

Solar Energy Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The Solar Energy Market is expected to reach 1015.4 GW by the end of this year and is projected to register a CAGR of over 12.7% during the forecast period.

The market was negatively impacted by COVID-19 in 2020. Presently the market has now reached pre-pandemic levels.

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 cost, are likely to support the global solar energy market growth during the forecast period

On the other hand, factors such as rising adoption of alternate clean power sources, such as gas-fired power plants, onshore and offshore wind projects are likely to hinder the market growth during the study period.

Nevertheless, an increase in off-grid solar utilization due to the decreasing cost of solar PV equipment and supportive global initiatives to eliminate carbon emissions are expected to create several opportunities for the market in the future.

Due to its increasing solar installations, the Asia-Pacific region has dominated the solar energy market in the past few years and is expected to be the largest and fastest-growing region in the solar energy market during the forecast period.

Solar Energy Market Trends

Solar Photovoltaic (PV) Expected to Dominate the Market

Solar photovoltaic (PV) is expected to account for the largest annual capacity additions for renewables, well above wind and hydro, for the next five years. According to IEA, solar PV generation increased by 23% in 2020, reaching 821 TWh, witnessing the second-largest absolute generation growth of all renewable technologies behind wind. With this increase, the solar PV share in

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global electricity generation is more than 3%.?

The continuous cost reductions in technology and the increasing growth in China, India, and other economies in Asia-Pacific and European countries, owing to policy changes and growing focus on achieving various capacity targets, are expected to contribute to the development of the solar PV market in the forecast period.?

The solar PV market cut costs dramatically during the past six years through economies of scale. As the market was flooded with equipment, prices plummeted, the cost of solar panels dropped exponentially, resulting in the increasing adoption of solar PV systems.?

In 2021, around 183 GW of PV systems were installed and commissioned globally, reaching a cumulative installed capacity of approximately 940 GW of PV at the end of 2021. ? ?

Some of the major markets, such as the Chinese market, grew with 54.9 GW installed PV capacity in 2021, representing about 31% of the global market. Following China, the United States ranked second with around 23 GW of annual installations in 2021. The European Union followed with an increased market of 26.8 GW, followed by India with about 13 GW installed. ?

The Middle-East, is also expected to be one of the fastest-growing markets owing to the increasing concerns of governments of major countries towards clean energy, decreasing the carbon footprint, and energy security. Countries like Israel, UAE, Saudi Arabia, etc., are expected to drive the market's demand over the forecast period.?

According to the US Energy Information Agency (EIA), in 2021, about 4,116 billion kilowatt-hours (kWh) (or about 4.12 trillion kWh) of electricity were generated at utility-scale power generation facilities in the United States. About 61% of this power generation was from fossil fuel, 19% was from nuclear energy, and about 20% was from renewable energy sources. ?

Therefore, owing to the above factors, the solar photovoltaic (PV) segment is likely to dominate the solar energy market during the forecast period.

Asia-Pacific Expected to Dominate the Market

Asia-Pacific, in recent years, has been the primary market for solar energy installations. With an additional installed capacity of around 75.7 GW in 2021, the region held a market share of about 57.2% of the global solar power installed capacity.

The Levelized Cost of Energy (LCOE) for solar PV in the last decade reduced by more than 85%, because of which developing countries in the region, such as Indonesia, Malaysia, and Vietnam, saw an increase in solar energy installation capacity in their total energy mix.

China is a major contributor to the solar energy market's growth in Asia-Pacific and globally. China had a total installed solar PV capacity of about 306.4 GW as of 2021, representing an increase of 21% from that of 2020. According to China's National Energy Administration (NEA), its newly installed solar PV capacity reached around 53 GW in 2021. Of this capacity, around 29 GW came from distributed solar power generation projects, and the remaining shares came from the large-scale solar plants.

China already achieved its solar energy goal in 2020, two years ahead of the schedule. In China, most of the solar PV projects are concentrated in the eastern and southern parts of the country. In these two regions, the economy is the most prosperous. These regions also have the maximum demand for solar power. China has also secured the position of the largest solar panel technology manufacturer in the world. As of 2021, the country manufactured more than 60% of the solar panels across the world. China's dominance in solar panel manufacturing is evident from the fact that out of the top ten solar panel manufacturers in the world, seven are Chinese firms. ?

In June 2021, the National Thermal Power Corporation (NTPC) declared that it will be building a 4.75 GW solar PV plant in the Rann of Kutch in Gujarat, India, as a part of its efforts in building a 60 GW renewable energy portfolio by 2032. The cost of the project is estimated to be USD 3.31 billion, and the project is expected to enter intocommercial operation in 2023. Such large-scale utility projects are expected to increase the adoption of solar energy during the forecast period.

In December 2021, the Power Development Department (PDD) of Ladakh signed a power purchase agreement (PPA) with Solar Energy Corporation of India (SECI) for buying 50 MW DC solar power.

nIn March 2022, Alibaba Group's logistics arm Cainiao Network started to use distributed solar power generated by rooftop solar

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panels installed on 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 rooftop, that can store 7.862 MW of energy, with an annual power output of over 8 million kilowatts hour, which is 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, by 2023, Cainiao and its partners expect to install rooftop PV generation systems on Cainiao's bonded warehouses spanning a combined 500,000 square meters.

Therefore, owing to the above factors, Asia-Pacific is expected to dominate the solar energy market during the forecast period.

Solar Energy Market Competitor Analysis

The solar energy market is fragmented in nature. Some of the key players in the market (in no particular order) include Canadian Solar Inc., JinkoSolar Holding Co. Ltd, Trina Solar Co. Ltd, SunPower Corporation, and LONGi Green Energy Technology Co. Ltd. among others.

Additional Benefits:

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

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