2026 Qn-SOLAR Company Profile

Website

Linkedin

Instagram

Facebook

Qn-SOLAR PV LIMITED

Add: 6th Floor, Building No.1, Resource Plaza, Huangpu District, Shanghai, China. (Headquarters)
Xiyi High-tech Zone, Xinyi City, Xuzhou City, Jiangsu Province, China， 21 hectares. (Factory)
Web: www.qn-solarpv.com E-mail: info@qn-solarpv.com

TOP 13
Global PV Module Brand

TOP 15
Top Solar Modules Listing

VERSION 2026

One-stop PV solutions, Continuous value creation for customers

Strict product quality control refined management system to reduce cost and enhance operation effectiveness

Over 15 years experience of EPC project development

Reliable quality is our core value for customers due to our constant cooperation with **Utilities in downstream, Tier 1 supplier in upstream**

BloombergNEF Tier 1+ Bankability is in process

More than 15 years of business experience in utility-scale make us focus more on **the world-class quality**

Global SPV project business with local partner

ABOUT QN-SOLAR

20GW PV cells

25GW PV modules

Since our inception, Qn-SOLAR has quickly risen to the top of the PV manufacturing industry. Our senior team has more than 15 years of comprehensive expertise in PV technology and PV solutions. From 2014 to now, the installed capacity of our projects has reached 15GW. Our own asset of PV power stations have exceeded 1.5GW. Qn-SOLAR officially launched global PV business in 2022.

Our headquarters is in Shanghai of China, and we have 4 manufacturing bases in China. As a professional and integrated company, Qn-SOLAR has laid out various fields of PV upstream and downstream, achieving an annual production capacity of 20GW PV cells and 25GW PV modules in 2024.

Nowadays, under the trend of global carbon reduction, Qn-SOLAR can generate about 23 billion kWh of electricity from our asset power stations per year, and reduce about 22 million tons of carbon emissions every year in the current projects. We believe that we will witness a clean world with all mankind shortly.

60+ Global Partners

6GW Global Shipment in 2023

10000+ Global Employees

1.5GW Self-owned Power Station

40+ Shipping Countries

10+ Global Branches

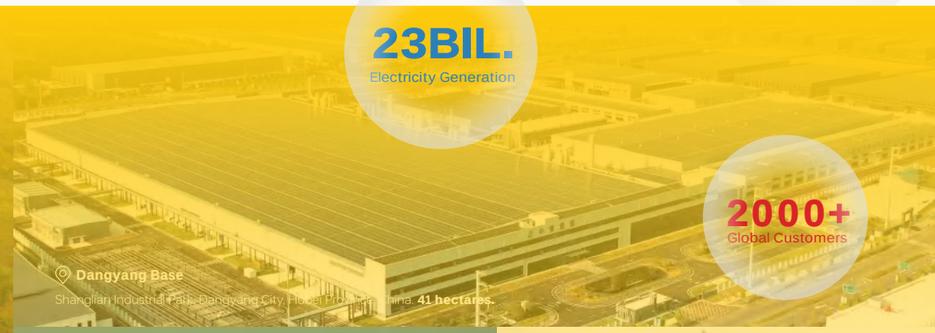
15GW+ Cumulative Installed

22MIL. Carbon Reduced

23BIL. Electricity Generation

2000+ Global Customers

Xuzhou Base
Xiyi High-tech Zone, Xinyi City, Xuzhou City, Jiangsu Province, China. **21 hectares.**



Dangyang Base
Shanglian Industrial Park, Dangyang City, Hubei Province, China. **41 hectares.**

Inner Mongolia Base
Jiuyuan District, Baotou City, Inner Mongolia, China. **67 hectares.**

Dongzhi Base
Dongzhi county, Chizhou City, Anhui Province, China. **55 hectares.**

Company Milestones

Our completed EPC projects are more than **500MW**.

Key customer:
China Tier 1 utility-scale company.

2014-2017

Our own projects have reached 600MW.

Gradually rated as 3A, 4A, 5A company by China institution.

Co-work with Top 5 Chinese Tier 1 utility-scale projects owner.

2018-2019

Our first Wind Power project is completed in Anhui Province, China.

Our own asset of PV and wind power projects are more than **800MW**.

2020

Pre IPO by financing.

Our own asset of PV and wind power projects exceeded **1GW**.

First cell and module manufacturing factory complete.

2021

Launched production of N-type TOPCon PV cell and PV module.

Our own asset of power station exceeded **1.5GW**.

Three cell and module manufacturing factories complete.

Officially launch global PV business.

2022

Production Capacity: **20GW** PV cells, **25GW** PV modules.

4 manufacturing bases of cell and module

6GW global shipment in 2023

Global business ongoing.

2023

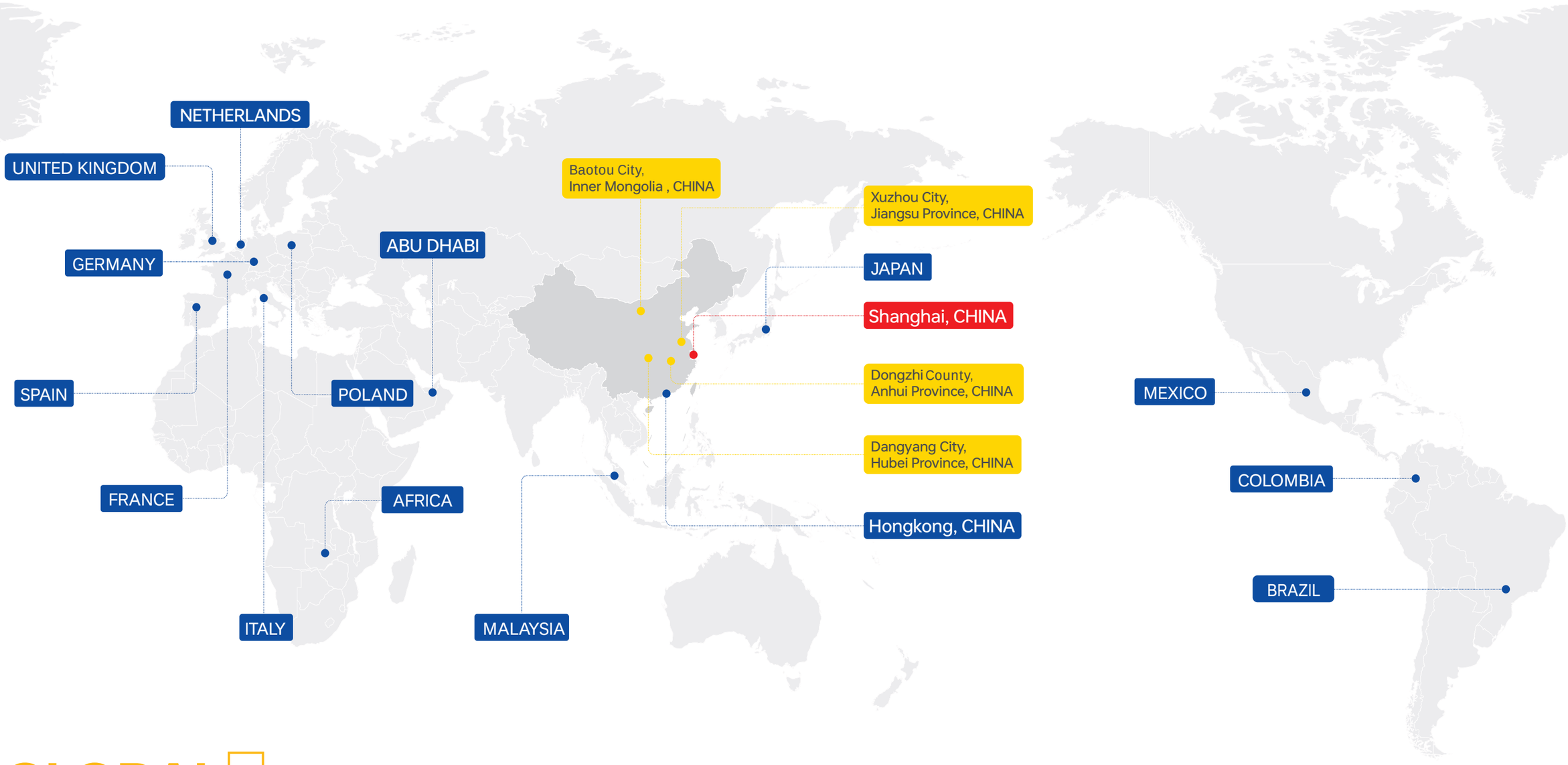
Perovskite cell debuted.

Partnering with top local partners to launch global SPV projects.

Bloomberg Tier 1 certification ongoing.

More than **8GW** global shipment.

2024-2025



GLOBAL DEPLOYMENT

Globalization is Qn-SOLAR's strategy. We have set up branches in many countries including Germany, Spain, Italy, Greece and Poland, Brazil, Malaysia, Japan, etc. We have also built four manufacturing bases in China.

Headquarters

- Shanghai, China

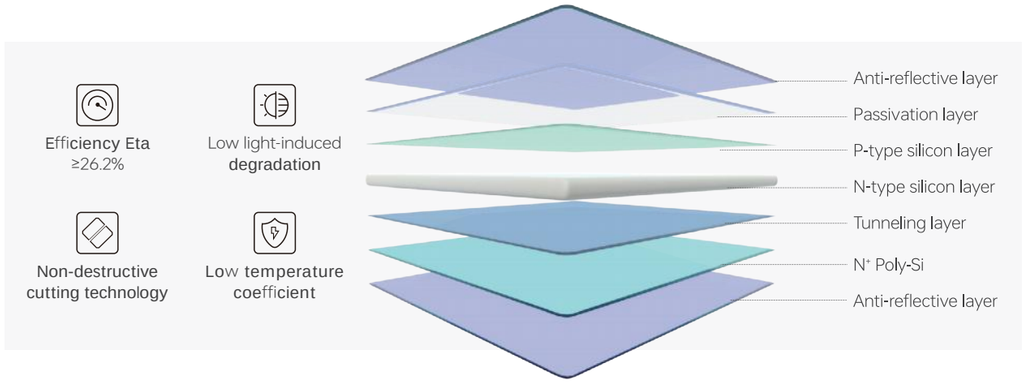
Manufacturing Bases

- Baotou, China
- Xuzhou, China
- Dangyang, China
- Dongzhi, China

Global Presence/Branches

- Abu Dhabi
- Africa
- Brazil
- Colombia
- France
- Germany
- Hong Kong, China
- Italy
- Japan
- Malaysia
- Mexico
- Netherlands
- Poland
- Spain
- United Kingdom

N-TOPCon PV Cell Structure



N-TOPCon 182mm 16BB Bifacial PV Cell

CC005 CC-ZC-PS-05

Laboratory Efficiency **26.5%**

Production Efficiency **26.2%**

- High Efficiency
- Bifaciality ≥85%
- Low temperature coefficient -0.30%/K
- Low LID
- Weak light relative efficiency ≥97%
- Anti PID

N-TOPCon Bifacial PV Module Features

- Ultrahigh bifaciality, 20% more rear side maximum out power than PERC.
- 0/+5: 0~+5W positive power tolerance peak power output ensures the reliability of the module.
- Excellent lower temperature coefficient, 1%-2% more power generation than P-type modules in high temperature areas.
- Weak Light: The module shows excellent weak light performance in the morning, evening and cloudy days.
- Lower LCOE, 3.5% more power generation than PERC modules, greatly reduce the cost of power generation.
- Anti-PID: Improved cell technology and selected materials make the module has good PID resistance.

HIGH-EFFICIENCY SOLAR PANELS

Rectangular Solar N-type Bifacial Half-Cell Module

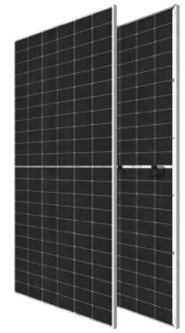
- N-type 210R Solar Panel
  No. of cells: 96 (2×48)

Model	QNN210R-HG-48
Power range	435-460W
Dimension	1762±2 x 1134±2 x 30mm
Weight	25.0 kg
Efficiency	23%
Packing	36 pcs / pallet, 936 pcs / 40'HQ

- N-type 210R Solar Panel
  No. of cells: 108 (2×54)

Model	QNN210R-HG-54
Power range	490-510W
Dimension	1961±2 × 1134±2 × 30mm
Weight	27.5 kg
Efficiency	22.93%
Packing	36 pcs / pallet, 864 pcs / 40'HQ

- N-type 210R Solar Panel
  No. of cells: 132 (2×66)



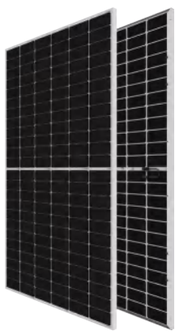
Model	QNN210R-HG-66
Power range	610-640W
Dimension	2382±2 × 1134±2 × 30mm
Weight	32.5 kg
Efficiency	23.8%
Packing	36 pcs / pallet, 720 pcs / 40'HQ

Standard Solar N-type Bifacial Half-Cell Module

- N-type 182mm Solar Panel
  No. of cells: 108 (2×54)

Model	QNN182-HG-54
Power range	430-455W
Dimension	1722±2 × 1134±2 × 30mm
Weight	24 kg
Efficiency	23.30%
Packing	36 pcs / pallet, 936 pcs / 40'HQ

- N-type 182mm Solar Panel
  No. of cells: 144 (2×72)

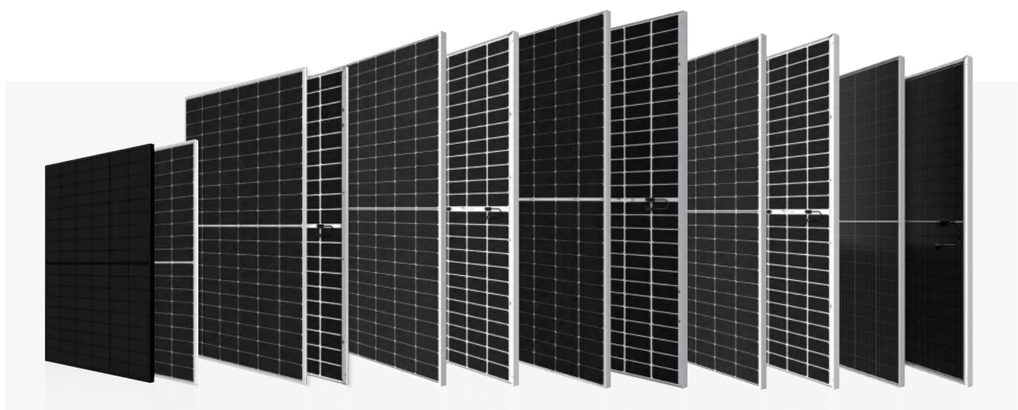


Model	QNN182-HG-72
Power range	580-605W
Dimension	2278±2 × 1134±2 × 30mm
Weight	30.8 kg
Efficiency	23.42%
Packing	36 pcs / pallet, 720 pcs / 40'HQ

- N-type 210mm Solar Panel
  No. of cells: 132 (2×66)

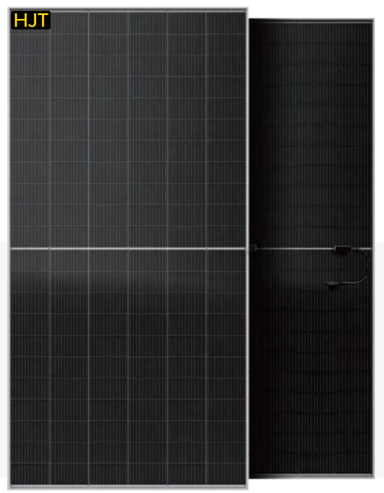
Model	QNN210-HG-66
Power range	715-740W
Dimension	2384±2 × 1303±2 × 33mm
Weight	38.2 kg
Efficiency	24%
Packing	36 pcs / pallet, 594 pcs / 40'HQ

N-type Half-Cell Module



182mm-54	182mm-60	182mm-72	182mm-78	191mm-72	210mm-66
410~455W	465~505W	560~605W	610~660W	590~625W	710~730W

N-HJT 210mm N-type Bifacial Half-Cell Module



QNH210-HG-66

Output Power	Max Efficiency
710~730W	23.50%

No. of cells	132 (2×66)
Weight	38.3 kg
Dimensions	2384mm × 1303mm × 33mm

Comprehensive Certificates

TÜV Rheinland · ISO · CE (Europe) · INMETRO (Brazil) · RETIE (Colombia) · MCS (UK) · Double Insulation

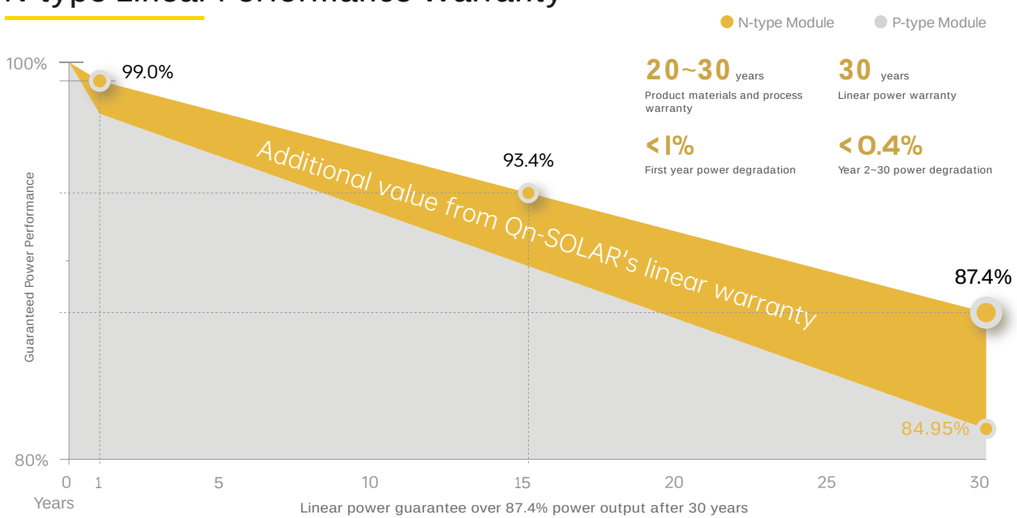
TÜV SÜD · PVEL (USA) · JPEA (Japan) · SEC (Chile) · PV-CYCLE (Global) · Fire Class 1 (Italy) · CQC (China)

Performance Insurance

Ariel Re · LLOYD'S Underwriters

- Higher harsh environments adaptability, Higher fire rating.
- 90% bifaciality, 7-30% rear side power gain.
- Excellent low irradiance performance.
- 0~+3% positive power tolerance.
- Low temperature coefficient.
- Excellent Anti-PID.

N-type Linear Performance Warranty



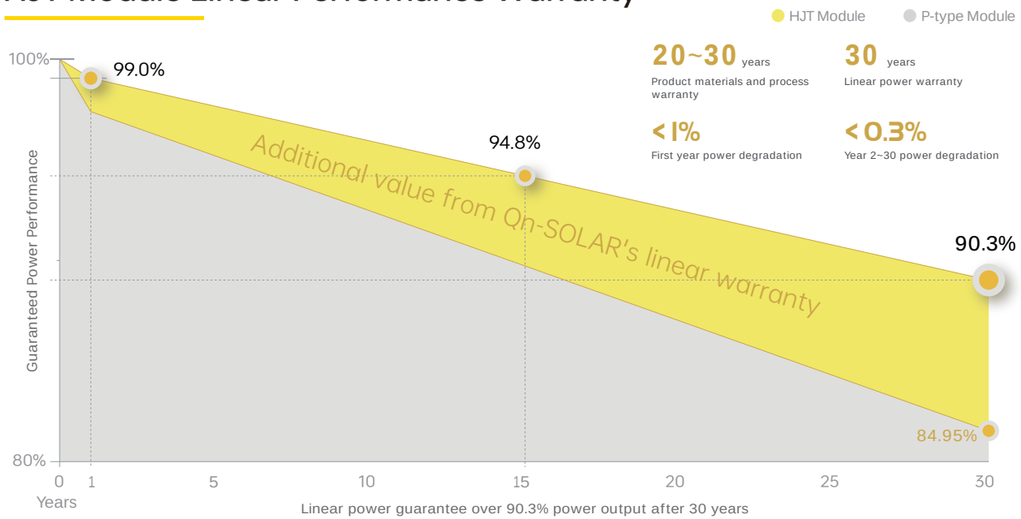
20~30 years — Product materials and process warranty

30 years — Linear power warranty

< 1% — First year power degradation

< 0.4% — Year 2~30 power degradation

HJT Module Linear Performance Warranty



20~30 years — Product materials and process warranty

30 years — Linear power warranty

< 1% — First year power degradation

< 0.3% — Year 2~30 power degradation

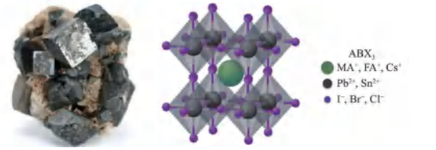
Perovskite Business Segment

Perovskite solar cells are based on materials with a perovskite crystal structure. Their intrinsic composition consists of organic–inorganic hybrid lead halides (not containing calcium or titanium; not a traditional mineral).

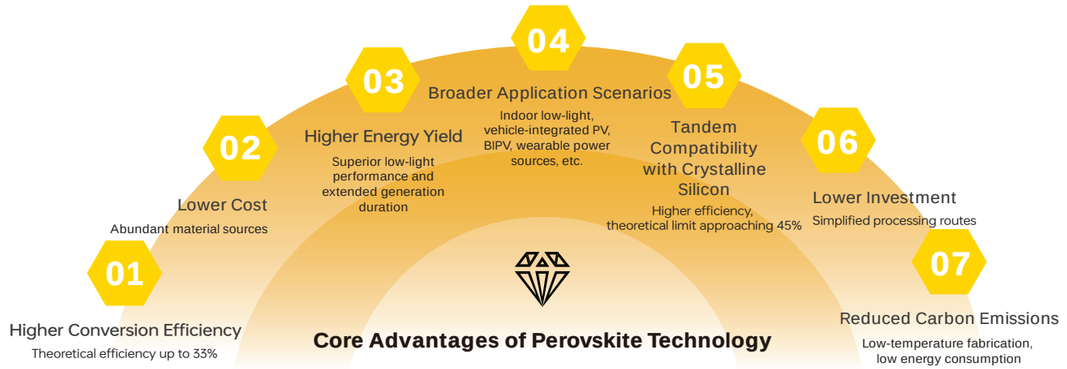
Unique Crystal Structure:
Combines exceptional light absorption capability with superior charge transport properties.

Low-Cost Fabrication:
Can be processed via solution-based or vacuum deposition methods, enabling scalable mass production.

Core Enabling Technology:
Provides revolutionary material and process foundations for next-generation photovoltaic breakthroughs.



Natural perovskite: Ca-Ti-O₃ Artificial perovskite: Organic–inorganic hybrid lead halides



Core Positioning

Focusing on pain points of energy supply in low-light environments, we provide integrated perovskite energy + microcircuit system-level solutions.

We break through the bottleneck of energy harvesting in weak-light conditions, enabling miniaturized, low-maintenance, wireless power supply — delivering stable and long-lasting "perpetual power" for electronic devices.

Power Generation
Perovskite low-light power generation technology efficiently harvesting diverse light sources

Energy Storage
Miniaturized long-duration energy storage systems optimizing energy management and distribution

Power Supply
Integrated microcircuit solutions ensuring stable power delivery to various devices

Integrated System Architecture

Technology Innovation Driving Commercial Value

30%-50%
Reduction in overall energy system costs

Breaking away from the traditional PV valuation model based solely on "wattage (W)".
New Value Assessment System: Three Core Dimensions

- **Scenario Adaptability**
  Customized energy output solutions for specific application environments.
- **Operational Endurance**
  Focused on real-world continuity and stability of energy supply.
- **Comprehensive Cost Reduction**
  Full lifecycle cost optimization, eliminating hidden expenditures.

Core Strength: "Stick-and-Use" Deployment

- **System Integration**
  Integrates perovskite modules, energy storage units, and intelligent control modules into a single system — no complex wiring required.
- **Plug-and-Play**
  Simplified installation process; deployment can be completed without professional technical background.
- **Optimized O&M**
  Reduced component replacement frequency and significantly lower long-term maintenance costs.

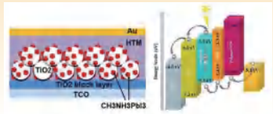
Technology Milestones

2011- In the absence of prior literature references, the research team independently designed solid-state perovskite-sensitized solar cells in parallel with international peers, resolving the stability issues of liquid-state systems.

→ First global report of a non-doped, highly stable perovskite solar cell system;

→ First perovskite solar cell research paper published in *Energy & Environmental Science;

Energy Environ. Sci. 2013, 6, 1480



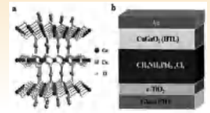
01

High-Efficiency & High-Stability Perovskite Cells
Second successful global case of constructing perovskite solar cells with both high efficiency and high stability.
Stability is the key barrier toward commercialization:

→ Severe methylammonium volatilization at 80°C — eliminated MA; adopted Cs/FA-based perovskite system (stable up to 175°C);

→ Instability of organic hole transport materials — replaced with inorganic HTMs such as $CuGaO_2$;

Energy Environ. Sci. 2013, 6, 1480



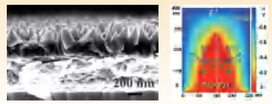
02

Through synergistic additive engineering, anatase TiO_2 nanocone array structures were fabricated, achieving a world-record efficiency (22.48%) for devices based on one-dimensional electron transport layers.

→ Length ≤ 600 nm, ideal as a model material for 1D optoelectronic devices;

→ Crystallographic challenge: 1D anatase TiO_2 synthesis is highly difficult;

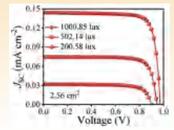
Angew. Chem.Int. Ed. 2000, 59, 11969–11976



03

2023- Proposed an in-situ preferential nucleation strategy to obtain high-quality and highly uniform perovskite thin films.
Devices achieved a world-record efficiency of 40.07% under simulated indoor illumination, laying the foundation for underwater and low-light photovoltaics.。

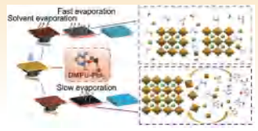
Adv. Mater. 2024, 36, 2306870.



04

2024 – DMPU Partial Substitution Strategy
Developed a fabrication strategy partially substituting DMSO with DMPU:
DMPU forms a more stable intermediate phase with PbI_2 and enables controlled release of PbI_2, effectively slowing crystallization kinetics and widening the processing window. Achieved an open-circuit voltage (VOC) of 1.256 eV — the world's highest value compatible with tandem solar cells.

Energy Environ. Sci., 2024, DOI: 10.1039/D4EE00330F.



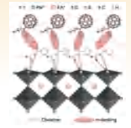
05

2025 – Interfacial Bridging Regulation Strategy
Proposed an upper-interface bridging modulation strategy for perovskite solar cells. Bridging molecules deliver multiple synergistic effects:

→ Defect passivation (coordination & etching), suppressing recombination loss;

→ Induced n-type band bending, improving energy level alignment and promoting charge separation;

Adv. Mater. 2025, DOI: 10.1002/adma.202508352;
Angew. Chem. Int. Ed., 2025, 64(21), e202502244. (Hot Paper) ;
Energy Environ. Sci., 2025, 18, 6237–6247.



06

Application Cases

Underwater Low-Light Power Generation System
Autonomous Energy Solution for Marine Exploration

Application Scenarios:
Underwater robotic fish, various subsea sensors, marine buoys, etc.

Product Description:
Based on globally exclusive patented underwater perovskite technology, this solution pioneeringly provides continuous energy supply for underwater robotic fish and low-power sensing devices.
It fundamentally addresses two longstanding challenges in subsea equipment: limited operational endurance and high maintenance costs.

Flexible Low-Light Perovskite Modules
Customized Energy Solutions

Application Scenarios:
Rollable portable power systems, wireless passive sensors, smart wearables, electric sunshades, etc.

Product Description:
Focused on customized requirements from overseas clients, delivering tailored energy solutions optimized for low-light performance, eliminating dependence on batteries or active power supplies.

Empowering Smart Devices with Extended Endurance
Consumer Electronics Energy Solutions

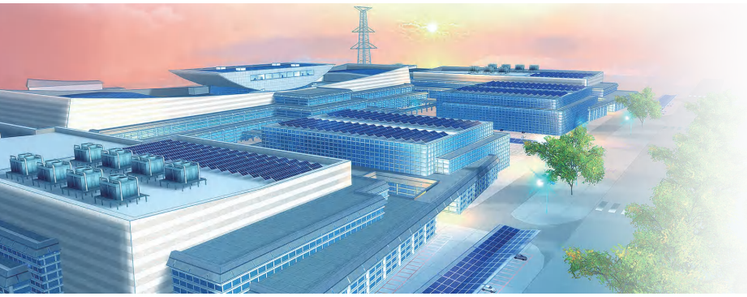
Application Scenarios:
Crystal lamp bases, electronic shelf labels (ESL), smart door locks, remote controls, etc.

Product Description:
By integrating perovskite modules with microcircuit design, this solution enables battery-free power supply for electronic shelf labels, smart locks, remote controls, and similar devices, fundamentally addressing endurance and sustainability challenges.

Core Service

PRE-SALE GUIDANCE

choose the best solution for clients, including PV modules type and power, PV system type and transport.



DESIGN

Providing PV system design, in order to maximize the generated energy.

O&M

Operation and maintenance with global service partners.

CONSTRUCTION

Coordinate the project construction with the local EPC.

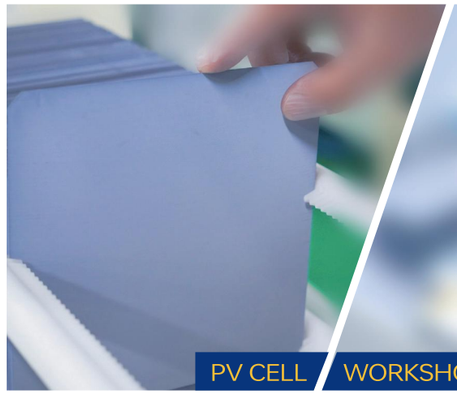
DEVELOPMENT

Developing PV projects around the world, including location found, purchasing project rights, establishing SPV

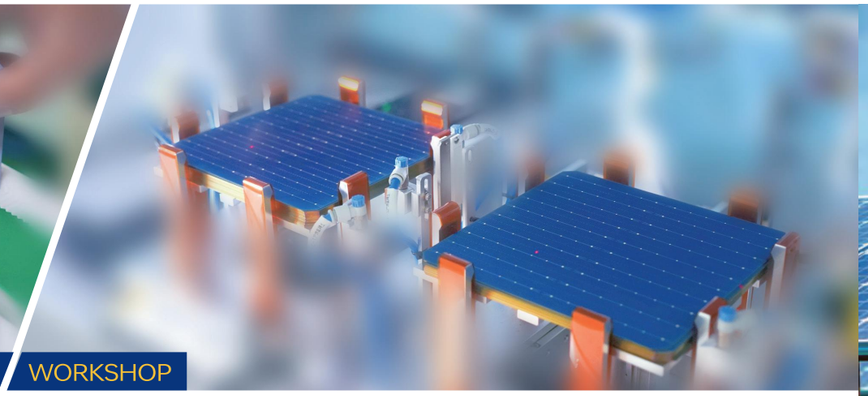
OUR PARTNERS

(Ranking in no particular order)

国家电投 SPIC
国家能源集团 CHN ENERGY
中核集团 CNNC
中国节能
中国能建 ENERGY CHINA
中国电建 POWERCHINA
COSCO SHIPPING
中国大唐集团 China Datang Corporation
中国三峡 China Three Gorges Corporation
華潤電力 CR POWER
中国航天
中电投集团
深圳能源 SHENZHEN ENERGY
中国华电 CHINA HUADIAN CORPORATION LTD.
中国华能 CHINA HUANENG
国家电网 STATE GRID
ChinaCoal
中国南方电网 CHINA SOUTHERN POWER GRID
中广核 CGN
中国兵器工业集团 NORINCO GROUP
CHINA TOWER 中国铁塔
中国中车 CRRC
中国移动 China Mobile
DEC 东方电气 DONGFANG ELECTRIC
中国海油 CNOOC
MINGYANG
中泰集团 ZHONGTAI GROUP
SUNGROW
吉利汽车 GEELY AUTO
申能 SHENERGY
中环 ZHONGHUAN
中国西电 CHINA XD
湖北能源
孚尧能源
Tencent
Sinopec
中国石油
中储粮 SINOGRAIN
小桔充电



PV CELL WORKSHOP



PV MODULE WORKSHOP

PV Mounting EPC

INVERTER ENERGY STORAGE

Photovoltaic + Agriculture

grassland | plain | forest land
mountainous

Photovoltaic + Idle Land

abandoned land
barren mountains and slopes
abandoned mine
saline-alkali land

Photovoltaic + Wastewater Treatment

wastewater treatment
water purification plant

Photovoltaic + Ecology Solutions

Photovoltaic + Heating

Ecological Town
Pastoral Area
Rural Area
Urban Area

Photovoltaic + Desertification Control

desert | gobi desert
saline-al | kali land

Photovoltaic + Industrial Energy Efficiency

industrial park
self-built factory buildings
commercial rooftops

Energy Storage Solutions

GENERATION SIDE

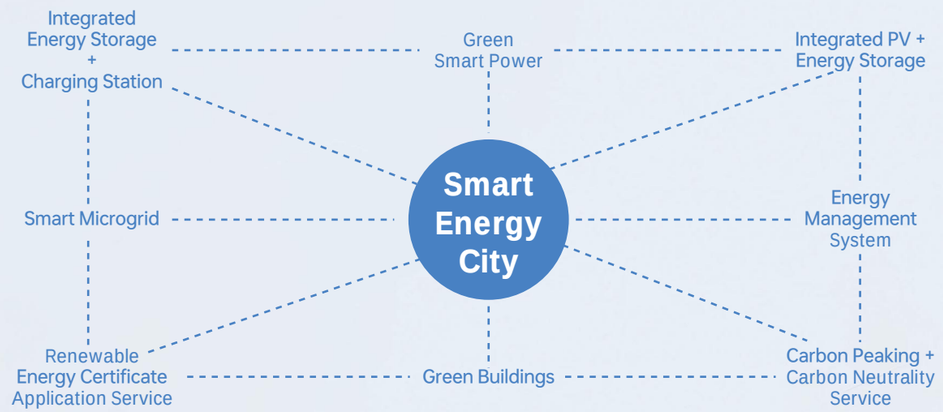
Optimizing the power generation output curve enhances grid stability, reduces curtailment of variable renewable energy (VRE) like wind and solar, and provides critical ancillary services such as frequency regulation and peak shaving. This not only improves the reliability of power supply but also allows for higher integration of renewables into the grid.

USER SIDE

Enables off-grid areas to achieve reliable electricity access, reducing societal electricity costs while improving demand-side energy efficiency. This promotes equitable energy access, maximizes resource utilization, and contributes to long-term social and economic development.

GRID SIDE

In the transmission and distribution segments, it facilitates grid capacity expansion and enhances backup power capabilities, allowing for the seamless integration of more renewable energy sources. This supports the grid’ s safe, stable, and efficient operation while optimizing cost-effectiveness and ensuring resilience against disruptions.



Integrated PV + Energy Storage + Charging

15GW
Cumulative Installed

60+
Global Partners

40+
Shipping Countries

1.5GW
Power Plants

50MW
Photovoltaic + Agriculture

Yingcheng City, Hubei Province
PROJECTS

140 Million kWh
The annual cumulative power generation exceeds

3000 Hours
The annual equivalent duration exceeds

30% utilization hours
Beyond the feasibility study

WIND POWER PROJECTS
Si County, Suzhou City, Anhui Province, China

50MW
Photovoltaic + Agriculture

Yiyang County, Hunan Province
PROJECTS

80MW
Photovoltaic + Agriculture

Yingcheng City, Hubei Province
PROJECTS

200MW
Photovoltaic + idle land

Kangbao County, Hebei Province
PROJECTS

100MW
PV + Poverty Alleviation

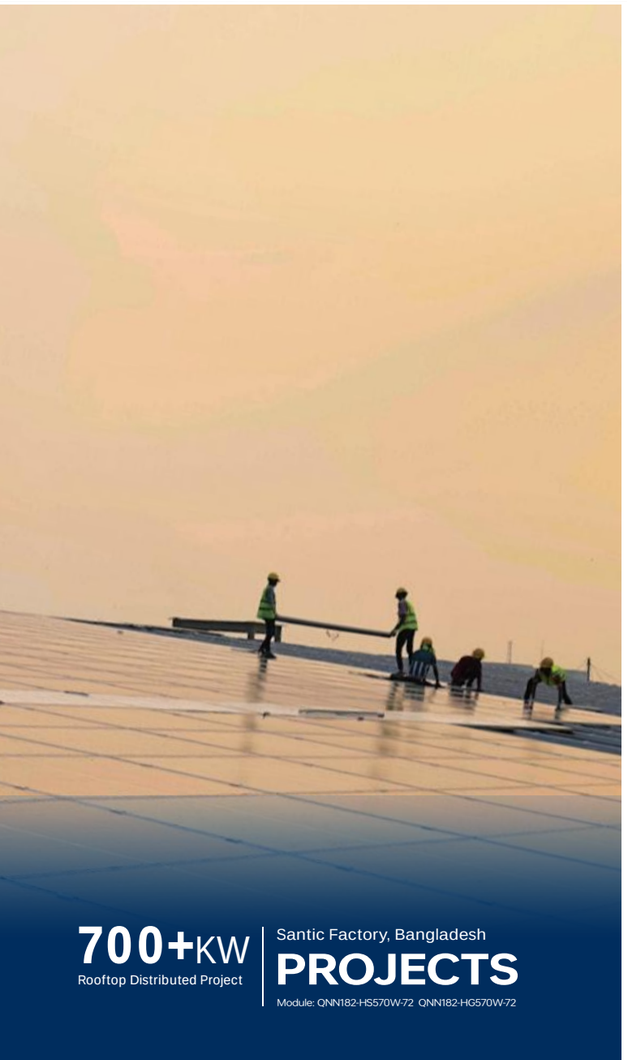
Shayang County, Hubei Province
PROJECTS

80MW
PV + Poverty Agriculture

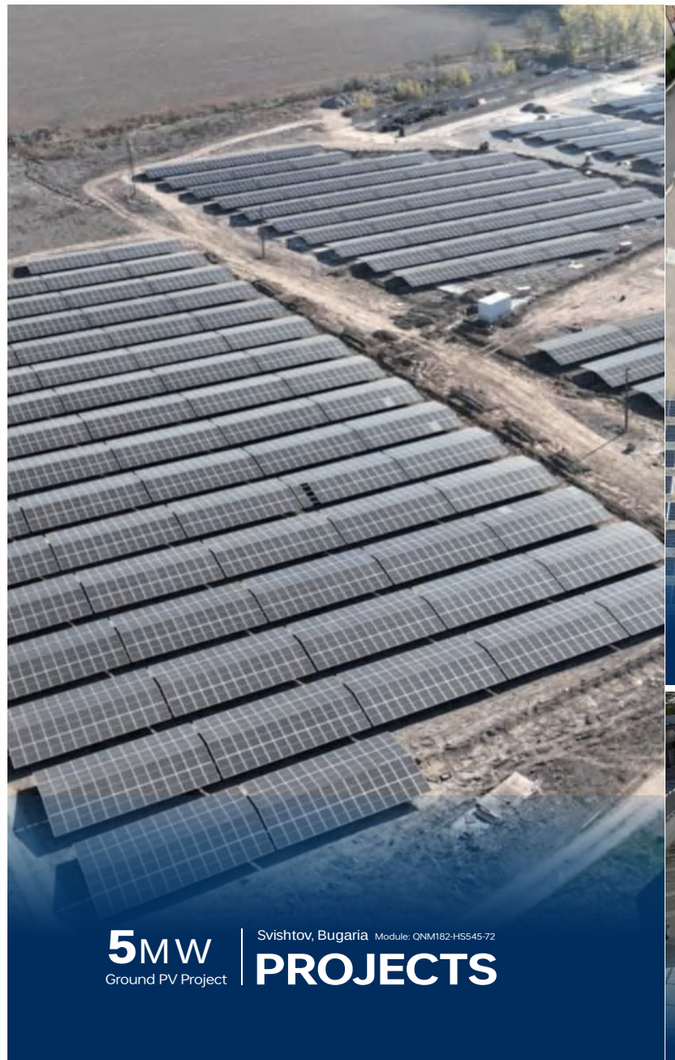
Dangyang City, Hubei Province
PROJECTS

7MW
Ground PV Project
Italy Module: QNN182-HG570W-72
PROJECTS

1MW
Ground PV Project
Poland Module: QNN182-HS560W-72
PROJECTS



700+KW
Rooftop Distributed Project
Santic Factory, Bangladesh
PROJECTS
Module: QNN182-HS570W-72 QNN182-HG570W-72



5MW
Ground PV Project
Svishtov, Bugaria Module: QNM182-HS545-72
PROJECTS

300KW
Rooftop Distributed Project
Vallo della Lucania, Salerno, Italy
PROJECTS

1MW
Ground PV Project
Tricase, Italy
PROJECTS

400KW
Rooftop Distributed Project
Italy Module: Full Black QNN182-HS420W-54
PROJECTS