

BloombergNEF Tier 1 Power Inverter, 2Q 2025

BloombergNEF has developed a tiering system for solar and battery storage inverter products based on bankability to create a transparent differentiation between the multiple manufacturers of power inverters on the market. The basic tiering categorization should never replace a proper due diligence process in product selection.

1. Why divide the inverter PV market into tiers?

BloombergNEF is frequently requested by clients for a list of 'major' or 'bankable' suppliers - in common industry parlance, tier 1 suppliers - for use in manufacturing forecasts, preliminary competitor analysis, and other internal comparisons. It is very common for industry players to refer to 'tier 1' players, but these terms are seldom defined or described, which is unhelpful for firms outside the solar and battery storage industry trying to get a basic overview.

We strongly recommend that inverter purchasers and banks do not use this list as a measure of quality, but instead consult a technical due diligence firm such as TÜV Rheinland, STS Certified, Bureau Veritas, SGS, UL Solutions, Intertek ETL, RETC LLC, Clean Energy Associates, PI Berlin, Pvbuyer. These would usually consider what factory the inverter comes from, conduct fault and availability tests on a sample and give an informed opinion on whether the inverters will perform as expected.

2. Definitions

'Bankability' - whether projects using the solar or battery storage products are likely to be offered non-recourse debt financing by banks - is the key criterion for tiering. Banks, and their technical due diligence providers, are extremely unwilling to disclose their whitelists of acceptable products. BloombergNEF therefore bases its criteria in what deals have been closed in the past, as tracked by our database – 98,000 photovoltaic and battery storage financings worldwide as of February 2025.

We only tier manufacturers which actually own production facilities and sell under their own brands. Companies which outsource production under brand names are not tiered.

3. Inverter Tier 1

Tier 1 inverter manufacturers are those which have provided own-brand, own-manufacture products to at least **four** different solar, battery storage or hybrid projects over 5MW+ of installed capacity, which have been financed non-recourse by **two** different commercial (ie not development, not export-import) banks, in the past two years. The earlier of financing or commissioning date counts for tiering, ie refinancings of old projects do not count.

The link to the full methodology can be found in [English](#) and [Chinese](#). Inverter makers that want us to tier them accurately can send us data using the template in this [link](#) for solar projects and this [link](#) for battery storage projects.

Table 1 shows inverter makers that meet our criteria as of 2Q 2025.

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Table 1: Power inverter manufacturers meeting BloombergNEF's Tier 1 criteria as of 2Q 2025

Firm/Brand	2023 inverter production, MW/year
TMEIC	5,900
Tesla	Not disclosed
TBEA	22,870
Sungrow	151,000
SMA Solar Technology	20,500
Sineng	24,500
Power Electronics	23,422
Ingeteam	6,303
Huawei	160,000
Hopewind	12,242
Goodwe	18,360
Ginlong/Solis	30,089
GE Verona	Not disclosed
Gamesa Electric (Siemens Energy)	1,795
CRRC Times Electric	18,000
CLOU	450
Chint Power / CPS	7,077

Source: BloombergNEF. Note: Methodology [here](#). List is in reverse alphabetical order to avoid giving the impression that the order is relevant. Companies can access the finance deals in BNEF's asset finance database ([link](#)) and download the solar dataset of financings [here](#).

In this iteration, the Tier 1 inverter list has two new companies with qualifying solar projects. Japanese TMEIC (Toshiba Mitsubishi-Electric Industrial Systems Corporation) and Chinese Goodwe.

This quarter, Wartsila was removed from the list. According to information verified by us, the company does not own inverter manufacturing and serves purely as a battery storage integrator.

We also exclude firms which are in default of financial obligations. Relevant documents (in Chinese) can be found on [the public platform where defaulter's information is released](#). As of June 2, 2025, Envision Energy had a record under “远景能源有限公司” and therefore is not in the list despite meeting the criteria on number of projects and banks.

There are no companies that only supply module-level power electronics like microinverters and optimizers on this list as we do not track projects under 5MW of capacity. This is not a reflection of the quality of microinverters, merely that they are generally not used in large solar projects, so banks are unlikely to have conducted due diligence on them.

See more about inverter technologies and market trends in the *Power Inverter Market Outlook 2024: Oversupply Curbs Sales* ([web](#) | [terminal](#)).

About us

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