

Jinko ESS

SunTera G3 6.25MWh Energy Storage System



—— 6.25MWh | 4-Level Safety | Full-Stack Intelligence | Grid-Forming ——

Jinko ESS | Powering a Sustainable Future

1. **Insight: Global Energy Storage Market Enters a New Growth Cycle**

Market Size & Growth Drivers

Challenge: From Duck Curve to Grid Physical Security

2. **Response: Jinko ESS SunTera G3 – The Utility Storage Solution**

Product Portfolio & Core Advantages

From Cell to Grid: Safety, Intelligence, Integration

3. **Strength: A World-Class Smart Energy Partner**

PV-DNA & Vertically Integrated Capabilities

Global Project Delivery & Value Commitment



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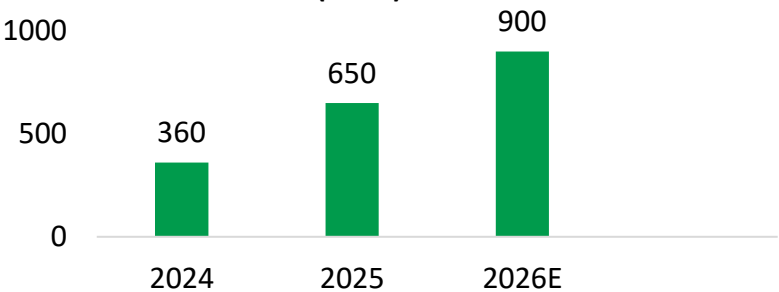
Market Insight – Global Market Enters a New Growth Cycle

Global energy storage is moving from "policy-driven" to "market economy", ushering in a new growth cycle driven by the triple engine of AI computing infrastructure + energy transition rigid demand + grid blockage.

Core conclusion: triple drive, demand structural explosion

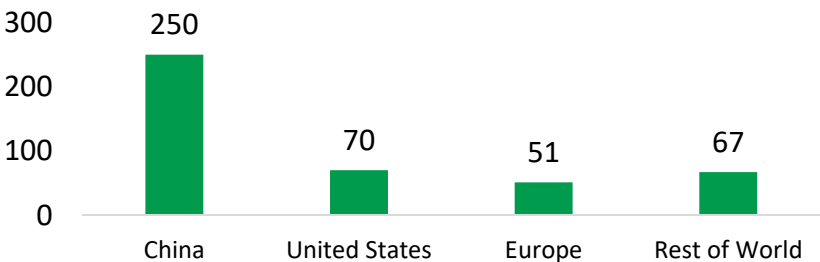


Global Energy Storage Battery Shipments (GWh)



2025 Global Shipments: **650 GWh** (80% YoY growth)
2026E Global Shipments: **800–900 GWh** (approx. 40% YoY growth)

2026 Global Energy Storage Installation Forecast (GWh)



In 2026, energy storage installations are projected to grow by:
China: +67%, United States: +35%, Europe: +55%, Rest of World: +91%
Global total installations are estimated to reach **438 GWh**,
representing **62%** year-over-year growth.

Market Insight – Key Drivers & Demand

1 Energy Transition Imperative

Wind and solar penetration exceeds 20%, raising grid stability to a physical safety challenge; long-duration energy storage (≥4h) accounts for over 55% of deployments.



The proportion of long-term energy storage

2 AI Computing Power Demand

Data center power bottlenecks turn energy storage into an active power supply unit; projected to drive 18–279 GWh of new demand from 2025 to 2028.

18-279 GWh

New demand from 2025 to 2028

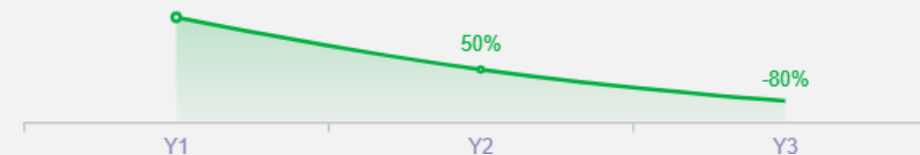
3 Grid Congestion

“Fast generation, slow grid” intensifies congestion; grid-forming energy storage is becoming the new standard for grid connection.



4 Economic leap

System costs have dropped ~80% in three years; standalone energy storage projects can achieve 6–10% IRR.



Three-year cost downward trend



**Market
Requirement**

Higher Capacity

Ultimate Safety

**Grid-Forming
Capability**

**Deep integration
and intelligence**

Market Insight – Application Scenarios



Generation side

Challenges

Curtailment, output fluctuation, low frequency compliance

Energy Storage Role

Smoothing, energy time-shift, primary/secondary frequency regulation

Customer value

- ✓ Higher grid connection rate
- ✓ Increased spot market revenue
- ✓ Reduced grid code penalties



Grid side

Challenges

Frequency deviation, voltage support, transmission congestion

Energy Storage Role

Fast frequency response, dynamic reactive power support, congestion relief

Customer value

- ✓ Enhanced grid stability
- ✓ Deferred T&D investment
- ✓ Ancillary service revenue



Independent / Large C&I

Challenges

Peak-off-peak spread, demand charges, reliability

Energy Storage Role

Peak shaving, demand management, demand response, backup power

Customer value

- ✓ Lower electricity costs
- ✓ Capacity leasing revenue
- ✓ Emergency support



3 Scenarios

Full Coverage of Applications

Multi-dimensional

Value Creation

End-to-end

Solution

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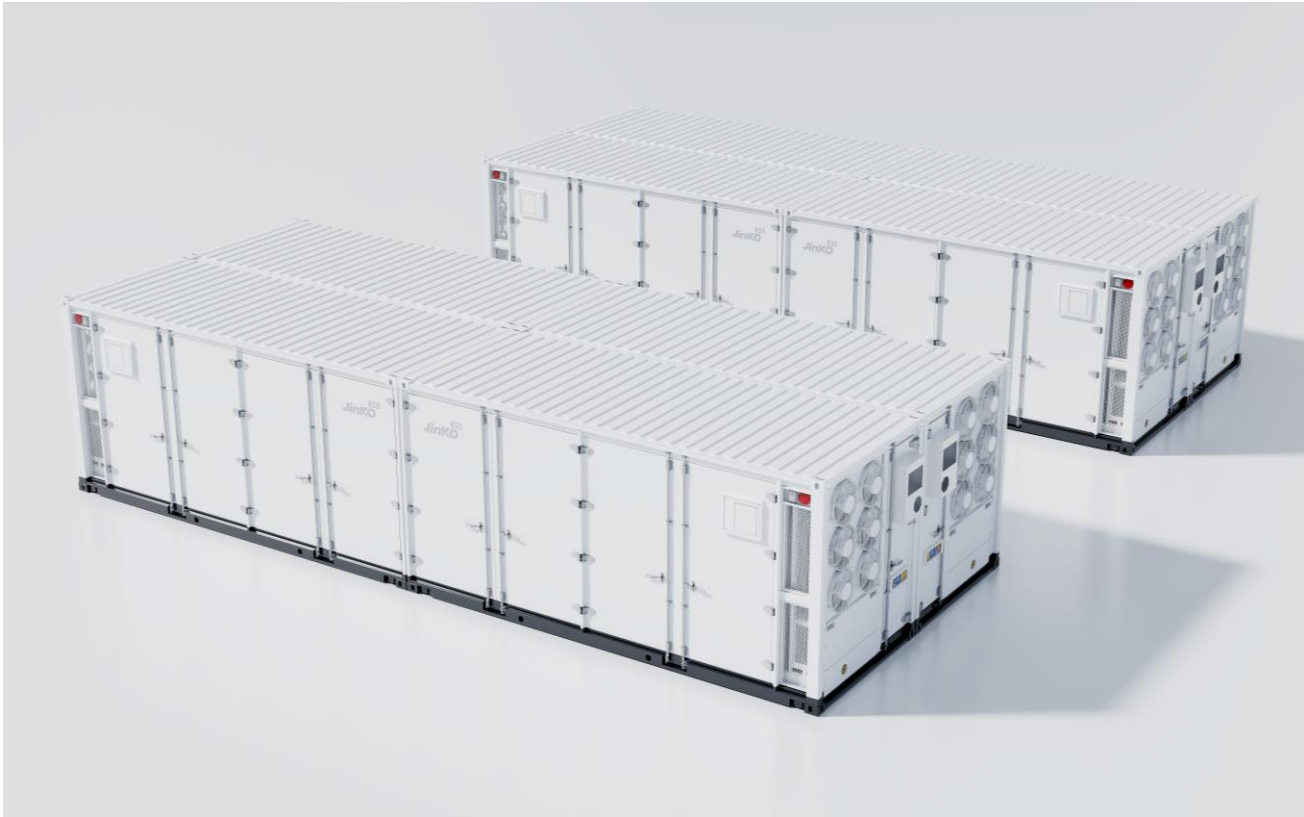


Product Overview – SunTera G3 6.25MWh



Jinko ESS SunTera G3 - 6.25MWh energy storage system

The world's leading 20-ft standard container system with 6.25MWh high-density integration, delivering exceptional performance, safety, and intelligent operation for utility-scale projects.



20FT

Standard
Container

10000

Cycle Life

95%

Max System
Efficiency

1P104S

Long Pack
Design



6.25MWh Extra large capacity



5-Level safety



AI-driven Full-stack intelligence



Grid-Forming

C5

Corrosion
Resistance

IP55

Protection
Rating

4000m

Altitude

55°C

High-
Temperature

Product Overview – Key Specifications



Parameter categories	Parameter Name	Specifications
System	Rated capacity	6.25 MWh
	Charge/discharge power	0.5P/0.25P
	System Configuration	1P416S×8
	Dimension(L×W×H)	6,058×2,438×2,896mm
	Weight	50,000 kg
Cell	Cell type	Lithium Iron Phosphate(LFP)
	Single cell capacity	588 Ah
Efficiency	Max. RTE	≥95%
	PCS conversion efficiency	≥98.5%
Environmental adaptation	Operating temperature	-40°C ~ +55°C
	Operating humidity	≤100%RH
	Altitude	< 4,500m
Electrical parameters	Rated voltage	1331.2V
Communication	Communication protocol	Ethernet / CAN
Certification	Certification Standards	IEC62619, IEC61000, IEC62477, UL9540A, UL1973, UL9540, NFPA68, NFPA69, NFPA855

Product Overview – Thermal Management



AI-Powered Fluid Dynamics Simulation

Matches cell thermal distribution with bionic flow channels; delivers targeted cooling for local hot spots; enables precise temperature control.



AI Algorithm Optimization



Bionic Flow Channels

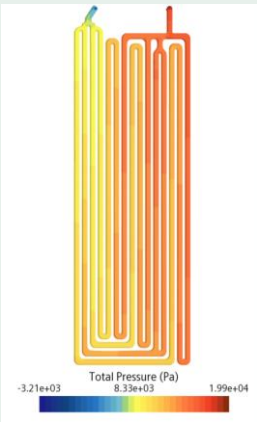


Precise Cooling



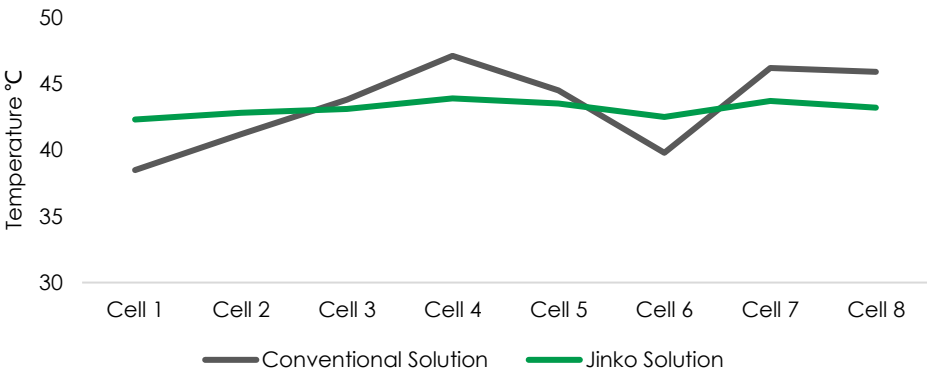
Conventional Solution

- ✗ High-pressure zones
- ✗ Obvious temperature dead spots
- ✗ Uneven temperature distribution



Jinko Solution

- ✓ No abnormal high-pressure zones
- ✓ Minimal temperature dead spots
- ✓ Balanced and uniform temperature



Intelligent Control Strategy



Zone-specific cooling



load-adaptive adjustment



Dynamic regulation

Thermal Equalization Benefits



Improve battery consistency



Reduce thermal stress, Extend battery life



Reduce failures caused by thermal runaway

Core Advantage 1 – Deep Integration & System Synergy

ESS
Jinko

Self-developed OPS

24/7 real-time monitoring and remote maintenance with industry-leading fault prediction accuracy. An integrated O&M platform that reduces labor costs and improves system availability.



Self-developed BMS

A consistency screening model built from tens of thousands of cell test data points. Full-time active balancing algorithm delivers cell voltage sensing accuracy of $\pm 1\text{mV}$ and SOC estimation error below 2%.



Self-developed EMS

Integrated with an AI-powered dispatching engine that supports multi-scenario self-learning. Site-wide coordinated response in under 200ms, enabling integrated optimization of generation, grid, load, and storage.



High-Performance PCS

Industry-leading string PCS, deeply optimized for Jinko systems. Achieves conversion efficiency $>98.5\%$ with modular design for flexible capacity expansion.

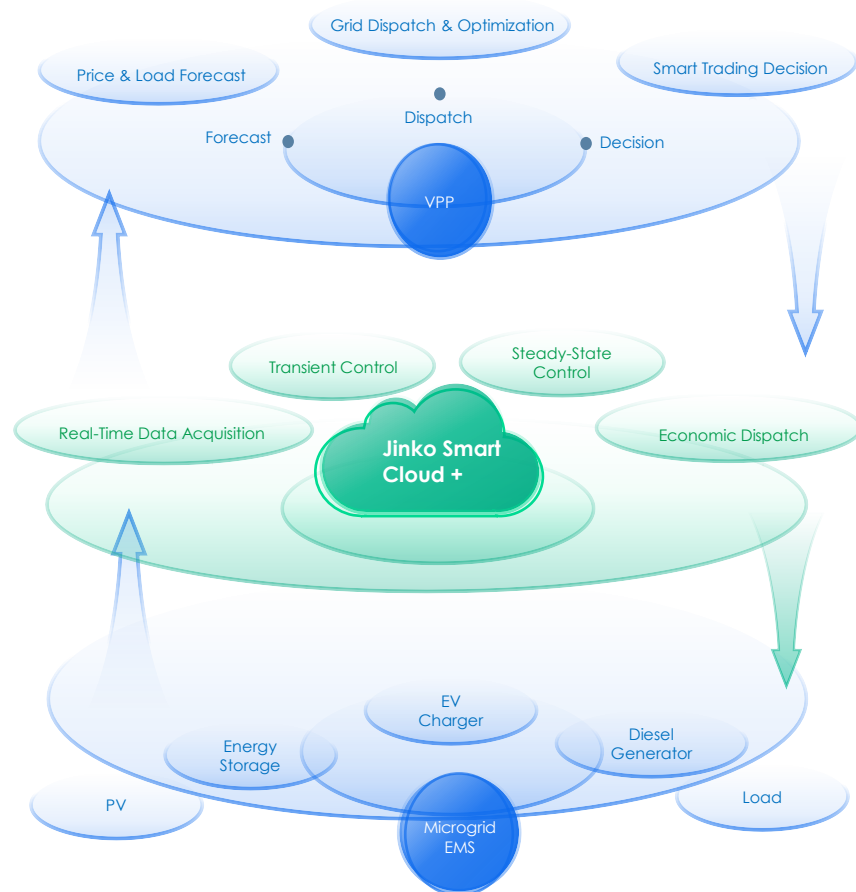


Integrated Cells

Co-developed 587Ah large-format LFP cells featuring low internal resistance, long cycle life, and high safety—delivering system-level performance rooted at the source.



Core Advantage 2 – Full-Stack AI Intelligence



AI+BMS

Cell-level smart warning

- gas composition monitoring
- temperature/voltage tracking
- abnormal cell identification
- thermal runaway early warning accuracy >99%

AI + OPS

Asset intelligent O&M

- health & life prediction
- digital twin-based asset visualization
- self-diagnosis & OTA remote repair

AI+EMS

System-level smart coordination

- intelligent power dispatch based on price, load, and weather
 - grid-adaptive mode switching
- AI-driven efficiency optimization to maximize round-trip efficiency across the lifecycle

晶智云 尖山美能储能站

告警列表

告警标题	设备类型	告警设备	发生时间	结束时间	告警等级	状态
禁止充电	电池组	1#电池组	2026-02-27 06:54:49	2026-02-27 08:02:48	告警	已结束
禁止充电	电池组	2#电池组	2026-02-27 06:54:51	2026-02-27 08:02:40	告警	已结束
堆内模块电压过...	电池组	1#电池组	2026-02-27 06:54:54	2026-02-27 06:57:40	提示	已结束
电池模组过电压警	电池组	1#电池组4#电池组	2026-02-27 06:54:54	2026-02-27 06:57:40	提示	已结束
电池模组过电压警	电池组	1#电池组5#电池组	2026-02-27 06:54:55	2026-02-27 06:57:34	提示	已结束
电池模组过电压警	电池组	1#电池组4#电池组	2026-02-27 06:54:40	2026-02-27 06:57:16	提示	已结束
电池模组过电压警	电池组	1#电池组5#电池组	2026-02-27 06:54:42	2026-02-27 06:57:01	提示	已结束
电池模组过电压警	电池组	1#电池组4#电池组	2026-02-27 06:54:46	2026-02-27 06:56:58	提示	已结束
电池模组过电压警	电池组	1#电池组5#电池组	2026-02-27 06:54:43	2026-02-27 06:56:58	提示	已结束
堆内各单体过压...	电池组	2#电池组	2026-02-27 06:54:11	2026-02-27 06:55:09	提示	已结束

共 478 条数据



Core advantage 3 – Four-Level DC Side Safety



UL 9540A

▀ The thermal runaway spread test has passed



1

Cell

LFP inherent safety + aerogel insulation; single-cell thermal runaway does not propagate

2

Modular

Mica flame-retardant sheets block arc and flame propagation paths

3

Rack

Multi-sensor detection (gas, temperature, smoke) with millisecond-level alarms

4

System

Pack-level gas suppression + container-level perfluorohexanone + container-level water fire protection – three-stage coordinated response

Core advantage 4 – AC Side Electrical Safety & System Protection



Fuse protection

Cluster-level and system-level fuse graded configurations



Rack-level leakage detection

Real-time insulation monitoring, response time <100 ms



Arc fault protection

Real-time detection and fast cut-off of DC side arc



Lightning and overvoltage protection

AC side surge protective devices compliant with IEC 61643



SVG reactive power compensation

Built-in SVG mode in PCS for fast reactive power regulation

AC Side Electrical Safety Protection

International safety standards

IEC 62619

IEC 62477-1

IEC 61000

North American certification

UL 1973

UL 9540A

Transportation & Fire safety

UN 38.3

NFPA Series

Global grid connection standard

GB

EN

IEEE

AS/NZS

DEWA/SEC

System Security Certification

Core Advantage 5 – Leading Grid-Forming Capability

“1” True Voltage Source Behavior

Actively builds grid voltage and frequency without relying on the main grid.

⚡ Short-circuit current capability

Provides 3× rated current to ensure reliable protection coordination.

🔄 Inertia support

Simulates synchronous generator rotor inertia, limiting the rate of change of frequency (RoCoF).

🔌 Black start capability

Establishes an islanded grid in <0.5 s, supporting rapid microgrid restoration.

Seamless Grid-Island Transition: Switching time <20ms; critical loads experience no interruption.

Stabilize the voltage/frequency waveform



Jinko Grid-Forming

🔌 Modular design

A single-string fault does not affect overall system operation.

⚙️ Wide Power Regulation Range

Independent active/reactive power regulation; power factor adjustable from -0.9 to +0.9.

🔌 Multi-Unit VSG Parallel Operation

Proven circulating current suppression technology.

Stringed PCS parallel topology

PCS

PCS

PCS

PCS

Modular · Independent adjustment · Circulation suppression

Advantages of stringed PCS architecture

Core Advantage 6 – Integrated Design & Rapid Deployment



Traditional Solution

- On-site PACK assembly
- PCS assembled on-site
- DC cabling on-site construction
- Fire protection system on-site wiring

30~45 days

Typical on-site to grid
connection cycle

VS



Jinko solution

- 70% reduction in on-site installation effort
- 50% reduction in on-site commissioning cycles
- Preset full-scenario test scripts
- One-click configuration, one-click detection

7~10 days

Typical on-site to grid
connection cycle

All-in-one pre-integrated system

- Medium voltage transformers, ring network cabinets, and protection systems are fully integrated in 20-foot TEUs, forming an all-in-one turnkey product
- More than 90% of the system assembly and commissioning have been completed in the factory, including BMS, PCS, EMS, fire protection, and temperature control full-link joint commissioning

Black start and island operation

- The system has a built-in black start policy to quickly set up a microgrid without the need for an external power source
- Support multi-machine parallel black start and automatic synchronization



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Jinko ESS Strength – Strategic Positioning & Market Recognition



PV-DNA

Leveraging world-leading PV R&D, manufacturing, and project expertise to deeply understand generation-side and grid-side needs.



Strategic Focus

Entered energy storage in 2019; established Jinko Storage in 2022; driving "PV + Storage" synergy.



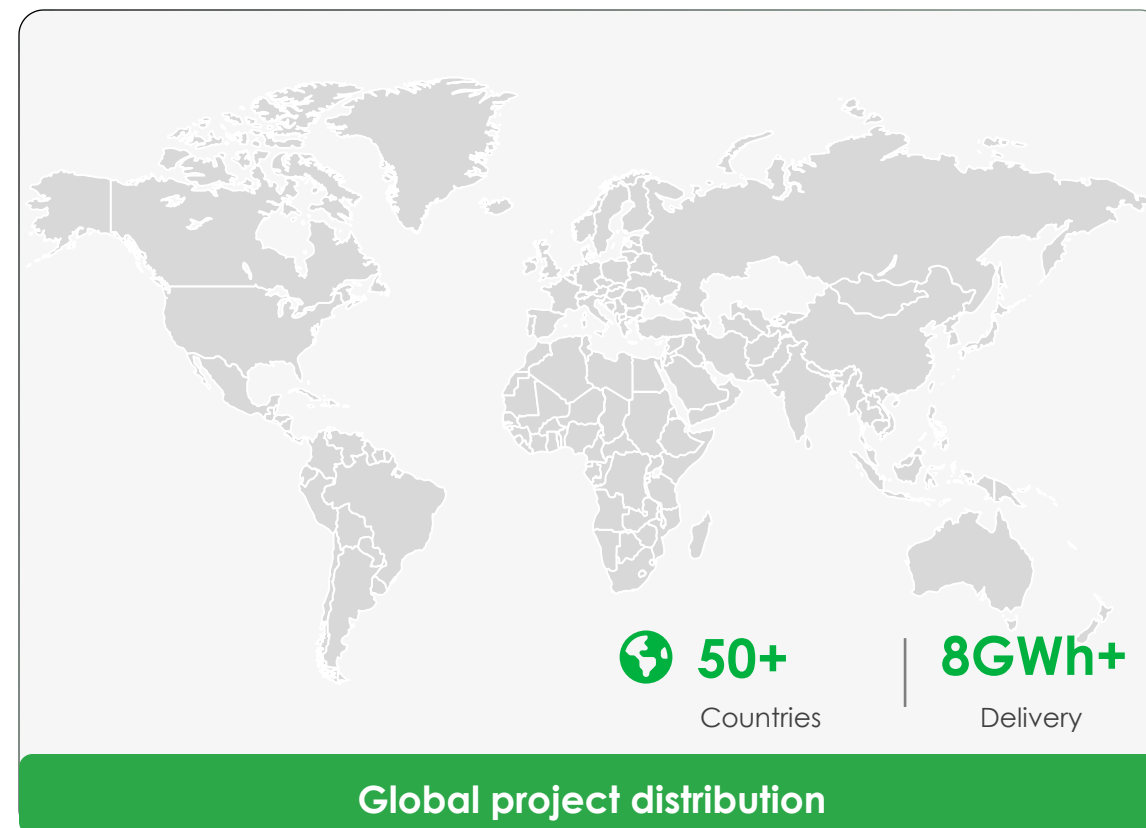
Market recognition **BNEF Tier 1**

Continuously rated as a global Tier 1 energy storage system integrator (Tier 1) by Bloomberg New Energy Finance (BNEF)



Global footprint

Projects in 50+ countries; cumulative deliveries exceeding 8 GWh (as of Q1 2026).



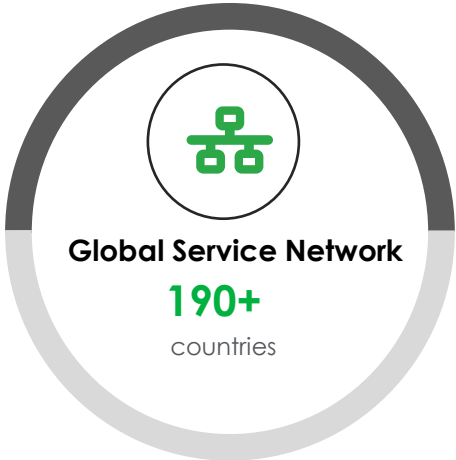
Jinko ESS Strength – Manufacturing & R&D Strength with Global Delivery



World-leading intelligent energy storage factories;
fully in-house pack and system production ensures consistency.



Annual R&D investment exceeds ¥1 billion;
eight technology centers covering BMS, EMS, thermal management, AI algorithms, etc.



Business presence in 190+ countries;
localized technical service teams across six continents.



100% green electricity for energy storage production by 2025;
30% lifecycle carbon footprint reduction target.

*190+ is Jinko's business coverage; ESG targets come from Jinko's ESG report

Jinko ESS Strength – Global Certifications & Product Honors



Safety certification

UL 9540A

IEC 62619

UN 38.3

NFPA 855

IEC 62477



Grid connection compliance

GB
China

EN 50549
Europe

IEEE 1547
United States

AS/NZS 4777
Australia

DEWA/SEC
Middle East



Comprehensive capabilities

Consecutively named BNEF Tier 1 Energy Storage System Integrator – a mark of bankability, technical reliability, and scalable delivery.

- Entered the "Tier 1" list of Bloomberg Energy Storage Systems and SMM Grid-Side Energy Storage Systems in 2024Q1
- Received the "Solar Energy Cup" Award in 2021
- Received the "Best Innovative Enterprise in China's Energy Storage Industry for 2022" Award
- Received the "Outstanding Energy Storage Enterprise" Award for 2023
- Received the "ESG Innovation Practice List" for the Kenyan Photovoltaic Storage Integration Microgrid Project
- Received the "ISO9001" Management System Standard by Bureau Veritas



Why Choose Jinko ESS?



Partner with Jinko To build a Zero-Carbon Future

Jinko ESS is not just an equipment supplier,
It is also your trusted smart energy partner

Jinko ESS



Deep Integration, System Synergy

Co-developed cells + deeply adapted PCS + self-developed BMS/EMS/thermal management – unleashing the ultimate 6.25MWh performance.



Ultimate Safety, Proactive Defense

Four-level defense in depth + full-stack intelligent warning, UL 9540A validated – protecting asset returns.



Grid Expert, Grid-Forming Leader

True voltage source behavior, 3× overload, 0.5 s black start – defining the new power system stabilizer.



Integrated Design, Fast Deployment

90% factory pre-commissioning, 70% less on-site installation, dramatically shortened project timelines.



Global Experience, Local Service

50+ country project track record, 190+ country service network – end-to-end solution partner.

Thank You!

Q&A

Thank you for listening – we look forward to partnering with you!

