

Recently, Jinko Solar conducted a performance comparison of energy output across different module strings at a residential PV site in Laizhou, Shandong. Based on energy yield data from July to November, the latest generation of Tunnel Oxide Passivated Contact (TOPCon) modules demonstrated higher per-watt energy output compared to P-type (BC) modules. A comprehensive analysis indicated that:

Due to the superior high-temperature performance, low-irradiance efficiency, and reliability in near-shore environments of TOPCon modules, the average power generation gain per watt is 3.14% higher than that of P-type (BC) modules. Data monitoring is conducted by esteemed third-party organization. TÜV Rheinland.

As the photovoltaic industry advances, N-type TOPCon technology has emerged as the preferred solution for mainstream solar installations. Recently, manufacturers of BC modules have promoted several advantages of their products, particularly the rated power and front-side efficiency of BC modules without gridlines. In Laizhou—a coastal city with abundant sunlight and a maritime climate—a pilot project was launched to evaluate the performance of these modules under diverse environmental conditions. This study, based on a real-world residential PV installation, compared the energy generation of TOPCon and P-type BC modules. Preliminary results indicate that N-type TOPCon technology delivers superior energy yield, demonstrating why it has become the optimal PV solution for clients.

