Thin-Film Photovoltaic Market by Material (Cadmium Telluride (CDTE), Amorphous Silicon (A-SI), Perovskite, Copper Indium Gallium Selenide (CIGS), Organic PV, Copper Zinc Tin Sulfide (CZTS), Component (Module, Inverter, BOS) - Global Forecast to 2028

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Report description:

The thin-film photovoltaic market is projected to grow from USD 5.3 billion in 2023 to USD 11.2 billion by 2028, registering a CAGR of 16.0% during the forecast period. Some of the major factors driving the growth of the thin-film photovoltaic market include the increasing government initiatives towards thin-film solar cells and the growing adoption of thin-film solar cells in residential applications. However, competition from traditional crystalline silicon solar cells act as a challenge for the market in the future. The major growth opportunities for the market players are ongoing technologies/material development in thin-film solar cell manufacturing.

"Market for Cadmium Telluride (CdTe) have the highest share during the forecast period"

The cadmium telluride (CdTe) segment of the thin-film photovoltaic market is expected to account for the highest CAGR in the forecast period. Among all solar panel varieties, CdTe has the lowest carbon footprint, water need, and energy payback period. It also shares the same low-cost advantage as polycrystalline cells. Further, the increasing investment in this material is driving the market growth. Recently in August 2022, the US Department of Energy (DOE) announced its investment of USD 20 million toward the R&D of CDTE-based thin-film PV modules through a newly setup CdTe Accelerator Consortium (CTAC) to increase cell efficiencies of CDTE-based solar panels from 22to 24% by 2025 and above 26% by 2030 while steadily reducing the per-watt cost of manufacturing.

"Utilities end user had the highest share in 2023"

The utility segment held the largest market share in 2023, and a similar trend is expected during the forecast period. The solar power plants are environmentally friendly; therefore, governments across several countries promote the installation of such

plants. Thus, governments' special schemes and financial support for the installation of solar power projects are expected to boost the demand for PV systems to be instaslled for utility applications during the forecast period.

"North America to witness the second highest growth among other regions during forecast period"
North America is expected to dominate the thin-film photovoltaic market during the forecast period. The governments in the US, and Canada have taken several initiatives, such as the National Community Solar Partnership and Climate Action Incentive Fund, to promote the use of PV modules in North America. A few key players in the photovoltaic market in North America such as First Solar (US). The region is also home to several solar tracker providers, such as NEXTracker (US), AllEarth Renewables (US), and Array Technologies (US).

In determining and verifying the market size for several segments and subsegments gathered through secondary research, extensive primary interviews have been conducted with key industry experts in the thin-film photovoltaic market. The break-up of primary participants for the report has been shown below:
-By company type: Tier 1 - 35 %, Tier 2 - 45%, and Tier 3 - 20%
-By designation: C-Level Executives - 35%, Managers - 25%, and Others - 40%
-By region: North America - 45%, Europe - 20%, Asia Pacific - 30%, and RoW - 5%
The report profiles key players in the thin-film photovoltaic market with their respective market ranking analyses. Prominent players profiled in this report include First Solar (US), Kaneka Corporation (Japan), Ascent Solar Technologies (US), Oxford PV (UK), Hanwha Q CELLS (South Korea), Sharp Corporation (Japan), JA Solar Technology Co. Ltd (China), MiaSole (US), AVANCIS GmbH (Germany), Solbian (Italy), among others.
Research coverage
This research report categorizes the thin-film photovoltaic market based on material, component, end user, and region. The report describes the major drivers, restraints, challenges, and opportunities pertaining to the thin-film photovoltaic market and forecasts the same till 2028. The report also consists of leadership mapping and analysis of companies in the thin-film photovoltaic ecosystem.
Reasons to buy this report:
The report will help the market leaders/new entrants in this market with information on the closest approximations of the revenue numbers for the overall thin film photovoltaic market and the subsegments. This report will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and to plan suitable go-to-market strategies. The report also helps stakeholders understand the pulse of the market and provides them with information on key market drivers, restraints, challenges, and opportunities.
The report provides insights on the following pointers:
- Analysis of key drivers (Increasing government-led initiatives related to thin-film solar cells, growing adoption of thin-film solar cells in residential sector, and increasing investments in renewable energy), restraints (Availability of substitutes and high installation cost and lack of skilled workforce for photovoltaic installation), opportunities (Integration of thin-film solar cells into windows, facades, and roofs and ongoing technological/material developments in thin-film solar cell manufacturing), and challenges (Growing popularity of traditional crystalline silicon solar cells in large-scale solar installations) influencing the growth of the thin film photovoltaic market

- Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product & service launches in the thin film photovoltaic market

- Market Development: Comprehensive information about lucrative markets - the report analyses the thin film photovoltaic market across varied regions

- Market Diversification: Exhaustive information about new products & services, untapped geographies, recent developments, and

investments in the thin film photovoltaic market

- Competitive Assessment: In-depth assessment of market shares, growth strategies and service offerings of leading players like First Solar (US), Kaneka Corporation (Japan), Ascent Solar Technologies (US), among others in the thin film photovoltaic market.

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