

FACT SHEET

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SOLAR PHOTOVOLTAIC INDUSTRY

OVERVIEW

It is no secret that dealing with climate change will require a global energy transition away from fossil fuels to renewable energy sources. Among current renewable energy solutions, solar power remains one of the most dominant technologies, primarily due to its high efficiency and cost-effectiveness.

Today, the global energy crisis is opening up new opportunities for solar energy. According to a recent analysis from the International Energy Agency (IEA), global solar PV capacity is set to almost triple during the 2022-2027 period, surpassing coal to become the world's largest source of electric power capacity. The IEA also forecasts an acceleration in the installation of solar panels on residential and commercial rooftops as the cost of traditional energy sources remains high. SABIC partners with other innovators to improve the performance of solar power systems. SABIC offers high quality materials that combine properties such as pressure, temperature resistance, good processability and long lifetimes. In collaboration with renewable energy companies, SABIC is even helping to build solar fields on bodies of water such as lakes. In such applications, the panels float on supports made from SABIC materials where they stay cool and generate energy more efficiently without overheating or using valuable land resources.

INDUSTRY LANDSCAPE

According to a recent report released by the IEA, the world is seeing the signs of emerging diversification in global PV supply chains, with new policies in the United States and India expected to boost local investment in solar manufacturing. Despite these shifts, China will remain the dominant player in solar manufacturing. As a result of measures introduced during the 14th Five-Year Plan, China is expected to account for almost half of new global renewable power capacity between 2022 and 2027. More specifically, China is expected to add 95 to 120 gigawatts (GW) of solar power in 2023, in what would be a record annual rise in capacity, according to a solar manufacturing association.

Meeting both international and domestic climate goals requires PV solutions providers to innovate and develop components and system-level solutions on an unprecedented scale. SABIC is proud to have collaborated with pioneers in the photovoltaic industry and to have developed high-performance materials for both land and floating photovoltaic power stations that are starting to fuel homes and meet rising industrial demand for renewable energy.

SABIC SOLUTIONS TO SOLAR PHOTOVOLTAIC INDUSTRY

As one of the largest plastic resin manufacturers globally, SABIC has a wide product portfolio to meet the needs of the solar power industry. Further, to provide complete application solutions, SABIC is actively engaging with the solar energy value chain to enable future technologies. SABIC's wide product portfolio, ranging from polyolefin to engineering thermoplastics, has several offerings for sub-component and system-level solutions for photovoltaic solar applications, including PV modules, connectors, and floats.

SABIC FORTIFY™ POE, a family of high performance octene-1 copolymers, offers excellent electrical properties, high transmittance, excellent weathering resistance, good structural stability and water vapor transmission rates are critical influence factors for high efficiency, more durable, longer shelf-life of the PV module. Most importantly, SABIC FORTIFY™ POE addresses the Potential Induced Degradation (PID) issue, which is critical for the high efficiency trend along with new module structure.

- **SABIC FORTIFY™ POE C5075DP AND C13075DP** elastomers used for encapsulant films in bi-facial high-power glass-glass PV panels combine outstanding stability at elevated temperatures and UV exposure. High volume resistance features significantly improve cell efficiency through solving potential induced degradation (PID) issue compared to commonly used EVA (ethyl vinyl acetate) based encapsulants.
- **PV Floating Barrels with SABIC® HDPE B5308 AND B1054** have excellent ESCR and are a long-service life solution for the renewable energy industry. With collaboration with energy companies, solar fields are being built on lakes using these innovative structures to make solar energy viable without using valuable land resources.
- **LEXAN™ 503R applied in PV Inverter and Storage Battery** is featured in excellent weatherability, excellent mechanical properties and good colorability. LEXAN™ 503R can also meet the flame retardant requirements of UL94 V0 and 5VA, with its advantages in reliability and good impact resistance.
- **SABIC® PP 95MK40T applied to PV backsheet in solar modules**, which provide fluoropolymer free solution with more sustainability and recyclability, as the same time, the co-extrusion process leads free from glue and inter-layer delamination, the low density nature of PP would generate light weight opportunities in solar market.