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## BNEF PV module maker tier 1 list, 1Q 2019

Bloomberg New Energy Finance has developed a tiering system for PV module makers based on bankability, to create a transparent differentiation between the hundreds of manufacturers of solar modules on the market. This basic categorisation has been used as an advertisement by certain manufacturers, but should never replace a proper due diligence process in product selection.

### 1. Why divide the PV market into tiers?

Bloomberg New Energy Finance 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 industry trying to get a basic overview.

We strongly recommend that module purchasers and banks do not use this list as a measure of quality, but instead consult a technical due diligence firm such as **Edif ERA (formerly OST Energy), Sgurr Energy, DNV GL, Black & Veatch, TUV, E3, ATA Renewables, STS Certified, Clean Energy Associates, Solarbuyer, Pvbuyer, Enertis, Oravia or Leidos Engineering**. These would usually consider what factory the module comes from, as well as the brand, and give an informed opinion on whether the modules will perform as expected.

### 2. Definitions

'Bankability' - whether projects using the solar 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. Bloomberg New Energy Finance therefore bases its criteria in what deals have been closed in the past, as tracked by our database - 29,196 photovoltaic financings worldwide as of November 2018.

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. We do not publish a tier 2 or 3 list.

### 3. Tier 1

Tier 1 module manufacturers are those which have provided own-brand, own-manufacture products to **six** different projects, which have been financed non-recourse by **six** different (non-development) banks, in the past two years. These 1.5MW+ deals must be tracked by our database, ie the project location (sufficiently to identify the project uniquely), capacity, developer, bank and module maker must be in the public domain. One exception is manufacturers which have filed for bankruptcy or a form of insolvency protection, or experienced a major default on bond payments; these are removed from the tier 1 list until further notice. Full methodology [here](#).

In China, India, Turkey and some other markets, non-recourse finance is rare and cannot be assumed. From 2Q 2017, we will therefore require additional evidence that a deal is non-recourse (for example an email from a non-affiliated developer, or a look at a confidential project finance document) to include a financing in our database and therefore count it for tiering.

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#### 4. Can I share this list on the internet?

**No.** If you are a BNEF Solar Insight client, you can share with selected business partners who will not release it further. Pirate copies on the internet may be doctored and are published without BNEF's permission and against our terms and conditions.

**Table 1: Solar module manufacturers meeting BloombergNEF's tier 1 criteria as of 1Q 2019**

Firm/ brand	Annual module capacity, MW/year	Firm/ brand	Annual module capacity, MW/year
Jinko*	10,000	Sumec/ Phono Solar*	2,000
Canadian Solar*	8,700	Jinneng	2,000
Risen Energy*	8,600	REC Group*	1,500
JA Solar*	8,500	Waaree	1,500
Hanwha Q-Cells*	8,000	HT-SAAE*	1,500
Trina Solar*	8,000	Adani/Mundra*	1,200
Longi*	7,500	Vikram Solar*	1,100
GCL*	5,400	ET Solar	1,000
Talesun	4,800	Neo Solar Power/ URE	1,000
Seraphim*	4,000	Lightway	1,000
Suntech*	3,900	Boviet*	800
Renesola	3,500	Hansol Technics	600
ZNShine*	3,200	S-Energy	530
First Solar*	2,900	AU Optronics	500
Chint/Astronergy*	2,500	Shinsung	300
LG Electronics*	2,500	Heliene*	250
BYD*	2,400	Sharp	210
Eging	2,100	<b>Total</b>	<b>113,490</b>

Source: BloombergNEF. Methodology [here](#). \* denotes module makers for which a technical due diligence report is available from PV Evolution Labs (PVEL, formerly part of DNV GL). Contact [Tara.Doyle@pvel.com](mailto:Tara.Doyle@pvel.com) for details.

## About us

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