Next-Generation Solar Cell Market Size, Share, Competitive Landscape and Trend Analysis Report

The Business Research Company's Next-Generation Solar Cell Global Market Report 2025 – Market Size, Trends, And Global Forecast 2025-2034

The Business Research Company

LONDON, GREATER LONDON, UNITED KINGDOM, October 17, 2025 /EINPresswire.com/ -- How Large Will The Next-Generation Solar Cell Market Be By 2025?

The market size for next-generation solar cells has seen a swift expansion in recent periods. Its growth is expected to shoot up from $2.95 billion in 2024 to $3.43 billion in 2025, with a Compound Annual Growth Rate (CAGR) of 16.2%. Factors that contributed to the growth during the historical period include intensifying worries about the effect of standard energy, surges in urbanization and population, increased use of PV modules, a burgeoning demand for renewable energy, and an increase in approvals for the integration of smart grids and energy storage solutions.

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In the coming years, a swift expansion is anticipated in the market size of next-generation solar cells. This sector is predicted to surge to a worth of $6.15 billion by 2029, boasting a compound annual growth rate (CAGR) of 15.7%. This predicted growth over the forecasted years can be attributed to several factors, including the escalating demand for energy, growing environmental concern and sustainability targets, the proliferation of photovoltaic cell use, the increasing integration of intelligent grid and energy storage solutions, and an enhanced demand for electricity in urban areas. Key trends to look out for in the forecast period incorporate state-of-the-art technology designs, improvements in manufacturing processes, progress in perovskite and organic photovoltaics, technological advancements such as thin-film technology, and a transition towards eco-friendly energy sources.

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What Are The Major Driving Forces Influencing The Next-Generation Solar Cell Market Landscape?

The anticipated rise in electricity demand is predicted to fuel the expansion of the next-generation solar cell market. Factors such as urbanization, population growth, industrialization and the heightened usage of electric vehicles and electronic items are contributing to the surging demand for electricity. Next-generation solar cells offer higher efficiency, lower costs and superior performance across different conditions, making solar power more reliable and readily available. For example, in January 2024, the International Energy Agency (IEA), an independent intergovernmental organization based in France, revealed global electricity demand increased 2.2% in 2023 and is projected to rise by 3.4% per year until 2026. Additionally, the US saw a 2.6% increase in electricity demand in 2022. Hence, the escalating demand for electricity in urban locales propels the growth of the next-generation solar cell market.

Who Are The Top Players In The Next-Generation Solar Cell Market?

Major players in the Next-Generation Solar Cell include:
• Panasonic Corporation
• Mitsubishi Chemical Holdings
• Sharp Corporation
• JinkoSolar Holding Co.Ltd
• Trina Solar
• Canadian Solar
• First Solar Inc.
• Kaneka Corporation
• SunPower Corporation
• Yingli Solar

What Are The Key Trends Shaping The Next-Generation Solar Cell Industry?

Prominent companies engaged in the next-generation solar cell market are concentrating on advanced technology development, such as pioneering N-Type tunnel oxide passivated contacts (TOPCon) technology. This innovation aims to boost efficiency, lower costs, and improve the overall performance and dependability of solar energy systems. The N-type TOPCon technology contributes to the improvement of solar modules' efficiency and lifespan by decreasing surface recombination and aiding the extraction of carriers. For example, Navitas Solar, a module manufacturing company from India, introduced in February 2024 its new N-type TOPCon solar modules to the next-generation market. These new modules carry a 12-year product and 30-year performance warranty, are created with 182 mm (M10) 16BB, half-cut cells, and can produce power ranging from 560 to 630 watts. Moreover, the efficiency of these modules exceeds 22%.

Market Share And Forecast By Segment In The Global Next-Generation Solar Cell Market

The next-generation solar cellmarket covered in this report is segmented –

1) By Type: On-Grid, Off-Grid
2) By Material Type: Transceivers, Cadmium Telluride (CdTe), Copper Indium Gallium Selenide (CIGS), Amorphous Silicon (a-Si), Gallium-Arsenide (GaAs), Other Material Types
3) By Application: Residential, Commercial, Other Applications

Suubsegments:
1) By On-Grid: Residential On-Grid Systems, Commercial On-Grid Systems, Industrial On-Grid Systems
2) By Off-Grid: Residential Off-Grid Systems, Commercial Off-Grid Systems, Industrial Off-Grid Systems

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Next-Generation Solar Cell Market Regional Insights
In 2024, North America led the market for next-generation solar cells, with Asia-Pacific predicted to experience the most rapid growth in the future. The next-generation solar cell market report encompasses regions such as Asia-Pacific, Western Europe, Eastern Europe, North America, South America, Middle East, and Africa.

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