

Department of Energy Awards 3M \$4.4 Million to Reduce Cost of Photovoltaic Energy Systems

The U.S. Department of Energy (DOE) has awarded 3M \$4.4 million as part of DOE's SunShot Initiative. SunShot aims to reduce the total costs of photovoltaic solar energy systems by about 75 percent, so that they are cost-competitive with other forms of energy without subsidies. SunShot calls for achieving this goal by the end of the decade. The sum of the 3M award is estimated at \$4.4 million over three years.

The goal of 3M's project is to accelerate efforts toward further development and commercialization of 3M™ Ultra Barrier Solar Film. The funding will support a robust reliability test program to validate the lifetime performance of 3M's film as well as development of second-generation 3M Ultra Barrier Solar Film with enhanced performance and reduced costs.

As part of the initiative, 3M will collaborate with DOE's National Renewable Energy Laboratory (NREL) located near Denver, Colorado, to test the performance and durability of Ultra Barrier Solar Films. NREL recently confirmed moisture vapor transmission rates in the range of 2×10^{-5} - 8×10^{-5} g/m²/day for 3M's current Ultra Barrier Film 9L product using its electrically based calcium moisture vapor transmission rate (MVTR) test. "Technology for economical production of transparent barrier films has been a missing link in the flexible CIGS photovoltaic supply chain for a long time, and we are looking forward to working with 3M in the development of this technology," NREL Senior Scientist Mike Kempe said.

"We are delighted that DOE has recognized the relevance of 3M's Ultra Barrier Solar Film toward achieving its goals for driving down the cost of solar," said Derek DeScioli, Business Development Manager for the 3M Renewable Energy Division. "High-efficiency flexible solar modules manufactured with 3M's Film not only have the potential to significantly reduce the total system costs for rooftop solar installations, but also have an array of niche applications where our customers can take advantage of the unique module form factor."

Designed to address the needs of flexible thin film solar manufacturers, 3M Ultra Barrier Solar Film acts as a replacement for glass with high light transmission, superb moisture barrier performance, and excellent weatherability. Compared with glass-glass modules, large area, light weight flexible PV modules manufactured with 3M Ultra Barrier Solar Film can achieve lower balance of systems (BOS) costs by requiring less installation time, removing the need for metal racking, and reducing logistics expenditures. 3M Ultra Barrier Film also enables lower module manufacturing costs by allowing manufacturers to commercialize large area modules, effectively reducing fixed costs associated with module manufacturing, assembled in a continuous roll-to-roll process.

About 3M

3M captures the spark of new ideas and transforms them into thousands of ingenious products. Our culture of creative collaboration inspires a never-ending stream of powerful technologies that make life better. 3M is the innovation company that never stops inventing. With \$27 billion in sales, 3M employs about 80,000 people worldwide and has operations in more than 65 countries. For more information, visit www.3M.com or follow @3MNews on Twitter.

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