



**A Trustworthy Partner for Your Solar Energy Business**

# Contents

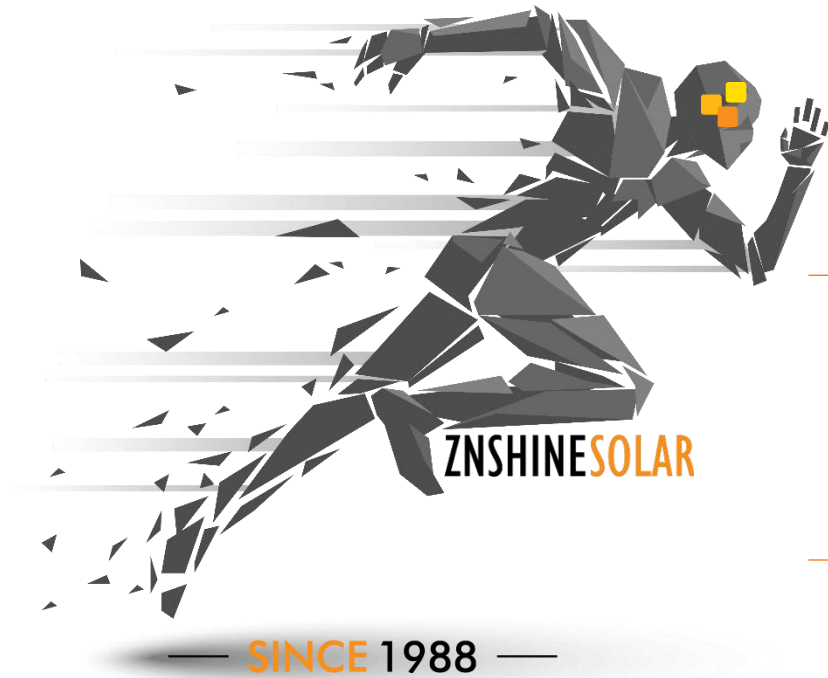


- 01 | Business Overview
- 02 | Manufacture and R&D
- 03 | ZNSHINE Worldwide
- 04 | Social Responsibility

01

## Business Overview

# In a Nutshell



**30+ years**  
Manufacturing  
experience

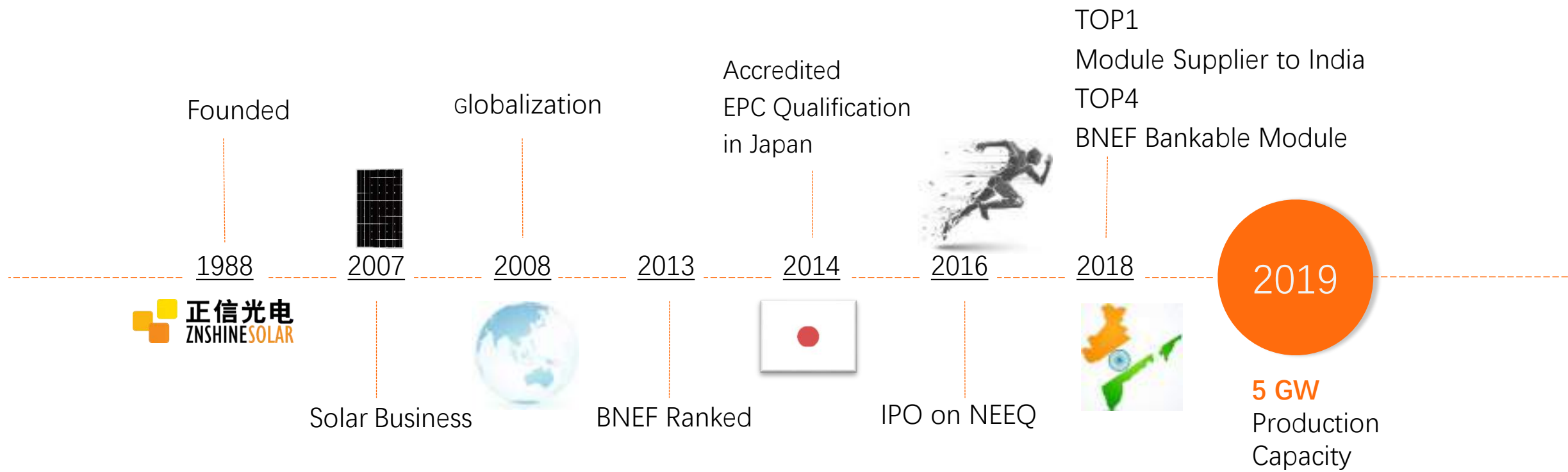
**Tier 1**  
Module Manufacturer  
(BNEF Q2, 2019)

**5GW**  
Production Capacity

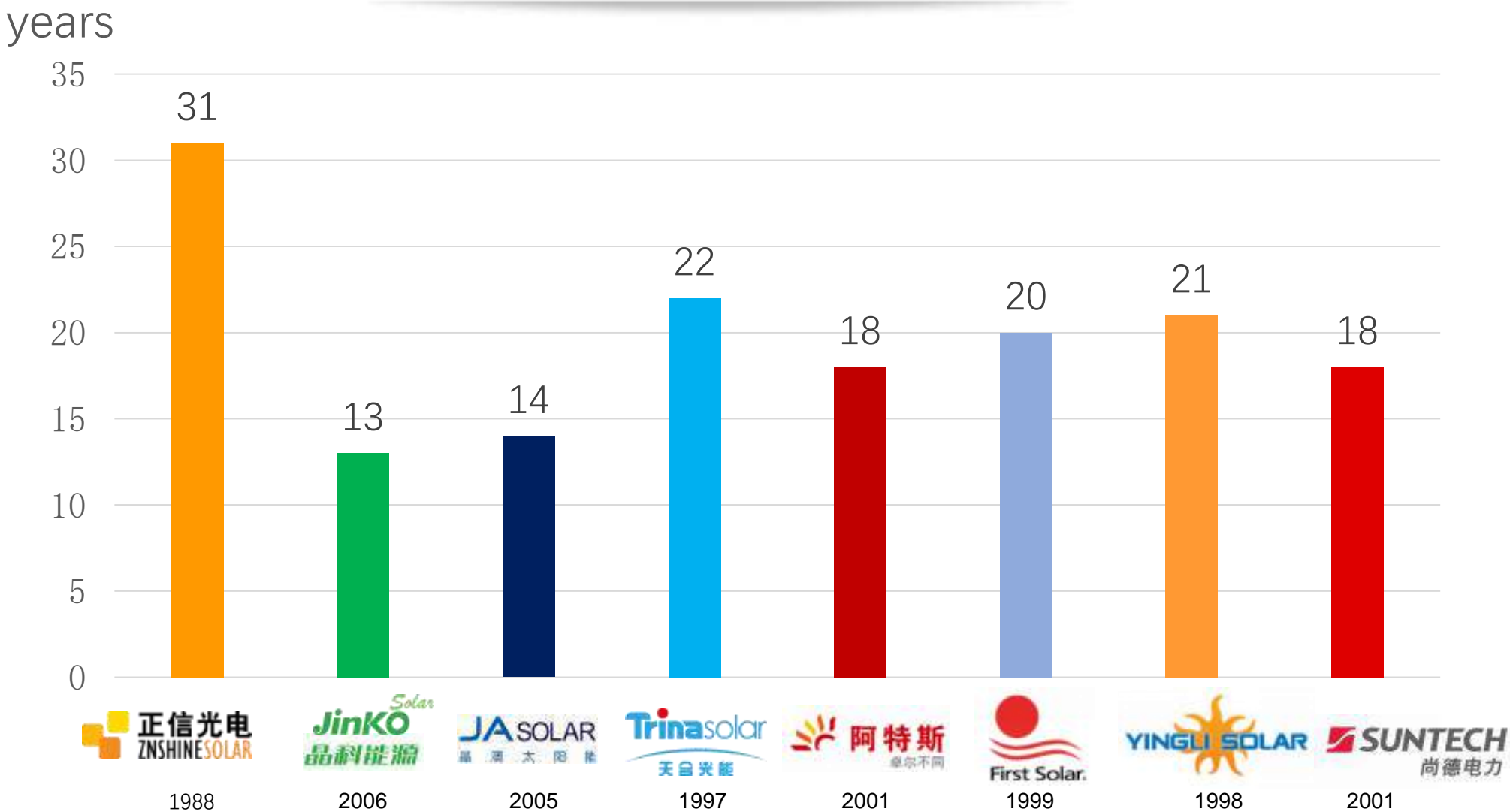
**1 GW +**  
EPC Commissioned

**3 Business Pillars**  
Module Manufacture  
EPC Contractor  
IPP and O&M

# Milestones



# Manufacturing Experience



# Tier 1 Ranking

2017

2018

Table 1: Tier 1 PV module manufacturer list, 4Q 2017

Company	Capacity	Company	Capacity
Trina Solar*	8,000	Changzhou Almaden	1,500
Jinko Solar*	7,500	HT-SAAE*	1,500
JA Solar*	7,000	China Sunergy	1,450
Canadian Solar*	6,970	REC Group*	1,300
Hanwha Q Cells*	6,400	Akcome	1,000
GCL Systems*	5,000	Phono Solar	1,000
Longi	5,000	ET Solar*	1,000
Talesun*	5,000	Vikram*	1,000
Suntech/ Shunfeng*	3,300	SunPower*	900
Seraphim*	3,000	Boviet	700
First Solar*	2,200	Neo Solar Power*	670
Hareon	2,000	Tata Solar Power	500
Renesola	2,000	Waaree	500
LG*	1,650	AU Optonics	455
ZNShine	1,600	<b>Total</b>	<b>80,095</b>

Top 15

Table 1: Module manufacturers meeting Bloomberg New Energy Finance's tier 1 criteria as of 3Q 2018

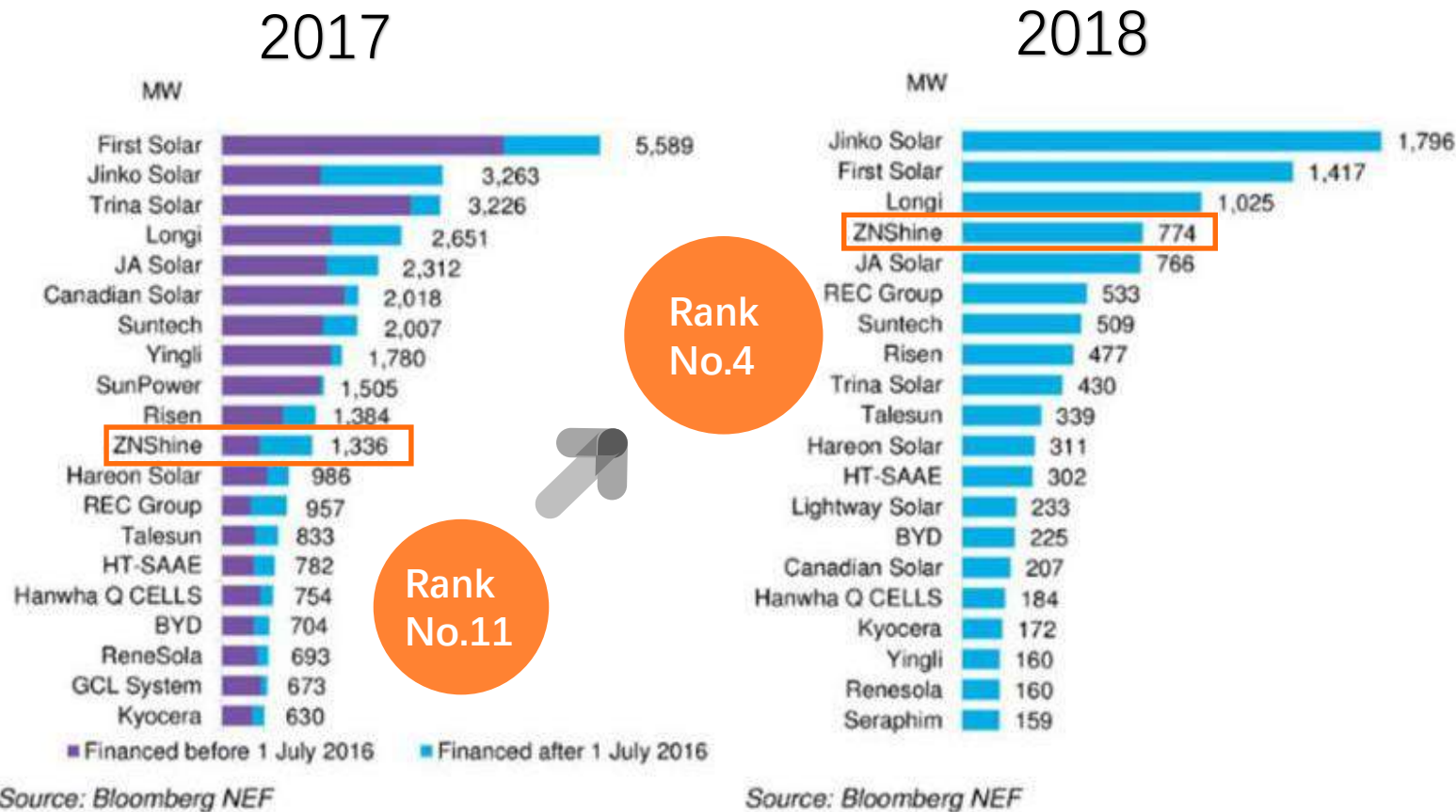
Firm/brand	Annual in-house module capacity (MW/year)	Firm/brand	Annual in-house module capacity (MW/year)
Jinko Solar*	9,000	HT-SAAE*	1,500
JA Solar*	8,500	WAAREE	1,500
Canadian Solar*	8,310	China Sunergy	1,450
Hanwha Q CELLS*	8,000	REC Group*	1,400
Trina Solar Ltd*	8,000	Hycocera Corp	1,350
Risen	6,600	Akcome	1,000
GCL System*	5,400	ET Solar	1,000
Talesun	4,500	Vikram*	1,000
Suntech/Shunfeng*	3,300	Neo Solar Power	670
Znshine Solar*	3,200	Lightway Solar	660
Seraphim	3,000	S-Energy	530
Chint/Astronergy	2,500	Hansol Technics	480
First Solar*	2,200	AU Optonics	455

Top 10

Source: Bloomberg New Energy Finance (BNEF), Global PV Market Outlook, Q3 2018.



# Module Bankability



Source: Bloomberg New Energy Finance (BNEF), Global PV Market Outlook, Q3 2018.



# Module Bankability

2019 TOP PERFORMER



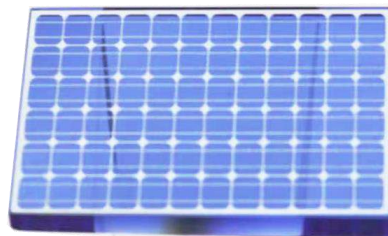
PV MODULE  
RELIABILITY SCORECARD



Polycrystalline 6" 72 cells  
ZXP6-72 Series, 304-340 Wp



Polycrystalline 6" 60 cells  
ZXP6-60 Series, 255-280 Wp



## DNVGL Product Qualification Program

Thermal Cycling  
Damp-Heat  
Humidity Freeze  
UV Exposure  
Dynamic Mechanical Load Test  
PID

PAN Files  
NOCT  
IAM  
LID

# Warranty covered by Global Insurance



**China RE**

Warranty partner



# D&B Rating

China Supplier Evaluation Report	
<a href="#">Identification &amp; Summary</a>   <a href="#">Risk</a>   <a href="#">Trade</a>   <a href="#">History</a>   <a href="#">Principals</a>   <a href="#">Operations</a>   <a href="#">Structure</a>   <a href="#">Finance</a>   <a href="#">Public Records</a>   <a href="#">Appeal</a>	
<b>ZNSHINE PV-TECH CO., LTD.</b>	
Report compiled Jul 03, 2017	
<a href="#">Print Preview</a>   <a href="#">Help/Glossary</a>   <a href="#">New Features</a>	
IDENTIFICATION & SUMMARY	
Identification	
Company Name	ZNSHINE PV-TECH CO., LTD.
Official English Name	Yes
Chinese Name	正信光电科技股份有限公司
Trading Style (Chinese)	正信光电
DUNS® Number	52-949-4079
Address	1#, Zhenxing (S) Road, Industrial Concentration Zone, Zhixi Town, Jintan District, Changzhou, Jiangsu 213251
Postal Code	213251
Address (Chinese)	金坛区直溪镇工业集中区聚贤南路1号
Telephone	0519 82449226
Facsimile	0519 82442068
Website	www.znshinesolar.com
E-mail	linda@znshinesolar.com
Type of Business Listed on	A joint stock National Equities Exchange and Quotations
Year Started	2006
History	Business (Subject has court record(s) within 2 years)
Imports	Yes
Exports	Yes
Employees	745 (Total)
Risk Summary	
<b>RISK EVALUATION</b>	
BHMA Score	6
D&B Rating	5A3(PRV. 5A)
D&B PAYDEX®	90
<b>LEGAL EVENTS</b>	
Litigation Records	1
<b>PRINCIPAL INFORMATION</b>	
Principa(s)	1
<b>PAYMENT INFORMATION</b>	
Trade References	8
<b>COMPANY KEY EVENTS</b>	
History Changes	14
Media Records	4
<b>FINANCIAL SUMMARY</b>	
Registered Capital	RMB 547,911,831
Sales/Turnover	2,296,444,000 (2016)
Tangible Net Worth	1,172,361,000 (2016)
Total Assets	3,851,611,000 (2016)
Shareholders Equity	1,193,713,000 (2016)
Click on summary items for full details	
<b>CURRENCY</b>	
All monetary amounts quoted in this report are shown in Renminbi(RMB) unless otherwise stated.	
<b>REMARKS</b>	
"-" stands for "Insufficient information" or "No comment".	

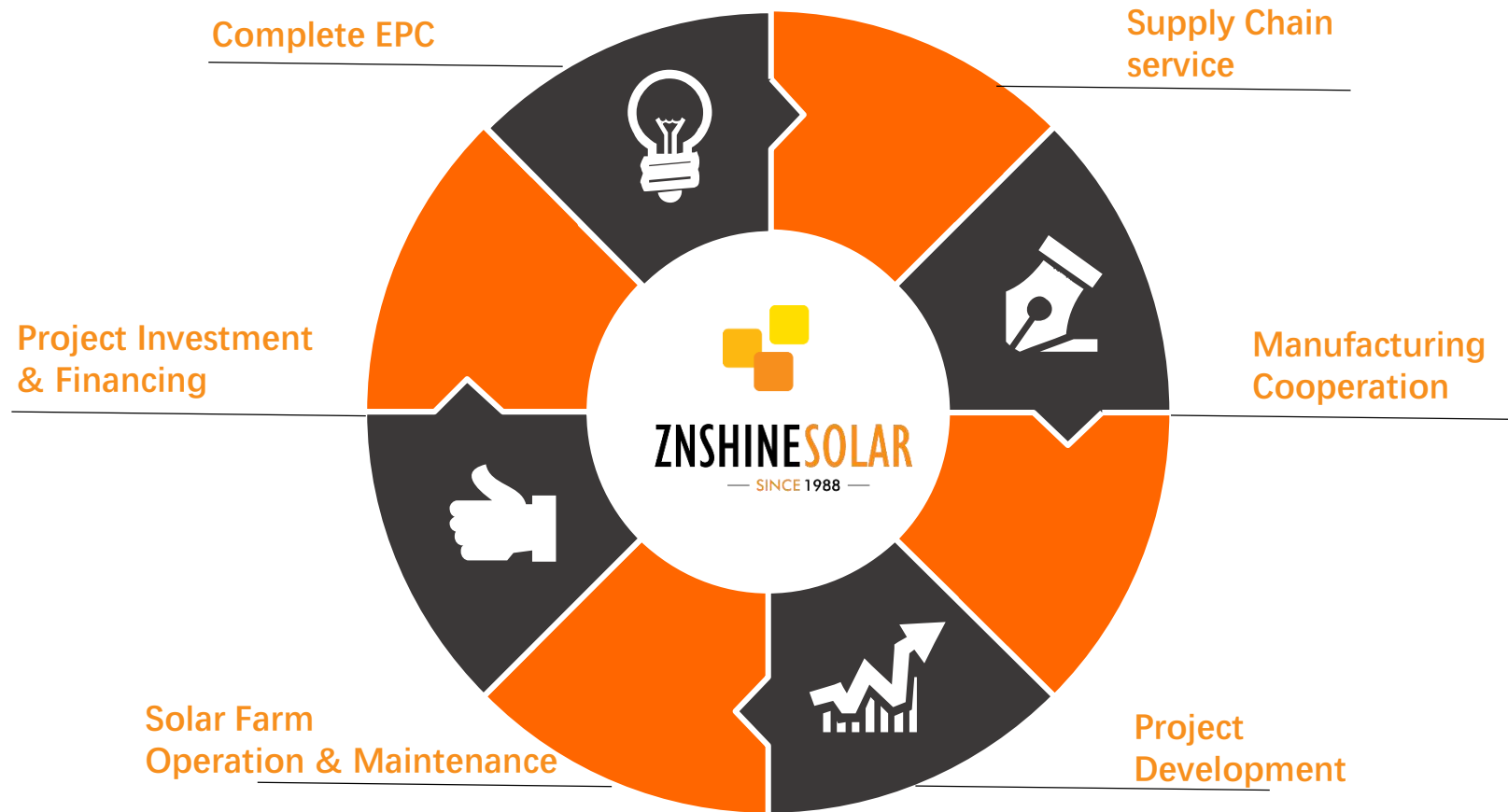
## D&B Rating

### D&B Rating Interpretation Tables

Financial Strength			Composite Credit Appraisal			
Tangible Net worth	Registered Capital	Renminbi (RMB)	Strong	Good	Fair	Limited
5A	5AA	> 450,000,000	1	2	3	4
4A	4AA	35,000,000 - 449,000,000	1	2	3	4
3A	3AA	25,000,000 - 34,999,999	1	2	3	4
2A	2AA	15,000,000 - 24,999,999	1	2	3	4
1A	1AA	4,500,000 - 14,999,999	1	2	3	4
A	AA	2,500,000 - 4,499,999	1	2	3	4
B	BB	1,750,000 - 2,499,999	1	2	3	4
C	CC	1,000,000 - 1,749,999	1	2	3	4
D	DD	650,000 - 999,999	1	2	3	4
E	EE	450,000 - 649,999	1	2	3	4
F	FF	300,000 - 449,999	1	2	3	4
G	GG	200,000 - 299,999	1	2	3	4
H	HH	< 200,000	1	2	3	4

D&B rating indicates the Financial Strength and Credit Ranking of ZNSHINE business as a whole

# Value Addition



With 30+ years of manufacturing experience, coupled with extensive scope of Solar Farm project development, ZNSHINE is well positioned to provide its clients with added-value offerings to help succeed in their PV business

02

## Manufacture and R&D

# 5GW Capacity



ZNSHINE Headquarters in China

Jintan District, Changzhou, Jiangsu Province

Production capacity: **4.5GW** / year by 2019



ZNSHINE SOLAR Silan Factory

Production Capacity: **300MW** Double Glass modules



Production capacity outside China: **200 MW**

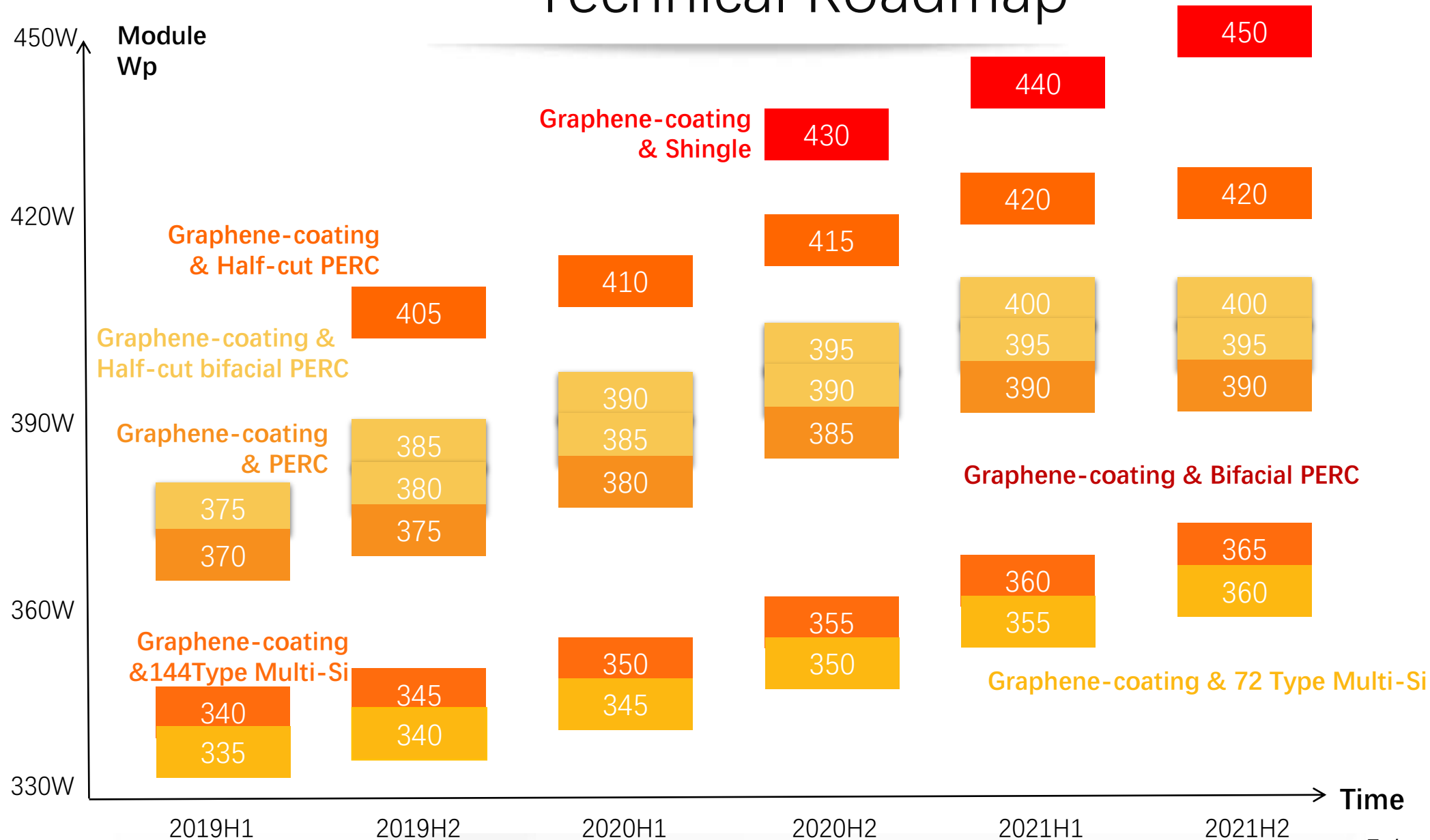
Poland: 50MW

Czech Republic: 40MW

Canada: 40MW

India: 70MW

# Technical Roadmap



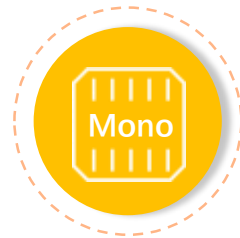


# R&D

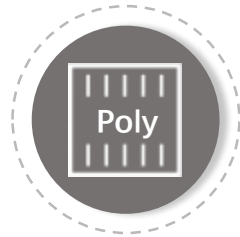
## Technology:

ZNSHINE Manufacture is underpinned its in-house Research & Development Capability

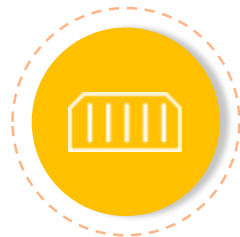
Monocrystalline



Polycrystalline



Half-cut



Graphene  
-coating

Double-  
glass

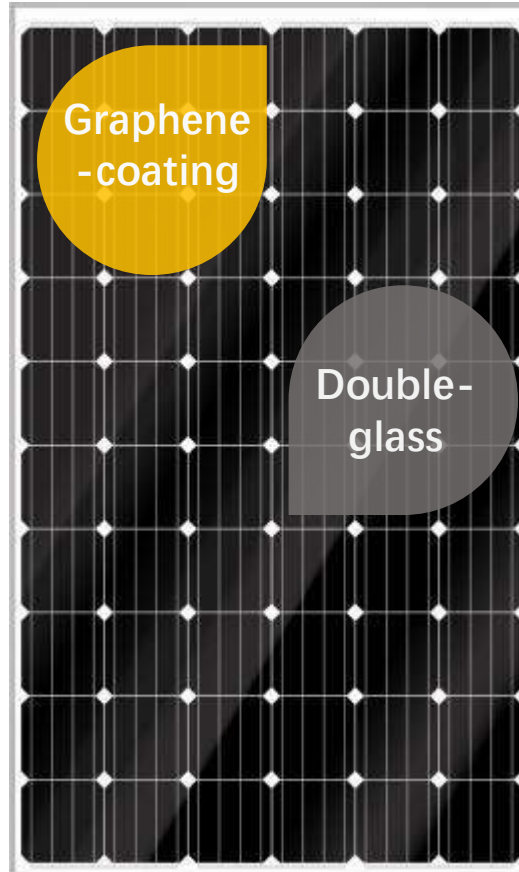
Bifacial



9 busbar



Shingle

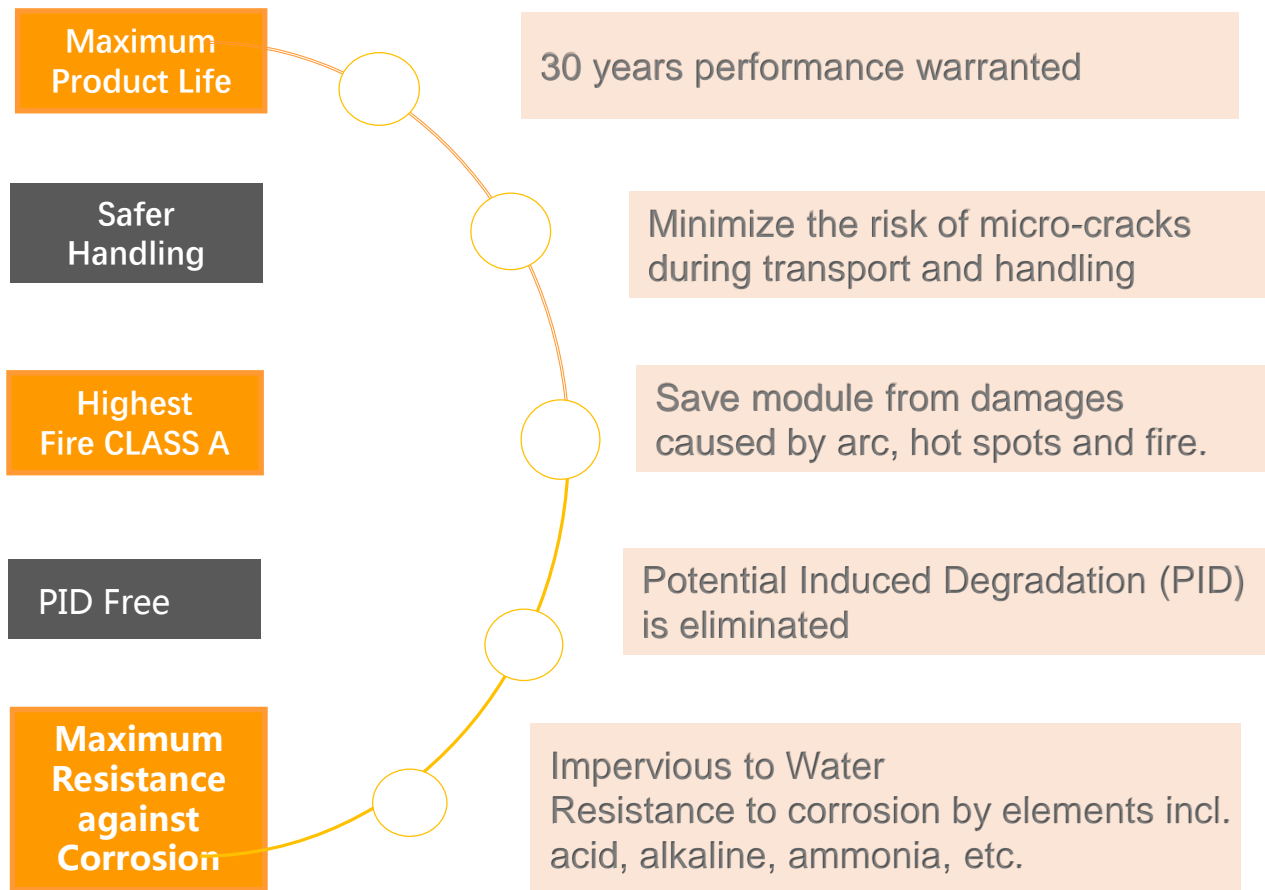


# Lightweight Double Glass Panel

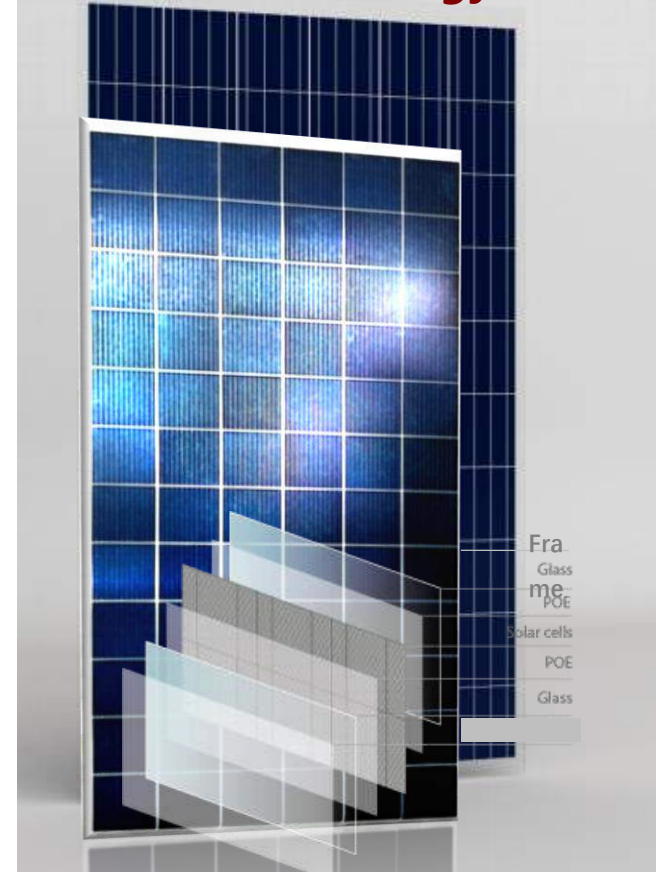
## Technology

This Technology boasts the best-in-breed module configuration

### UNIQUE Features :



## Lightweight double-glass module technology

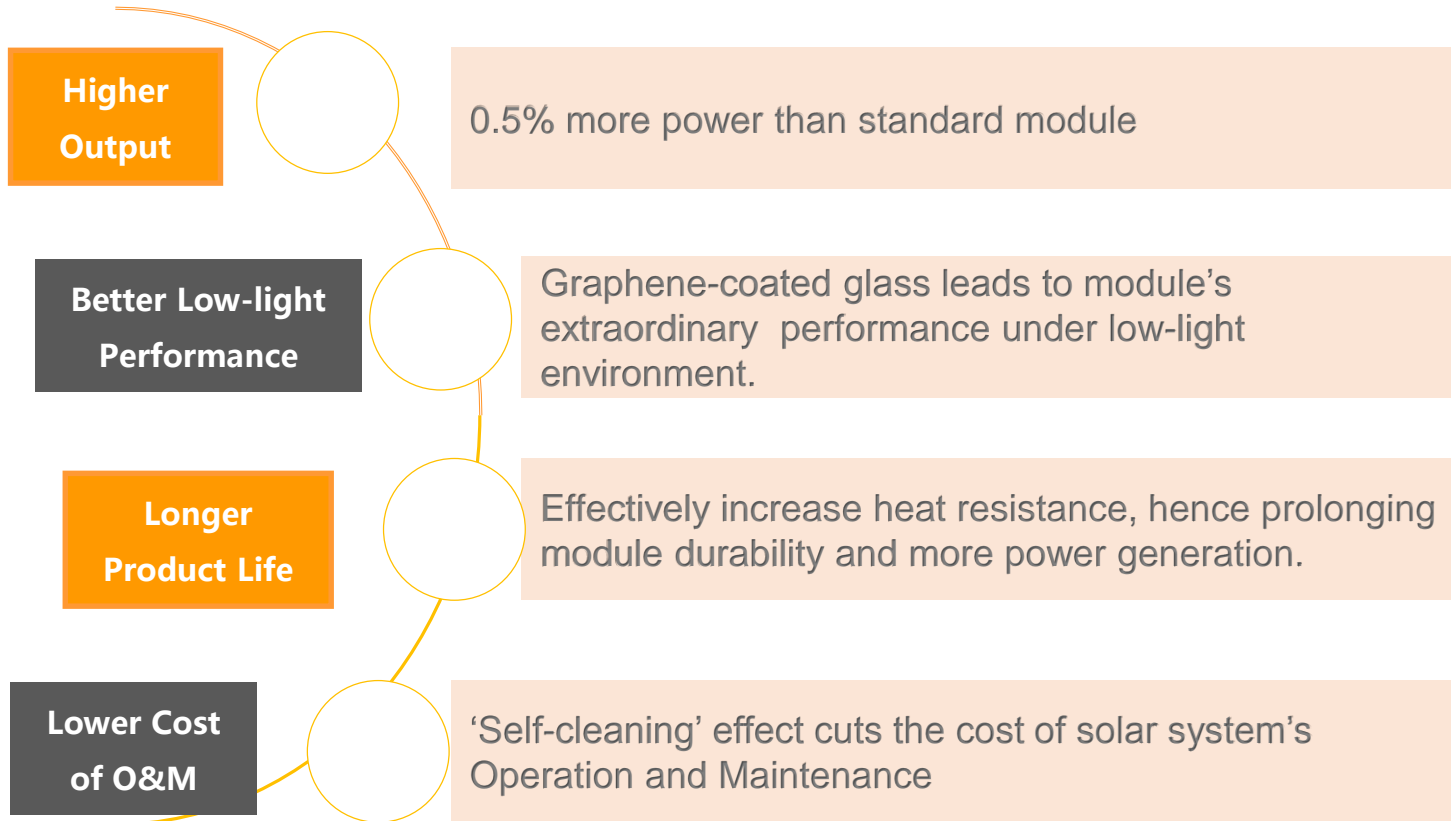


# Graphene Coating

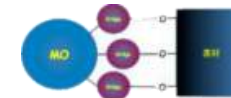
## Technology :

Graphene Coating enhances the transmission properties of glass, rendering a hydrophilic surface to achieve “self-cleaning” effect.

## Features :



**Graphene  
-coating**



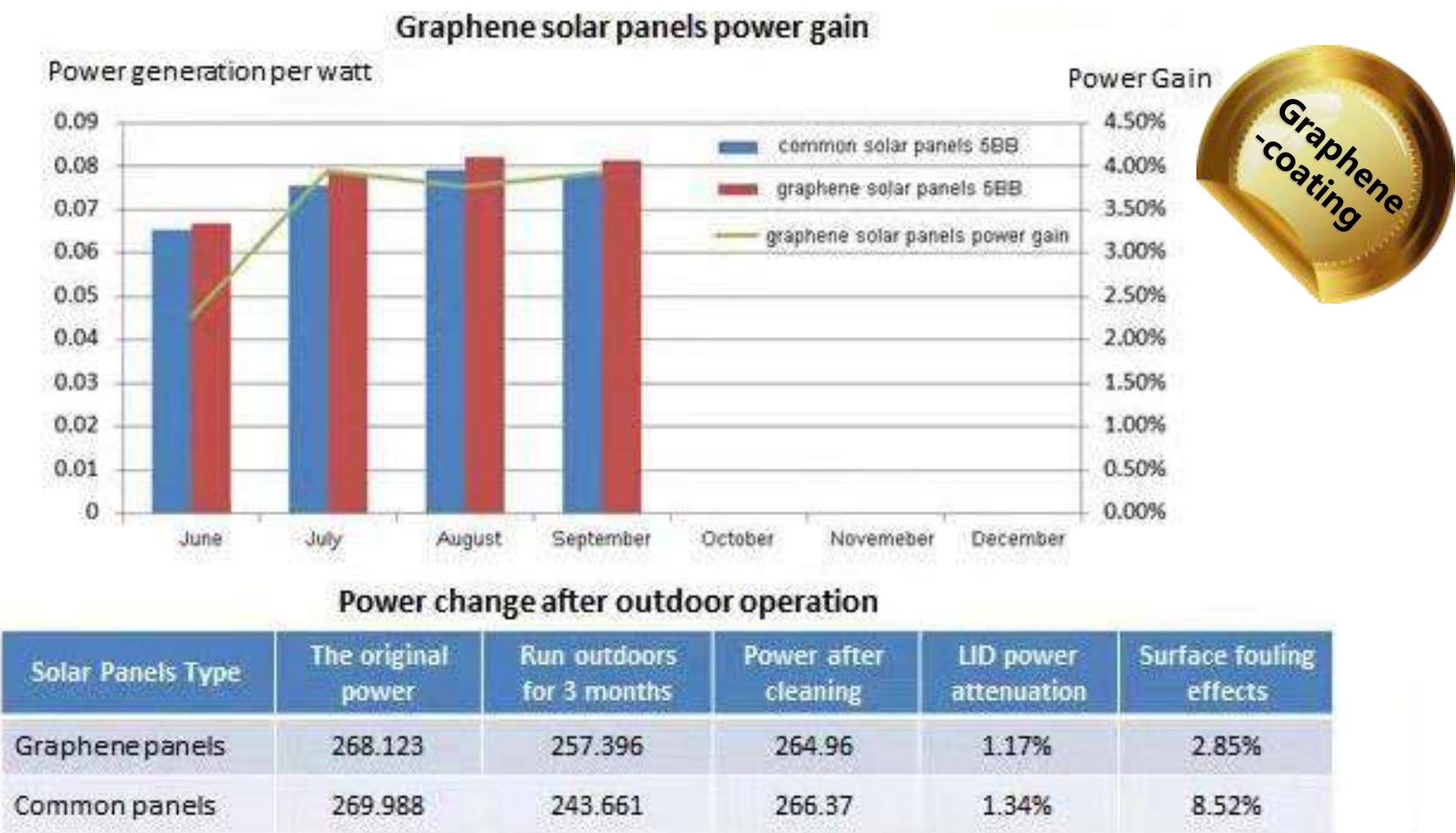
Titanium dioxide-  
New glass coating  
solution



**Efficiency  
up to  
18.87%**

# Performance Test: Graphene-coated Module

## Comparison of Power Generation between Graphene-coated Panels and Standard Panels

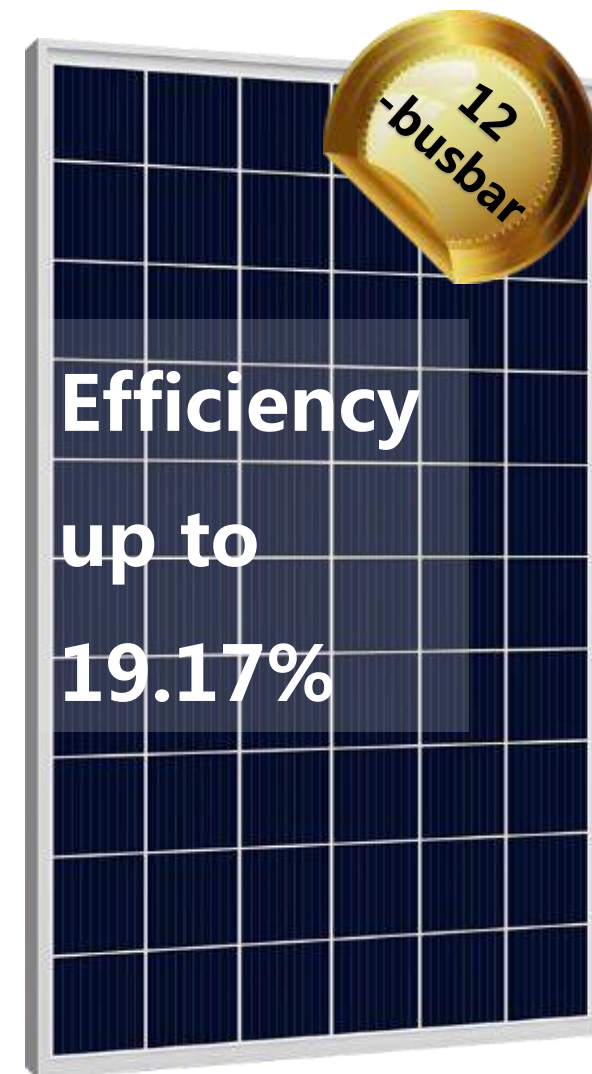
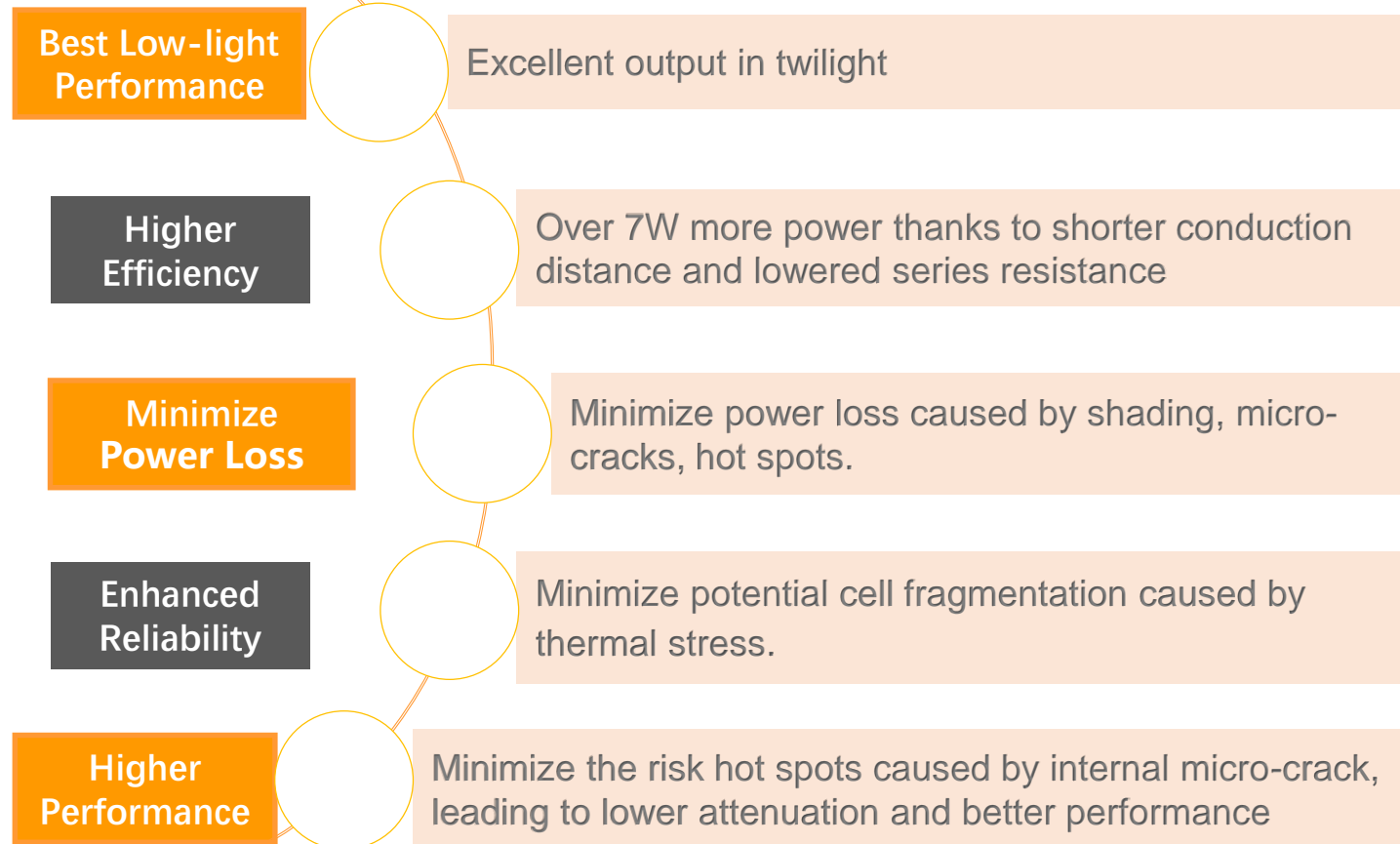


# 12BB Cell

## Technology :

The Maximum busbars available on solar cells

## Features :





# Solar Kits



**Standard Kits**

Size: 3KW, 5KW, 8KW, 10KW  
Panel: Poly Panel, Mono Panel, Double-Glass

List	
Panels	
Inverter	
Distribution box	Circuit Breaker
	Ammeter
	Surge Protection
Solar DC Cable	
Ac Cable	
Mounting System	

# Certifications

## ■ Global Certifications by Reputable Independent Laboratories



- All Modules are certified in conformity with IEC Standards latest edition (61215, 61730, 62804 and 62701)
- Quality Assurance System Certifications to ISO 14001, ISO 9001, and OHSAS 18001



03

## ZNSHINE Worldwide

## Europe

 Great Britain

 Germany

 France

 Switzerland  
 Lichtenstein

 Italy

 Albania

## Asia

 China, Jintan Headquarters  
China, Beijing  
China, Shanghai  
China, Taiwan  
China, Hong Kong

 Lebanon

 United Arab E.

 Bahrain

 Japan

## North America

 Canada

 United States of America

 Mexico

## South America

 Colombia

 Brazil


 Chile

 Argentina

## Africa

 Morocco

 Egypt

 Senegal

 Côte d'Ivoire

 South Africa

 India

 Laos

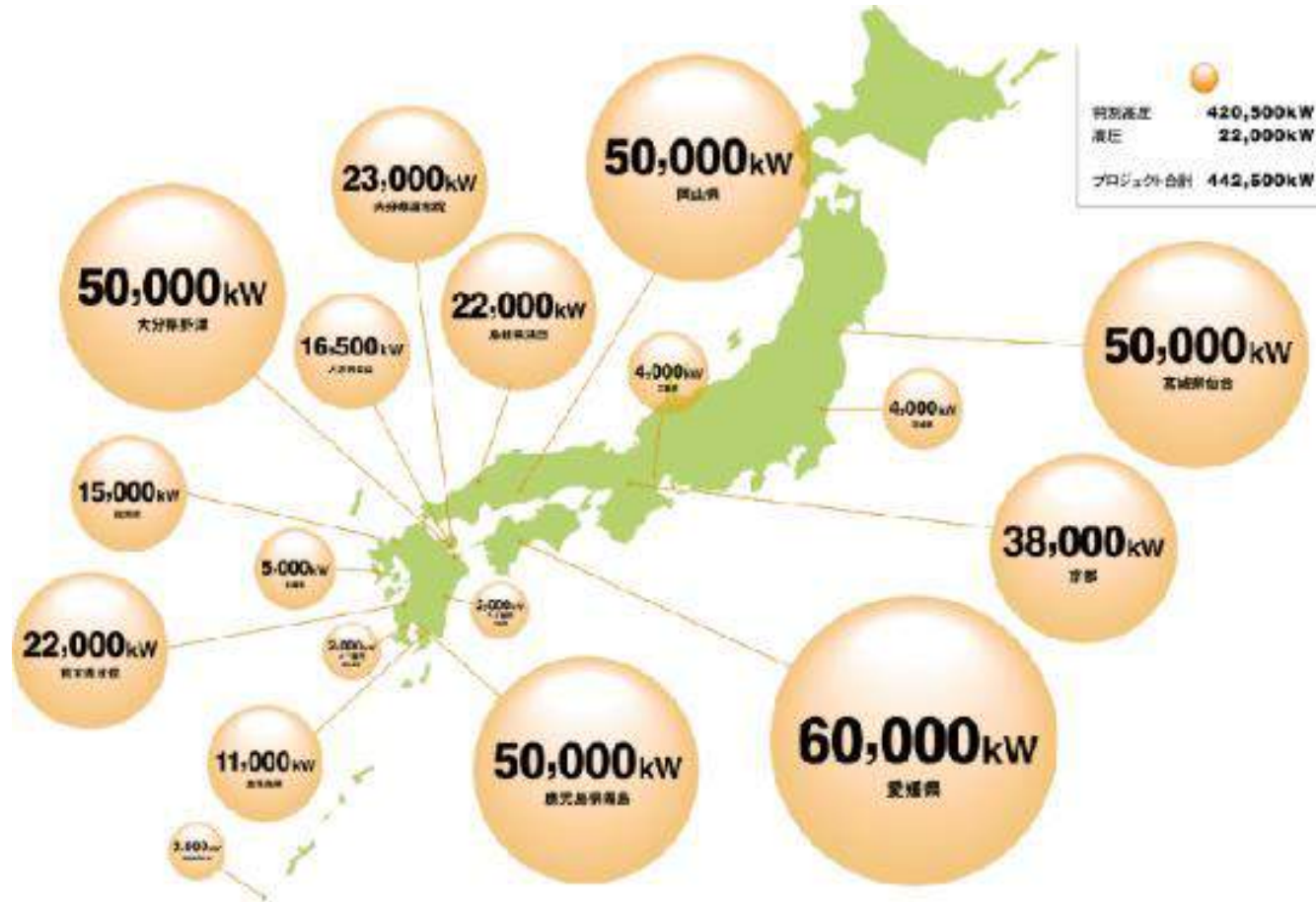
 Thailand

 Indonesia

## Oceania

 Australia

# ZNSHINE Japan



In 2016, ZNSHINE Group has over 1.3GW of projects in pipeline in Japan and 1.3GW in China. It has earned the trust of local and national governments as a certified and acknowledged EPC in both countries.

# ZNSHINE Japan

Hamada Project phase II  
Installed capacity: 23MW  
COD: April 26<sup>th</sup>, 2017



Hamada Project phase I  
Installed capacity: 11MW  
COD: October 20<sup>th</sup>, 2015



Chinese equipment used in Phase II significantly increases to 90% as compared to 40% in Phase I, resulting +15% more yield while cost reduced -25%

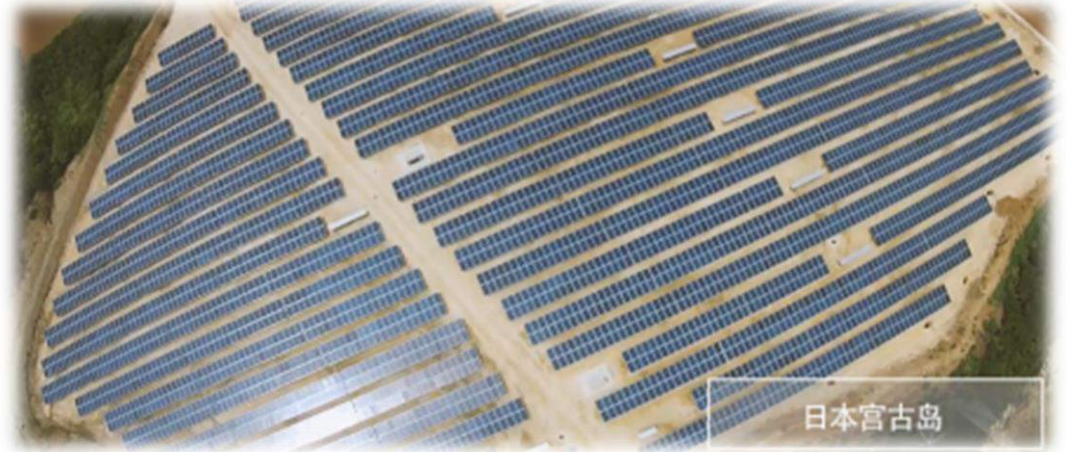


# ZNSHINE Japan

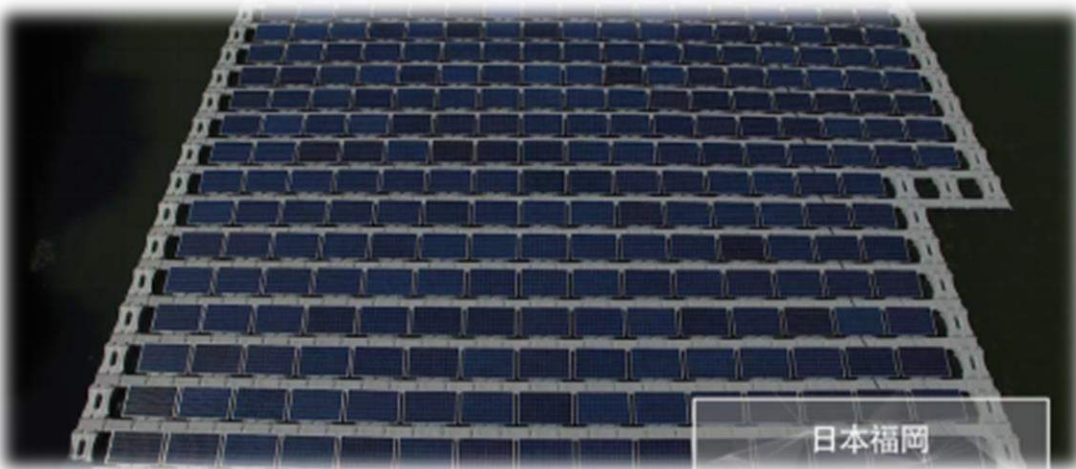
**Okayama**



**Miyakojima**



**Fukuoka**



**kagoshima**



# ZNSHINE India

*ZNSHINE Solar is the biggest solar module supplier for India in 2018.*

*1GW panels were shipped to India in 2018.*

1H 2018 India Solar Market Share Leaders	
Top Utility-scale Project Developer by Installed Capacity	
Top Rooftop Installer	
Top Utility-scale EPC Player	
Top Inverter Supplier	
Top Solar Module Supplier	
Top Solar Tracker Supplier	

Source: Mercom India Market Share LeaderBoard

MERCOM  
INDIA MARKET SHARE



# ZNSHINE India



Pokaran Project  
Installed capacity: 225 MW  
COD: April 26<sup>th</sup>, 2018





# ZNSHINE India



Trivandrum Project  
Installed capacity: 300 MW  
COD: September 17<sup>th</sup>, 2018



# ZNSHINE Indonesia

## The 1<sup>st</sup> Floating Power Plant



ZNSHINE cooperates with local public listed company, Indorama, JASA TIARA.

The total capacity scheduled is up to 10MW.

The project has been completed and connected to the grid in July 2015.

## 1GW Pipeline in Indonesia

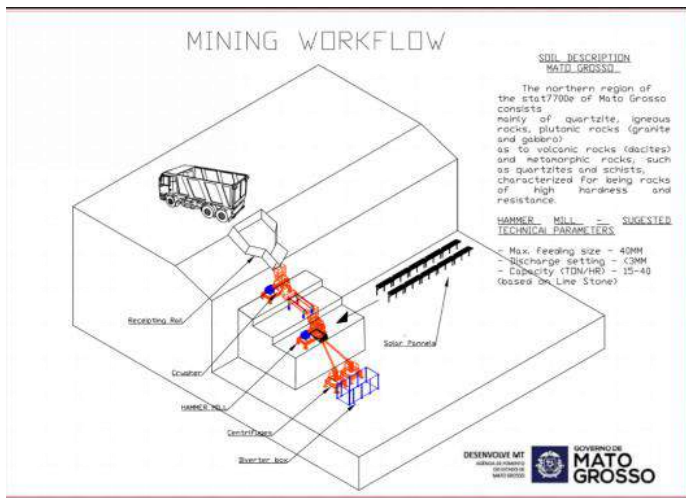


Qualified Applicant for IPP renewable energy short-list (DPT) and eligible for further procurement process

# ZNSHINE Brazil



## 300MW Mining Solar Plant Solution



**300MW 光伏**

**规格:**

1. 组件单面发电 210W/组件 3150W, 双面发电 4100W/组件
2. 组件 21~22 吨/块, 重量 22 吨/块, 组件长度 157, 组件宽度 2m
3. 功率误差在 12.5%, 效率为 18.5%, 转换率为 16.130m2

Nov.8<sup>th</sup>, 2017, ZNSHINE as the only solar company signed the MOU of 300MW solar project with the president of Mato Grosso Brazil.



# ZNSHINE Brazil

## Minas Gerais, Brazil

Commissioned June 2018

Installed capacity: 2MW

Module: ZNX6-60 polycrystalline



## São Paulo, Brazil

Commissioned January 2018

Installed capacity: 15kw

Module: ZXP6-60 polycrystalline

# ZNSHINE Chile



## **Teno, VII Region, Chile**

Commissioned June 2019

Installed capacity: 1.6MW

Module: ZXM-LD72-370W

# ZNSHINE Europe & USA

- St. Columb Solar Park, UK, Europe
- Commissioned March 2014
- Installed capacity: 7 MW
- Investor: Low Carbon (Macquarie)
- Module type: ZXP6-60 polycrystalline
- 



- Polos, England Solar Park
- Installation Capacity : 8MW



- Monroe County, New York, USA
- Commissioned October 2014
- Capacity: 85 kWp
- Construction: Entecco
- Module type: ZXP6-60
- polycrystalline

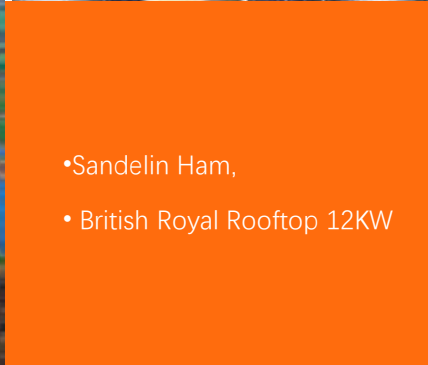


- Brück, Germany, Europe
- Commissioned July 2014
- Installed capacity: 4,2 MW
- Investor: Naturstrom (GLS bank)
- Module type: ZXP6-60 polycrystalline

- Rudbaxton Solar Park, UK, Europe
- March 2014, grid-connected
- Capacity: 10.8 MW
- Investor: Low Carbon
- Module type: ZXP6-60 polycrystalline
- 



- Sandelin Ham,
- British Royal Rooftop 12KW





# ZNSHINE Australia

## **Melbourne Australia**

Commissioned July 2017

Installed capacity: 15kw

Module type: 12BBZXP6-60 275W  
polycrystalline



## **Brisbane Australia**

Commissioned August 2018

Installed capacity: 8kw

Module type: ZXP6-60 12BB 280W polycrystalline



# ZNSHINE Thailand



The project is underway.....

# ZNSHINE China



04

## Social Responsibility



# Community Contribution



Every year ZNSHINE sponsors daily supplies and school stationery for students in Aba Country, Sichuan Province, China.



Donated ZNSHINE solar systems brings light to off-grid area in Sichuan China in 2017.

正

Zhèng

*Fair Dinkum*

信

Xìn

*Creditworthy*

= Z(E)NSHINE



# Thank You !

Contact: Collin WANG  
Email : [collin.wang@znshinesolar.com](mailto:collin.wang@znshinesolar.com)  
Phone : 0434 061 619  
Web : [www.znshinesolar.com](http://www.znshinesolar.com)



**ZNSHINESOLAR**