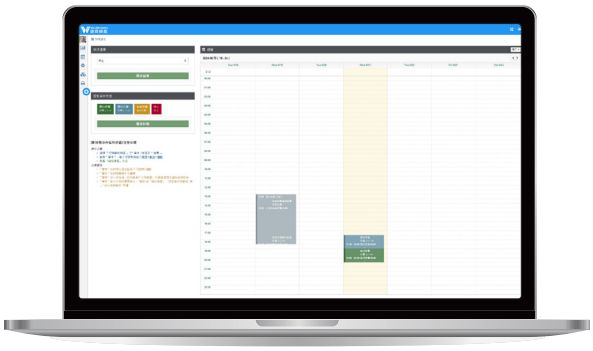
- Real-time monitoring with full-day data display and system status visualization, enabling analysis and allocation of various energy resources for faster decision-making.
- Monitors equipment operation modes, integrates PCS and BMS for coordinated control, and provides comprehensive data visualization of power supply, battery, and PCS performance with environmental parameters.
- Responds instantly to Taipower dispatch commands, flexibly adjusts energy usage, monitors frequency anomalies, and ensures stable system operation.
- Integrates PV and energy storage control systems, consolidates solar data, and automatically schedules battery operation to meet frequency, voltage, and power demands.

Single-Line Diagram & Real-Time Alarm

The single-line diagram visualizes the charging and discharging status of the energy storage system. When the power value is negative, the system is charging; when it is positive, the system is discharging.

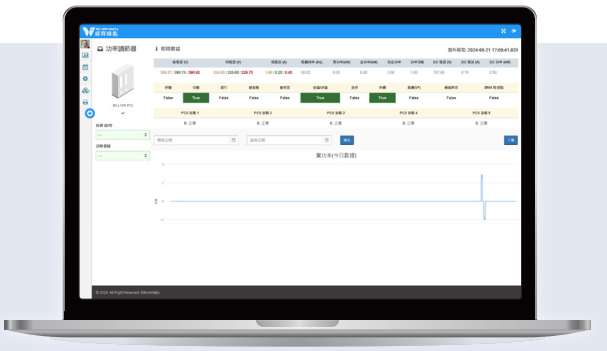
Scheduling Settings

A calendar-based scheduling control panel allows users to drag and drop “events” onto the calendar to configure related parameters.



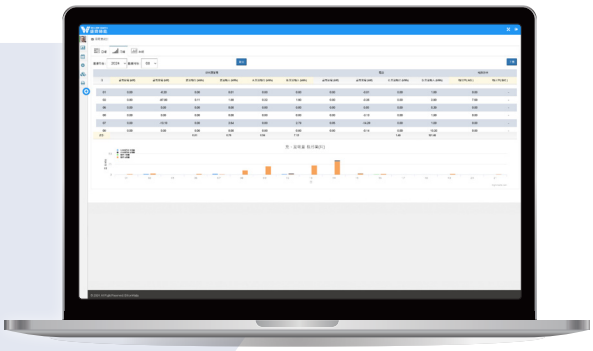
Equipment Monitoring

Data is updated every second.
Users can click on any electrical parameter to display its corresponding trend curve below.



Energy Consumption Statistics

Retrieves data recorded by the EMS from the PCS, BMS, and electric meters to calculate each item’s energy consumption (kWh) and store it in the database.



Energy Storage O&M Services

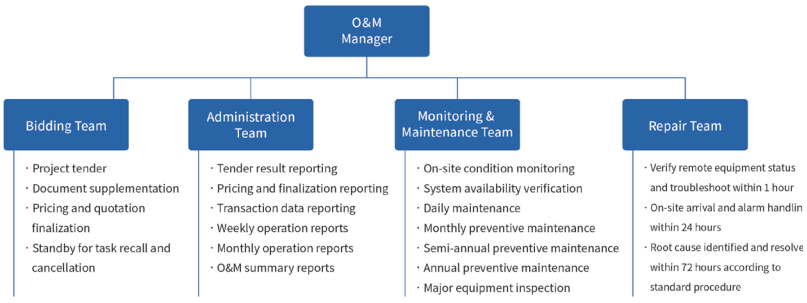
Preventive Maintenance

1. Extend Equipment Lifespan：Conducting regular preventive maintenance helps identify potential issues early, preventing minor problems from developing into major failures and extending the overall service life of the equipment.
2. Reduce Unexpected Downtime：Through routine inspections and maintenance, the risk of unexpected shutdowns can be minimized, enhancing equipment reliability and stability to ensure continuous system operation.
3. Save Maintenance Costs：Compared with repairing after major failures, scheduled preventive maintenance helps avoid costly repairs and reduces long-term operational expenses.
4. Improve Operational Efficiency：Preventive maintenance keeps the system in optimal condition, improving overall operational efficiency and service performance.
5. Performing maintenance according to manufacturer requirements and intervals ensures warranty validity, complies with safety and regulatory standards, and prevents potential legal liabilities or penalties.

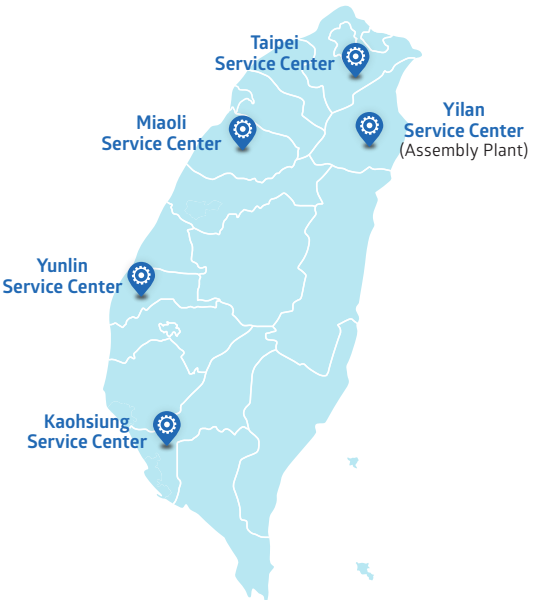
Corrective Maintenance

1. 24/7 Engineer Monitoring：The engineering team provides full-time monitoring. In case of an abnormal condition at the site, corrective maintenance will be initiated within 1 hour. If the issue cannot be resolved remotely, it will be reported to the manufacturer for online assessment within 24 hours, followed by on-site inspection within 48 hours. Upon manufacturer confirmation, RMA replacement or repair will be carried out within 72 hours.
2. Rapid System Recovery：Quickly restores normal equipment operation after a failure, minimizing downtime and ensuring business continuity at the site.
3. Targeted Problem Resolution：Focuses on specific known issues to address current faults or performance degradation without unnecessary maintenance work.
4. Ensure Equipment Reliability：Restores the equipment to a reliable operating condition by repairing or replacing faulty components, preventing recurring performance problems.
5. Reduce Safety Risks：Immediate corrective maintenance effectively prevents safety hazards caused by equipment malfunctions, protecting on-site personnel and other assets.
6. Extend Equipment Lifespan：Timely fault correction prevents further damage or cascading failures, helping to extend the overall service life of the system.

Service Sites & After-Sales Support



30+ On-site O&M Engineers Across Taiwan



Taiwan Australia Japan

Billion Watts Technologies Co., Ltd.

Address | 7F, No.190, Sec. 2, Zhongxing Rd., Xindian Dist., New Taipei City 231,Taiwan

Contact Sales | 0800-585-665

Contact Support | 0908-810-990

Email | sales@billionwatts.com.tw

Website | www.billionwatts.com.tw