and precise acquisition of power generation data. Meanwhile, key environmental parameters including module surface irradiance, module backsheet temperature, ambient temperature and humidity, atmospheric pressure, wind speed and wind direction were synchronously monitored and recorded at the same 1-minute interval, laying a solid foundation for subsequent comparative analysis of the test data.

Project Background

In the current context of rapid technological iteration within the global PV industry, N-type TOPCon technology has emerged as the mainstream installation solution in the market, owing to its high power conversion efficiency and operational stability. Recently, certain PV module manufacturers have publicized the technical merits of their products, with a particular emphasis on the enhancements in rated power and front-side conversion efficiency realized through gridless structural design.

Weihai, located in Shandong Province, is a coastal city endowed with abundant solar irradiance and a typical maritime climate, rendering it an ideal pilot site for evaluating the environmental adaptability of different types of PV modules. This empirical study focused on the practical application scenario of household PV power stations, conducting a comprehensive comparative analysis of the power generation performance between Jinko Tiger Neo modules and N-type BC modules. The preliminary test results indicated that the N-type TOPCon technology integrated into Tiger Neo modules possesses more prominent advantages in terms of power generation output, making it the optimal PV solution for customers in the current market.

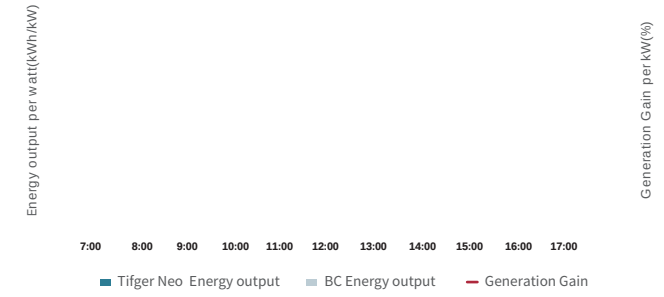
Project Overview

This research was conducted on a household distributed PV system located in Weihai, Shandong Province, with a distance of 2 kilometers from the coastline, thus being directly exposed to the impacts of maritime climate. The test duration covered the period from August to

Test Results

During the test period from August to November 2025, the cumulative per-watt power generation of Jinko Tiger Neo modules reached 408.86Wh/W, whereas the cumulative per-watt power generation of N-type BC modules was 397.82Wh/W, corresponding to a **2.78%** power generation gain for Tiger Neo modules. The performance of Tiger Neo modules was particularly outstanding under low-light conditions. According to the data monitored from August 1 to November 12, the per-watt power generation of Tiger Neo modules was **3.13%** higher than that of N-type BC modules at 7:00 a.m., and the power generation gain surged to **5.53%** at 17:00 p.m.

It is noteworthy that due to the objective constraints imposed by the installation scenario and mounting method of this household PV project, the bifacial power generation gain advantage of Jinko Tiger Neo modules was not fully exploited. Even under such suboptimal conditions, the power generation output of Tiger Neo modules still surpassed that of N-type BC modules. Further evidence from empirical projects conducted by other third-party testing institutions confirms that if Tiger Neo modules are applied in ground-mounted PV power stations or high-bracket distributed PV systems where bifacial power generation gain can be fully harnessed, their high bifaciality characteristic will be brought into full play, leading to more significant power generation advantages and thus yielding more substantial power generation revenue for customers.

.0588176	2.85%	8	141.9941302	138
2.943969	2.82%	9	136.689752	13
[illegible]	[illegible]	10	[illegible]	[illegible]
25/829	44.95068659	2.48%	11	46.07
63062	397.8175945	2.78%	Total	408.8

Jinko Tiger Neo VS BC : Per Wa tt Generation Comparison (Time periods)