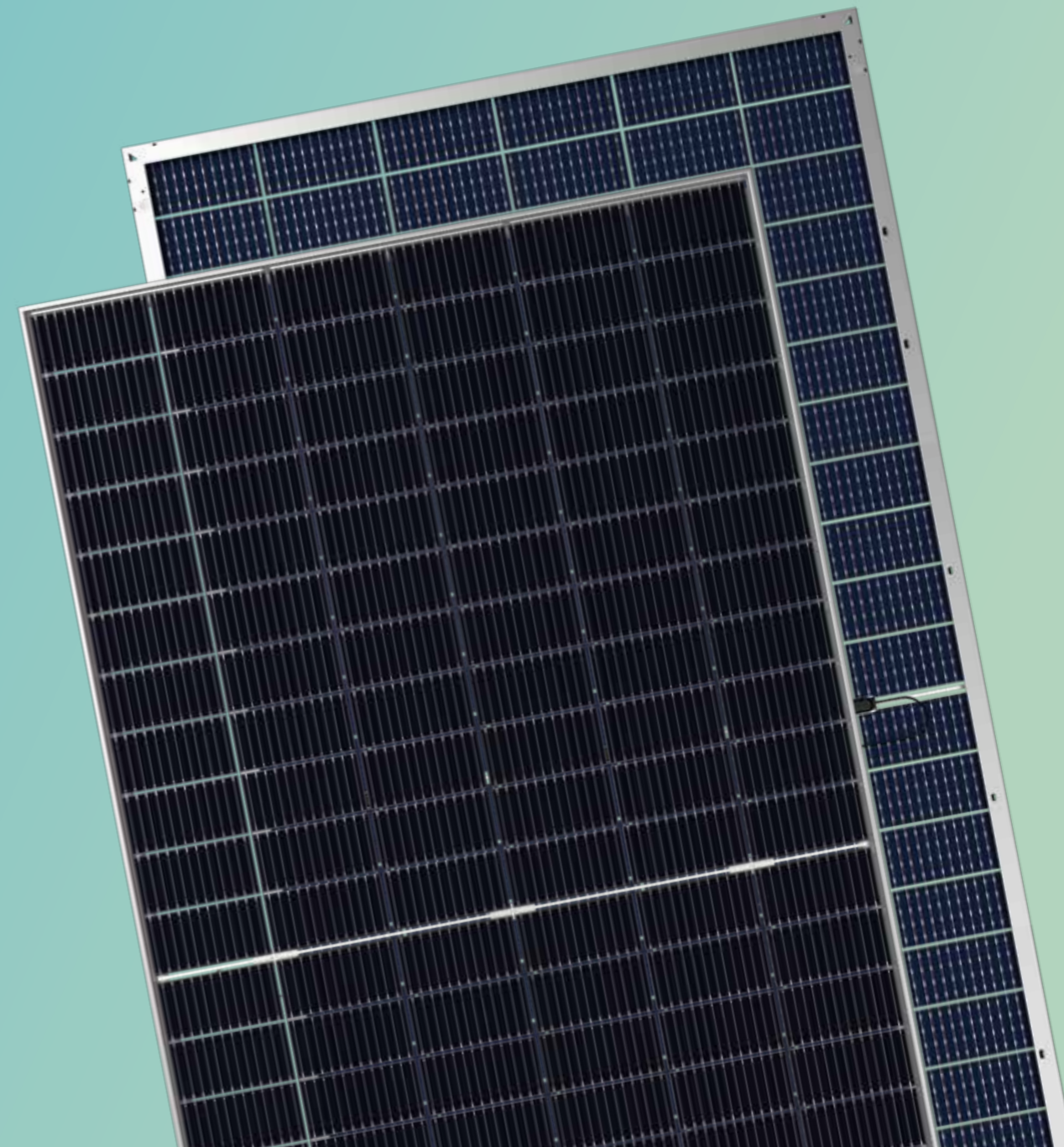


COMPANY BROCHURE

# BEYONDSUN HOLDINGS

A Global Leading Solar Manufacturer & Integrated Energy Solution Provider



**Zhejiang Beyondsun Green Energy Technology Co., Ltd.**

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# Creating a More Sustainable Future for Our Planet

## MISSION

Power the future with infinite solar energy

## VISION

Devoted to be a global trustworthy solar energy partner



# ZHENBEI GROUP

## A Global Multi-Industry Complex

Beyondsun is a member of ZHENBEI GROUP, ZHENBEI GROUP was founded in 1986, started with cashmere industry. With the business principle of "Morality, Quality, Brand", ZHENBEI GROUP has been committed to provide customers products with the best quality and excellent services.

After more than 36 years of prudent operation, ZHENBEI GROUP has become a multi-industry complex with four key business sectors: cashmere, real estate, renewables and assets management. We have never stopped innovating, which is the core competence of ZHENBEI GROUP and keep us in forefront of different industries.

Looking forward, with globalization of economy, ZHENBEI GROUP has switched its goal from provide excellence products to be a international excellence brand, and we will keep striving for it.

### ZHENBEI GROUP's four key business sectors:

- Cashmere – ZHENBEI Cashmere
- Renewables – Beyondsun Holdings
- Real Estate – ZHENBEI Real Estate
- Assets Management – ZHENBEI Holdings

**1986**  
Founded in

**8 Billion RMB+**  
Total assets

**3,000+**  
Employees

**80+**  
Countries covered

# ZHENBEI CASHMERE

## Key Facts & Figures

Experience can't be achieved overnight; it takes time — in our case, more than 36 years of hard work and dedication. ZHENBEI Cashmere was founded 1986, from beginnings in the cloth manufacturing industry, ZHENBEI Cashmere has grown to become a cashmere products giant with full vertically integrated value chain.

Today, ZHENBEI Cashmere is one of the largest cashmere product manufacturers in the world, and more importantly it is one of the top 3 cashmere brand in China.

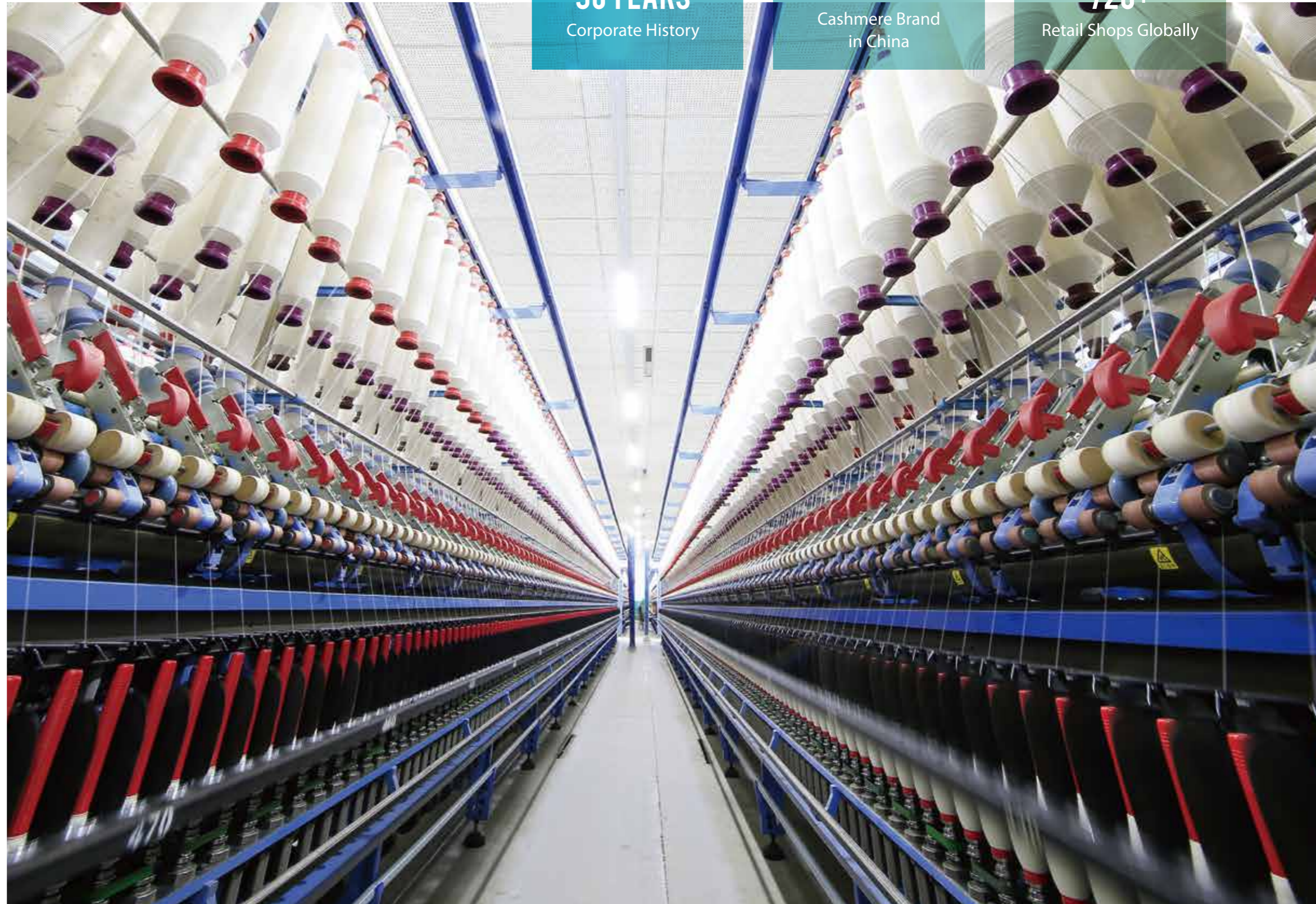
### ZHENBEI Cashmere vertical value chain:

- Goat farming and elite breeding
- Wool collecting
- Washed wool
- Dehaired wool
- Article wool
- Cashmere yarn
- Cashmere products
- Retail shops and distribution channels

**36 YEARS**  
Corporate History

**TOP 3**  
Cashmere Brand  
in China

**720+**  
Retail Shops Globally





# ZHENBEI REAL ESTATE

## Key Facts & Figures

ZHENBEI Real Estate was founded by ZHENBEI GROUP in 2007. With strong financial support from ZHENBEI GROUP, ZHENBEI Real Estate has been developing very fast. Until now, it has developed dozens of projects in eastern China with a total of more than 2,500,000 square meters.

From the very beginning, ZHENBEI Real Estate has set its market position in high-level villas and apartments. With high quality, good design and services, ZHENBEI Real Estate has delivered houses to more than 20 thousands proprietors with a new life of smart housing.

**2,500,000** SQM+  
CUMULATIVELY REAL ESTATE DEVELOPED

**15 BILLION** RMB+  
TOTAL SALES REVENUE



Picture: ZHENBEI HanLin Gold Plaza

# ZHENBEI HOLDINGS

## Key Facts & Figures

With more and more different kinds of estate assets developed by ZHENBEI GROUP, ZHENBEI Holdings was founded in 2014 and it's dedicated to operate, maintain and increase value of those assets.

Till now, ZHENBEI Holdings operates several different kinds of assets, including industrial parks for cloth manufacturing and e-commerce, high class shopping centers, hotels and catering. Those assets can continuously provide great cash flow to the parent group every year, which is a corner stone of the group's healthy finance.

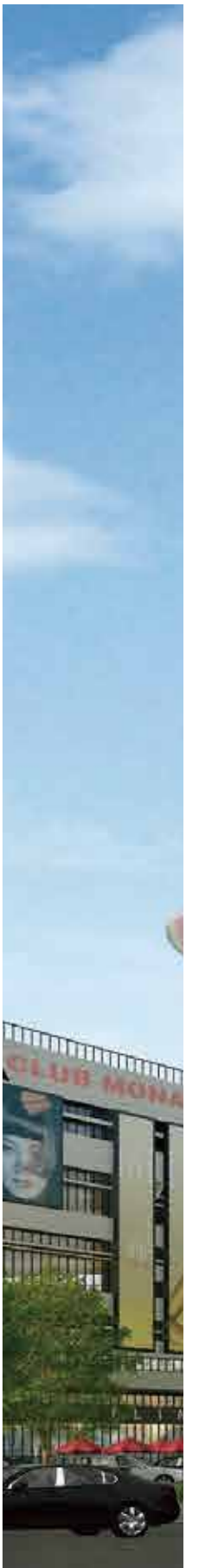
ZHENBEI Holdings is also keep looking for other opportunities to extent its business scope and expand its assets scale.

**550,000** SQM+

COVERS INDUSTRIAL PARKS,  
SHOPPING CENTERS & HOTELS

**3BILLION** RMB+

TOTAL ASSET MANAGEMENT SCALE



# A Global Leading Solar Manufacturer & Integrated Energy Solution Provider

## BEYONDSUN HOLDINGS

As a remarkable PV module manufacturer and renewable energy solution provider, Beyondsun dedicates to providing high-quality solar products with outstanding performance and one-stop solutions since its establishment in 2008. With excellent financial background backed by ZHENBEI GROUP, Beyondsun never stops its pace in innovation to assure leading-edge of the products.

By far, Beyondsun has 2 GW cell capacity and 5 GW module capacity and will maintain a competitive capacity in the next decades. Beyondsun branded products have been widely deployed in more than 68 countries through a global sales network spanning more than 580 sales and installation partners across the globe.



### Beyondsun Industry Value Chain

From upstream raw materials to downstream project investment, EPC, O&M and sales and distribution of electricity of integrated projects of solar, wind and energy storage, Beyondsun runs through the entire value chain of renewable energy.



# AMAZING DECADES

**2008**

Trunsun Solar founded

**2009**

TUV certificate acquired  
Beyondsun PV established

**2010**

1st solar power plant in Belgium

**2011**

Shanghai sales & marketing center opens  
Netherlands logistic center opens  
Germany sales center opens  
UL, ETL & Golden Sun certificate acquired

**2012**

Fully automatic assemble line started  
Trunsun Investment Holdings established in Bulgaria  
Beyondsun International Limited established in Hongkong

**2013**

SoalrIF acquired  
Beyondsun New Energy established

**2014**

First commercial rooftop solar project in Zhejiang province

**2015**

60MW solar projects in China

**2016**

Module capacity ramp up to 600 MW  
200MW ground project in China

Project pipeline up to 600MW

**2017**

Beyondsun Aluminum founded  
Project pipeline in China up to 1GW

**2018**

Tier 1 by BloombergENF

Vietnam factory founded

Module capacity ramp up to 1.2 GW

**2019**

Module capacity ramp up to 1.6 GW

KS certificate acquired

Beyondsun Power founded

**2020**

Renamed as Beyondsun Green Energy

Launched 550W+ High-efficiency PV Products

**2021**

Module capacity ramp up to 5 GW

Complete 300 MW wind power project

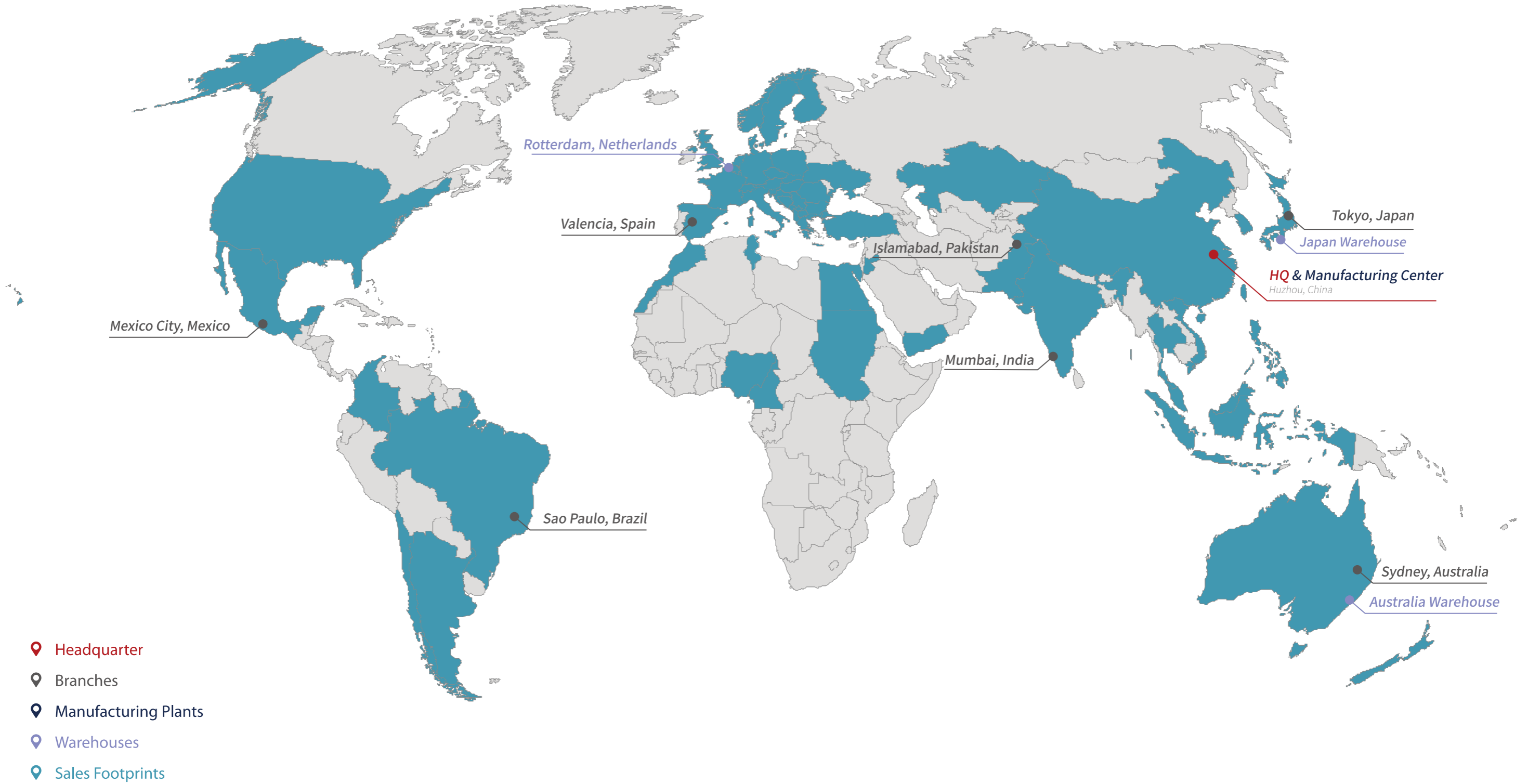
Launched 655W+ High-efficiency PV Products

**2022**

Launch N-TOPCon high-efficiency modules



# GLOBAL PRESENCE

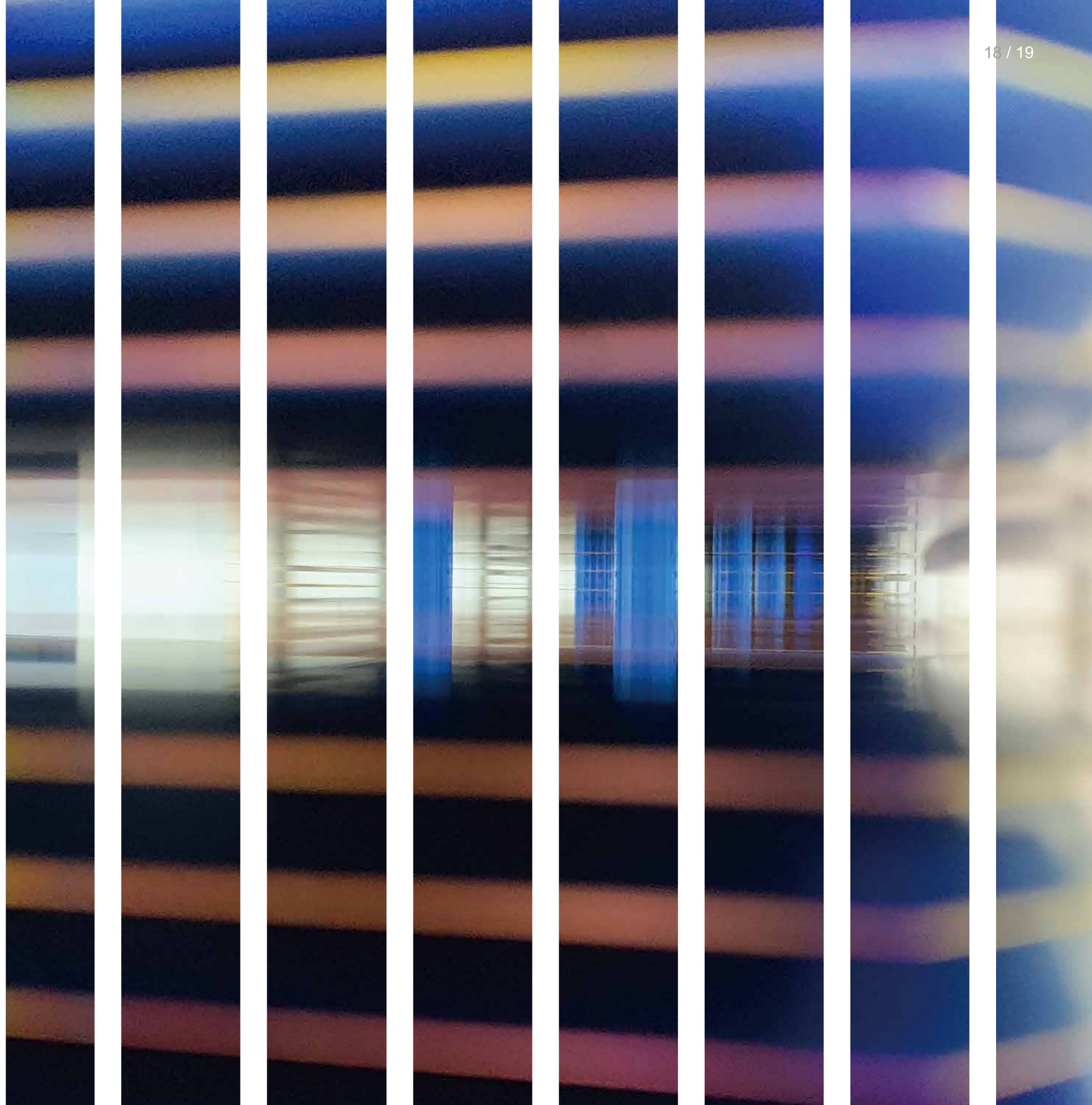


# MAKE SOLAR YOUR BETTER CHOICE

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Beyondsun is a global leader in the solar industry,  
differentiated across four categories:

- *TECHNOLOGY LEADERSHIP*
- *MANUFACTURING EXCELLENCE*
- *QUALITY MANAGEMENT*
- *PROJECT EXPERTISE*



SOLAR CELL  
EFFICIENCY

**24.7%**

SOLAR MODULE  
EFFICIENCY

**22.3%**

## 01 OUR RENEWABLE BUSINESS IN FOCUS

### TECHNOLOGY LEADERSHIP

We are leading global solar company constantly exploring new approaches and technologies. We employ a unique combination of R&D, pilot production, and testing to develop and apply innovative manufacturing methods for high-tech products.

Our strong capability in R&D has created a product portfolio that keeps up with customer needs. Its standard and high-efficiency product offerings are among the most powerful and cost-effective in the industry.

Innovation is our foundation and also core competence, allowing us to stay ahead in the industry. We're committed to contribute to a more sustainable future with solar technology.

**118**  
R&D talents

**168**  
Patents

**\$280M**  
R&D investment

## 02 OUR RENEWABLE BUSINESS IN FOCUS

### MANUFACTURING EXCELLENCE

Beyondsun produces high quality products through leveraging fully-automated manufacturing factories, and employing experienced process talents. Our state-of-the-art Manufacturing Execution System (MES) installed in the plants allows for 100% traceability of all products from procurement to logistic.

Further more, our system optimizes the entire production process by maintaining an optimum balance between production scheduling inventory holding, manufacturing and product delivery.

To date, we have mass-produced more than 10 GW of high quality Beyondsun solar modules.

**2GW**

SOLAR CELL  
CAPACITY

**5GW**

SOLAR MODULE  
CAPACITY



## 03 OUR RENEWABLE BUSINESS IN FOCUS

### QUALITY MANAGEMENT

Beyondsun uncompromising quality and reliability firstly is based on stringent internal quality control program. From raw material to product shipment, Beyondsun has more than 300 quality control points.

Also, Beyondsun uncompromising quality and reliability is validated by a number of world renowned third parties. Those tests ensures outstanding durability and world-class performance even in the harshest conditions: strong wind, heavy snow loads, salt stress, aridity, high temperature or humidity. Beyondsun products reliability is backed by VDE Germany. Beyondsun only offer best-in-class solar modules, and also warranties against annual degradation that are unparalleled in the market.

#### Beyondsun factory certifications :

- *ISO 9001: Quality Management System*
- *ISO 14001: Environment Management System*
- *ISO 45001: Occupational Health and Safety*

#### Beyondsun product certifications :



**GRADE A TÜV SÜD**  
PV PLANT O&M  
QUALITY RATING

**900 MW**  
SOLAR PROJECT  
COMPLETED

**300 MW**  
WIND POWER  
PROJECT COMPLETED

**6.5 GW**  
SIGNED RENEWABLE  
PROJECT PIPELINE

## 04 OUR RENEWABLE BUSINESS IN FOCUS

### PROJECT EXPERTISE

Beyondsun started its downstream business from 2013, with 200 million RMB registered capital. With 10 years of fast development, now our downstream business covers solar & wind power project development, investment, EPC, O&M, ESS, smart energy and electricity retail. Beyondsun is one of the few companies in the industry who successfully obtained "Grade A" rating of O&M quality by TÜV SÜD Germany.

During the 13th Five-Year Plan, Beyondsun has completed 900 MW of solar power projects and 300 MW of wind power projects. And during 14th Five-Year Plan, Beyondsun has set its goal to complete 10 GW renewable energy projects.

#### Beyondsun downstream business covers:

- Project development
- Project investment
- Project EPC
- Project O&M
- ESS
- Smart energy project
- Electricity retail

# OUR PRODUCT BRAND

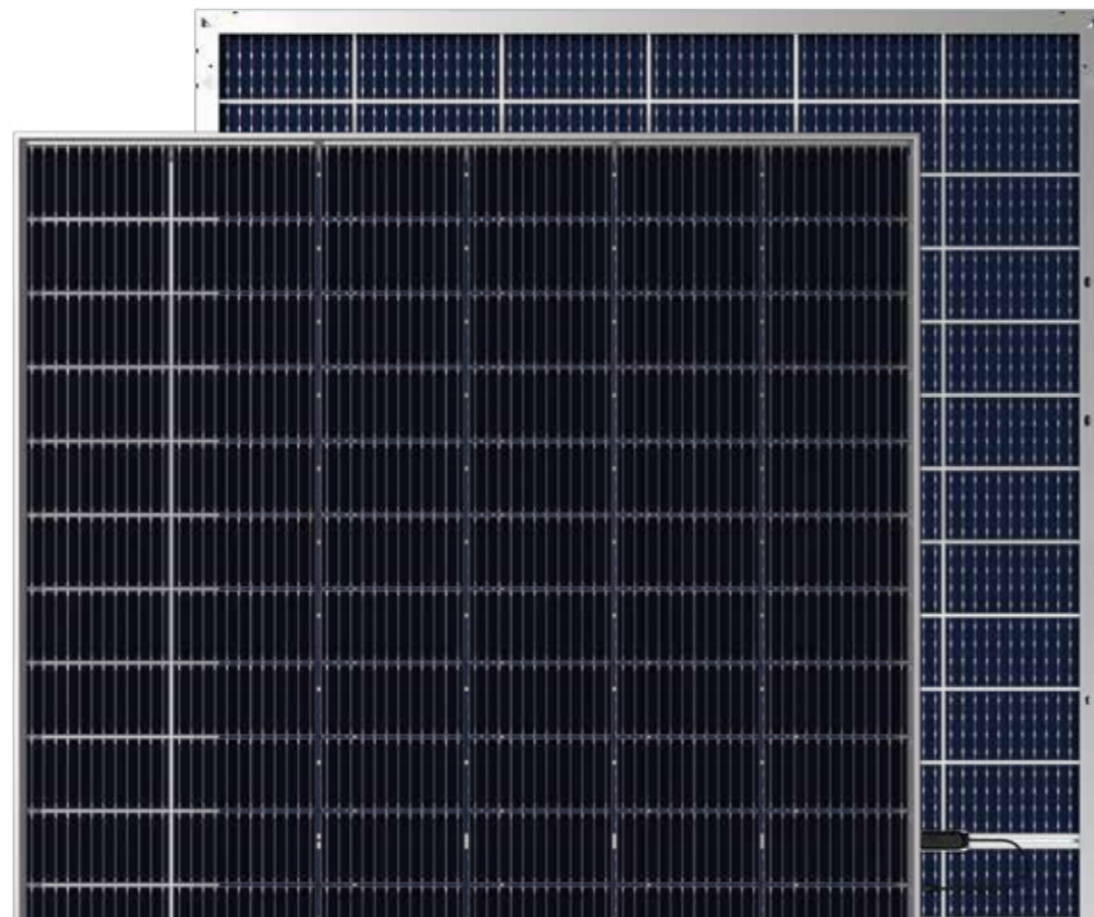


Beyondsun premium solar modules are engineered and produced in China, and they are the results of our industry-leading technical expertise. More than 118 R&D talents continuously conducting new technology to improve product efficiency and reliability. It is no coincidence that Beyondsun solar modules have been widely deployed in many countries and become one of the most recognized solar module brand in the world.

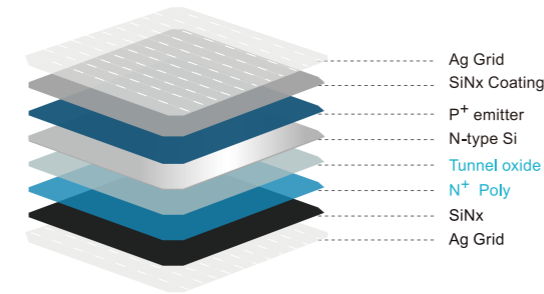
Beyondsun will never stop exceeding to achieve better product efficiency and reliability and create more value to our customers.

Our world-renowned brand, Beyondsun markets a premium solar module portfolio including:

- **N Power Series**
- **DuDrive Max Series**
- **DuDrive UltraMax Series**
- **BiDrive Max Series**
- **BiDrive UltraMax Series**



# CELL TECHNOLOGY

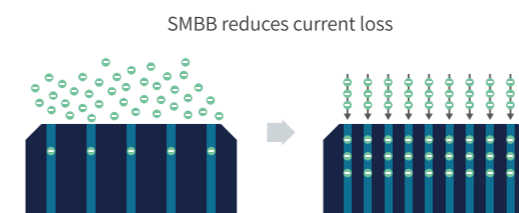
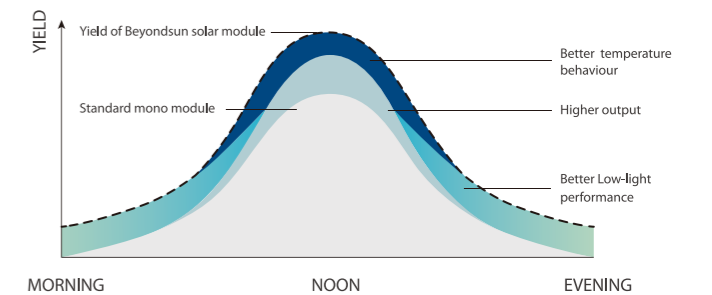


## N-type TOPCon Cell Technology

N-type TOPCon is a solar cell technology with tunnel oxide layer passivated contact based on the principle of selective carrier. Its cell structure is an N-type silicon substrate cell, with a layer of ultra-thin silicon oxide on the back. And with a thin layer of doped silicon, together it forms a passivated contact structure, which effectively reduces surface and metal contact recombination. The cell has great advantages of high efficiency, low degradation, high bifacial rate, low temperature coefficient, etc.

## PERC Cell Technology

PERC (Passivated Emitter Rear Cell) technology is the standard state-of-the-art solar cell technology today. PERC is considered as an effective solution to increase the energy yield and reduce the levelized costs of electricity (LCOE) in a PV system. By depositing a rear surface passivation film on monocrystalline material, the PERC technology can increase the cell performance to more than 23.0 % in mass production - especially when a selective emitter is used.



## SMBB Technology

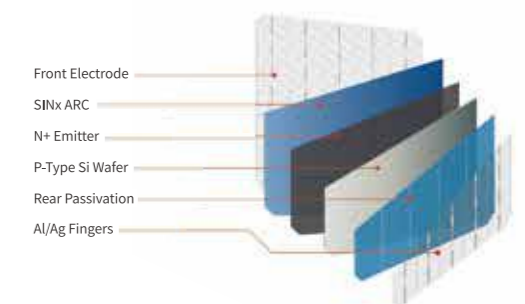
SMBB (super multi-busbar) is an optimized design of solar cell, which uses multiple copper wires to form shorter current paths on a solar cell for improvement of current collection efficiency. Special copper wires of circular design are utilized to increase the amount of light incident on the solar cells, such that the power generation performance of module is improved further.

In addition, by using the SMBB design, the impact of external force on solar cell can be reduced effectively, so that the solar module can maintain a stable output performance for a long period of time. Thus, this is a new generation technology that enhances both power performance and reliability simultaneously.

## Bifacial Technology

Bifacial technology lifts solar power to the next level. Instead of hiding the back side of solar cells with an opaque polymer sheet to protect them from diffused and reflected light, the rear is now also open for sunlight absorption.

For a bifacial PERC or N type TOPCon cell, the back surface eld is replaced by grid, hence render the majority of rear side transparent and attain a bifaciality of 75% - 80%. The back side adopts a glass package, achieving bifacial light reception and power generation. The backside can increase energy yield up to 25%, and can bring higher returns to the investors.



# PRODUCT PORTFOLIO



### DuDrive **Max** Series

TSHM-108HV 400W-415W  
TSHM-144HV 535W-555W



### BiDrive **Max** Series

TSBHM-108HVG 400W-415W  
TSBHM-144HVG 535W-555W



### DuDrive **UltraMax** Series

TSHM-120HS 595W-605W  
TSHM-132HS 645W-660W



### BiDrive **UltraMax** Series

TSBHM-120HSG 595W-605W  
TSBHM-132HSG 645W-660W

## **N** POWER Series




### Our Latest High-End Product

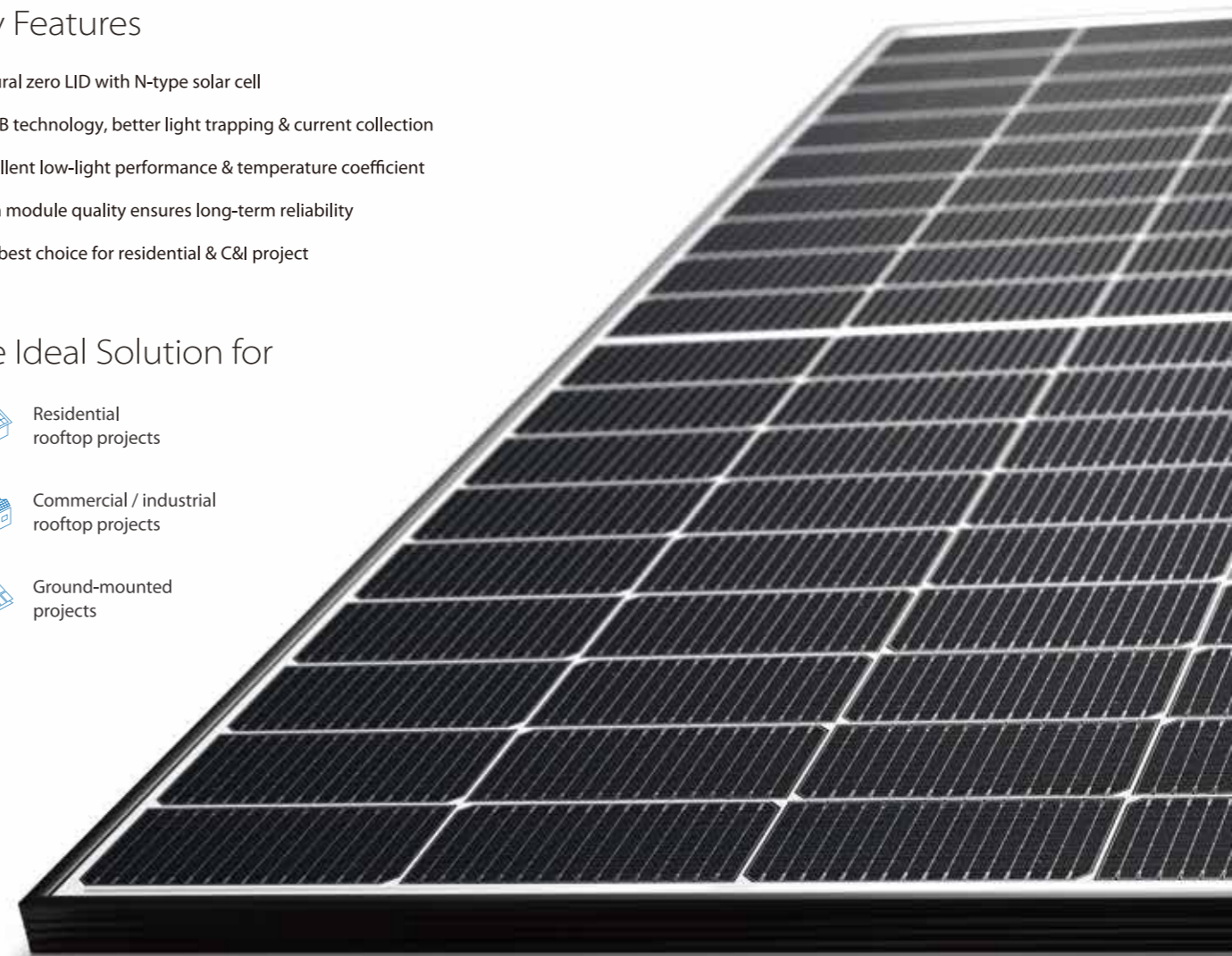
TSHNM-108HV 415W-435W    TSBHNM-108HVG 415W-435W  
TSHNM-144HV 560W-580W    TSBHNM-144HVG 560W-580W

### Key Features

- Natural zero LID with N-type solar cell
- SMBB technology, better light trapping & current collection
- Excellent low-light performance & temperature coefficient
- High module quality ensures long-term reliability
- The best choice for residential & C&I project

### The Ideal Solution for

-  Residential rooftop projects
-  Commercial / industrial rooftop projects
-  Ground-mounted projects







01

## PROVEN RELIABILITY

Our high-quality PV products are widely used in more than 68 countries and regions around the world, covering various application scenarios including utility, C&I, residential and floating systems as well. Our tracking records demonstrated the performance and reliability of Beyondsun products even under harsh environment. We will continue to invest on technology innovation and provide more efficient and reliable product solutions and bring more value to customers.

**375 MWp**  
 Rajasthan India

This project is invested and constructed by the Indian new energy giant ACME. The project is located in Rajasthan, with a total installed capacity of 375MWp. Beyondsun has provided more than 230,000 pieces of high-performance solar modules to the project. MSEDCCL provides electricity sales and distribution services for the project and it is currently one of the largest solar projects in India.



# PROJECT REFERENCE



**300 MWp**

- Onshore wind power
- Gansu, China

This project is located in Dingxi, Gansu Province, China. The project is invested and developed by Beyondsun, and China Power provided the EPC service. The total investment of the project is 2.5 billion RMB with total capacity of 300MWp. The project was officially put into operation at the end of 2021. The annual power generation is about 700,000 MWh, which can save 280,000 tons of standard coal each year, reduce 2,400 tons of dust and air pollution, and reduce 2,000 tons of carbon dioxide emissions.




**80 MWp**

- Fishing lake project
- Huzhou, China

**80 MWp**

- Fishing lake project
- Huzhou, China

This project was invested and developed by Beyondsun in 2017. The project is located in Huzhou, China with installed capacity of 80MWp. The project uses more than 296,000 pieces of high-efficiency Beyondsun solar modules, which can provide about 88,000 MWh of clean electricity each year, which is enough to supply 12,000 households.



**15 MWp**

- Ground mounted
- Valladolid, Spain

**15 MWp**

- Ground mounted
- Valladolid, Spain

PV 13 Roeles Sur project is located in Valladolid, Spain, with a total installed capacity of 15 MWp. The project installed 45,000 pieces of Beyondsun solar modules, and adopted a flat single-axis tracking system. The project started commercial operation in 2020, with an average annual power generation of approximately 21,000 MWh, enough to supply 2,500 local households.

# PROJECT REFERENCE



**4.5 MWp**

**Industrial roof-top**

**Huzhou, China**

The project was invested and EPC by Beyondsun. The project is located in the Huzhou Small-Enterprise Industrial Park. It occupies 100,000 SQ.M roof and has a installed capacity of 4.5MWp. The project provides about 5,400 MWh of electricity to the industrial park each year, saving about 1,700 tons of standard coal and reducing carbon dioxide emissions by nearly 4,800 tons each year.



**25 MWp**

**Fishing lake project**

**Huzhou, China**

The project was invested and developed by Beyondsun in 2018. The project is located in Nanxun, a famous water town in Zhejiang, with installed capacity of 25 MWp. The project uses more than 94,000 pieces of polycrystalline solar modules of Beyondsun, with an annual power generation around 30,000 MWh, which can reduce 18,000 tons of carbon dioxide, 59 tons of sulfur dioxide, and 51 tons of nitrogen oxide emissions in each year.



**20 MWp**

**Ground mounted**

**Badgingarra, Australia**

Emu Downs Solar Farm is adjacent to the existing 80 MW Emu Downs wind farm in Dandaragan. The project covers an area of 70 hectares, adopts 75,168 pieces of Beyondsun solar modules and flat single-axis tracking system to achieve the best solar energy collection. The project was officially connected to the grid for power generation in early 2018.

**28 MWp**

**Ground mounted**

**Madhya Pradesh, India**

The project is located in Madhya Pradesh, India and was developed by Sterling & Wilson, with installed capacity of 28 MWp. The project installs 106,000 pieces of poly modules from Beyondsun. The average annual power generation is about 37,800 MWh, which is enough to provide clean electricity to 60,000 local households.



**2.3 MWp**

**Ground mounted**

**Alsozsolca, Hungary**

The project is located in Alsozsolca, Hungary, with installed capacity of 2.3 MWp. The project installed 7,040 pieces of poly 330W solar modules, using a fixed racking system. The project began commercial operation in 2019, with an average annual power generation of 2,800 MWh, which brought significant economic and social benefits to the local community.

# THE RESULTS SPEAK FOR THEMSELVES

We never stop exceeding! We will keep our leadership position and further expanding our market and bring more values to our customers.

## EMMA SCORE 1 by **dun&bradstreet**

Beyondsun was rated EMMA score 1 by dun&bradstreet, which demonstrates our financial strength and healthy operation. Beyondsun is your reliable solar energy partner.

## TOP 15 Module Capacity Globally

With 2 GW of solar cell capacity and 5 GW of solar module capacity, Beyondsun now is among one of the largest solar products manufacturers in the world.

## 1.2 GW+ Project Completed

Since Beyondsun started project investment and EPC business from 2014, more than 1 GW of renewable projects have been developed and completed.

## 12 GW+ Module Shipment Globally

Since 2008, Beyondsun has shipped more than 10 GW of photovoltaic modules globally, benefiting hundred of thousands of households with green energy.

## 22.3% + Module Efficiency

Beyondsun R&D team applies self-developed core patented cell technologies, and successfully realized mass production of module efficiency with more than 21.3%.

## 168 Patents

Beyondsun continues to lead the cutting-edge photovoltaic technology, with forward-looking vision and advanced technology to promote industry transformation and upgrading.

## 6.5 GW + Project Pipeline

Beyondsun has aggressive project development target of more than 10 GW during the 14th Five-Year Plan, and currently we have signed and confirmed more than 6.5 GW project pipeline.

## 68 Countries & Regions

As of 2021, Beyondsun's products have been widely deployed in over 68 countries and regions in Europe, Asia Pacific, LATAM and Africa.

# SOCIAL RESPONSIBILITY

We grow together with our employees, customers, and partners. We have been giving back to the society in various ways and channels, including social charity, sharing of green power, human resources and the environment, and sustainable development.

## Social Charity

Since its establishment in 2008, Beyondsun has never stopped its participation in social charity, with a cumulative donation amount of more than 5 million RMB. In 2016, Beyondsun established the "Beyondsun Charity Fund" to better serve the social charity work. For decades, the company has carried out the "One-Day Charity Donation" activity every year, and all the funds raised are donated to the Huzhou Charity Federation, adding support to local charities. After the earthquake in Maduo, Qinghai province in May 2021, Beyondsun rushed to produce more than 1,000 sets of windproof and cold-proof clothing, and deliver the "Beyondsun warm" to students in multiple elementary schools in the disaster-stricken area. It took only 30 hours before and after.

## Solar Sharing

In the development, Beyondsun has applied its solar solutions to social welfare, sharing solar energy with communities. Beyondsun has donated solar street light systems to many schools in Shanxi, Henan and other provinces in China, which has great social and educational benefits. In August 2021, Beyondsun worked with the State Grid Corporation of China and donated a 16 kW solar system to Zhangjiakou in Hebei province, to provide green energy for the Beijing Winter Olympics 2022.

## Human Resources

Recruiting and cultivating human capital is essential to realizing Beyondsun's vision of sustainable development. We continue to train future elites in the new energy industry through a comprehensive training system. Beyondsun global employees have the same challenge and technological innovation. Motivated employees are our foundation and the beginning of a better future for the company. At the same time, we also encourage employees to find a balance between work and life.

## Environment & Sustainable Development

As a responsible corporate citizen, Beyondsun has introduced an environmental safety management system. At every stage of corporate management, we strive to reduce the impact on the environment through low-carbon energy and reliable and safe business agreements. The Beyondsun production base is equipped with a rooftop solar power system, and all the green electricity produced is used for manufacturing; at the same time, the company has formulated strict production and manufacturing process control protocols, and the production energy consumption, waste water and waste gas emissions must comply with the state related standards.

In a global marketplace, supply chains are becoming increasingly complex. Beyondsun has always been a firm practitioner of corporate social responsibility. Beyondsun is the first PV module manufacturer who has obtained amfori BSCI certification, which is widely recognized by the international market due to its large global influence, wide coverage of industries, and strict audit process.



At the same time, in order to continue to promote the company's multi-dimensional sustainable development strategy, Beyondsun formally joined the United Nations Global Compact in 2021, committed to the management and improvement of the company in the fields of human rights, labor, environment and anti-corruption.

### WE SUPPORT



# A BRIGHTER TOMORROW

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We are leading  
the world' s solar energy industry  
to provide our customers  
with energy for life.

