Thin-Film Solar Cell Market Worth $25.3 Billion by 2030

Global Thin-Film Solar Cell Market projected to grow at a CAGR of 8.4% from 2021 to 2030

WILMINGTON, DE, UNITED STATES, December 17, 2024 / EINPresswire.com/ --

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According to a new report published by Allied Market Research, the thin-film solar cell market size was valued at $11.3 billion in 2020, and is projected to reach $25.3 billion by 2030, growing at a CAGR of 8.4% from 2021 to 2030.

A thin-film solar cell is a second-generation solar cell that is made by depositing one or more thin layers, or thin-film (TF) of photovoltaic material on a substrate, such as glass, plastic, or metal. Thin-film solar cells are commercially used in several technologies, including cadmium telluride (CdTe), copper indium gallium diselenide (CIGS), and amorphous thin-film silicon (a-Si, TF-Si). Thin-film solar cells are cost-effective and is an efficient way to transform sunlight into electricity. These films own the property of bandgap and requires 10 times lesser quantity of material to absorb light as compared to silicon.

> “Technological evolution of thin film solar cell, increasing solar power demand and rise in urbanization are the current trend expected to influence the Global Thin film solar cell Market.”
>
> *Allied Market Research*

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Asia-Pacific dominated the global thin-film solar cell market in 2020, and is projected to remain the fastest-growing segment during the forecast period. This is attributed to numerous factors such as a large consumer

base and industrialization & urbanization.

The key players operating and profiled in the global thin-film solar cell industry report include Ascent Solar Technologies, Filsom AG, First Solar, Hanergy mobile energy, Kaneka corporation, Miasole, Mitsubishi Heavy Industries, Shunfeng International Clean Energy, SUNQ, and Trony Solar.

The thin-film solar cell market is anticipated to witness considerable growth during the forecast period. This is attributed to factors such as rise in demand for rooftop solar among residential & commercial application is the important factor of pushing the market growth.

The factors that drive the market growth are increase in awareness toward green energy, rise in energy consumption across the globe, growth in installation flexibility, and cost & performance efficiency of thin-film solar cell.

Rise in environmental concerns and increase in research activities in the field of thin-film solar cells provide a substantial growth opportunity to market.

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Rise in product modernization and technological advancement is anticipated to create new opportunities for thin-film solar cell market in the coming years.

High initial manufacturing cost and technological complexity associated with the use of thin-film solar cells hamper the market growth.

Thin-films are easier to work with and utilize low cost substrate that make them relatively cheaper compared to silicon. Moreover, several research activities resulted into the increased efficiency of thin-film solar cell, which beat multi-crystalline silicon cells.

Depending on type, the market is categorized into cadmium telluride, amorphous thin-film silicon, copper indium gallium selenide, microcrystalline tandem cells, thin-film polycrystalline silicon, and others. Cadmium telluride segment holds the largest thin-film solar cell market share in 2020.

According to installation, it is divided into on-grid and off-grid. The on-grid segment accounted for the largest market share in 2020.

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As per the end user, it is classified into residential, commercial, and utility. The utility segment accounted for the largest market share in 2020.

COVID-19 Impact on the Market

The manufacturing of thin-film solar cell was halted for a specific period due to high peak of COVID-19 situation, which significantly impacted the sales of thin-film solar cell.

Sales of thin-film solar cell are directly proportional to the demand for solar panels. Solar projects have been negatively impacted amid the lockdown imposed due to the COVID-19 outbreak and recorded a huge decline in sales of thin-film solar cell.

Construction plays a vital role in the development of solar industry. The COVID-19 pandemic severely impacted integrated construction industry across the globe. Factors include disruption due to migration of workers and unavailability of material. However, decrease in construction activity significantly impacted the thin-film solar cell market.

COVID-19 impacted almost all industries by hindering various industrial operations and disrupting the supply chain. Maximum companies halted their operation due to less workforce. However, there is a sluggish decline in the global thin-film solar cell market due to impact of COVID-19.

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Import and export activities were significantly impacted, which, in turn, adversely affected the industries using thin-film solar cell, thereby affecting the global thin-film solar cell market.

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Thin-Film Solar Cell Market

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