

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

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Report description:

The Solar Photovoltaic Wafer Market size is estimated at USD 16.61 billion in 2025, and is expected to reach USD 31.83 billion by 2030, at a CAGR of 13.9% during the forecast period (2025-2030).

Key Highlights

- Over the medium term, the growing global demand for renewable energy and supportive government policies are expected to be the primary growth driver for the market during the forecast period.
- On the other hand, photovoltaic wafers are costly compared to alternatives like thin films available in the market, which are expected to restrain growth in the forecast period.
- Nevertheless, the technological advancement in wafer technology is expected to create several opportunities for the market during the forecast period.
- Asia pacific is expected to dominate the market owing to upcoming solar projects and supportive government policies.

Solar Photovoltaic Wafer Market Trends

Monocrystalline Solar Photovoltaic Wafer is Expected to Dominate the Market

- A solar wafer is a thin slice of crystalline silicon that works as a substrate for microeconomic devices for fabricating integrated circuits in photovoltaics (PVs) to manufacture solar cells and assist in power generation by absorbing sunlight.
- Due to the higher efficiency and lower space occupancy of monocrystalline solar panels, monocrystalline solar wafers are

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expected to dominate the market during the forecast period.

- According to Fraunhofer ISE, monocrystalline solar cells had the highest efficiency (26.7%) of any solar cell. This translates to higher electricity production, especially in large utility-scale projects, further reducing the levelized cost of electricity, which is expected to give the technology an advantage over other technology types, driving the segment during the forecast period.
- In August 2023, Trina Solar began producing 210mm Monocrystalline Wafers in Vietnam. The factory will be able to produce 6.5 GW of wafers annually. With this new capacity, Trina Solar will have greater flexibility in being able to deliver its products worldwide.
- India is a significant market for solar photovoltaic wafers. As the country's solar photovoltaic sector grows rapidly, it is also expanding its solar cell, wafer, and ingot production capacity to match domestic demand and reduce dependence on imports.
- In December 2022, Adani Solar unveiled India's largest monocrystalline silicon ingot. The new manufacturing line will produce silicon ingots exclusively for producing solar wafers, cells, and modules. The facility will produce large-sized monocrystalline silicon ingots capable of producing M10 and G12 wafers. According to the company, it aims to add 2 GW of ingot and wafer capacity by the end of 2023 and scale it up to 10 GW by 2025.
- Therefore, owing to the above points, the monocrystalline solar photovoltaic wafers segment is expected to dominate the solar photovoltaic wafer market during the forecast period.

Asia-Pacific to Grow at Fastest Rate

- Asia-Pacific is expected to become the fastest-growing market in the forecast period. Countries like India, Japan, and China are aiming to install solar power on a large scale in the future.
- Significant projects in China are expected to create a large demand for solar photovoltaic wafers in the upcoming period. Additionally, as China is the global hub for solar PV hardware manufacturing, Chinese manufacturers such as JinkoSolar, JA Solar, Yingli, etc. are at the forefront of research and development in solar cell, wafer, and ingot technology, which is expected to provide a significant impetus to the market.
- In the first half of 2023, according to Polaris Solar Photovoltaic Networks Statistics, silicon wafer production in China reached 442GW from January to June and was worth USD 5.7 billion.
- In July 2023, the Australian government announced USD 33.7 million in investment to develop renewable energy supply chains. The funding will support research to develop projects in Australia and southern and southeast Asian countries, particularly mentioning solar ingot and wafer production and battery cell component manufacturing.
- In 2022, the installed capacity of solar photovoltaic in Asia was estimated at more than 603 GW, which is expected to grow steadily during the forecast period. With the future growth of solar energy, the market for solar wafers is also estimated to grow considerably.
- With a large number of projects under construction and ambitious solar energy goals for countries in Asia-Pacific, the region is anticipated to grow at the fastest rate in the forecast period.

Solar Photovoltaic Wafer Industry Overview

The solar photovoltaic wafer market is fragmented. Some of the major companies (in no particular order) include Jinko Solar Holding Co., GCL-Poly Energy Holdings Limited Ltd, LONGi Green Energy Technology Co Ltd, CETC Solar Energy Holdings Co, and Sino-American Silicon Products Inc.

Additional Benefits:

- The market estimate (ME) sheet in Excel format

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