SINO VOLTAICS®
ZERO RISK SOLAR & BESS

REPORTS

PV INVERTER MANUFACTURER RANKING

EDITION 1/2026

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Welcome to this Edition 1 - 2026 version of the **SINOVOLTAICS Inverter Manufacturer Ranking Report**.

The Altman-Z Scores in this report has been calculated from March 2023 until December 2025, and provide detailed insight how the financial strength of inverter manufacturers has evolved over the past 3 years.

What's the value of Altman-Z Scores?

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

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

Employing inverters from financially stable manufacturers provides for a better hedge against the potential risks of collapsing return of investment (ROI) of any PV project.

Why is financial stability important?

Ultimately, the **financial stability of an inverter manufacturer is geared to the validity and enforceability of the warranty policies** on its portfolio of central, string or micro inverters. Most people realize that today's inverter manufacturers will probably not be around in 5 to 10 years. However for the short to medium term, you want to be sure that warranties are in place.

In many years to come, lots of PV projects will likely face this tough question: whom to contact with performance complaints and replacement requests regarding a malfunctioning inverter after 2, 5 or 10 years?

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In this report we present you the **Altman Z-Scores of 30+ inverter manufacturers.** This report can be used to see how one manufacturer matches up to the other, and can be an important indicator when selecting your inverter manufacturer.

The Altman Z-Scores show you which inverter manufacturers are **financially strong**, and which manufacturers are in the **risk zone of going bankrupt within the coming 2 years.**

2023 - 2025: rating of inverter manufacturers worldwide

On the following pages you find the full table showing the Altman Z-Scores of the major, publicly listed Asian, European and American manufacturers.

The scores have been calculated by team Sinovoltaics with the use of publicly available financial data.

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MANUFACTURERS	RANKING	TREND	MAR23	JUN23	SEP23	DEC23	MAR24	JUN24	SEP24	DEC24	MAR25	JUN25	SEP25	DEC25	LISTING
KSTAR	1	↑	7.19	6.38	5.32	5.83	5.47	4.94	4.98	5.09	5.42	5.01	7.97	8.55	SZSE:002518
DELTA ELECTRONICS	2	↑	4.31	4.7	4.03	4.01	4.27	4.63	4.18	4.4	4.02	4.26	6.47	6.97	TPE:2308
APSYSTEMS (YUNENG TECHNOLOGY CO)	3	↓	11.36	9	6.92	9.27	6.55	4.23	6.29	5.36	5.39	5.72	6.48	6.42	SHSE:688348
SINEXCEL	4	↓	5.23	6.55	5.57	4.87	4.86	4.28	4.9	5.08	5.32	5.4	6.09	5.38	SZSE:300693
SUNGROW	5	↑	3.8	4.04	3.42	3.35	3.71	3.53	3.98	3.13	3.01	2.9	4.81	5.06	SZSE:300274
ABB	6	↑	3.26	3.56	3.53	3.79	3.89	4.19	4.62	4.37	4.21	4.19	4.83	5.03	OTCPK:ABBNY
EATON	7	↓	3.62	3.99	4.12	4.47	5.31	5.39	5.44	5.43	4.46	5.39	5.38	4.93	NYSE:ETN
HOYMILES POWER ELECTRONICS	8	↓	27.13	21.11	19.83	20.32	19.46	10.71	9.77	5.68	5.61	4.95	5.21	4.8	SHSE:688032
EMERSON	9	↑	3.62	3.66	4.17	4.21	3.71	3.68	3.8	4.51	4.05	3.84	3.88	4.12	NYSE:EMR
HOPEWIND ELECTRIC	10	↓	4.54	4.82	3.97	4.19	4.02	2.94	2.77	3.13	4.03	4.17	4.17	3.92	SHSE:603063
JIUZHOU ELECTRIC	11	↓	3.03	3.05	2.94	2.98	3.77	3.16	3.29	3.81	3.99	3.8	3.91	3.88	SZSE:000801
SCHNEIDER ELECTRIC	12	↑				2.69	3.7	3.88	4.09	3.94	2.88	3.31	3.54	3.56	OTCPK:SBGSY
GENERAL ELECTRIC	13	↑	1.48	1.53	2.05	2.3	2.31	2.16	2.78	2.73	2.58	3.03	3.3	3.37	NYSE:GE
KEHUA HENGSHENG	14	↓	3	2.49	2.52	2.18	2.29	2.13	2.11	2.15	2.81	3.08	4.2	3.32	SZSE:002335
INVT SOLAR	15	↓	3.9	4.19	3.86	3.61	3.53	3.22	3.41	3.42	3.61	3.34	3.7	3.19	SZSE:002334
GOODWE	16	↓	7.66	6.5	5.52	5.64	5.01	4.16	3.42	2.6	2.8	2.57	3.15	2.92	SHSE:688390
SINENG ELECTRIC	17	↓	3.33	3.13	2.84	2.76	2.67	2.5	3.13	2.95	2.47	2.21	2.93	2.72	SZSE:300827
HITE (SHANGHAI HI-TECH CONTROL SYSTEM CO)	18	↑	3.53	3.85	3.27	2.7	2.53	2.15	2.38	2.18	2.25	2.15	2.55	2.7	SZSE:002184
OMRON	19	↓	4.87	5.4	4.88	4.7	2.87	3.2	3.27	2.93	2.64	2.55	2.64	2.52	TSE:6645
ABLEREX	20	↑	2.07	2.14	2.1	2.02	2.16	2.04	1.8	1.95	1.94	1.92	2.41	2.48	ROCO:3628

MANUFACTURERS	RANKING	TREND	MAR23	JUN23	SEP23	DEC23	MAR24	JUN24	SEP24	DEC24	MAR25	JUN25	SEP25	DEC25	LISTING
EAST GROUP	21	↑	2.97	2.68	2.69	2.75	2.72	2.23	2.02	2.3	2.25	2.15	2.36	2.47	SZSE:300376
CLENERGY	22	↑	3.77	3.89	3.71	4.43	4.12	3.47	3.11	2.84	2.88	2.38	2.34	2.43	SHSE:603628
GINLONG (SOLIS)	23	↓	3.46	2.8	2.3	1.99	1.87	1.33	2.01	1.74	1.68	1.89	2.77	2.42	SZSE:300763
SIEMENS	24	↓	2	2	2	2.18	2.22	2.18	2.25	2.31	2.25	2.2	2.42	2.41	XTER:SIE
ENPHASE	25	↓	9.21	7.46	6.09	6.32	5.9	4.98	5.24	3.46	2.93	2.22	2.21	2.12	NAS:ENPH
SMA	26	↑	4.55	4.87	3.55	3.7	3.79	3.13	2.81	2.31	1.72	1.63	1.6	1.72	XTER:S92
SENYUAN	27	↑	1.49	1.45	1.38	1.46	1.42	1.35	1.41	1.55	1.72	1.69	1.55	1.67	SZSE:002358
CHINT POWER (CHINT ELECTRICS)	28	↑	1.96	1.95	1.65	1.59	1.58	1.53	1.48	1.52	1.52	1.43	1.46	1.48	SHSE:601877
TBEA	29	↑	2.09	2.1	1.88	1.66	1.71	1.49	1.42	1.3	1.28	1.21	1.33	1.47	SHSE:600089
SHANGHAI ELECTRIC GROUP	30	↓	0.8	0.8	0.81	0.8	0.82	0.77	0.77	0.89	0.88	0.83	0.87	0.83	SHSE:601727
CLOU ELECTRONICS	31	↓	0.54	0.44	0.36	0.6	0.01	-0.03	0.01	-0.22	-0.13	0.09	0.91	0.76	SZSE:002121
SOLAREDGE	32	↓	6.7	5.91	4.1	3.47	2.7	1.64	1.24	-1.1	-1.62	-1.54	-1.29	0	NAS:SEDG
SOLARBRIDGE (SUNPOWER)	33	↓	1.14	0.69	0.37	-0.52	-1.42	-1.44	-1.71	-1.71	-1.71	-2.49	-2.1	-0.42	NAS:SPWR
WILLINGS (CARRY CO)	34	↓	1.75	2.67	1.68	0.06	-0.37	0.19	-1.1	-1.07	0.34	0.58	-0.1	-0.71	XKRX:313760
TIGO ENERGY INC	35	↓	3.82	4.3	5.44	2.36	1.09	1.32	-0.76	-3.08	-3.8	-3.45	-2.18	-1.34	NAS:TYGO

Graph overview

Graph #1 - The latest inverter manufacturers ranking, recorded December 2025

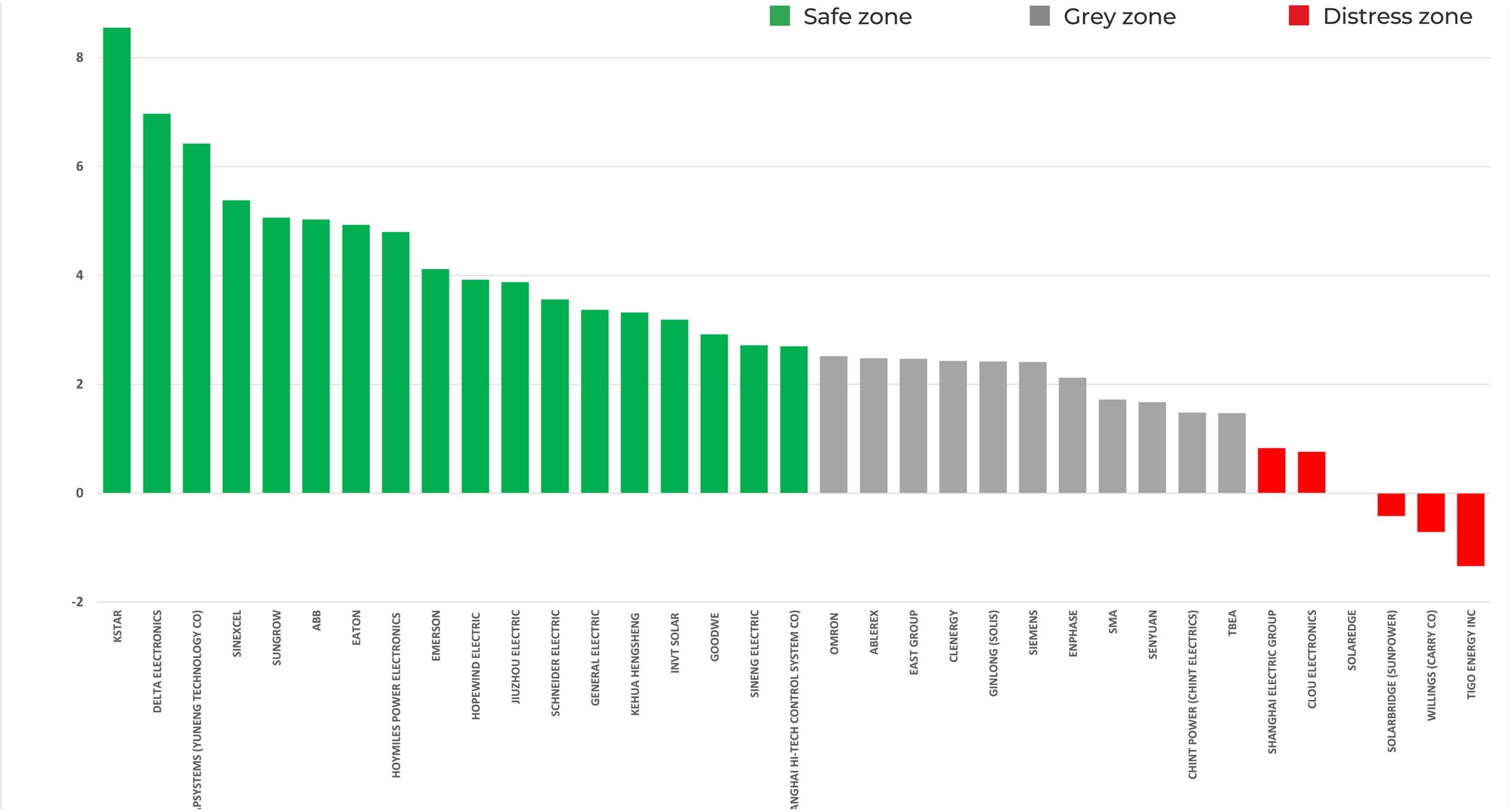
Graph #2 - Inverter manufacturers that are currently in the Safe Zone

Graph #3 - Inverter manufacturers that are currently in the Grey Zone

Graph #4 - Inverter manufacturers that are currently in the Distress Zone

Graph #1 - Full ranking overview of inverter manufacturers

Sinovoltaics PV inverter ranking - Edition #1 - 2026



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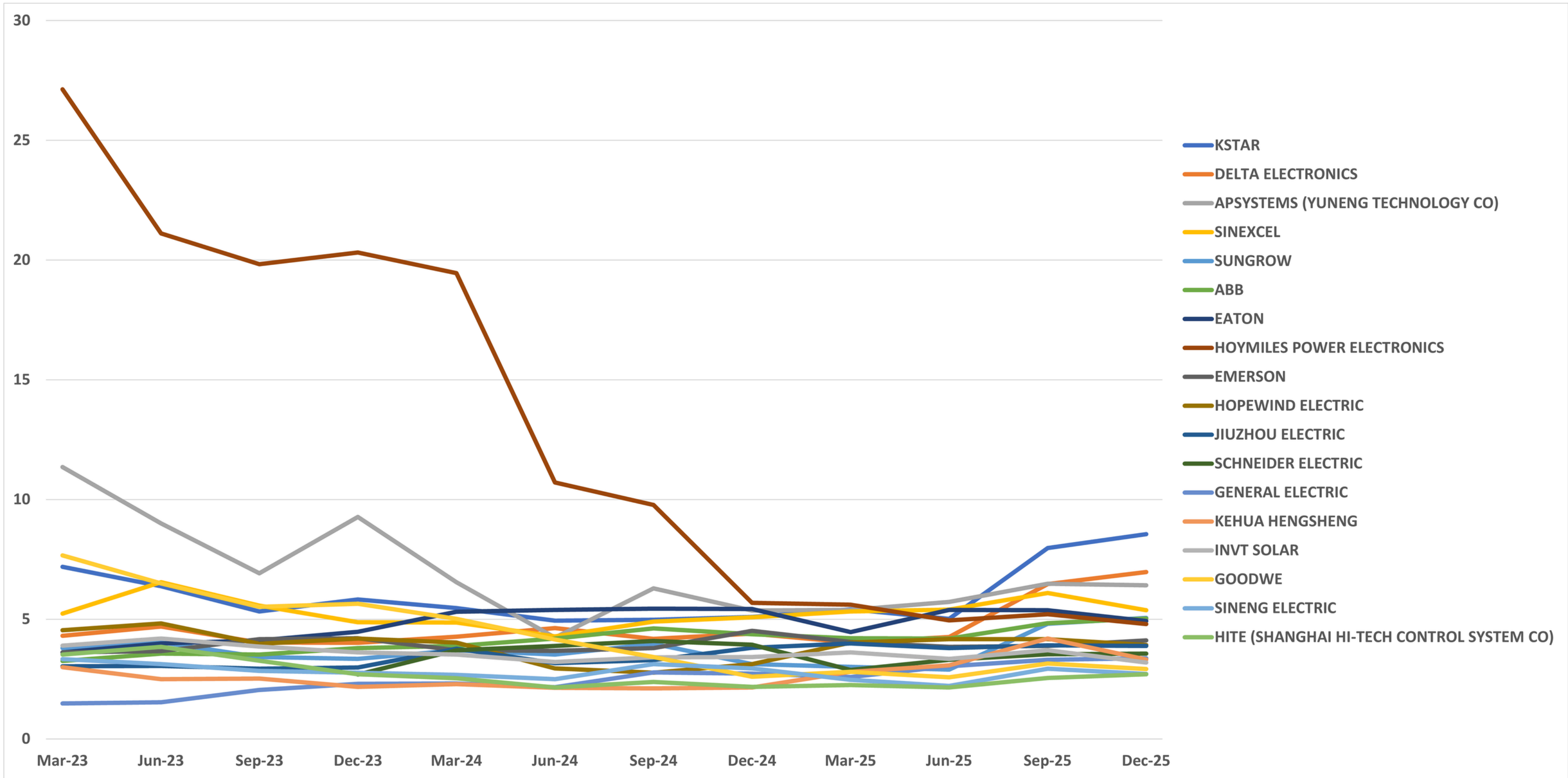
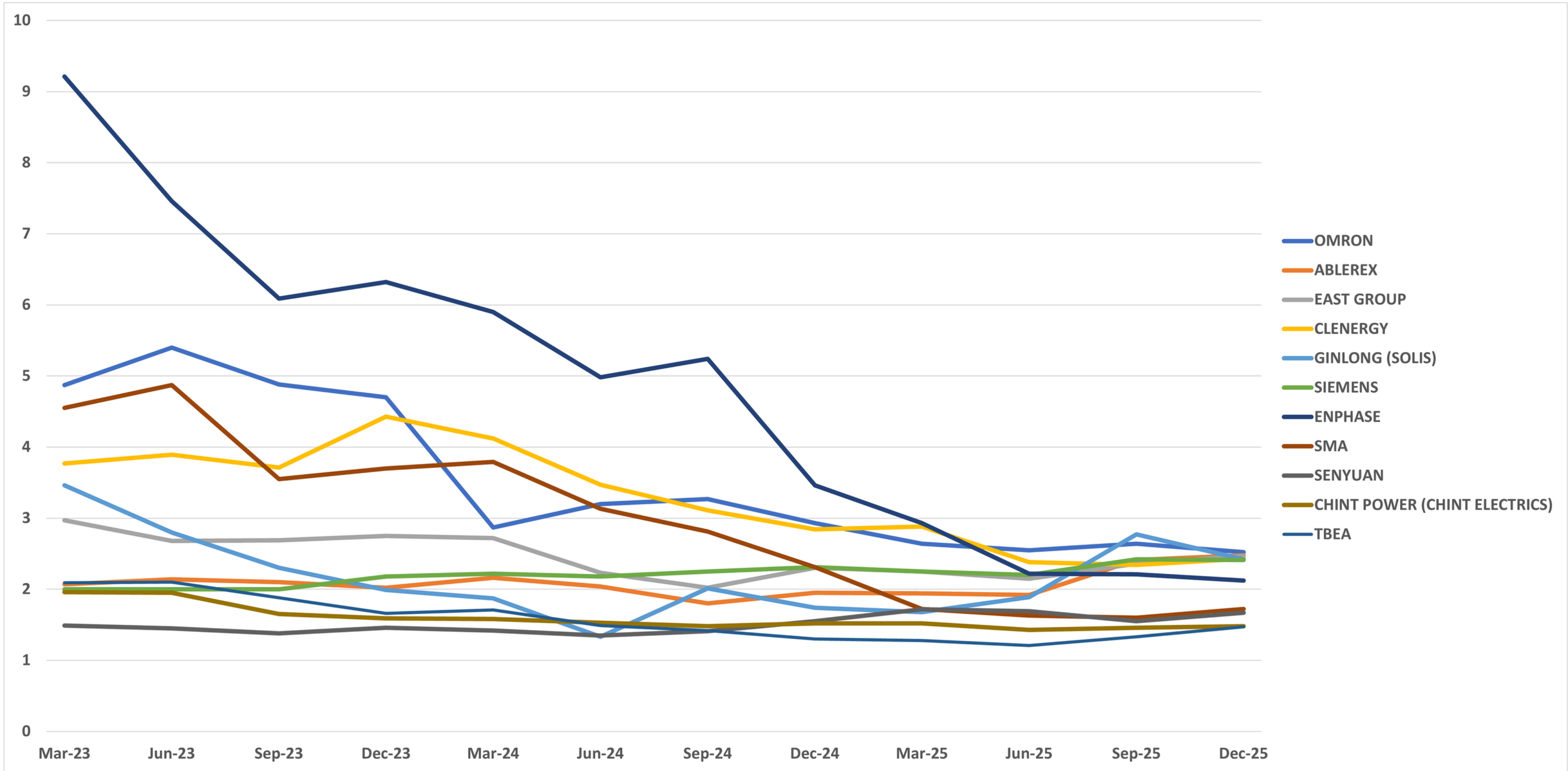
Graph #2 - Inverter manufacturers – Safe Zone

Sinovoltaics Inverter manufacturer ranking - Edition #1 - 2026 - Safe Zone



Graph #3 - Inverter manufacturers – Grey Zone

Sinovoltaics PV manufacturer ranking - Edition #1 - 2026 - Grey Zone



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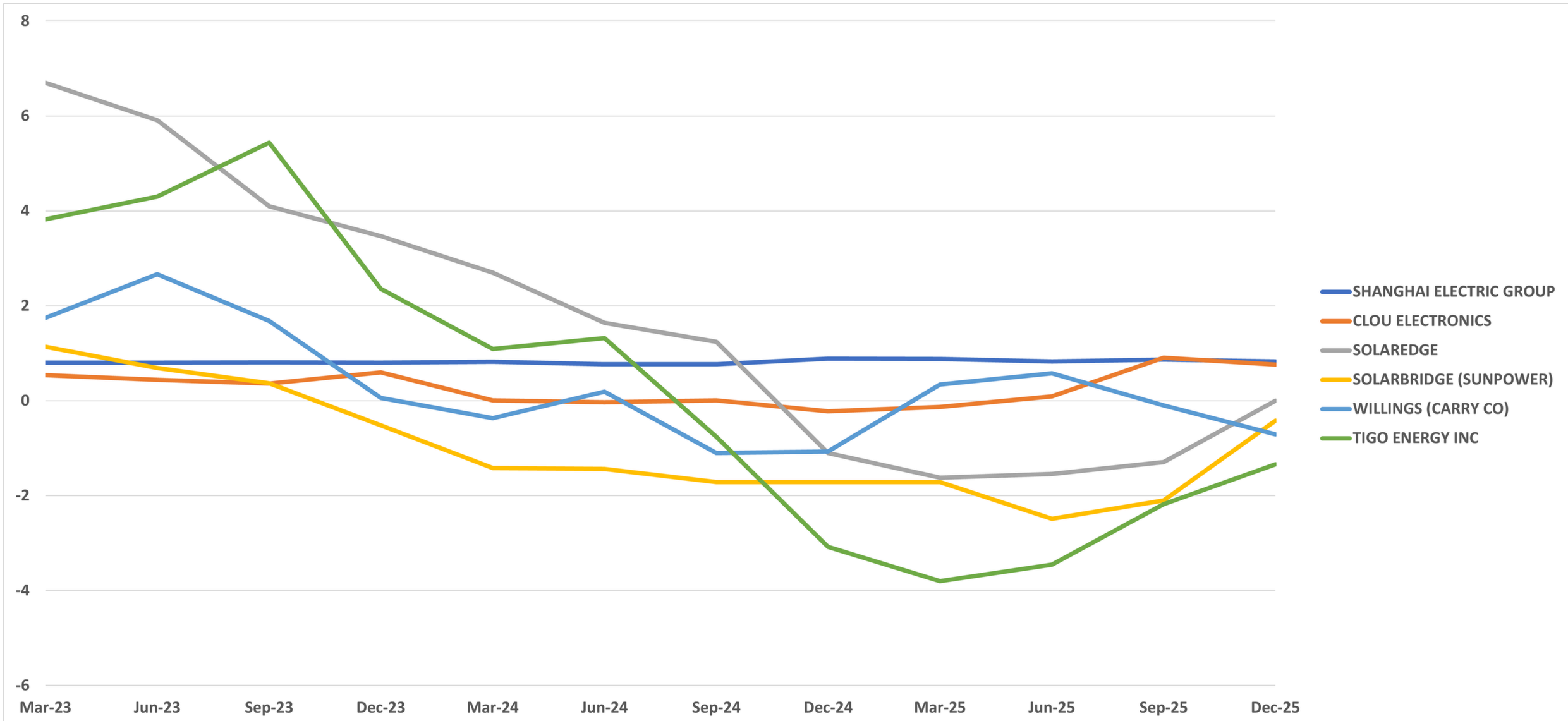
Graph #4 - Inverter manufacturers – Distress Zone

Sinovoltaics PV manufacturer ranking - Edition #1 - 2026 - Distress Zone



How is the Sinovoltaics Ranking Score calculated?

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

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 the Safe Zone, Grey Zone and Distress Zone:

Z > 2.6	Safe Zone
1.1 < Z < 2.6	Grey Zone
Z < 1.1	Distress Zone

How to interpret companies in the ‘GREY ZONE’?

With a large number of companies in the 'Grey Zone', how to interpret these scores when selecting a manufacturer?

While ideally, a manufacturer is in the 'Safe Zone', some companies have been consistently in the 'Grey Zone' for years.

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

3.26 on Q1 2023

4.19 on Q2 2024

4.62 on Q3 2024

5.03 on Q4 2025

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Currently stands at 5.03 (Dec ’25)

The inverter segment of the PV industry continues to demonstrate solid financial resilience, with **18 manufacturers currently positioned within the safe zone (AZ ≥ 2.6),** compared with **19 companies in the previous report.** Despite the slight decline, the number of financially stable players remains substantial, indicating **ongoing stability across the inverter manufacturing landscape.**

ABB, headquartered in **Zurich, Switzerland,** currently holds an **Altman Z-score of 5.03 as of December 2025,** reinforcing its position as one of the most financially robust and well-managed companies in the inverter sector. The company’s score has shown a consistent upward trajectory, rising from **3.26 in Q1 2023 to 4.19 in Q2 2024, 4.62 in Q3 2024, and 5.03 in Q4 2025.** This steady improvement reflects **strong operational efficiency, disciplined capital structure management, and sustained profitability,** underscoring ABB’s solid financial standing within the inverter manufacturing landscape.

Overall, the inverter segment shows **continued signs of financial resilience and market maturity,** with a substantial number of manufacturers maintaining positions within the **safe zone (AZ ≥ 2.6)**—an encouraging indicator for the sector's long-term sustainability. Notably, EMERSON demonstrates a clear upward trajectory, improving from **3.62 in Q1 2023 to 4.12 in Q4 2025,** reflecting strengthening financial stability. **INVT SOLAR,** while showing moderate fluctuations over the same period, has consistently remained within the safe zone, indicating a **stable solvency position.** Together with industry leader **ABB,** these trends highlight a broader pattern of **resilience and disciplined financial management among key inverter manufacturers.**

EMERSON	INVT SOLAR
3.62 Q1 2023	3.9 Q1 2023
3.68 Q2 2024	3.22 Q2 2024
3.8 Q3 2024	3.41 Q3 2024
4.12 Q4 2025	3.19 Q4 2025

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PV QUALITY INSPECTIONS

Hire our **PV specialized quality engineers** to inspect your PV components on-site at the factories in Asia.

LABORATORY TESTING

Thoroughly test your solar PV components at our **accredited PV lab**. Inform about country and climate specific test procedures for your region

TEST ALL PV COMPONENTS, INCLUDING:

- Solar modules
- Inverters
- BOS components
- Solar cells
- Energy Storage

A SELECTION OF LAB TESTS:

- Potential Induced Degradation (PID) test
- Light Induced Degradation (LID) test
- EVA gel content test
- Damp heat testing
- Thermal cycling testing

FACTORY AUDITS

Make a **fully informed decision** on the factories you're procuring from. Our accredited auditors provide you with **full insights** in the manufacturing capabilities of any PV factory worldwide. Use our **audit scoring card** system to manage and compare your factory selection.

SOLAR FARM INSPECTIONS

On-site solar farm **inspections** and **troubleshooting** worldwide. Assess your existing solar farms and optimize performance.

FACTORY AUDITS INCLUDE:

- Pre-manufacturing audit
- General qualification audit
- Factory benchmark
- Factory background check
- Financial audit

SOLAR FARM INSPECTIONS INCLUDE:

- Drone infrared thermography
- I-V measurement
- Electroluminescence imaging
- Electrical safety tests
- Commissioning checks

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SINOVOLTAICS EL MASS ANALYSIS (SELMA)

Eliminate **micro-cracks** and other cell-inherent defects and boost your solar power plant performance with **Sinovoltaics EL Mass Analysis (SELMA)**, our AI-driven electroluminescence Testing Software.

WHY CHOOSE SELMA FOR EL TESTING?

- Up to 99.9% accuracy
- Inspection of ALL modules (no sampling!)
- High-speed and on-the-fly analysis: avoid delays and easily keep up with the factory's production speed
- Identification and classification of up to 15 cell-inherent defect types
- Replace defective PV modules before shipment

QUALITY GUARANTEE

QUALITY ASSURANCE MEETS INSURANCE:

- With our Quality Guarantee, Sinovoltaics becomes a shared risk partner in our clients' PV projects.
- The Quality Guarantee enables the client to claim Liquidated Damages in case of a valid Warranty Claim with the factory.
- Eligibility: after performing our regular, 100% pre-shipment inspection on the client's PV modules at the factory, the client will be eligible for our Quality Guarantee for 3 years.
- Industry-wide unique protection and based on Sinovoltaics' Zero Risk Solar® framework the Quality Guarantee is backstopped by Munich Re.

15+ Years	25+ GWp	14,800+	350+
at the PV factories in Asia	Zero Risk Solar projects	Community	PV & BESS Factories Audited