Solar Photovoltaic (PV) - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-04-28 | 300 pages | Mordor Intelligence

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Report description:

The Solar Photovoltaic Market size is estimated at 2.16 thousand gigawatt in 2025, and is expected to reach 6.06 thousand gigawatt by 2030, at a CAGR of 22.9% during the forecast period (2025-2030).

Key Highlights
- Over the medium term, favorable government policies and increasing adoption of solar PV systems, with the declining price of solar panels and installation costs, will likely support the growth of the global solar energy market during the forecast period.
- Conversely, factors like the growth of other renewable technologies, such as wind and bioenergy, are expected to hinder market growth.
- Nevertheless, the efforts by several governments across emerging nations in the regions like Africa and Southeast Asia to provide 100% electricity access in remote areas coupled with off-grid applications and technological advancements in solar PV modules are expected to create ample opportunities in the near future.

Solar Photovoltaic Market Trends

Ground-mounted Solar PV to Dominate the Market

- In 2022, ground-mounted solar PV accounted for more than 60% of the global solar PV capacity, with countries like China, the United States, Germany, and India leading the market growth.
- The ground-mounted solar PV segment's dominance can be attributed to the factors such as the increasing number of

utility-scale projects, solar energy targets, and declining costs of solar PV installations.
- Countries worldwide plan to develop large-scale solar PV projects to reduce their reliance on fossil fuel-based power generation and diversify their energy mix.
- In May 2023, Savannah Energy Niger Solar Ltd., the wholly-owned subsidiary of British independent power company Savannah Energy Plc, signed a memorandum of agreement (MoA) with the Niger government to develop two solar photovoltaic power plants. The power facilities will have a combined installed power capacity of up to 200 MW. The proposed solar plants will be connected to the South-Central section of Niger's electricity grid. The projects will likely receive sanctions next year and achieve operational status over next two to three years.
- Moreover, in the United States, the utility-scale solar PV sector has led the overall solar market regarding installed capacity, accounting for nearly 60% of installed capacity in 2022. There are 467 solar projects slated for the next five years until 2028, with a total value of USD 98 Billion. Also, the regions in the USA spending the most on Ground-mounted solar power projects over the next ten years are Texas (USD 27 billion), New York (USD 7 billion), Indiana (USD 6 billion), California (USD 6 billion), Ohio (USD 6 billion), and Nevada (USD 6 billion).
- Therefore, owing to the above points, the increasing installations of large-scale utility solar PV projects are expected to make ground-mounted solar PV a dominating segment during the forecast period.

Asia-Pacific to Dominate the Market

- As of 2022, Asia-Pacific was the largest solar PV market globally, accounting for a major share of the global installed solar PV capacity, and it is expected to continue its dominance during the forecast period. China, Japan, and India were the key markets in the region with the largest installed capacities as of 2022.
- The Chinese solar photovoltaic industry has grown faster than any other country in the region over the past few years. As of 2022, China's solar PV installed capacity reached 392.436 GW, representing an increase of 28.08% compared to the previous year's value.
- With the increasing demand for electricity and green energy, in December 2022, the New Delhi Government approved the draft of its ambitious Solar Policy 2022, which revises the installed capacity of 6,000 MW from 2,000 MW in two years; the policy aims to create a unified single-window state portal managed by the Delhi Solar Cell that will provide information on the benefits of solar PV systems.
- Moreover, in March 2022, Alibaba Group's logistics arm Cainiao Network started to use distributed solar power generated by rooftop solar panels installed in its bonded warehouses in China to power its operations. The company had installed the PV power generation systems on 100,000 square meters of warehouse rooftops that can store 7.862 MW of energy, with an annual power output of over 8 million kilowatts per hour, enough to power more than 3,000 homes. The power generated by the solar power system will be sufficient to power Cainiao's warehouse operations, and excess electricity will be diverted to the grid. Further, Cainiao and its partners expect to install rooftop PV generation systems on Cainiao's bonded warehouses spanning a combined 500,000 square meters, this year.
- Factors such as upcoming solar PV projects, supportive government policies, and declining costs of solar PV modules and associated systems are expected to drive the solar PV market in the region during the forecast period.

Solar Photovoltaic Industry Overview

The solar photovoltaic (PV) market is fragmented. Some of the major players operating in the market (in no particular order) include SunPower Corporation, JinkoSolar Holding Co. Ltd., Canadian Solar Inc., Trina Solar Ltd, and JA Solar Holdings Co. Ltd, among others.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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