

Renogy ShadowFlux Recognized by Frost & Sullivan as World's First Rigid Solar Panel with Cell-Level Shadow Management

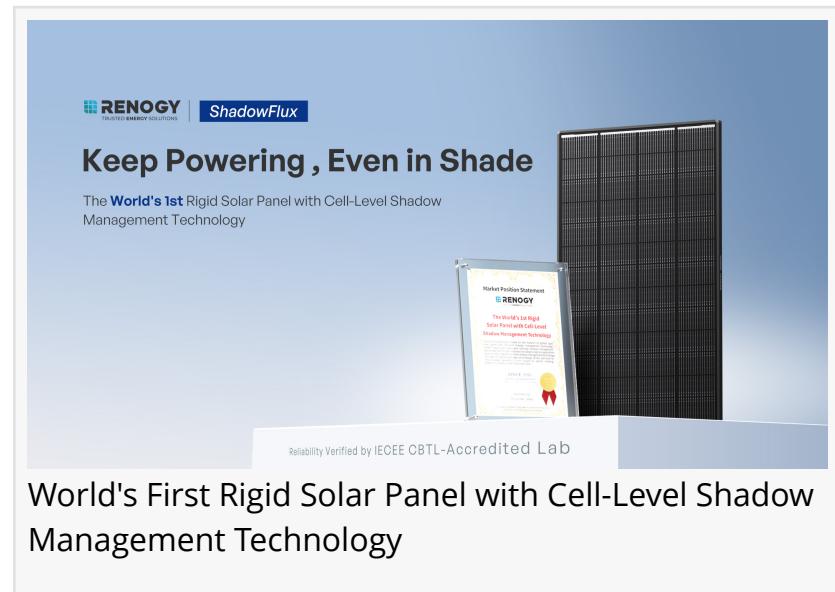
Frost & Sullivan confirms ShadowFlux's first-of-its-kind cell-level shadow management for rigid solar panels, marking Renogy's 2nd "world's 1st" recognition.

ONTARIO, CA, UNITED STATES, December 24, 2025 / EINPresswire.com/ -- Renogy, a U.S.-based provider of [off-grid and mobile energy solutions](#), announced that its [ShadowFlux™ solar module](#) has been officially certified by Frost & Sullivan as the world's first rigid solar panel featuring cell-level shadow management technology. This recognition marks Renogy's second "world's first" market position certification, following Frost & Sullivan's earlier validation of Renogy's smart, portable solid-state batteries for mobile energy storage.

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Renogy's Head of Marketing



World's First Rigid Solar Panel with Cell-Level Shadow Management Technology

“Our decision to pursue independent certification is fundamentally about building customer confidence,” said Renogy's Head of Marketing. “Off-grid power solutions like solar panels and lithium batteries are becoming more important as the market grows, but for many people, they're still not part of everyday life. While suppliers can market performance and features with data, real-world performance takes time to prove.”

“That's why Renogy puts our products through rigorous real-life simulations and works with trusted third-party organizations like Frost & Sullivan to validate our claims. By combining real-world testing with independent

certification, we aim to educate customers, reduce uncertainty around reliability and safety, and

help partners and OEMs make decisions they can trust.” Shading is one of the most common and unavoidable challenges in solar energy generation, particularly in applications such as RVs, boats, overland vehicles, and residential rooftops where shadows from antennas, trees, rails, or nearby structures are frequent. Traditional rigid solar panels experience significant power loss when even a small portion of the panel is shaded.

According to Frost & Sullivan’s independent market research, ShadowFlux is the first commercially available rigid solar panel to integrate cell-level shadow management.

This technology allows unaffected cells to continue operating when part of the panel is shaded, rather than reducing output across the entire panel. In partial-shading conditions, testing shows ShadowFlux can deliver up to approximately 85% higher energy output compared with conventional rigid solar panels, depending on shading patterns and installation conditions—resulting in more stable and reliable power generation in real-world use.

In addition to the market position recognition, ShadowFlux has undergone reliability validation to evaluate its performance stability in real-world environments. Partnered with an IECEE CBTL-accredited laboratory, the product completed more than [48 extreme reliability tests](#) that simulate years of field exposure, including exposure to temperature variation, humidity, vibration, and mechanical stress, to assess long-term durability in demanding use scenarios.

About Frost & Sullivan

Frost & Sullivan is a globally respected market research and consulting firm with more than 60 years of experience in growth strategy, technology validation, and competitive benchmarking. Its Market Position Certification is based on rigorous independent research, including primary interviews, secondary data analysis, and competitive landscape evaluation. For brands, this certification serves as a credible, third-party confirmation of technological leadership and real market differentiation.

About Renogy

Founded in 2010 and headquartered in the United States, Renogy is a global leader in off-grid and mobile energy solutions, empowering millions of people worldwide to live independently and sustainably. From high-efficiency solar panels and lithium batteries to smart energy management systems, Renogy products power RVs, boats, marine vessels, homes, and mobile lifestyles everywhere. Customers can access Renogy products and services through the official website, authorized dealer partners, or pre-installed on all types of RVs and boats, making clean and reliable energy easy and convenient to use.

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