

Photovoltaics (PV) Films Market by Raw material (EVA, PVB, POE), Application (Ground-mounted PV, Building-integrated PV) - Forecast to 2034

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Abstracts

The photovoltaics (PV) films market size is projected to grow from USD 14.05 billion in 2025 to USD 29.01 billion by 2030, registering a CAGR of 15.6% during the forecast period.

The main driver is the increasing emphasis on sustainability, as countries and industries push for low-carbon energy systems, which require durable encapsulants for solar panels for long-lasting energy production and efficiency. Recent material trends include new encapsulation materials, namely, the movement away from EVA in favor of non-EVA materials like polyvinyl butyral (PVB) and thermoplastic polyurethane (TPU). It is critical due to the extreme climate conditions faced by the countries, and these encapsulation materials have superior UV stability and outstanding mechanical strength. Lightweight and flexible encapsulation films have also emerged, particularly related to applications in building-integrated photovoltaic (BIPV) systems and off-grid systems.

“POE raw material to account for the fastest-growth of photovoltaics (PV) films market in terms of value, during the forecast period”

Polyolefin elastomers (POEs) continue to be the fastest-growing product segment in the photovoltaics films market due to their superior performance properties when compared with conventional materials such as EVA. While there are many drivers behind POE's rapid growth, one of the biggest reasons is POE film's superior moisture resistance, which leads to a lower likelihood of Potential Induced Degradation (PID), a well-known risk when operating in humid and high-voltage environments. POE is also very thermally stable and UV stable, which contributes to a ,longer-lasting transparent layer on the

solar panels for high performance and durability, especially in extreme weather environments. POE is particularly suited for most modern module technologies, including bifacial modules and high-efficiency solar cells, which are constantly deployed in utility-scale solar projects.

“Ground-mounted PV to account for the fastest growth of the photovoltaics (PV) films market in terms of value, during the forecast period”

Ground-mounted PV systems are the fastest-growing segment in the photovoltaic film market because they are widely found in utility-scale and large commercial solar projects. Ground-mounted PV systems are mainly found in open and unshaded spaces with high-capacity arrays, making them ideally suited to create bulk power. In many regions, active development of utility-scale solar farms is occurring to meet the clean renewable energy requirements from emerging economies and large energy consumers, such as China, India, the US, and countries in the Middle East. Subsequently, there is a strong demand for long-term reliability and protection against the harsh environment in which these solar modules are utilized. Therefore, there is a pressing demand for durable, high-performance encapsulation films for solar modules that will provide reliability for many years or decades, depending on the location and use of the module, specifically with respect to exposure to UV rays, heat, and moisture.

“Asia Pacific is projected to be the fastest-growing region in the photovoltaics (PV) films market in terms of value, during the forecast period”

Asia Pacific is the fastest-growing region in the photovoltaics films market because of the rapidly growing solar energy capacity, government support, and a robust manufacturing ecosystem. Growing solar capacity in the region, particularly in China, India, Japan, and South Korea, is driven by reducing carbon emissions, increasing energy demands, and bolstering energy independence. China is the largest producer and consumer of solar panels and an integral player in the global supply chain, which includes the manufacture of photovoltaic encapsulation films. Favorable policies, subsidies, and renewable energy targets are fueling the expansion of solar across the region. Meanwhile, government action, such as the National Solar Mission and state incentives, are driving utility-scale and rooftop solar projects in India. The combination of abundant sunlight, low-cost labor, and a growing commitment to solar across the Asia Pacific is also a boon for the photovoltaics films market. Additionally, Asia Pacific includes many leading encapsulant film manufacturers, which facilitate new product innovation and support pricing efficiencies.

In-depth interviews were conducted with Chief Executive Officers (CEOs), marketing directors, other innovation and technology directors, and executives from various key organizations operating in the photovoltaics films market, and information was gathered from secondary research to determine and verify the market size of several segments.

By Company Type: Tier 1 – 50%, Tier 2 – 30%, and Tier 3 – 20%

By Designation: Managers– 15%, Directors – 20%, and Others – 65%

By Region: North America – 30%, Europe – 20%, Asia Pacific – 40%, Rest of the World – 10%.

The Photovoltaics (PV) Films market comprises major players, such as H.B. Fuller Company (US), 3M (US), Kuraray Co., Ltd (Japan), JA SOLAR Technology Co., Ltd. (China), Borealis AG (Austria), Jiangsu Sveck Photovoltaic New Material Co., Ltd (China), HANGZHOU FIRST APPLIED MATERIAL CO.,LTD. (China), Shanghai HIUV New Materials Co.,Ltd. (China), Guangzhou Lushan New Materials Co., Ltd. (China), Betterial (China), Mitsui Chemicals, Inc. (Japan), Hanwha Group (South Korea), Zhejiang Sinopont Technology Co.,Ltd. (China), and Cybrid Technologies Inc. (China). The study includes in-depth competitive analysis of these key players in the photovoltaic films market, with their company profiles, recent developments, and key market strategies.

Research Coverage

This report segments the market for photovoltaic films market on the basis of raw material, application, and region, and provides estimations for the overall value of the market across various regions. A detailed analysis of key industry players has been conducted to provide insights into their business overviews, products & services, key strategies, and expansions associated with the market for photovoltaic films.

Key benefits of buying this report

This research report is focused on various levels of analysis — industry analysis (industry trends), market ranking analysis of top players, and company profiles, which together provide an overall view of the competitive landscape, emerging and high-growth segments of the photovoltaic films market; high-growth regions; and market drivers, restraints, opportunities, and challenges.

The report provides insights on the following pointers:

Analysis of drivers: (Demand for high-performance films to enhance solar panel longevity and protection), restraints (Lack of effective recycling process for used photovoltaic films), opportunities (Innovations in encapsulation materials elevate panel efficiency and performance, driving investments), and challenges (Performance Concerns of solar films in regions with climate variability).

Market Penetration: Comprehensive information on the Photovoltaic Films market offered by top players in the Photovoltaic Films market.

Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, product launches, partnerships, agreements, joint ventures, collaborations, announcements, awards, and expansions in the market.

Market Development: Comprehensive information about lucrative emerging markets. The report analyzes the markets for photovoltaic films across regions.

Market Capacity: Production capacities of companies producing photovoltaic films are provided wherever available with upcoming capacities.

Competitive Assessment: In-depth assessment of market shares, strategies, products, and manufacturing capabilities of leading players in the photovoltaic films market.

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