

India Solar Encapsulation Market Assessment, By Type [Ethylene-Vinyl Acetate, Polyolefin Elastomer, Others], By Panel Type [Monocrystalline Solar Panels, Polycrystalline Solar Panels, Thin-Film Solar Panels, Others], By Application [Rooftop Solar Systems, Building-Integrated Photovoltaics, Solar Farms, Others], By Region, Opportunities and Forecast, FY2019-FY2033F

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Report description:

India solar encapsulation market is projected to witness a CAGR of 10.20% during the forecast period FY2026- FY2033F, growing from USD 227.25 million in FY2025 to USD 494.26 million in FY2033. The market for solar encapsulation has witnessed strong growth in recent years, driven by the achievement of renewable energy targets and favorable government policies promoting the adoption of solar technologies. This upward trend is expected to continue with a steady growth rate in the coming years. India is committed to achieving its ambitious solar power capacity goals, which necessitate the use of efficient and reliable solar photovoltaic (PV) systems. This, in turn, is driving the demand for solar encapsulation materials. These materials enhance the efficiency and durability of solar panels, especially under extreme climatic conditions, thereby supporting the need for high-quality solar panel production.

In addition, the government is implementing measures in the installation of solar panels that have improved local manufacturing capacity within the nation. Government program favors production and the supply chain of the raw materials applied in the production of solar panels. Besides, solar panel manufacturers are investing in research and development to refine encapsulation materials that are resilient enough to withstand harsh weather conditions, which is expected to drive growth in the solar encapsulation market in the coming years. In addition, the reduced cost of solar PV modules, combined with government support through tax incentives and subsidies, is increasing the use of solar energy across various regions of the country, thereby propelling the demand for solar encapsulation in the market.

As of April 2025, India's cumulative installed solar power capacity has reached approximately 107.95 GW. This includes 82.39 GW

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from ground-mounted solar plants, 17.69 GW from grid-connected rooftop systems, 2.89 GW from hybrid projects, and 4.98 GW from off-grid installations. The country added 23.83 GW of solar capacity in FY2024-25, marking a significant increase over the 15.03 GW added in the previous year. This growth underscores India's commitment to expanding its renewable energy infrastructure and achieving its ambitious target of 500 GW of non-fossil fuel energy capacity.

Adoption of Technologically Advanced Solar Energy Solutions Creates Market Growth

Adopting technologically advanced solar energy solutions is driving market demand for solar encapsulation by enhancing the performance, durability, and versatility of photovoltaic (PV) systems. Innovations such as bifacial panels, heterojunction technology (HJT), and tandem solar cells require high-quality encapsulants capable of withstanding elevated temperatures. The advanced panels manufactured with high-quality encapsulation material are able to capture high sunlight. Advanced solar energy technologies are an efficient way to maximize energy generation in a cost-effective manner which contributes to the rise in demand for solar encapsulation in the market. Companies are engaged in the production of innovative solar panels which could increase solar power production.

For instance, in September 2024, Sharp decided to launch a 450 W bifacial TOPCon module with 22.52% efficiency. The product is an IEC61215-and IEC61730-certified solar panel with an operating temperature coefficient of -0.29% per. The launch of innovative solar panel products drives the demand for efficient solar encapsulation in the market.

The country is focusing on the development of community solar projects, which is driving the demand for advanced solar panels in the market. Both utility and household sectors are increasingly investing in advanced solar technologies for these projects, thereby contributing to the growth of the solar encapsulation market in the coming years. Moreover, utility-scale and rooftop installation projects are adopting cost-effective technologies that generate large amounts of clean energy. Additionally, the integration of energy storage systems with solar panels has increased the need for encapsulation materials to support hybrid technologies. The capabilities of advanced solar energy solutions are enabling producers to develop more efficient solar systems in the market.

Government Policies and Initiatives Regarding Solar Panel Manufacturing Create Market Opportunity

India is establishing aggressive targets for renewable energy to minimize its reliance on fossil fuels and respond to climate change. To realize the established objectives, the nation is optimizing green energy from the increasing installations of solar energy in the household and for commercial purposes which increases demand for advanced encapsulation of the solar in the market. Based on the incorporation of advanced solar encapsulation material, the panel's potential of generating solar energy in the difficult climate is improved.

Moreover, increasing government policies and initiatives on solar panel production are generating large market opportunities for solar encapsulation materials in the next few years. In India, the Union Budget for FY2025-FY2026 has set aside considerable investments to increase renewable energy, such as a special USD 1.1 billion for the development of solar infrastructure. These encompass big solar parks and roof-mounted installations, which increase the production capacity of solar panels and thus fuel the demand for solar encapsulation in the market.

In January 2025, The Ministry of New and Renewable Energy (MNRE) issued the Solar Systems, Devices, and Components Goods Order, 2025, replacing the 2017 order, to enforce stricter quality standards for solar photovoltaic (PV) products. Effective 180 days post-publication, the order mandates that solar PV modules, inverters, and storage batteries conform to the latest Indian Standards and bear the BIS Standard Mark. Minimum efficiency criteria have been set at 18% for mono-crystalline silicon and thin-film PV modules, and 17% for poly-crystalline silicon PV modules. The order applies to all stakeholders in the solar PV market, excluding products meant exclusively for export. The Bureau of Indian Standards (BIS) will oversee certification and enforcement, with penalties for non-compliance as per the BIS Act, 2016. This initiative aims to enhance product reliability, ensure safety, and support India's renewable energy targets.

Ethylene-Vinyl Acetate (EVA) to Dominate the India Solar Encapsulation Market

The use of ethylene-vinyl acetate (EVA) material is on the rise in the Indian solar encapsulation industry due to the growing demand for high-quality encapsulation materials. EVA is preferred for its excellent optical transparency and strong adhesion to both glass and solar cells, making it an ideal choice for protecting photovoltaic modules against environmental stress. Additionally, the Indian government's incentives and policies for solar energy uptake have triggered large investments in solar infrastructure, boosting the demand for EVA encapsulants in the market. The immense expansion of rooftop solar installations for

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residential and commercial purposes also aids in the growth of the segment as these require resilient encapsulation to deliver long-term performance and efficiency. In addition, improvements in the technology used in producing EVA have enhanced its properties making the material more attractive to solar panel makers. Consequently, EVA encapsulation is emerging as a key element in promoting the durability and reliability of solar panels in the market.

West and Central Region Dominate the India Solar Encapsulation Market

The western and central regions have dominated the solar encapsulation market and are expected to continue doing so during the forecast period. In these regions, Gujarat and Maharashtra are actively engaged in solar module and cell manufacturing, which is driving the demand for efficient solar encapsulation materials. These states have emerged as hubs for solar panel production, boosting the demand for encapsulation materials. Additionally, government initiatives promoting renewable energy adoption are further contributing to the market's growth.

For instance, in January 2025, Waaree Energies Limited has started trial production at its 5.4 GW solar cell factory in the Indian state of Gujarat. It is the largest solar cell manufacturing facility in India. This development highlights the rising investment in solar panel production which drives the demand for solar encapsulation in the market.

The Indian government is actively supporting the expansion of solar power projects through new initiatives and programs like solar parks and ultra-mega renewable energy power parks (UMREPPs) which drive the demand for solar panels in the region. The initiatives encourage the adoption of advanced solar technologies and encapsulation materials which could enhance the efficiency and output of solar installations.

Future Market Scenario (FY2026 - FY2033F)

□□The push towards the adoption of solar technologies is another significant trend that drives the demand for the solar encapsulation market.

□□Government policies aimed at promoting solar power infrastructure development are set to boost the demand for solar encapsulations in the country.

□□Integration of renewable energy sources in large-scale industrial applications creates the opportunity for solar encapsulation market growth in coming years.

□□Solar encapsulation material aligns with government goals regarding energy efficiency and sustainability energy policies which drive its market in the forecast period.

Key Players Landscape and Outlook

Continuous innovation characterizes the landscape of solar encapsulations, as companies compete in terms of energy efficiency, product life, and unique features. The market outlook remains positive, owing to increased demand for the integration of renewable energy and automation in the industrial sector. Product launches, agreements, business expansions, collaborations, and developing technologies are projected to increase competition in the fast-paced market.

For instance, in February 2024, RenewSys India Pvt. Ltd. decided to expand 1 GW of TOPCon module capacity, which is scheduled to start production by April 2025. Further, the company plans to add another 2 GW of TOPCon solar module capacity by April 2026 and 2 GW of ethylene vinyl acetate (EVA)/polyolefin (POE)/EPE encapsulation film capacity by Dec. 2024. This development highlights the rising investment in the solar industry which will boost the company market share in the coming years.

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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

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