How can we help **improve photovoltaic modules?**

Renewable energy is on the rise. And, in 2023, photovoltaic (PV) modules—also known as solar panels—contributed to three-quarters of all renewable capacity additions worldwide.[1] This number is expected to grow even more over the next five years.

At Dow, we believe:

- Solar power will continue to play an essential role in fueling the future by helping address long-term demand for sustainable energy sources
- Proper material selection is critical to helping achieve that role

That's why we're excited to talk about ENGAGE™ PV Polyolefin Elastomers (POEs), our advanced materials for encapsulant layers in high-quality PV modules.

What do ENGAGE™ PV POEs do for solar panels?

ENGAGE™ PV POEs offer a smart choice for PV encapsulant films.

Let's see why:

- **Exceptional Protection:** Exposure to moisture or water can cause significant losses of efficiency, as well as failure, in solar panels. ENGAGE™ PV POE-based encapsulant films feature low water vapor transmission rates (WVTRs) that offer improved resistance to damage caused by absorption, corrosion, or delamination. Low WVTR also contributes to increased potential induced degradation (PID) resistance, which can help maintain high energy output and extend service life.
- **Remarkable Performance:** The excellent durability and electrical properties of ENGAGE™ PV POEs can help PV modules achieve greater output, operating efficiency, and reliability for decades of strong service life. These non-yellowing materials also offer notably reduced degradation rates with PID Zero performance, especially for high-efficiency bifacial solar cells.
- **Lower Overall Lifetime Costs:** In the field, films made with ENGAGE™ PV POEs help increase module efficiency and reduce the levelized cost of electricity (LCOE). In the long run, that benefit – combined with their many other advantages – helps reduce total costs across the life of the PV system.

Want to learn more about our exciting PV options?
Please **visit us online** or contact a Dow representative.

Did you know?

Third-party testing has shown that ENGAGE™ PV POE-based encapsulant films exhibit **virtually no potential induced degradation (PID)** during service life – with a power loss of only 0.3%, compared to 35% for EVA-based films tested.[2]

Testing also found that films made with ENGAGE™ PV POEs **maintain their optical characteristics** without increased yellowing under UV exposure, even after 10,000 hours of Xenon Arc weather testing.[3]

ENGAGE™ PV POEs received the prestigious **2019 Gold Edison Award** for innovation in the Solar Advancements Category.

Dow also offers **EVA and silicone options** for PV encapsulant films, as well as other materials designed for use in various solar energy applications.

[1] Solar - IEA
[2] Data per tests conducted by the Fraunhofer Center for Silicon Photovoltaics CSP.
[3] Typical values, not to be construed as specifications. Users should confirm results by their own tests.

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