



REPORTS

BATTERY ENERGY STORAGE SYSTEMS MANUFACTURER RANKING

EDITION 2 - 2026





Welcome to the Edition 2 – 2026 version of the SINOVOLTAICS BESS Manufacturer Ranking Report.

For the purpose of this report, Battery Energy Storage Systems (BESS) refer to integrated systems designed for storing electrical energy using batteries, including key components such as battery cells, battery management systems (BMS), and power conversion systems (PCS).

The Altman Z-Scores presented in this report have been calculated from June 2023 to March 2026, providing detailed insight into how the financial strength of BESS manufacturers has evolved over the past three years. The ranking includes manufacturers across all market segments and scales, offering a comprehensive view of both established players and emerging companies in the global BESS landscape.

For readability, the term “BESS manufacturers” used throughout this report refers collectively to manufacturers, OEMs, and system integrators.

What's the value of Altman Z-Score?

Altman-Z Scores are calculated to understand which BESS manufacturers are financially stable, and which players are at risk of going bankrupt.

For any stakeholder involved in solar PV and energy storage projects, the financial stability of the manufacturer is of crucial importance.

Selecting BESS solutions from financially stable manufacturers helps mitigate the risk of declining return on investment (ROI) in BESS projects.

Why is financial stability important?

In this rapidly emerging BESS market, with its wide variety of existing and in-development technologies, purchasers are faced with a complex and challenging choice of manufacturers, many of which have only recently entered the sector. In such a young market, where warranty periods typically range between 2 and 10 years, the financial stability of a BESS manufacturer is critical, as it directly impacts the validity and enforceability of product warranties.

While it is widely recognized that not all of today's manufacturers will still be active in the years ahead, ensuring short- to medium-term reliability remains essential. Stakeholders must be confident that warranty obligations will be honored when needed.

Looking ahead, many solar PV and BESS projects may face a difficult question: who can be relied upon for performance support, warranty claims, or replacement of malfunctioning systems after 2, 5, or even 10 years?

2023 - 2026: Rating of BESS Manufacturers Worldwide

In this report, we present the Altman Z-Scores of **50+ BESS manufacturers**. It enables stakeholders to benchmark manufacturers against one another and serves as a valuable indicator when selecting a BESS supplier.

The Altman Z-Scores provide insight into which BESS manufacturers are financially strong, and which are in the risk zone of potential bankruptcy within the coming two years.

On the following pages, you will find the full table presenting the Altman Z-Scores of major, publicly listed BESS manufacturers across Asia, Europe, and the Americas.

Selected private BESS companies are also included to provide a more comprehensive overview of the global BESS market. As Altman Z-Scores require publicly available financial data, these companies are marked as: “Private company – financial data unavailable for Altman Z-Score calculation.”

The scores have been calculated by the Sinovoltaics team using publicly available financial data.

MANUFACTURERS	RANKING	TREND	ZONE	JUN 2023	SEP 2023	DEC 2023	MAR 2024	JUN 2024	SEP 2024	DEC 2024	Mar 2025	JUN 2025	SEP 2025	DEC 2025	MAR 2026	LISTING
TESLA	1	↓	SAFE	14.97	14.54	14.21	9.6	10.86	12.73	17.52	11.3	14.41	19.13	18.69	16.1	NAS:TSLA
HYUNDAI ELECTRIC	2	↑	SAFE	1.83	2.11	2.31	3.83	5	5.57	6.44	4.87	5.84	7.05	8.32	9.02	XKRX:267260
KUNG LONG BATTERIES	3	↑	SAFE	8	5.31	6.89	7.44	8.01	6.07	8.29	7.83	7.71	5.63	6.91	7.1	TPE:1537
DELTA ELECTRONICS	4	↓	SAFE	4.16	4.09	4.12	4.28	4.22	4.1	4.4	3.89	4.1	6.41	6.77	6.77	TWSE:2308
SINEXCEL (SHENZHEN SINEXCEL ELECTRIC)	5	↑	SAFE	7.37	5.57	4.9	4.86	4.28	4.9	5.08	5.32	5.39	6.09	5.38	5.87	SZSE:300693
EATON	6	↑	SAFE	3.99	4.13	4.47	5.31	5.39	5.44	5.43	4.46	5.39	5.38	4.93	5.27	NYSE:ETN
ABB	7	↑	SAFE	3.56	3.53	3.79	3.84	4.53	4.57	4.51	3.97	4.37	4.97	5.12	5.18	SWX:ABBN
YUASA BATTERY	8	↑	SAFE	5.04	4.98	4.57	4.63	4.79	4.66	4.38	4.31	4.51	4.78	4.78	5.03	BKK:YUASA
SACRED SUN (SHANDONG SACRED SUN POWER SOURCES CO LTD)	9	↑	SAFE	4.25	4.25	4.08	3.8	3.36	3.65	3.59	4.57	4.52	4.34	3.9	4.75	SZSE:002580
SUNGROW	10	↓	SAFE	3.92	3.39	3.46	3.8	3.21	3.59	3.01	2.97	3.2	4.91	5.29	4.62	SZSE:300274
GENERAC	11	↑	SAFE	3.81	3.38	3.7	3.67	3.77	4.13	4.3	3.96	3.95	4.09	3.57	4.35	NYSE:GNRC
ENERSYS	12	↑	SAFE	3.72	3.87	3.93	3.88	4.03	3.99	3.46	3.36	3.52	3.65	4.05	4.3	NYSE:ENS
ZHONGTIAN TECHNOLOGY	13	↑	SAFE	3.81	3.66	3.2	3.34	3.64	3.36	3.21	3.19	3.31	3.46	3.35	4.3	SHSE:600522
GREENSMITH ENERGY (WÄRTSILÄ)	14	↓	SAFE	2.26	2.28	2.62	2.73	2.88	3.01	2.92	2.77	2.96	3.42	3.8	3.77	OHEL:WRTIV
SCHNEIDER ELECTRIC	15		SAFE			2.93				3.33				3.62	3.62	ENXTPA:SU
PYLONTECH (PYLON TECHNOLOGIES)	16	↓	SAFE	7.37	6.67	5.64	4.86	3.38	3.97	3.48	3.59	3.36	4.03	3.76	3.61	SHSE:688063
HOYMILES	17	↓	SAFE	25.17	20.12	17.48	12.82	7.14	7.8	5.39	5.44	4.54	5.49	4	3.59	SHSE:688032
KEHUA TECH	18	↑	SAFE	2.77	2.28	2.27	2.43	2	1.97	2.06	3.16	2.93	3.92	3	3.55	SZSE:002335
CENTER POWER	19	↑	SAFE	2.78	2.59	2.97	2.95	2.46	2.37	2.39	2.62	2.85	3.22	2.96	3.37	SZSE:002733
GE VERNOVA	20	↑	SAFE				1.31	1.66	1.91	2.27	2.15	2.9	3.2	2.96	3.29	NYSE:GEV

*The trend column in the table reflects a comparison of the current quarter score to the previous one.

MANUFACTURERS	RANKING	TREND	ZONE	JUN 2023	SEP 2023	DEC 2023	MAR 2024	JUN 2024	SEP 2024	DEC 2024	Mar 2025	JUN 2025	SEP 2025	DEC 2025	MAR 2026	LISTING
GOODWE	21	↑	SAFE	6.37	5.53	5.41	4.67	3.26	3.23	2.41	2.65	2.55	2.98	2.8	3.16	SHSE:688390
CATL (CONTEMPORARY AMPEREX TECHNOLOGY CO)	22	↑	SAFE	2.53	2.48	2.23	2.36	2.24	2.65	2.8	2.51	2.59	3.31	3.13	3.14	SZSE:300750
ENPHASE ENERGY	23	↑	SAFE	7.64	5.93	6.37	5.82	4.77	5	3.31	3.04	2.33	2.23	2.04	3.02	NAS:ENPH
DMEGC SOLAR (DMEGC MAGNETICS GROUP)	24	↓	SAFE	3.64	3.4	2.84	3.07	2.75	2.85	2.73	2.7	2.86	3.26	3.23	2.88	SZSE:002056
SHOTO / SHUANGDENG GROUP	25		SAFE											2.8	2.8	HKSE:06960
JOHNSON CONTROLS	26	↑	SAFE	1.82	1.7	1.74	1.84	1.71	1.99	1.93	1.84	2.33	2.36	2.56	2.73	NYSE:JCI
SONNEN (SHELL PLC)	27	↑	GREY	2.65	2.54	2.54	2.36	2.37	2.34	2.26	2.27	2.25	2.23	2.3	2.5	NYSE:SHEL
DESAY BATTERY	28	↓	GREY	3.77	3.44	3.02	2.63	2.7	2.78	2.46	2.44	2.63	2.63	2.51	2.48	SZSE:000049
BASF	29	↑	GREY	2.46	2.3	2.28	2.52	2.31	2.15	2.23	2.2	2.18	2.2	2.31	2.43	XTER:BAS
FESE (FAR EAST SMARTER ENERGY)	30	↑	GREY	1.84	1.69	1.68	1.67	1.66	1.63	1.68	1.68	1.74	2.02	2.02	2.43	SHSE:600869
EAST GROUP	31	↓	GREY	2.68	2.69	2.77	2.72	2.23	2.02	2.3	2.25	2.15	2.36	2.47	2.41	SZSE:300376
NIDEC CORPORATION	32	↓	GREY	3.44	3.21	3	3.14	3.16	3.09	2.85	2.65	3.1	2.89	2.48	2.37	OTCPK:NJDCY
BYD	33	↑	GREY	1.85	1.79	1.74	1.61	1.75	2	1.76	2.32	2.34	2.16	2	2.01	HKSE:01211
LG ENERGY SOLUTION	34	↑	GREY	5.26	4.71	4.13	3.47	3.17	3.26	2.47	2.15	1.91	1.96	1.86	2.01	XKRX:373220
SIEMENS ENERGY	35		GREY	0.44	0.27	0.53	0.6	0.82	0.96	1.03	1.15	1.69	1.76	1.96	1.96	XTRA:ENR
GANFENG LITHIUM	36	↑	GREY	4.44	3.39	2.79	2.25	1.67	1.46	1.3	1.09	1.06	1.48	1.58	1.91	HKSE:01772
FARADION (RELIANCE INDUSTRIES)	37	↓	GREY	2.07	1.97	2.1	2.31	2.33	2.53	1.91	1.91	2.01	2.24	2.02	1.88	NSE:RELIANCE
EVE ENERGY	38	↓	GREY	2.26	1.95	1.85	1.83	1.73	1.87	1.79	1.77	1.76	2.49	2.01	1.82	SZSE:300014
FLUENCE ENERGY INC	39	↓	GREY	2.96	3.68	2.64	2.72	2.49	2.87	2.6	1.62	1.49	2.01	2	1.82	NAS:FLNC
GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI	40	↓	GREY	1.69	1.8	1.83	1.89	1.79	2.03	2.12	2.02	1.85	1.84	2.12	1.81	SZSE:000651

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MANUFACTURERS	RANKING	TREND	ZONE	JUN 2023	SEP 2023	DEC 2023	MAR 2024	JUN 2024	SEP 2024	DEC 2024	Mar 2025	JUN 2025	SEP 2025	DEC 2025	MAR 2026	LISTING
CIMC (CHINA INTL MARINE CONTAINERS)	41	↓	GREY	1.59	1.57	1.48	1.53	1.56	1.68	1.82	1.9	1.83	1.77	1.76	1.72	SZSE:000039
GREATPOWER (GUANGZHOU GREAT POWER ENERGY&TECHNOLOGY CO LTD)	42	↑	GREY	2.24	1.9	1.56	1.37	1.12	1.51	1.38	1.34	1.26	1.4	1.65	1.71	SZSE:300438
SAMSUNG SDI	43	↑	GREY	3.32	2.91	2.81	2.74	2.35	2.13	1.73	1.32	1.25	1.26	1.32	1.64	XKRX:006400
SAFT (TOTAL ENERGIES)	44	↑	GREY	1.95	1.84	1.85	1.81	1.8	1.67	1.48	1.5	1.43	1.45	1.54	1.57	NYSE:TTE
CRRZ ZHUZHOU (CRRZ CORP)	45	↑	GREY	1.26	1.22	1.22	1.28	1.31	1.27	1.27	1.27	1.24	1.22	1.24	1.32	SHSE:601766
SUNWODA	46	↓	GREY	1.26	1.36	1.26	1.26	1.22	1.36	1.3	1.27	1.25	1.47	1.24	1.22	SZSE:300207
JINKOSOLAR	47	↑	GREY	2.21	2.02	2.07	2.03	1.85	1.91	1.73	1.68	1.31	1.2	1.09	1.16	SHSE:688223
GOTION HIGH-TECH CO	48	↓	DISTRESS	1.02	0.96	0.88	0.88	0.71	0.77	0.73	0.74	0.88	1.04	0.97	0.92	SZSE:002074
SK INNOVATION	49	↓	DISTRESS	1.69	1.58	1.47	1.43	1.32	1.28	1.23	0.87	0.87	0.89	0.95	0.87	XKRX:096770
FARASIS ENERGY (GAN ZHOU)	50	↓	DISTRESS	1.24	1.2	0.85	0.71	0.67	0.96	0.97	1.07	0.9	1.16	0.93	0.8	SHSE:688567
TRINA SOLAR	51		DISTRESS	2.03	1.83	1.75	1.69	1.51	1.4	1.24	1.2	0.92	0.81	0.79	0.79	SHSE:688599
CLOU ELECTRONICS	52	↓	DISTRESS	0.58	0.61	0.16	0.04	-0.08	-0.22	-0.12	0.01	0.31	0.97	0.78	0.68	SZSE:002121
CANADIAN SOLAR (e-STORAGE)	53		DISTRESS	1.44	1.29	1.12	0.99	0.88	0.75	0.71	0.63	0.63	0.62	0.61	0.61	NAS:CSIQ
CALB GROUP CO LTD	54	↑	DISTRESS					0.53				0.35	0.6	0.52	0.59	HKSE:03931
NARADA	55	↓	DISTRESS	1.76	1.56	1.5	1.46	1.1	1.29	1.26	1.3	0.44	0.61	0.45	0.35	SZSE:300068
RISEN ENERGY	56	↓	DISTRESS	1.48	1.24	1.08	1.04	0.73	0.6	0.27	0.22	0.21	0.2	0.2	0.19	SZSE:300118
SOLAREDGE TECHNOLOGIES	57		DISTRESS	6.25	3.98	3.06	2.48	1.28	-0.97	-1.64	-1.6	-1.61	0.16	0.18	0.18	NAS:SEDG
CBAK ENERGY	58	↓	DISTRESS	0.44	0.02	0.15	0.19	0.53	0.78	0.49	0.22	0.12	-0.2	-0.17	-0.18	NAS:CBAT
MICROVAST	59	↓	DISTRESS	-0.38	-0.37	-0.61	-0.85	-1.06	-1.42	-0.43	-1.11	0.19	-0.39	-0.79	-0.8	NAS:MVST
INVINITY ENERGY SYSTEMS	60		DISTRESS	-1.65	-1.73	-1.8	-1.88	-1.95	-2.02	-2.1	-2.05	-2	-1.95	-1.9	-1.9	LSE:IES

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STEM INC	61	↓	DISTRESS	0.27	-0.08	-0.17	-0.59	-5.58	-8.58	-11.09	-11.74	-4.96	-4.03	-4.41	-4.41	NYSE:STEM
EOS ENERGY ENTERPRISES	62	↓	DISTRESS	17.99	-10.38	-9.08	-11.39	-5.5	-14.2	-15.66	-14.8	-13.1	-20.07	-5.9	-5.9	NAS:EOSE
ESS TECH INC	63	↓	DISTRESS	-4.58	-2.29	-4.73	-7.11	-8.68	-12.21	-17.88	-25.53	-34.88	-37.41	-26.22	-26.22	NYSE:GWH

**The trend column in the table reflects a comparison of the current quarter score to the previous one.*

Graph overview

Graph #1 – Latest BESS manufacturers ranking, recorded in March 2026

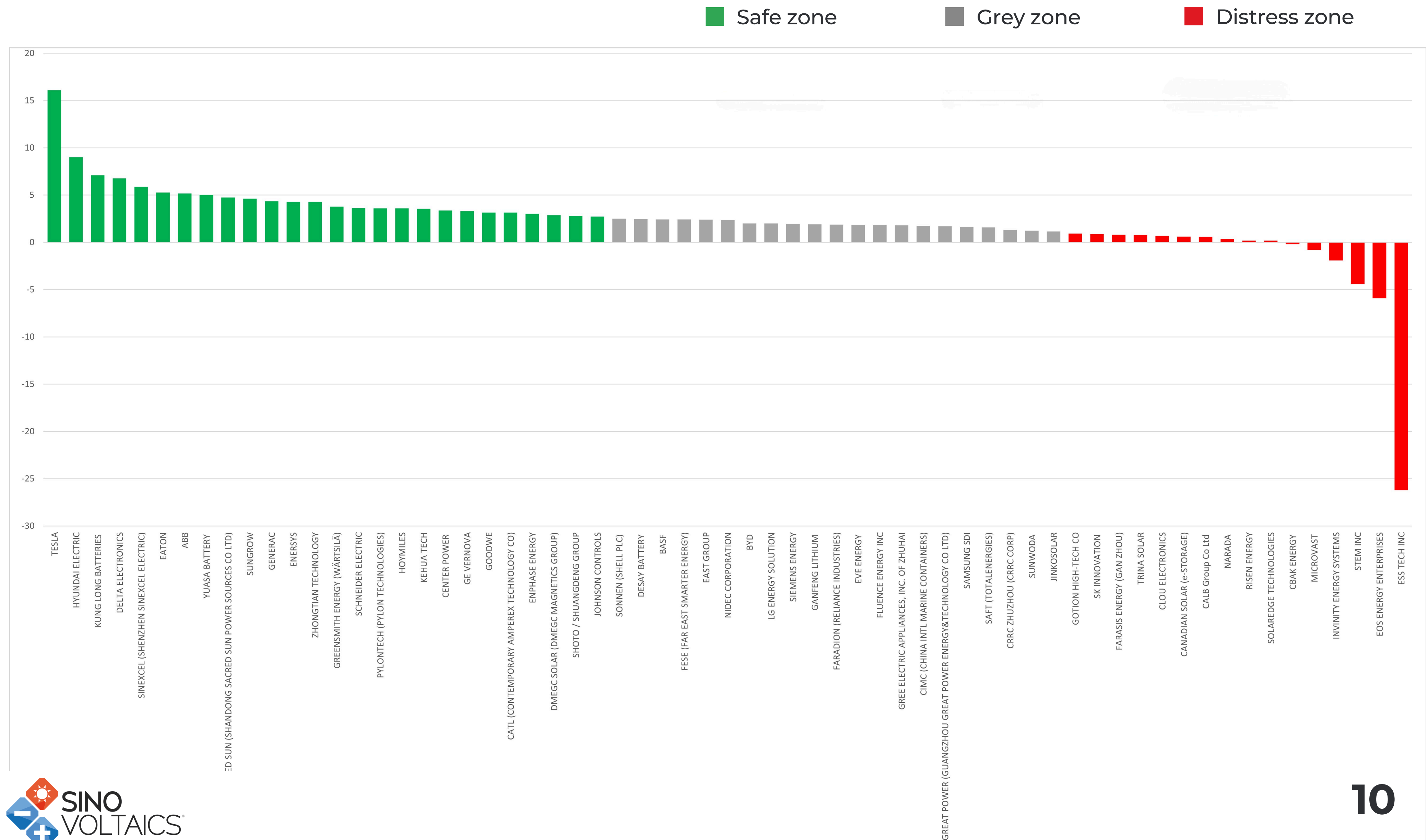
Graph #2 – BESS manufacturers currently in the Safe Zone

Graph #3 – BESS manufacturers currently in the Grey Zone

Graph #4 – BESS manufacturers currently in the Distress Zone

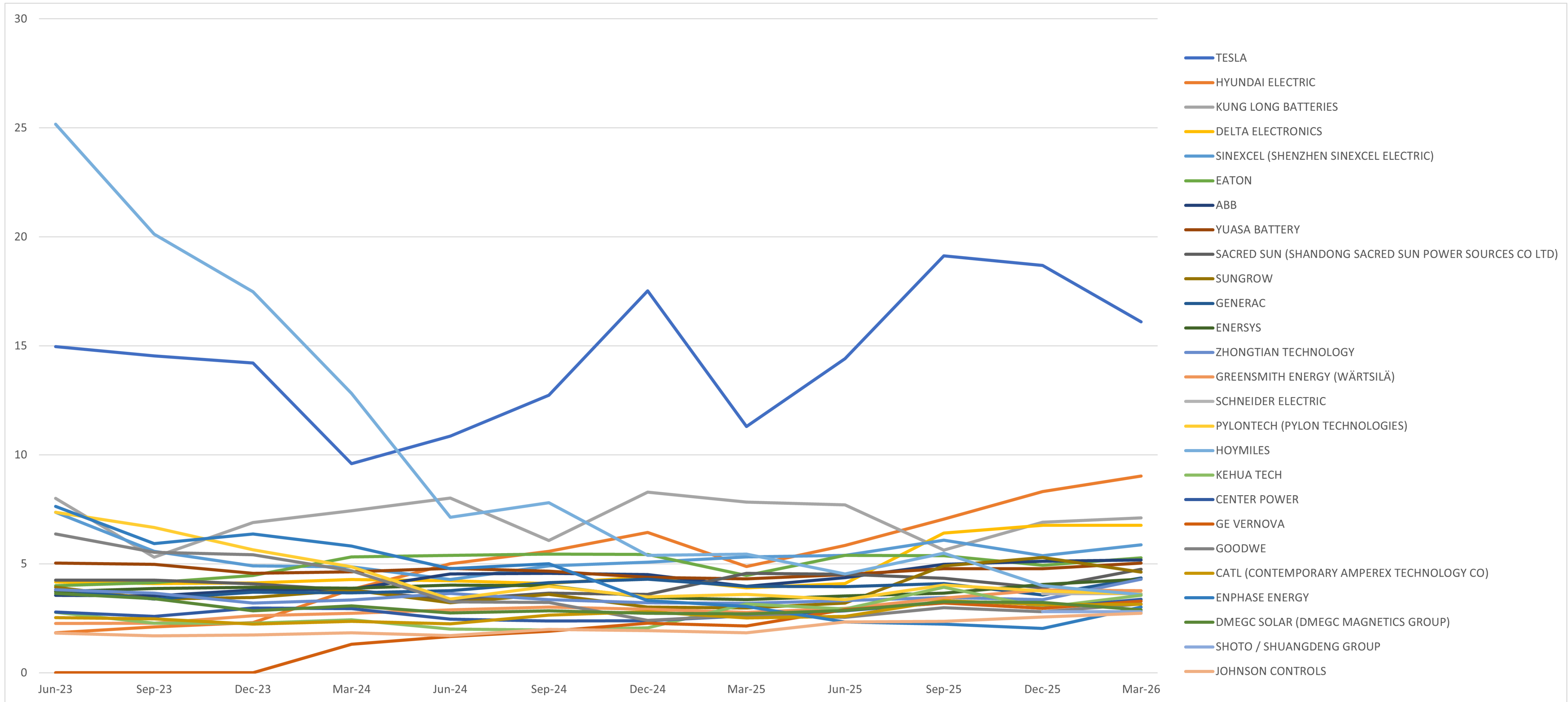
Graph #1 – Full ranking overview of BESS manufacturers

Sinovoltaics BESS Manufacturer Ranking: Edition 2 – 2026



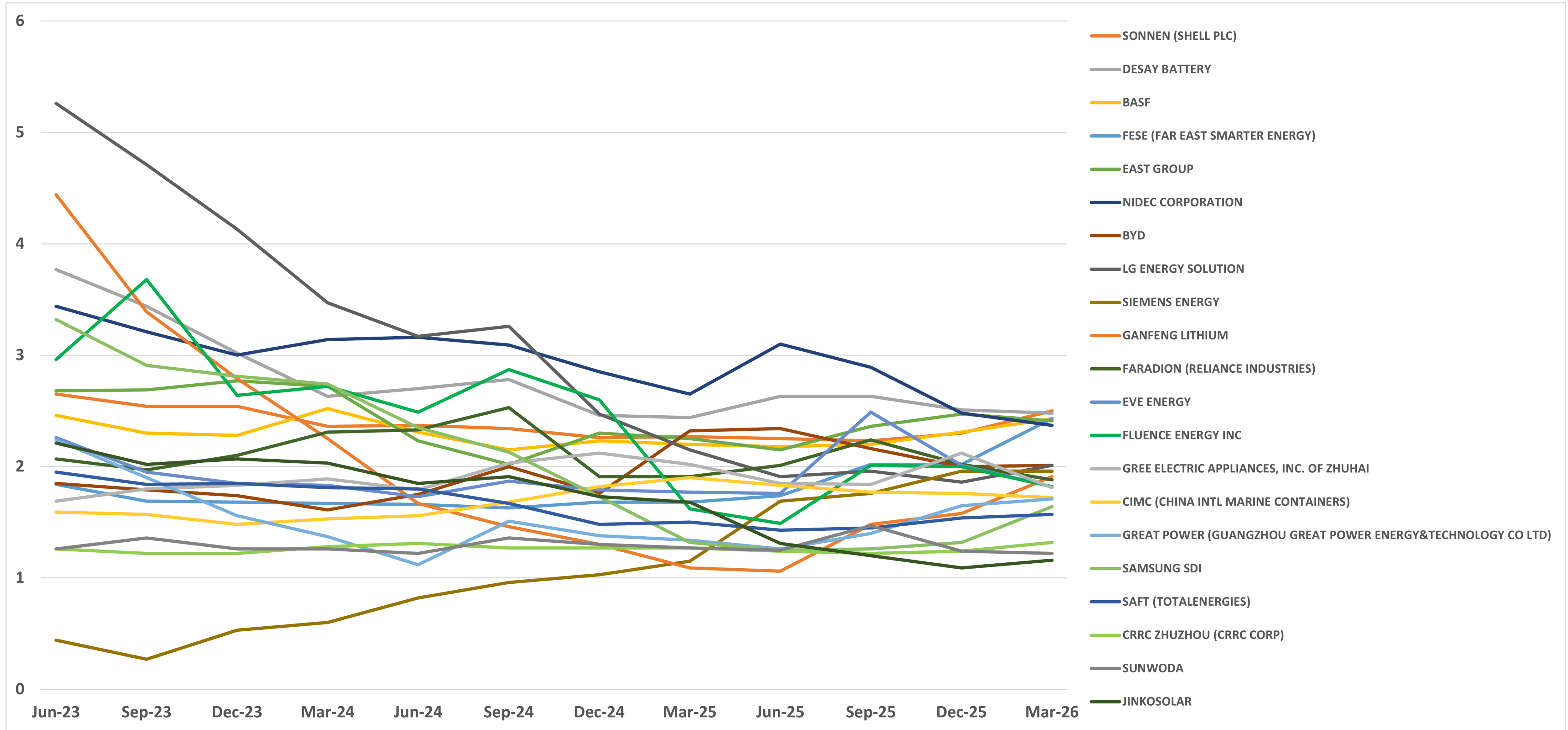
Graph #2 – BESS manufacturers in the Safe Zone

Sinovoltaics BESS Manufacturer Ranking: Edition 2 – 2026



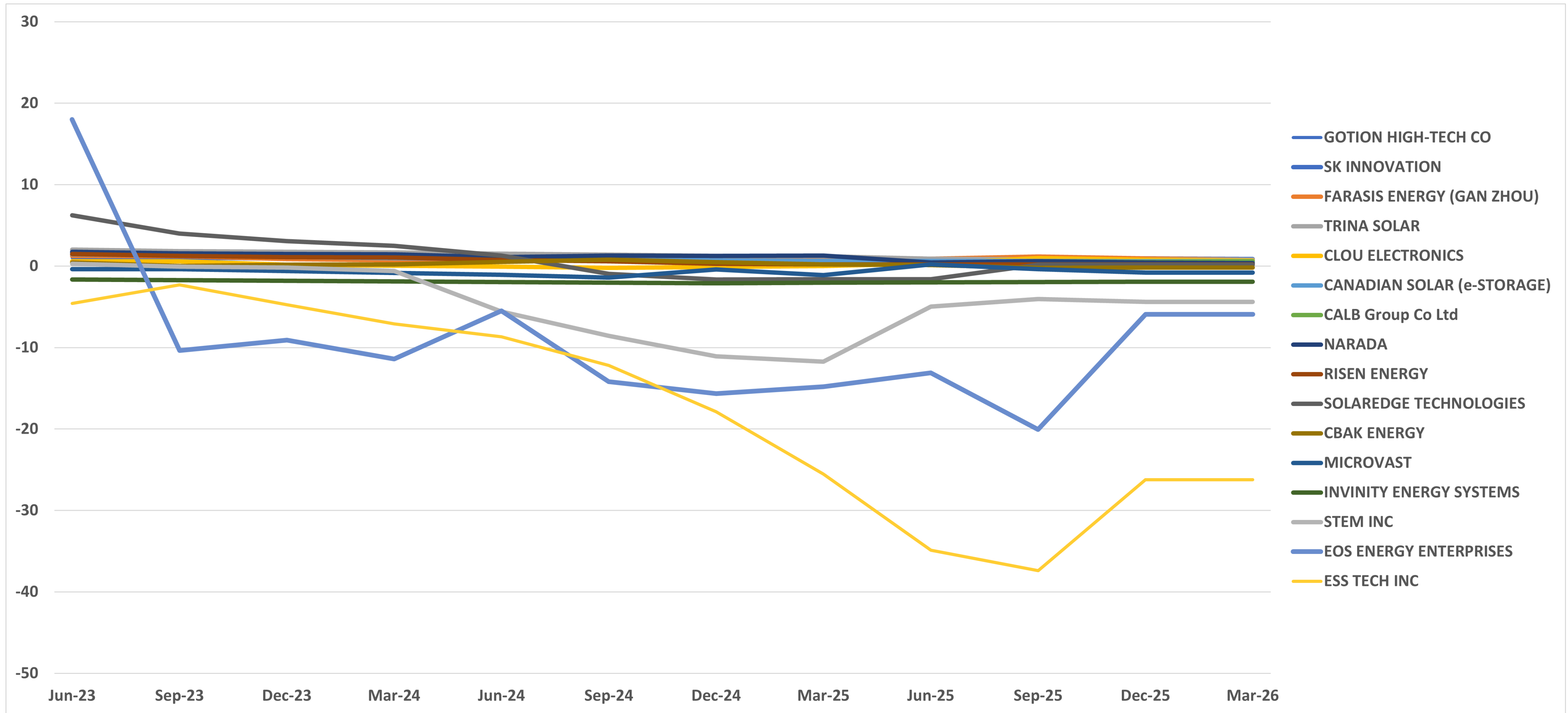
Graph #3 – BESS manufacturers in the Grey Zone

Sinovoltaics BESS Manufacturer Ranking: Edition 2 – 2026



Graph #4 – BESS manufacturers in the Distress Zone

Sinovoltaics BESS Manufacturer Ranking: Edition 2 – 2026



Other BESS Companies worth noting

- *Altman Z-Scores can only be calculated for companies with publicly available financial data.*
- *For alternative financial assessments, please contact Sinovoltaics.*

COMPANY	STATUS	ALTMAN-Z SCORE
HUAWEI DIGITAL POWER	PRIVATE	Contact Sinovoltaics
REPT BATTERO	PRIVATE	Contact Sinovoltaics
HITHIUM	PRIVATE	Contact Sinovoltaics
ENVISION ENERGY / AESC	PRIVATE	Contact Sinovoltaics
HYPERSTRONG	PRIVATE	Contact Sinovoltaics
SERMATEC	PRIVATE	Contact Sinovoltaics
NHOA ENERGY	PRIVATE	Contact Sinovoltaics
CHINT POWER	PRIVATE	Contact Sinovoltaics
ALPHAESS	PRIVATE	Contact Sinovoltaics
COSPOWERS	PRIVATE	Contact Sinovoltaics
CUBENERGY	PRIVATE	Contact Sinovoltaics

How is the Sinovoltaics Ranking Score calculated?

The Sinovoltaics BESS Manufacturer Ranking Score is based on the Altman Z-Score:

$$\text{Altman Z-Score} = 1.2A + 1.4B + 3.3C + 0.6D + 1.0E$$

The original formula is broken down as following:

A	Working Capital/Total Assets: measures liquid assets in relation to the size of the company.
B	Retained Earnings/Total Assets: measures profitability that reflects the company's age and earning power.
C	Earnings Before Interest & Tax/Total Assets: measures operating efficiency apart from tax and leveraging factors. It recognizes operative earnings as being important to long-term viability.
D	Market Value of Equity/Total Liabilities: adds market dimension that can show up security price fluctuation as a possible red flag.
E	Sales/Total Assets: a standard measure for total asset turnover.

How are the Altman Z-Scores interpreted?

The scores are categorized into 3 zones called Safe Zone, Grey Zone and Distress Zone:

$Z \geq 2.6$	Safe Zone
$1.1 < Z < 2.6$	Grey Zone
$Z \leq 1.1$	Distress Zone

How to interpret companies in the 'SAFE ZONE'?

With a large number of companies in the Grey Zone, it is important to analyze trends rather than relying on a single data point.

While some manufacturers remain consistently in the Grey Zone, others show significant volatility over time.

Take for instance **GENERAC**. Here's a number of Altman Z-Scores over the years:

3.81 on Q2 2023

3.77 on Q2 2024

3.57 on Q4 2025

4.35 on Q1 2026

Currently stands at 4.35 (March'26)

The energy storage manufacturing sector maintains a solid level of financial stability, with **26 manufacturers currently in the safe zone (AZ ≥ 2.6), compared with 21 companies in the previous edition.**

GENERAC, headquartered in **Waukesha, Wisconsin, USA**, currently holds an Altman Z-score of **4.35 in Q1 2026**, positioning it among the financially resilient companies in the energy storage and battery sector. The company's score has remained consistently within the safe zone over the observed period, moving from **3.81 in Q2 2023 to 3.77 in Q2 2024 and 3.57 in Q4 2025**, before improving to **4.35 in Q1 2026**. The sustained safe-zone positioning reflects stable financial strength, solid liquidity, and a healthy balance sheet, reinforcing GENERAC's resilient solvency profile within the market.

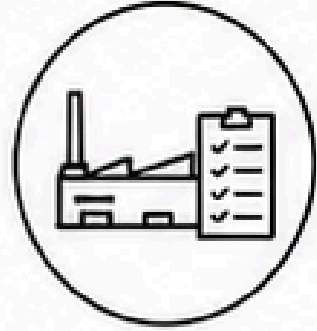
A comparison with peers such as **SUNGROW** and **KEHUA TECH** further highlights the overall financial resilience within the sector. **SUNGROW** maintains a consistently strong solvency profile, with Altman Z-scores remaining well within the safe zone and showing a gradual improvement from **3.92 in Q2 2023 to 4.62 in Q1 2026**. **KEHUA TECH**, meanwhile, also demonstrates a positive trend over the same period, rising from **2.77 in Q2 2023 to 3.55 in Q1 2026**, with only minor fluctuations along the way. Together, these trends suggest that several established players in the battery manufacturing landscape continue to maintain solid financial positions and stable solvency levels.

SUNGROW	KEHUA TECH
3.92 Q2 2023	2.77 Q2 2023
3.21 Q2 2024	2.00 Q2 2024
5.29 Q4 2025	3.00 Q4 2025
4.62 Q1 2026	3.55 Q1 2026

Discover our **ZERO RISK BESS SERVICES**

BESS QUALITY ASSURANCE

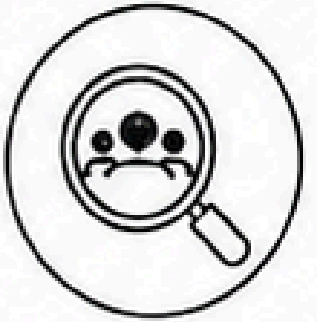
FACTORY AUDIT



Make a fully informed decision on the factories you're procuring from. Our accredited auditors provide you with full insights into the manufacturing capabilities of any BESS or battery factory worldwide. Use our audit scorecard system to enhance your supplier selection.

- Quality audits
- Supply Chain Mapping and Traceability audit
- ESG Audit

SUPPLIER SELECTION SUPPORT



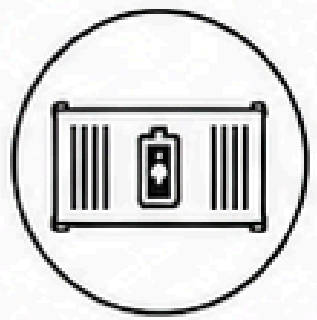
We support you shortlisting the most suitable Battery Energy Storage System (BESS) suppliers for your project. This process is based on a structured evaluation of technical, commercial, and project-specific criteria, ensuring alignment with your requirements and priorities.

CONTRACT NEGOTIATION SUPPORT



Leverage our expertise from reviewing GWh's of BESS projects that revealed manufacturers' legal strategies for shipping average-quality units. Work with us to strengthen your BESS contract, and key documents like Factory Acceptance Testing (FAT) checklists, ensuring you secure the quality you deserve.

BESS QUALITY INSPECTIONS



Hire our BESS specialized quality engineers to inspect your battery energy storage components on-site at the factories in Asia.

- BESS containers
- Battery modules / packs
- Battery cells
- PCS / inverters

OUR SERVICES COVER:

- Bill of Material (BOM) review
- Production Monitoring
- Factory Acceptance Testing (FAT)
- BESecure analysis
- Container and Loading Supervision

SITE COMMISSIONING



Are you concerned about the performance of your batteries during site commissioning?

Whether due to substandard FAT, potential transportation damages, or the need for a thorough performance review before BESS ownership transfer, our team can support you during cold and hot commissioning at your project's site.

SINOVOLTAICS BESSECURE™



Traditional FAT's capacity tests focus only on the BESS discharging capacity and Round-Trip efficiency. Our analysis tool go beyond that to do a full health checkup of your BESS before they leave the factory.

WHY CHOOSE BESSECURE?

- Evaluate 200-300 datapoints per container
- Discharging capacity & RTE per battery rack to identify bad apples
- Temperature-related KPIs that anticipate accelerated degradation
- Voltage-related deviations that assess BMS performance and calibration

WHY SINOVOLTAICS?

- 15+ years of quality assurance experience in Asia
- Specialized in BESS and PV projects support
- ISO 17020 certified company for inspection bodies
- Trusted partner for BESS and solar bankability

15+ YEARS

at the
factories in Asia

10GWh+

Zero Risk
BESS projects

26GWp+

Zero Risk
Solar projects

350+

PV & BESS
Factories Audited

