Modular Photovoltaic Power Generation Device Manufacturer

Overview

Top 10 Global Photovoltaic Module Manufacturers in 2025Based on the 2025 market shipment forecast and technology analysis, this report provides an in-depth.

Key Takeaways

Leading manufacturers of modular photovoltaic devices include JinkoSolar, LONGi, Trina Solar, JA Solar, EMMVEE, and Talesun Solar, offering high-efficiency modules and global distribution.Top Global Manufacturers

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JinkoSolar (Shanghai, China) is the world's largest PV module manufacturer with an annual production capacity exceeding 90 GW. It specializes in high-efficiency monocrystalline modules using N-type TOPCon technology, achieving efficiencies over 22%. Its Tiger-Neo series is widely used in residential and commercial projects, offering up to 30 years of performance warranty . LONGi Green Energy (Xi'an, China) produces over 85 GW annually, focusing on monocrystalline wafers and modules. The company invests heavily in N-type technologies like TOPCon and HJT, providing high-efficiency modules suitable for utility-scale and commercial applications . Trina Solar (China) ships over 70 GW of modules annually and is known for its technological innovation and global expansion. Trina invests significantly in R&D to enhance module efficiency and reliability . JA Solar (Beijing, China) has a production capacity of over 80 GW and is fully vertically integrated, manufacturing wafers, cells, and modules. Its DeepBlue series offers stable performance and high efficiency, with up to 25 years of warranty . EMMVEE Photovoltaic Power Private Limited (Bengaluru, India) specializes in residential, commercial, and industrial PV modules, including TOPCon and bifacial technologies. EMMVEE has expanded internationally to Europe, Africa, and the Middle East, emphasizing quality, innovation, and sustainability . Talesun Solar Technologies (Suzhou, China) produces high-efficiency solar cells and modules with capacities of 16 GW and 20 GW, respectively. The company provides global solar solutions, including project development and EPC services .

Key Considerations for Selection

• Technology: Look for manufacturers offering advanced cell technologies such as TOPCon, HJT, or bifacial modules for higher efficiency and long-term performance .

• Vertical Integration: Companies that control wafer, cell, and module production can ensure consistent quality and timely delivery .

• Global Presence: Manufacturers with international distribution networks can support large-scale projects and provide local service and warranties .

• Warranty and Reliability: Long-term performance guarantees (25–30 years) and proven track records in diverse climates are critical for project security . These manufacturers represent a mix of high-volume global leaders and specialized providers capable of delivering modular photovoltaic solutions for a wide range of applications.

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