

FACT SHEET

CHINAPLAS 2025, Shenzhen, China, April 15, 2025

SOLUTIONS FOR RENEWABLE ENERGY

OVERVIEW

In recent years, renewable energy has been increasingly prominent in the future energy landscape. According to the IEA's forecast in 2024, global renewable energy capacity is expected to grow by 2.7 times by 2030¹.

Among all renewable energy technologies, photovoltaics (PV) remains one of the dominant forces, with unprecedented installation volumes throughout the past years. In 2023, the world added a record 456 gigawatts (GW) of new PV capacity, pushing the global installed base past 1.64 terawatts (TW). China has spearheaded this expansion, installing an astounding amount of PV capacity which accounts for 60% of global PV deployment².

As the renewable energy market continues to expand, the demand for high-performance materials that ensure durability, efficiency, and sustainability in applications is growing rapidly. In response, SABIC collaborated with partners across the value chain for diverse products and solutions and accelerate the global transition toward a cleaner, more sustainable energy future.

INDUSTRY LANDSCAPE

With technology advancing rapidly, solar PV is reinforcing its position as an important renewable energy source. According to National Energy Administration, China's total installed solar PV capacity had reached approximately 840 GW by the end of 2024, with a utilization rate exceeding 95%³.

As solar PV adoption expands across commercial and residential applications, its deployment extends into challenging and complicated environments like water's surface, wind-prone zones, etc. These demanding conditions impose stringent performance and safety demands on materials for PV components, including module, inverter, connector, mounting structure, shutdown device, etc., requiring advanced plastic solutions to ensure the long-term viability of solar infrastructure.

In collaboration with local partners, SABIC is focused on delivering high-performance, reliable, durable, and more sustainable material solutions that evolve with the whole PV value chain. By optimizing material performance to meet the diverse functional and environmental requirements of these interconnected components, SABIC provides a diversified portfolio for renewable energy ecosystem and collaborates with customers to accelerate the widespread adoption and propel the industry towards a more sustainable and resilient future.

¹ Renewables 2024, International Energy Agency, 2024

² Trends In Photovoltaic Applications, International Energy Agency, 2024

³ National Energy Administration, 2024

SABIC SOLUTIONS

- **Comprehensive Solutions for PV Modules:**
 - **For PV encapsulation**, FORTIFY™ PV POE comes with improved volume resistance. FORTIFY™ PV POE based encapsulation maintain low leakage current and enable long-lasting protection of PV modules, thus extended service life of PV modules.
 - **For PV backsheet**, SABIC® PP 95MK40T resin is a fluoropolymer-free and recyclable solution, whose co-extrusion process does not have delamination problems because there are no adhesives during the forming process. The backsheet shows selective permeability towards water vapor, oxygen and acetic acid, providing good protection to PV modules. The low density of PP makes it a good lightweight solution.
 - **For PV shutdown device**, NORYL™ LTA6020 resin contains non-brominated, non-chlorinated flame retardant and carries a UL94 flame rating of 5VA at 2.5mm, 5VB at 2mm, and V0 at 1.5mm along with a UL746C Outdoor Suitability rating of F1. NORYL™ LTA6020 resin exhibits good dimensional stability over a wide temperature range, high heat performance, low moisture uptake, and offers long-term aging / retention of mechanical properties.
 - **For PV connectors**, LNP™ ELCRES™ EXL9334P copolymer is a blend based on polycarbonate copolymer with tailored design, with CT10 and IPT 2KV rating. It has good impact performance and provides low temperature ductility down to -40°C without offsetting its high CT10. This feature helps the designed PV connector parts/components to pass ball drop test for UL certification, reducing the risk of structural cracking against some chemicals or low temperature in extreme outdoor environment.
- **SABIC provides HDPE and compounds for PV floating barrels** that deliver good environmental stress crack resistance (ESCR) performance exceeding 1,000 hours, enhancing durability and reducing maintenance. This high-performance material also has compatibility with various ultraviolet (UV) stabilizers.
- **SABIC offers PV inverter housing with LEXAN™ PC resin** that offers good mechanical and thermal performance as well as good color matching capability, meeting UL94 V0/5VA Flame Retardant standards. It also has good surface quality (surface painting free) and good adhesive with conductive paint. Compared with conventional metal material, it offers advantage of design freedom, lighter weight and anti-rust.