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Global Low-Carbon PV Encapsulation Film Market 2026 by Manufacturers, Regions, Type and Application, Forecast to 2032

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Abstracts

According to our (Global Info Research) latest study, the global Low-Carbon PV Encapsulation Film market size was valued at US$ 1574 million in 2025 and is forecast to a readjusted size of US$ 3413 million by 2032 with a CAGR of 11.7% during review period.

In 2025, the global production of low-carbon PV encapsulant film was approximately 900 million square meters,with an average selling price of approximately US$1.7 per square meter, a gross profit margin of approximately 35%, and a single production line capacity of approximately 20 million square meters per year. Low-carbon PV encapsulant film refers to PV module encapsulation materials that, while maintaining or even improving the performance of traditional PV encapsulant films (such as high light transmittance, strong adhesion, and anti-PID performance), significantly reduce their carbon footprint throughout their entire lifecycle by using green raw materials, clean energy production, and efficient processes. It is a crucial link in the PV industry chain's move towards 'green manufacturing' and achieving 'low-carbon throughout the entire lifecycle.' The upstream supply chain of low-carbon PV encapsulant film revolves around polymer materials such as POE/EPE and anti-aging additives, relying on petrochemical companies and specialty chemical suppliers. The midstream involves precision co-extrusion, casting, and curing processes to form thin film products, requiring strict cleanliness and process control. The downstream directly connects with PV module manufacturers, used to encapsulate solar cells to form a protective structural layer. The demand stems from the continuous expansion of photovoltaic power generation capacity driven by the global energy transition, exhibiting a dual-driven characteristic of 'technological upgrading' and 'capacity expansion'.

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Key market drivers for low-carbon PV encapsulant film: 1. Global carbon neutrality regulations and trade barriers: Policies such as the EU's 'Carbon Border Adjustment Mechanism' and the US 'Reduce Inflation Act' incorporate product carbon footprint into costs, directly driving rigid demand for low-carbon PV products. 2. Downstream procurement requirements for 'zero-carbon modules': International energy companies and large utility companies explicitly require modules to provide full life-cycle carbon footprint certification in their procurement, making low-carbon encapsulant films a core technological path for modules to meet this requirement. 3. The PV industry's own pursuit of sustainable development: To solidify its pure green energy image, leading PV companies are actively building differentiated competitive advantages and enhancing brand value through supply chain decarbonization. 4. Technological maturity and cost optimization: Large-scale production via bio-based and other pathways has gradually narrowed the cost premium of low-carbon encapsulant films, making commercial promotion economically feasible.

This report is a detailed and comprehensive analysis for global Low-Carbon PV Encapsulation Film market. Both quantitative and qualitative analyses are presented by manufacturers, by region & country, by Type and by Application. As the market is constantly changing, this report explores the competition, supply and demand trends, as well as key factors that contribute to its changing demands across many markets. Company profiles and product examples of selected competitors, along with market share estimates of some of the selected leaders for the year 2025, are provided.

Key Features:

Global Low-Carbon PV Encapsulation Film market size and forecasts, in consumption value ($ Million), sales quantity (Sq m), and average selling prices (US$/Sq m), 2021-2032

Global Low-Carbon PV Encapsulation Film market size and forecasts by region and country, in consumption value ($ Million), sales quantity (Sq m), and average selling prices (US$/Sq m), 2021-2032

Global Low-Carbon PV Encapsulation Film market size and forecasts, by Type and by Application, in consumption value ($ Million), sales quantity (Sq m), and average selling prices (US$/Sq m), 2021-2032

Global Low-Carbon PV Encapsulation Film market shares of main players, shipments in revenue ($ Million), sales quantity (Sq m), and ASP (US$/Sq m), 2021-2026

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The Primary Objectives in This Report Are:
To determine the size of the total market opportunity of global and key countries
To assess the growth potential for Low-Carbon PV Encapsulation Film
To forecast future growth in each product and end-use market
To assess competitive factors affecting the marketplace

This report profiles key players in the global Low-Carbon PV Encapsulation Film market based on the following parameters - company overview, sales quantity, revenue, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Hangzhou First Applied Material Co., Ltd, Jiangsu Sveck Photovoltaic Technology Co., Ltd., Shanghai HIUV New Materials Co., Ltd, Suzhou Saintyear Photovoltaic Technology Co., Ltd, Changzhou Betterial Film Technology Co., Ltd., Guangzhou Lushan New Materials Co., Ltd, Mingguan New Materials Co., Ltd., Hangzhou Xiangbang Technology Co., Ltd., Jiangxi Weike New Material Technology Co., Ltd., Suzhou Yisheng Solar Material Co., Ltd., etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Market Segmentation

Low-Carbon PV Encapsulation Film market is split by Type and by Application. For the period 2021-2032, the growth among segments provides accurate calculations and forecasts for consumption value by Type, and by Application in terms of volume and value. This analysis can help you expand your business by targeting qualified niche markets.

Market segment by Type

Bio-based Film

Green Energy Production Film

Process-optimized Low-carbon Film

Market segment by Basic Chemical Materials

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Low-carbon POE Film

Low-carbon EPE Film

Low-carbon EVA Film

Market segment by Application

Single-glass Module

Double-glass Module

Others

Major players covered

Hangzhou First Applied Material Co., Ltd

Jiangsu Sveck Photovoltaic Technology Co., Ltd.

Shanghai HIUV New Materials Co., Ltd

Suzhou Saintyear Photovoltaic Technology Co., Ltd

Changzhou Betterial Film Technology Co., Ltd.

Guangzhou Lushan New Materials Co., Ltd

Mingguan New Materials Co., Ltd.

Hangzhou Xiangbang Technology Co., Ltd.

Jiangxi Weike New Material Technology Co., Ltd.

Suzhou Yisheng Solar Material Co., Ltd.

Guangdong Baojun New Material Technology Co., Ltd.

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Changshu Tegu New Material Technology Co., Ltd.

Market segment by region, regional analysis covers
North America (United States, Canada, and Mexico)
Europe (Germany, France, United Kingdom, Russia, Italy, and Rest of Europe)
Asia-Pacific (China, Japan, Korea, India, Southeast Asia, and Australia)
South America (Brazil, Argentina, Colombia, and Rest of South America)
Middle East & Africa (Saudi Arabia, UAE, Egypt, South Africa, and Rest of Middle East & Africa)

The content of the study subjects, includes a total of 15 chapters:

Chapter 1, to describe Low-Carbon PV Encapsulation Film product scope, market overview, market estimation caveats and base year.

Chapter 2, to profile the top manufacturers of Low-Carbon PV Encapsulation Film, with price, sales quantity, revenue, and global market share of Low-Carbon PV Encapsulation Film from 2021 to 2026.

Chapter 3, the Low-Carbon PV Encapsulation Film competitive situation, sales quantity, revenue, and global market share of top manufacturers are analyzed emphatically by landscape contrast.

Chapter 4, the Low-Carbon PV Encapsulation Film breakdown data are shown at the regional level, to show the sales quantity, consumption value, and growth by regions, from 2021 to 2032.

Chapter 5 and 6, to segment the sales by Type and by Application, with sales market share and growth rate by Type, by Application, from 2021 to 2032.

Chapter 7, 8, 9, 10 and 11, to break the sales data at the country level, with sales quantity, consumption value, and market share for key countries in the world, from 2021 to 2026.and Low-Carbon PV Encapsulation Film market forecast, by regions, by Type, and by Application, with sales and revenue, from 2027 to 2032.

Chapter 12, market dynamics, drivers, restraints, trends, and Porters Five Forces analysis.

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Chapter 13, the key raw materials and key suppliers, and industry chain of Low-Carbon PV Encapsulation Film.

Chapter 14 and 15, to describe Low-Carbon PV Encapsulation Film sales channel, distributors, customers, research findings and conclusion.

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