

Grid Connected PV Systems Market Estimate to Hit \$210.9 Billion by 2032

The grid-connected PV systems market grows with rising energy demand, urbanization, rooftop solar installations, and smart city solar adoption.

WILMINGTON, DE, UNITED STATES, December 2, 2024 /EINPresswire.com/ -- According to the report, the grid <u>connected pv systems market size</u> was valued at \$61.6 billion in 2023, and is estimated to reach \$210.9 billion by 2033, growing at a CAGR of 13.6% from 2024 to 2033.

Prime Determinants of Growth

The grid-connected PV systems market is driven by increasing government



incentives and regulations promoting renewable energy adoption, along with declining solar panel costs and advancements in PV technology, which make solar power more accessible and cost-effective. However, the market faces restraints due to the high initial installation costs and challenges related to grid integration and energy storage, which can limit widespread adoption. Furthermore, advancements in energy storage solutions and smart grid technologies offer significant growth potential. These innovations enable more efficient energy management and enhance the reliability of PV systems, paving the way for expanded use in both residential and commercial applications, particularly in regions with high solar energy potential.

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Based on components, the grid connection equipment sub-segment held the highest market share in 2023.

The driving factor for the grid connection equipment component sub-segment in the grid-

connected PV systems market is the growing demand for efficient and reliable integration of solar power with existing electrical grids. Advances in inverter technology, smart grid components, and energy storage solutions enhance the stability and performance of solar power systems, supporting increased adoption and enabling seamless energy transfer between solar installations and the grid.

Based on technology, the thin film sub-segment held the highest market share in 2023.

In the grid-connected PV systems market, the thin-film technology sub-segment is driven by its advantages of lower production costs, flexibility, and lightweight properties. These characteristics make thin-film panels ideal for diverse installations, including on curved surfaces and in limited space applications. Additionally, advancements in thin-film efficiency and durability contribute to its growing adoption, enhancing overall market appeal and enabling broader deployment of solar energy solutions.

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Based on grid type, the grid connected sub-segment held the highest market share in 2023.

The grid-connected sub-segment of the PV systems market is driven by increasing demand for renewable energy, favorable government policies, and declining solar panel costs. Urbanization and the need for sustainable energy solutions in residential and commercial sectors also boost adoption. Technological advancements, such as smart inverters and energy storage integration, enhance grid stability and efficiency, further propelling the growth of grid-connected PV systems in various regions.

Based on application, the industrial sub-segment held the highest market share in 2023.

The industrial application segment of the grid-connected PV systems market is driven by the growing need for energy efficiency and sustainability in manufacturing processes. Industries are increasingly adopting PV systems to reduce operational costs, meet regulatory requirements for carbon emissions, and ensure energy security. Additionally, advancements in solar technology and government incentives are encouraging industrial sectors to invest in large-scale PV installations, enhancing overall grid reliability.

Based on region, Asia-pacific held the highest market share in 2023.

The Asia-Pacific grid-connected PV systems market is driven by increasing government support for renewable energy initiatives, rapidly declining costs of solar PV technology, and rising electricity demand in emerging economies. Favorable policies, such as feed-in tariffs and tax incentives, coupled with large-scale solar projects in countries like China and India, further boost the market. Additionally, growing environmental concerns and the need for energy security accelerate the adoption of grid-connected PV systems in the region.

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Key Players in the Market

ABB

Canadian Solar Inc.

Delta Electronics Inc.

Emeren Group Ltd.

First Solar Inc.

Flin Technologies Pvt. Ltd.

Hanwha Corp.

Huawei Technologies Co. Ltd.

JA Solar Technology Co. Ltd.

JinkoSolar Holding Co. Ltd.

These players have adopted different strategies such as collaborations, new product launches, expansions, agreements, joint ventures, and others to fuel their market share and maintain dominance in globally.

In September 2020, First Solar Japan and Toshiba Energy Systems & Solutions Corporation partnered to build the Yatsubo and Ikeda Solar Power Plants in Tochigi Prefecture, Japan. These mega solar projects, connected to Japan's electricity grid, enhance the country's renewable energy capacity. They exemplify the growing adoption of grid-connected PV systems, contributing to sustainable power generation and grid reliability.

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In addition to providing a detailed analysis of key players in the global market, the report is valuable in highlighting business performance, operating segments, product portfolio, and strategic moves of market players to showcase the competitive scenario.

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