HY SOLAR

HY SOLAR N-TYPE ZERO-CARBON PV INDUSTRY CHAIN

GRAND ORIGIN SYMBIOTIC FUTURE

module.hysolar.com

TO MAKE ENERGY **CLEANER**
TO MAKE THE WORLD **BETTER**

Carry Forward the Grand Vision
Let the sun turn every corner of the planet green

As the New Start Begins
Return the energy to its original green color

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Company Profile

About HY SOLAR

HY SOLAR, established in 2002, is a photovoltaic full-industry-chain ecological enterprise focusing on innovation and application in the new energy sector. It was listed on the Shanghai Stock Exchange in 2018 with the stock code 603185.

Currently, the company has assets nearing **7** billion USD, with a total investment exceeding **8** billion USD across the entire industrial chain. It employs over **10,000** people, with its products and services reaching nearly **100** countries and regions. The company has also established overseas marketing and technical service subsidiaries in more than ten countries worldwide.

2002 Company Established

2004
- Began manufacturing crystalline silicon processing equipment
- Entered the photovoltaic industry

2018 Listed on the SSE main board

2019 Baotou Wafer Manufacturing Base Commenced Production

2020 Wafers obtained French ECS certification

2021 Selected as a National Green Factory

2023
- Baotou Silicon Material Manufacturing Base Commenced Production
- Xuzhou Cell Manufacturing Base Commenced Production
- Jiangyin Module Manufacturing Base Commenced Production
- Among the First Globally to Obtain TÜV's IEC Certification for Modules
- Modules rated "VERY GOOD" with 5 stars in PV Magazine testing
- One of the most influential PV module manufacturers in China

Established a Complete Photovoltaic Industry Chain

2024
- HT series modules received French ECS certification
- "Top 100 Global PV Brands" and"Top 20 Silicon Material and Wafer Brands" at the 9th Century PV Conference
- "Top 10 Annual PV Cell Brands" by China Good Photovoltaic

Strategic Path

HY SOLAR has been deeply engaged in the photovoltaic industry for over 20 years, focusing on innovation and application in the new energy sector. It has built the most comprehensive N-type photovoltaic integrated industry chain.

HY 1.0 2002-2018
High-end PV Equipment Manufacturer

2002
Establishment of Wuxi Shangji Grinder Co., Ltd

2004
Entry into the solar industry, engaging in the manufacturing of equipment for crystalline silicon

2018
Wuxi Shangji Automation was listed on the SSE with stock code of 603185

HY 2.0 2019-2021
Specialized Provider A New PV Materials

2019
Establishment of HOYUAN New Material (Baotou) Co.,Ltd. Entry into PV monocrystalline silicon industry

2020
Expansion of monocrystalline silicon production capacity to 8GW per year

2021
Expansion of monocrystalline silicon production capacity to 10GW per year

HY 3.0 2022-2025
Deeply Vertically-integrated PV Service Provider

2022-2025
- Metallurgical-grade silicon with 150 kilotonnes annual output
- High purity crystalline silicon with 100 kilotonnes annual output
- Monocrystalline silicon wafer with 75GW annual output
- N-TOPCon PV cell with 45GW annual output
- N-TOPCon PV module with 35GW annual output

HY 4.0 2026-Future
Global Green Energy Industry Eco-Integrator

2026-Future
- Power plant development and creating a green energy industry ecosystem
- Provide diverse green energy industrial system solutions

Globalization

Headquarters

Wuxi, Jiangsu, China

Global Marketing & Sales Center

Wuxi, Jiangsu, China

Overseas Regional Headquarters

Asia Pacific: Singapore | Europe: Germany | South America: Brazil | Oceania: Australia | Middle East & Africa: United Arab Emirates

Manufacturing Bases

Equipment	Wuxi, Jiangsu, China	Silicon	Baotou, Inner Mongolia, China	Silicon Ingots	Baotou, Inner Mongolia, China
Slicing	Baotou, Inner Mongolia, China	Slicing	Xuzhou, Jiangsu, China		
PV cell	Xuzhou, Jiangsu, China	PV cell	Baotou, Inner Mongolia, China		
PV module	Chuzhou, Anhui, China	PV module	Baotou, Inner Mongolia, China	PV module	Jiangyin, Jiangsu, China

Production capacity of each link by mid-2024

80,000T	60,000T	35GW	18GW	21GW
Industrial silicon	Polysilicon	Wafers	PV cells	PV modules

N-type PV Industry Chain

Global Headquarters Base

Jiangsu **Wuxi**

High-end Equipment Intelligent Manufacturing Base

Jiangsu **Wuxi**

LAND AREA 110 K m²

Silicon Material Manufacturing Base

Inner Mongolia **Baotou**

AMOUNT INVESTED 1630 M USD | LAND AREA 1170 K m²

METALLURGICAL-GRADE SILION EXISTING CAPACITY 80 K t | POLYCRYSTALLINE SILICON EXISTING CAPACITY 60 K t

PV Wafer Manufacturing Base

Inner Mongolia **Baotou**

AMOUNT INVESTED 3500 M USD | LAND AREA 810 K m² | EXISTING CAPACITY 35 GW

PV Cell Manufacturing Base

Jiangsu **Xuzhou**

AMOUNT INVESTED 2100 M USD | LAND AREA 730 K m² | EXISTING CAPACITY 18 GW

PV Moudle Manufacturing Base

Jiangsu **Jiangyin** Anhui **Chuzhou**

AMOUNT INVESTED 900 M USD | LAND AREA 500 K m² | EXISTING CAPACITY 21 GW

Honors and Awards

HYSOLAR

TOP 500
Global New Energy Enterprises
2024 · Ranked 185th

TOP 500
China Manufacturing Enterprises
2023

China Federation Of Commerce Sci-tech Award

China Machinery Industry Sci-tech Award

China industry research cooperation Innovation Achievement Award

Forbes
Top 50 Forbes China Most Innovative Companies

PVBL
Top 100 Global PV Brands

胡润中国
Top 100 Hurun China Private Energy Enterprise

Top 100 Private Manufacturing Enterprises in Jiangsu

CCmvm.
Top 500 Listed Companies By Market Value in China

National Green Factory

National SRDI Enterprise

Major Sci-tech Undertaking Enterprise Of NDRC

National High-tech Enterprise

Core Competence

R&D Capabilities

958 Researchers

84 Milion (USD) 2023 R&D

205 Patents

HY SOLAR R&D and Testing Center

AMOUNT INVESTED $ 14,000,000

Advanced Technology Reserves	Production Optimization	Improved Reliability	Intelligentization
TOPCon	New Materials	Material Reliability	Laboratory
XBC	High-end Equipment	PV Cell Reliability	Digital Simulation
HJT	Process Optimization	PV Module Reliability	Big Data Analysis
Perovskite	Online Monitoring		AI

TÜVRheinland®

IEC

CNAS

- It conforms to the construction and operation of **ISO17025** standards, and operates according to the requirements of **CNAS** certification system
- The laboratory covers an area of **5000** square meters, with a total of **58** sets of 28 kinds of equipment
- It has a full set of **IEC61215** and **IEC61730** standard testing capabilities

- The laboratory adopts a **LIMS** management system

  All instruments and equipment, testing tasks, personnel, testing processes, data results and other information are incorporated into the digital management of the laboratory, so as to realize the efficient operation of the laboratory, improve the testing efficiency, help R&D carry out project test management, retrieval and analysis of test data, and provide decision-making support for product R&D

Leading in N-Type Route

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TOPCon
Cutting-edge PECVD tech

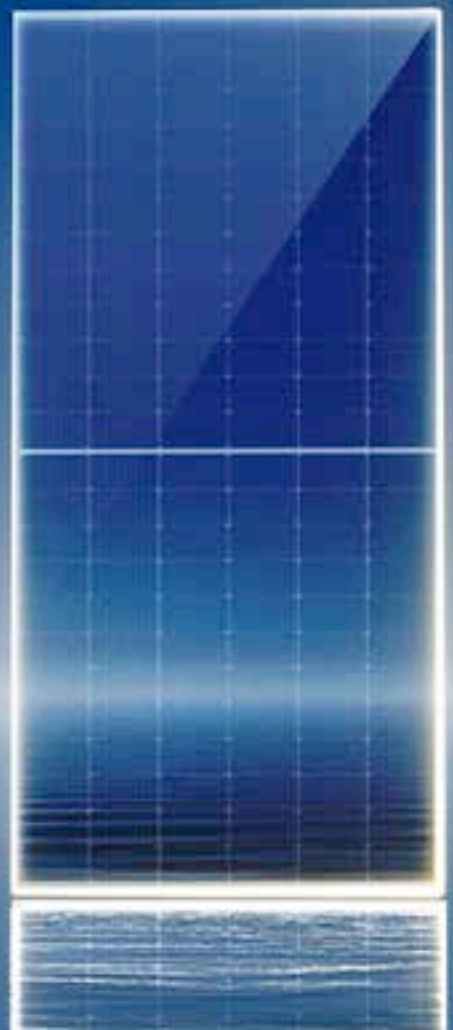
26.8%
PV cell mass production efficiency 26.8%

LECO+0.25%
More than +0.25% increase in efficiency

High Yield +0.3%
+0.3% increase in yield of pv cells

+30W
30W higher in efficiency
compared with PERC modules

45GW
TOPCON cell capacity
18GW in operation + 27GW under construction



Full Industrial Chain Traceability

Traceability system of the entire industrial chain

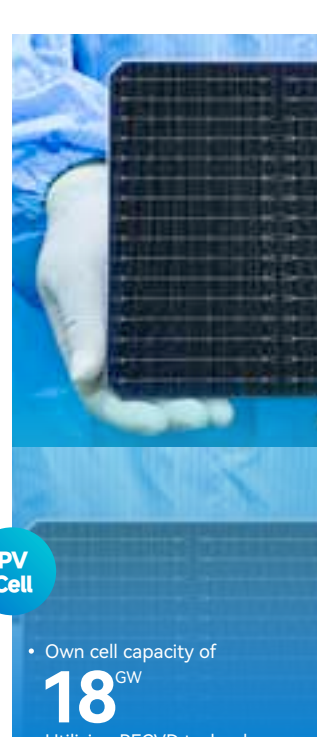
Starting from self-produced silicon materials, the origin of production is clear, providing information traceability and transparency for the entire manufacturing chain of silicon wafers, cells, and modules. The process is fully traceable, monitorable, and precisely managed, meeting customer demands.

Silicon

- Own silicon materials **60000** tons
- 11N high purity
- Manufactured in Baotou, with legal and compliant labour practices

PV Wafer

- Own silicon wafer capacity of **35** GW
- Covers 100% N-type specifications
- Leading in industry with low carbon footprint

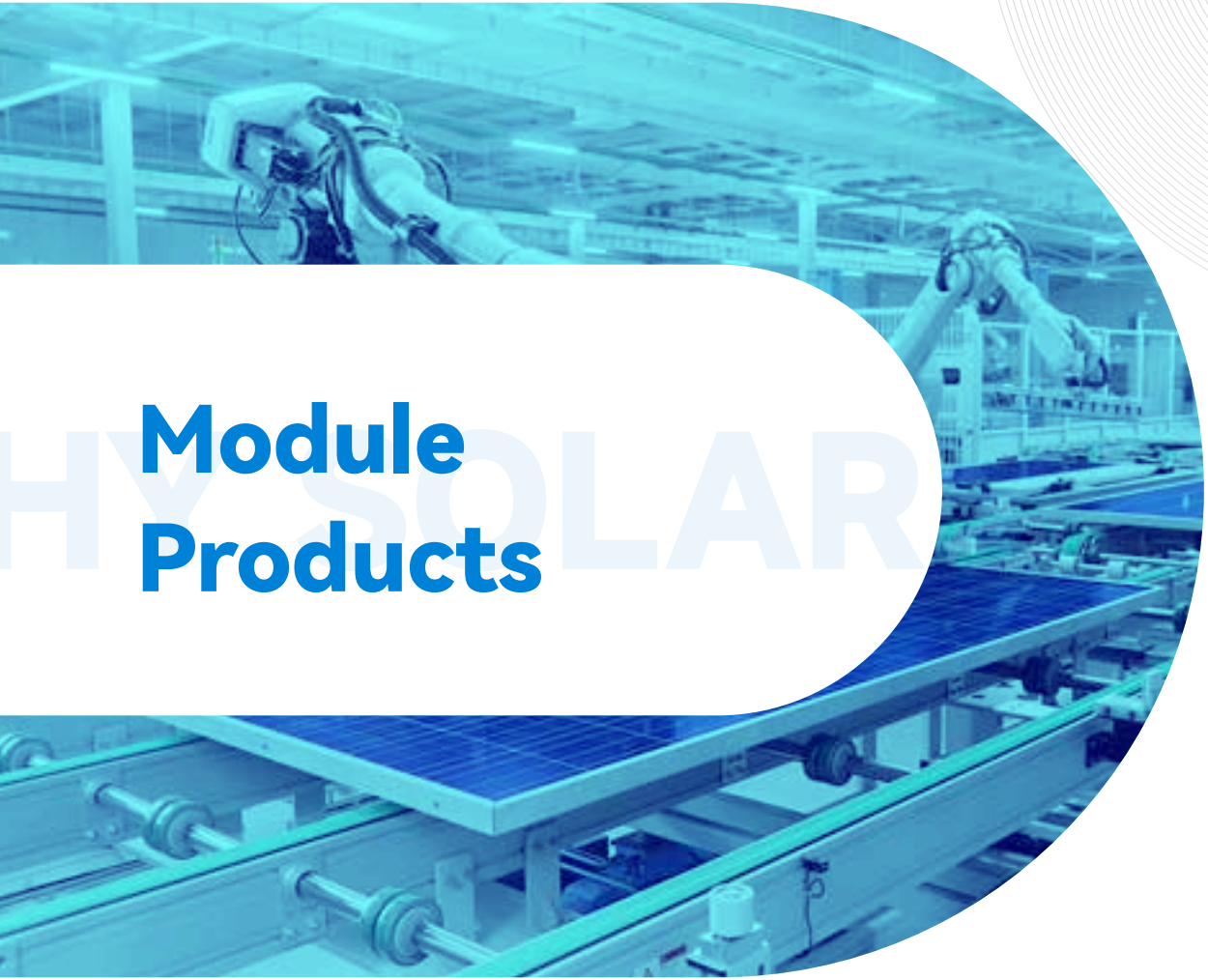


PV Cell

- Own cell capacity of **18** GW
- Utilizing PECVD technology
- Enhanced with LECO technology
- Efficiency up to 26.8%

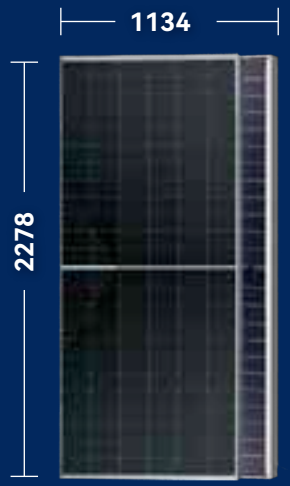
PV Module

- Own module capacity of **21** GW
- Full N-type coverage

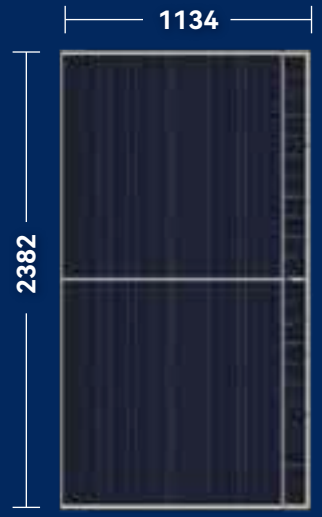


Module Products

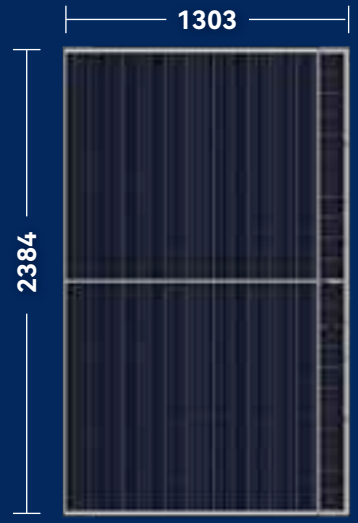
HY SOLAR Main Products – TOPCon Modules



● HY-NT10/72GDF



● HY-NT11/66GDF



● HY-NT12/66GDF

465W
HY-NT10/54BGDF

655W
HY-NT10/78GDF

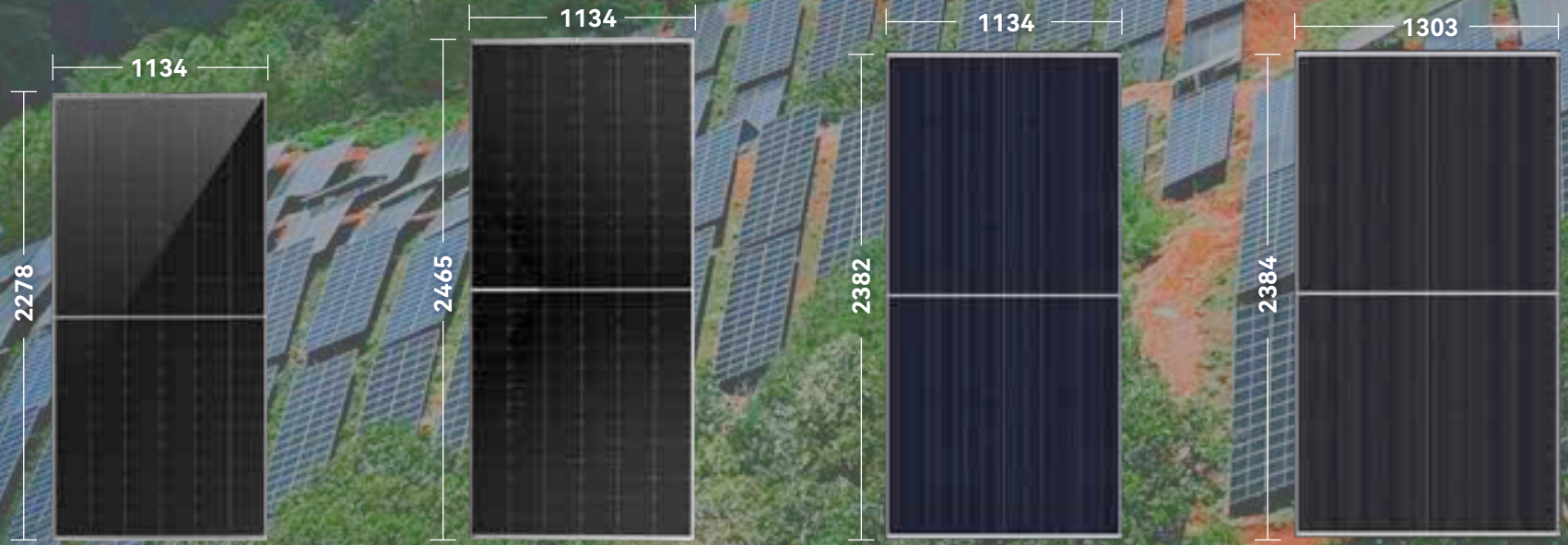
515W
HY-NT10/60BGDF

625W
HY-NT11/66GDF

605W
HY-NT10/72GDF

720W
HY-NT12/66GDF

High-efficiency Module Series
large-scale ground power station



HY-NT10/72GDF
Power: 585-605W
Efficiency: 23.4%
Weight: 32.1kg

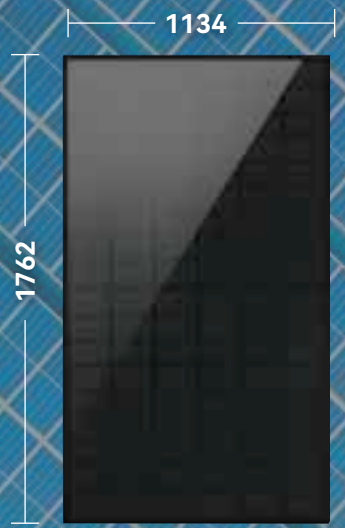
HY-NT10/78GDF
Power: 630-655W
Efficiency: 23.4%
Weight: 34.7kg

HY-NT11/66GDF
Power: 605-625W
Efficiency: 23.1%
Weight: 32.4kg

HY-NT12/66GDF
Power: 700-720W
Efficiency: 23.2%
Weight: 38.3kg

High-efficiency Module Series

Distributed and commercial industrial rooftops

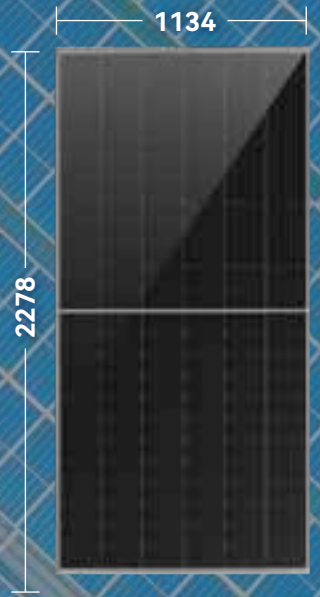


HY-NT10/54BGDF

Power: 445-465W
Efficiency: 23.3%
Weight: 21kg

HY-NT10/60BGDF

Power: 495-515W
Efficiency: 23.3%
Weight: 26.5kg



HY-NT10/72GDF

Power: 585-605W
Efficiency: 23.4%
Weight: 32.1kg

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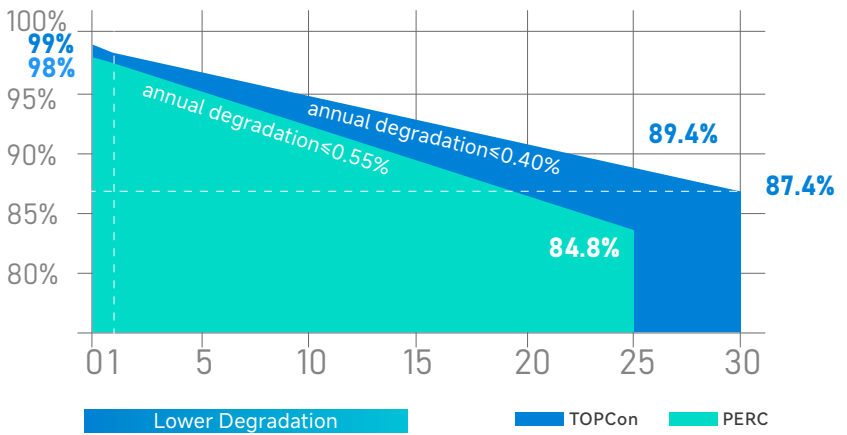
Reliable Quality and Longer Warranty



Warranty for N-type TOPCon modules

15Y product workmanship warranty, 30Y power warranty for modules

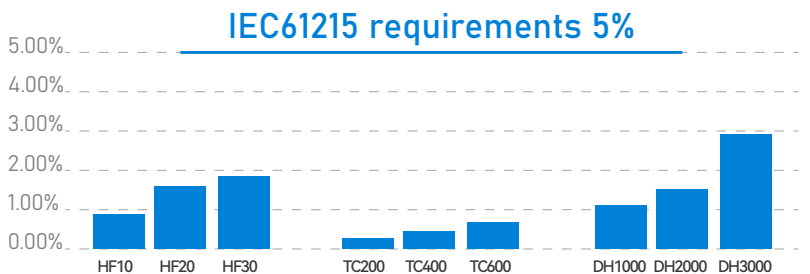
within 2m² residential rooftops:

30Y product workmanship warranty, 30Y power warranty

≤1% first year degradation, ≤0.4% of subsequent annual degradation

⩾87.40% of the initial output after 30 years

30Y Power Warranty	
	≤ 1% 1st year degradation
	0.4% Linear degradation



Stricter Testing Demonstrates Outstanding Performance

According to IEC61215 standard test, **Modules exhibit outstanding reliability performance**

- IEC61215 Test
- IEC Test triple as demanding

Outstanding Reliability Performance

Certifications

HY SOLAR has persisted on TOPCon as the primary technical direction of solar modules, and has received industry recognition for the "efficient" product performance. Meanwhile, our thorough global certification and increasingly abundant production capacity allow us to maintain our high-quality market dominance in the module application areas.

Product Certifications

System Certifications

ISO 9001
Quality assurance systems

ISO 14001
Environmental management systems

IEC/TS 62941
PV module manufacturing quality system

ISO 45001
Occupational health and safety management systems

Quality Assurance

Project Empirical Data

Empirical data of HT series modules in Hainan project

Date	July 2023-July 2024
Ave Temp	25.85℃
Geography	Grass

Output power gain **6.15%** than PERC

Scene	The number of items compared	Gain range % (-Perc reference)	Gain Average %
Grass	6	3.34~5.84	4.26
Color steel tile roof	1	2.99	2.99
Cement roof	4	3.37~6.19	4.80
Cement roof (white)	1	7.41	7.41
Sand	4	5.25~7.67	6.19
Brown soil	5	4.42~6.91	5.3

All-scenario Applications

HY SOLAR's N-type products provide comprehensive solutions for all scenarios, covering distributed residential rooftops, commercial and industrial applications, large-scale centralized ground-mounted power stations, and various "PV+" application scenarios. The products are also tailored with customized R&D and technological upgrades for special environments, ensuring a more precise match to customer needs and maximizing customer value.

Mountain PV Power Plants

Utility-Scale PV Power Plants

Commercial Distributed PV Power Plants

Residential Distributed PV Power Plants

Agri-PV Applications

PV + Desertification Control Applications

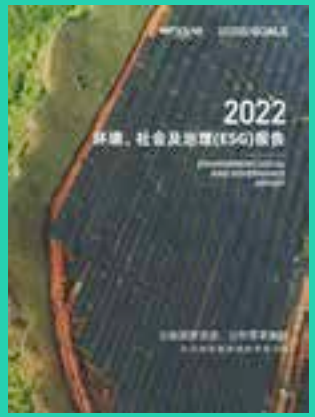
Freshwater Lake PV Applications

Offshore PV Applications

Green Ecosystem

Sustainable Development

HY SOLAR deeply integrates ESG concepts into the company's strategic planning and daily operations, and has published ESG sustainability reports for two consecutive years.



Friendly Environment

The investment in environmental protection will reach in 2023

40 Million (USD)

Renewable electricity production in 2023

1,084,837kWh

Reduced NOx emissions

4.6%

Water conservation in 2023

1,400kt+

A full range of silicon wafer products, HT series modules

Passed the French ECS carbon footprint certification

Shared Value

HY SOLAR Job creation in 2023

2000+

Social contributions and charitable donations have reached

20000k+

Normalization of volunteer service, annual service hours

500h+

To walk with the light
Driving the green world forward

We,
concentrate on the source of novel concepts for deep cultivation in order to consistently break through energy barriers.
We,
with the unwavering source of innovation, have fostered a bigger green dream;
We,
protect every source of energy from nature, investigate the mystery of sunlight, And return to nature with gifts from nature, so that each share of clean energy can be turned into the original green form.

100 GW
the shipment volume of PV wafer reach 100GW

18.46 million
Equivalent to saving standard coal by 18.46 million tonnes

85.54 million
Equivalent to cutting CO2 emissions by 85.54 million tonnes

4300 million
Equivalent to 4300 million trees planted in the forest

Global Partners

Wechat(CN)

Wechat Channel

Wechat(EN)

LinkedIn

Twitter

YouTube

Group Headquarters

- 158 Nanhu Middle Road, Binhu District, Wuxi City, Jiangsu Province, China

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Midstream And Upstream Manufacturing Bases

- **Silicon:** WeiEr Road, Jinshan Industrial Park,Jinshan Town, Guyang County, Baotou City, Inner Mongolia
- **PV wafer:** 1 South Park Road, New Planning Area, Equipment Manufacturing Industrial Park, Qingshan District, Baotou City, Inner Mongolia
- **PV cell:** 88 Jinfeng Road, Economic and Technological Development Zone, Xuzhou City, Jiangsu Province

Module Manufacturing Bases

- 1159 Gangcheng Avenue, Jiangyin City, Jiangsu Province
- 99 Jiuzi Road, Dingcheng Economic Development Zone, Dingyuan County, Chuzhou City, Anhui Province