

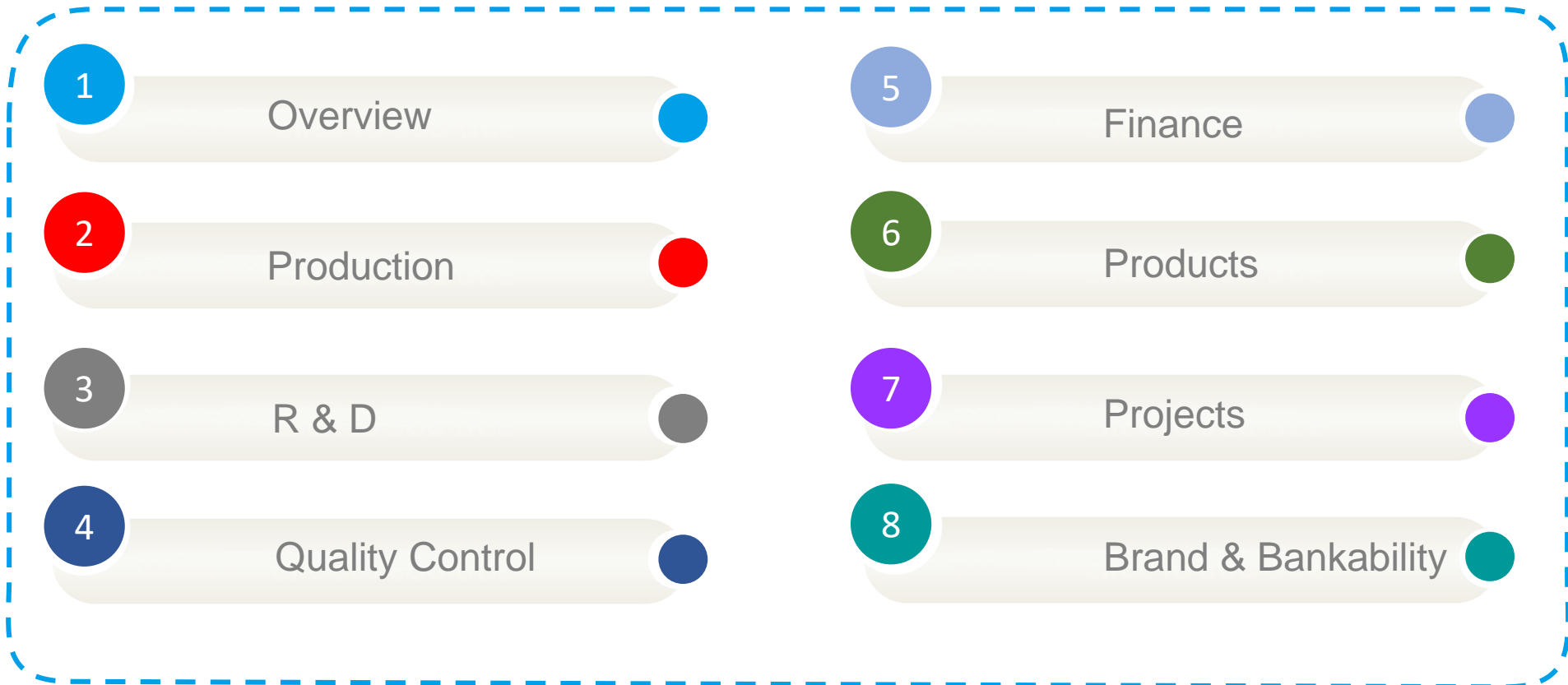
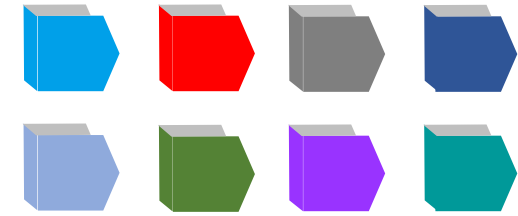


# Company Presentation

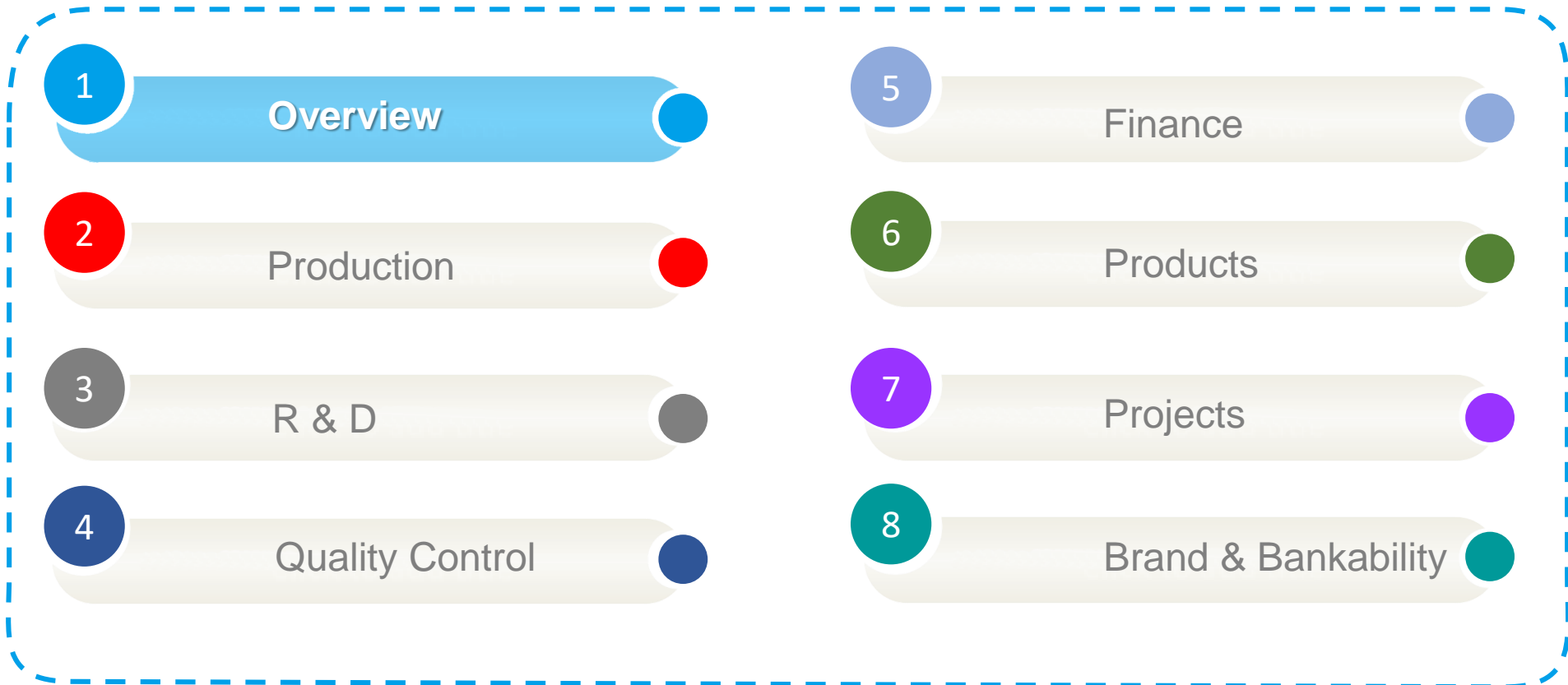
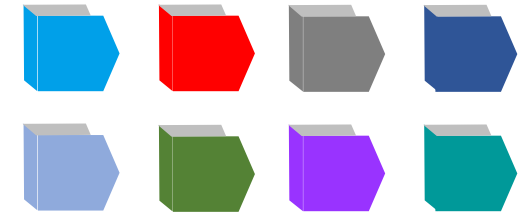
2019



Content



Content



## Company Overview

### About EGing

Founded in 2003, in Changzhou, China

1 single manufacturing campus

Listed on the Shanghai stock market (SH600537)

2 GW module production in 2016 (0.6GW capacity planning)

\$800 millions of revenue in 2015 (NP \$36 millions)

2,700 employees worldwide



West campus



East campus

**World's Most Advanced Fully Automated Module Line**  
**Vertically Integrated Production Chain**

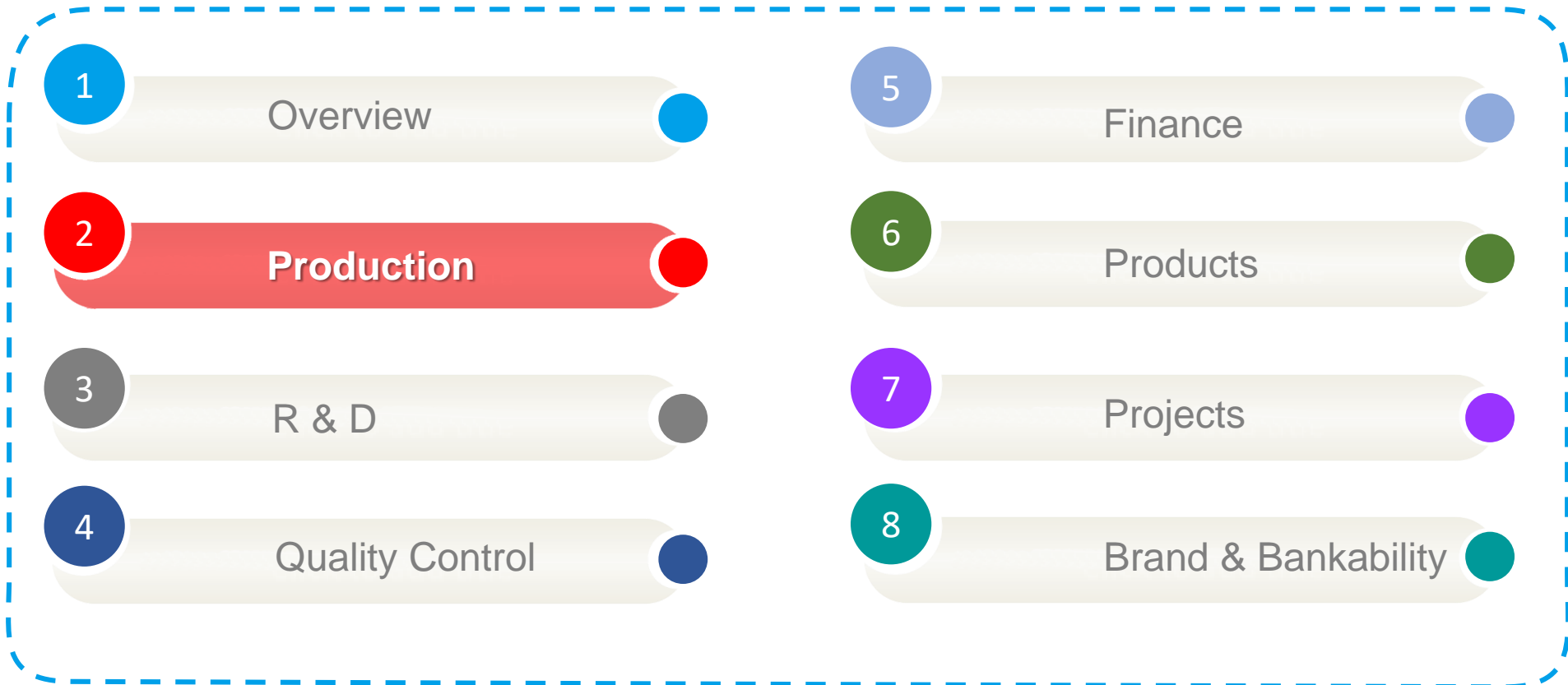
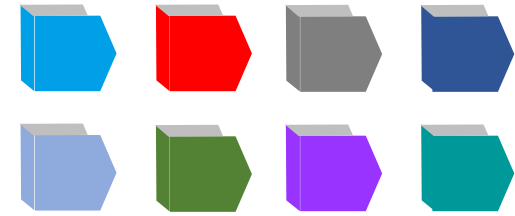
# Company Overview

## History & Milestone

In 2009, EGing Ranked Top 2 on Forbes' list of "China's Most Potential Enterprises Chart", Top 1 in China's PV industry elected by Forbes **Forbes**

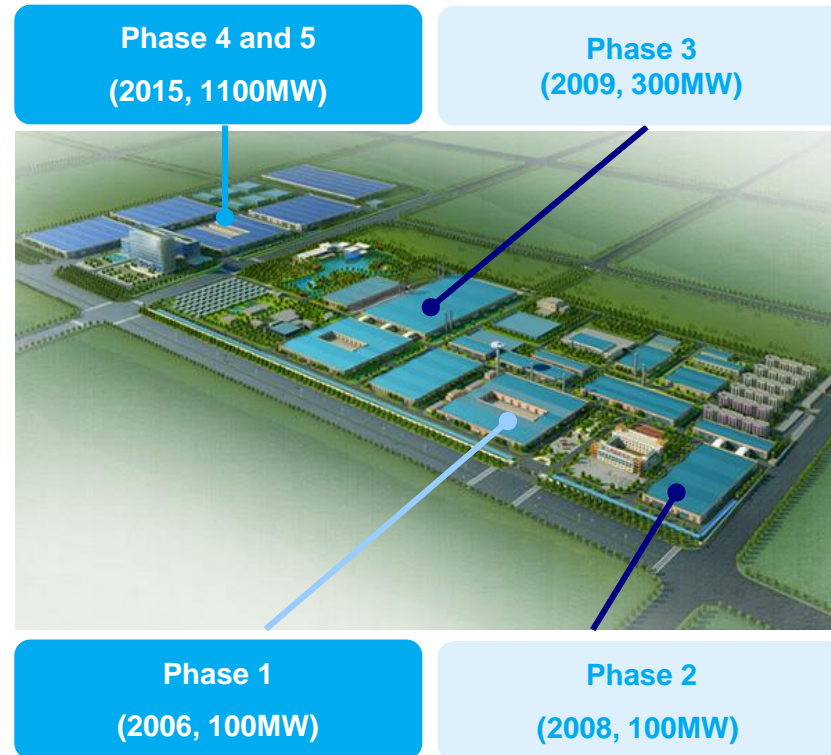


Content



## Production

### World leading Manufacturing



#### East Campus (Phases 1, 2 and 3)

- 500 MW production facility in a single location to offer increased utilization and efficiency
- Increased degree of vertical integration and automation from ingot, wafer, cell to module

#### West Campus (Phases 4 and 5)

- 500+600 MW fully automated production facility to offer European standard solar modules
- Vertical integration from ingot, wafer, cell to module

Integrated manufacturing capabilities  
allows better control of

- ☑ cost
- ☑ quality
- ☑ yield
- ☑ product development
- ☑ cycle time



## Production

### Fully automation

Equipped with the world's Most Advanced Fully Automated Module Lines from Reis Robotics Germany



Module



## Production

### Vertical integration

Integrated from ingot, wafer, cell to module with each annual capacity 2GW



Ingot

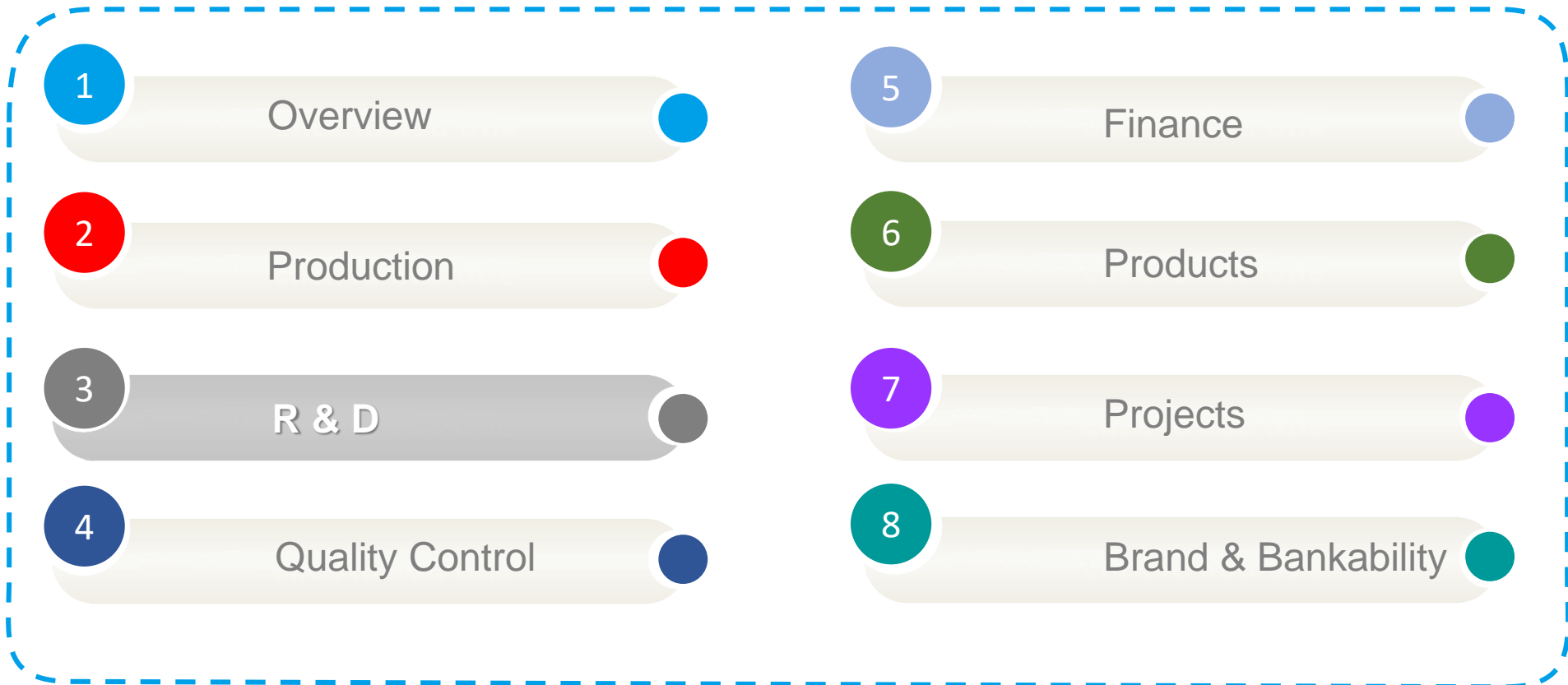
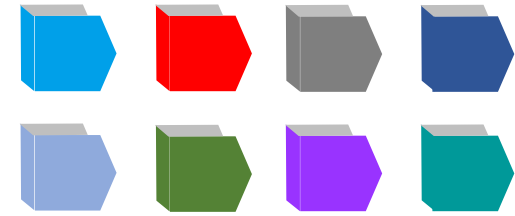


Wafer



Cell

Content



R&D



EGing PV has Strong R&D capabilities enabled it to obtain over 500 patents and remarkable achievements across the solar PV value chain



Jiangsu EGing PV Engineering Research Academy was founded in 2006 with 300M RMB investment and covers 50,000 m<sup>2</sup>.

“International Technology Cooperation Base” awarded by Ministry of Science and Technology of the People’s Republic of China

In-house VDE certified testing Laboratory

In-house CNAS certified testing Laboratory

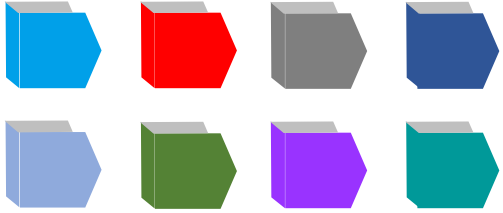


## Company Overview

### R&D and Testing Center

The Power Behind!  
EGing PV Laboratory, which plays an important role to ensure the module reliable and durable





1	Overview	5	Finance
2	Production	6	Products
3	R & D	7	Projects
4	Quality Control	8	Brand & Bankability

## QUALITY CONTROL

### Building Quality into all Aspects

EGing maintains one of the highest industrial standards for the design, performance, and workmanship of its solar products to ensure a reliable power supply of the PV system for well over 25 years



Every cell and module is subjected to at least 36 steps of the most stringent quality inspection procedures

Undergoes comprehensive in-house testing in the most advanced VDE certified testing lab for raw materials and modules

In-house tests extreme conditions such as tropical humidity, desert heat, coastal salt mist or agricultural ammonia enveloped atmosphere

Each module is subjected to 3 levels of EL test, after stringing, before and after laminating respectively to ensure free of micro-crack

Equipped with the world's best inspection equipment from Europe such as stringer, laminator, flash tester, EL tester etc



## QUALITY CONTROL

Outstanding warranty with strong quality control backed

### 10 year product warranty

**Qualified** raw materials and modules

**Consistent** reliability quality and performance of raw materials, and modules



The warranty period for material defects and workmanship is 10 years from the date of delivery.

### 25 year performance warranty



**Poly crystalline products:**  
2.50% degradation in the first year, and 0.70 % per year thereafter, ending at 80.70% in the 25th year after warranty start.

**Mono crystalline products:**  
3.00% degradation in the first year, and 0.68% per year thereafter, ending at 80.18% in the 25th year after warranty start.

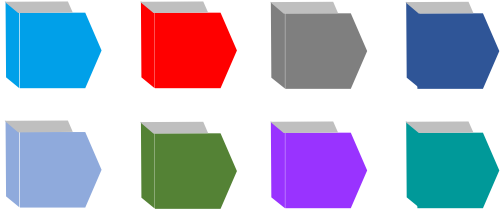
## QUALITY CONTROL

### Strong strategy partners and materials suppliers

**Premier** BOM materials supplied by long-term partners to ensure the high performance of panels

**Research and develop** together with our strategy partners to get the most advanced materials to the products





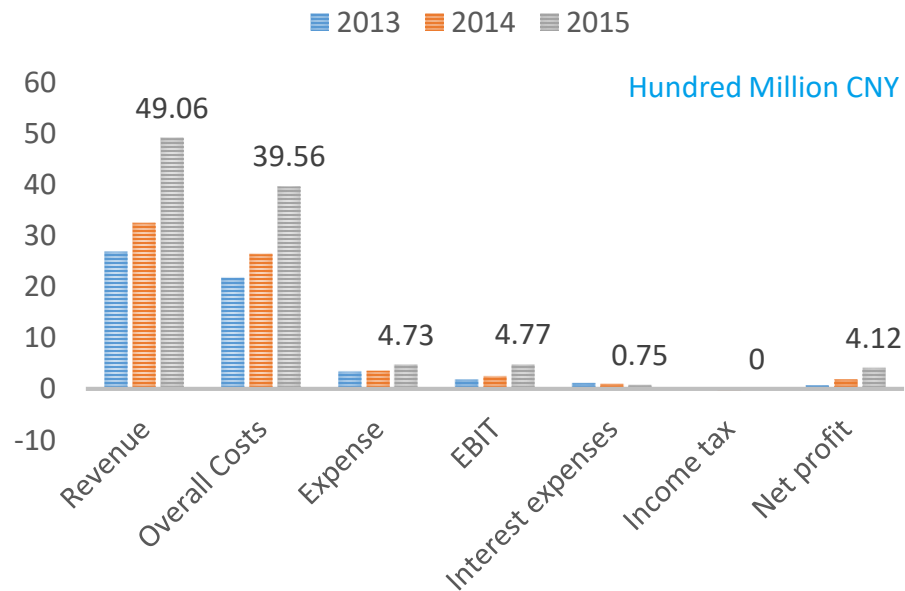


## Company Overview

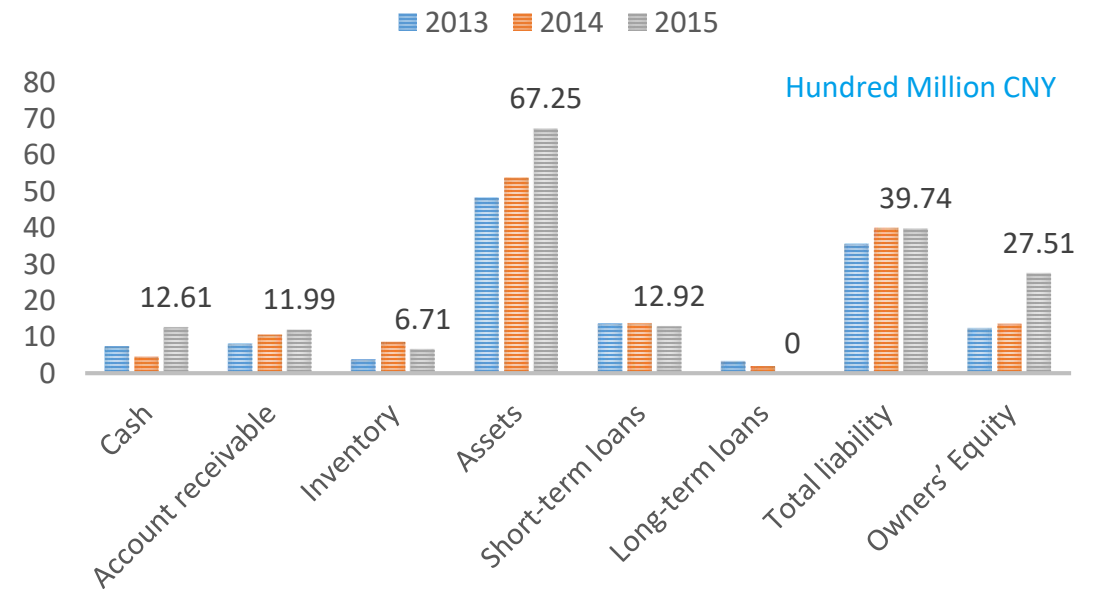
### Finance

From the main indicators of income and balance sheet, EGing shows very strong increasing on sales and profit, and excellent debt-to-assets ratio

### INCOME STATEMENT



### BALANCE SHEET

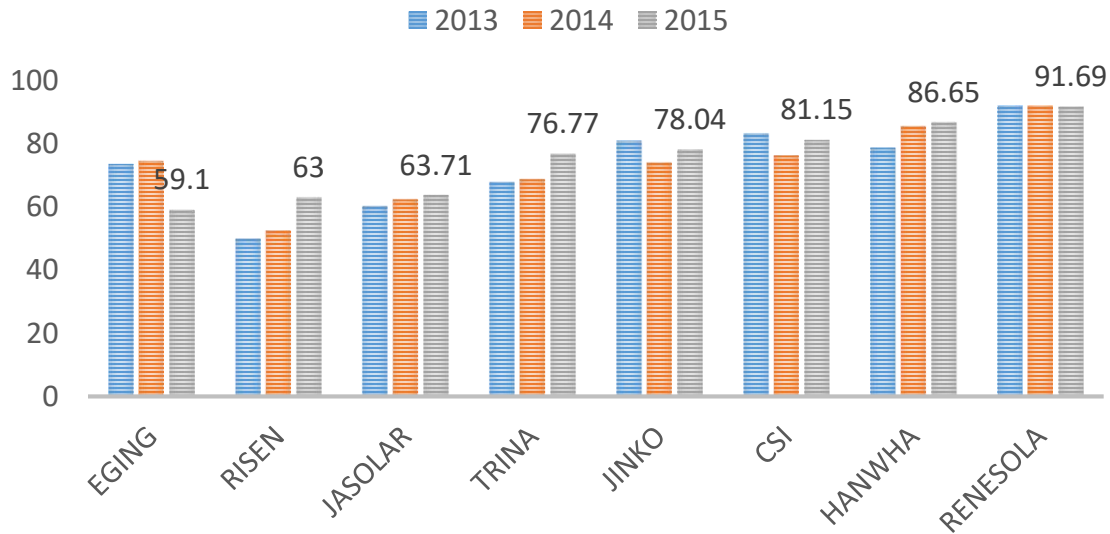


# Company Overview

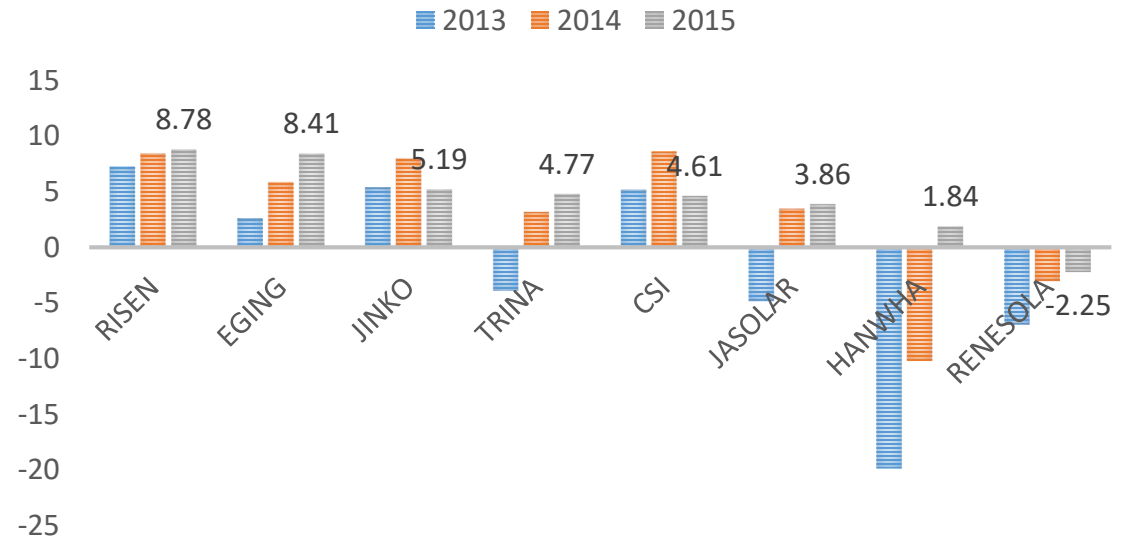
## Finance

From the comparisons with other named tier1 makers, EGing ranked 1<sup>st</sup> on debt-to-assets ratio and 2<sup>nd</sup> on net profit ratio in FY15

### DEBT TO ASSETS RATIO (%)



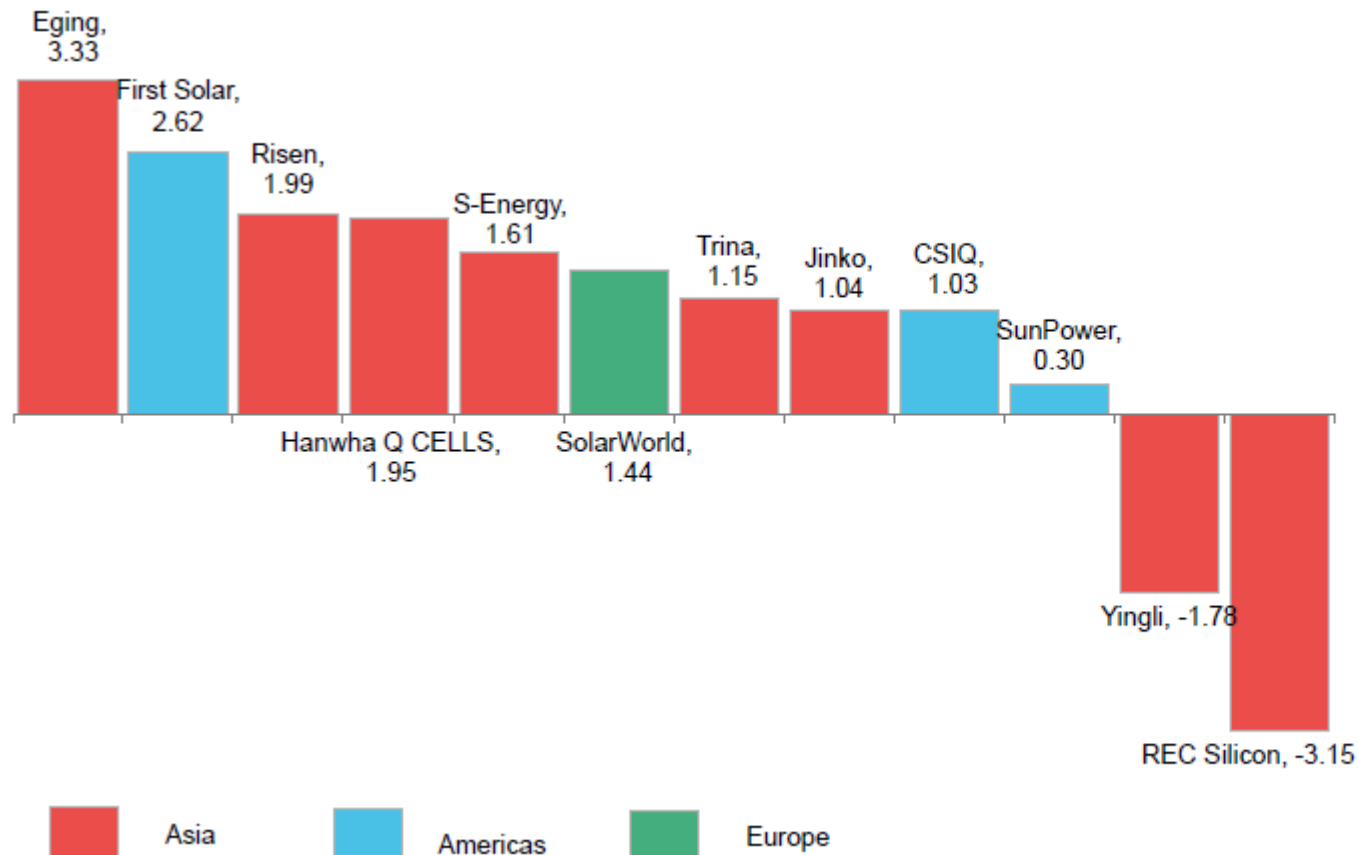
### NET PROFIT RATIO (%)



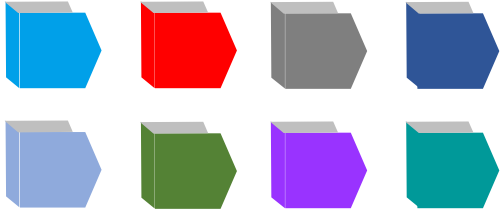
## Company Overview

### Finance

Altman-Z scores of selected solar companies, as of latest filing, February 2017. Eging was ranked the best.



- The Z-score formula may be used to predict the probability that a firm will go into bankruptcy within two years. A score below 1.8 means the company is probably headed for bankruptcy, while companies with scores above 3 are not likely to go bankrupt.
- From the chart, most of the solar companies are at the low zone



1	Overview	5	Finance
2	Production	6	<b>Products</b>
3	R & D	7	Projects
4	Quality Control	8	Brand & Bankability



## Products

### Rainbow Cells

Mono, up to 21.8% efficiency

Poly, up to 20.8% efficiency

5BB-Design reduces cell series resistance and stress, improves the efficiency of modules

Application of double-printing technology to improves solderability

Excellent anti-PID performance

Lower Cell-To-Module loss

## Technology Innovation

### PERC 5BB



### PERC+ BlackSilicon



Coming soon the 12BB, Half-cell products in 3Q17

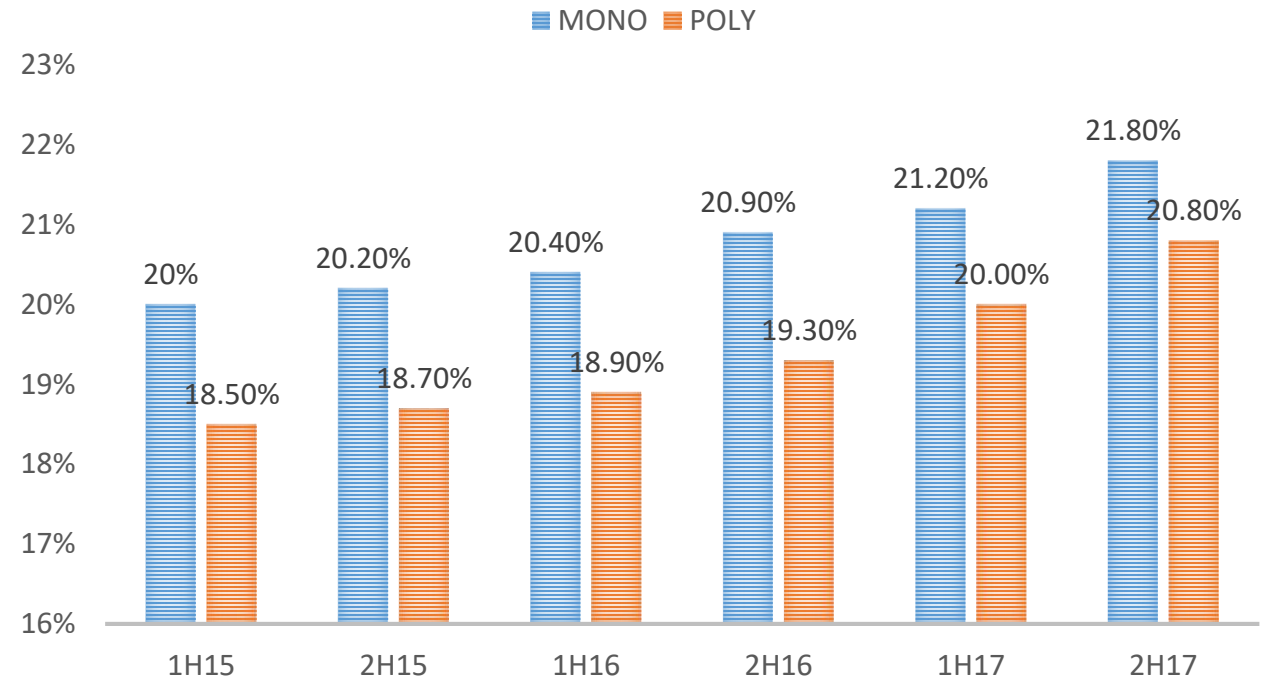
## Products

### Rainbow Cell Roadmap

In 2Q15 EGing launched the commercial production of Rainbow200 high efficiency module production, cell efficiency 20.0% and panel efficiency 17.4%.

The next generation Rainbow218 is coming now, 21.8% of cell efficiency for mono

### ROADMAP OF RAINBOW SERIES EFFICIENCY



## Products

### Poly Modules

Poly 60 cell: 265-285wp

Poly 72 cell: 320-340wp



#### High Cost-performance

BOM materials all comes from tier1 manufactures to ensure the quality

100% in-house cells are used to lower the cost and make the panels more uniform

JV company with silver paste manufacturer in Japan and strategic relationship with DuPont

Long-term contract of polysilicon to lower the silicon cost per watt



#### High Reliability

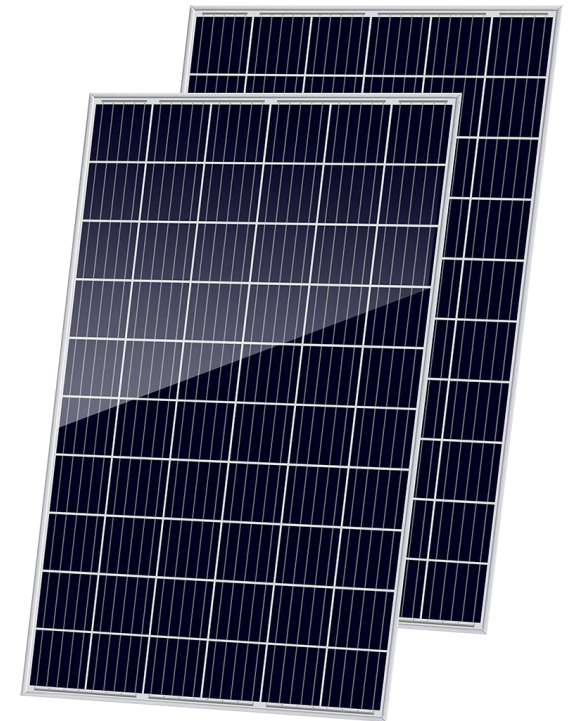
Fully automated production facilities using state-of-the-art plant technology from Germany

Three level electroluminescence (EL) tests guarantee fault-free modules

Double-printing cell processing to Lower contact resistance and optimize soldered connections

Excellent anti-PID performance

## PERC, PID-Free



## Products

### Mono Modules

Mono 60 cell: 275-285wp

Mono 72 cell: 325-340wp



#### High Efficiency

Outstanding Cell efficiency 20.8%,  
Module 18.7%

Approx. 10% more power output  
per unit, >20Wp per panel than  
industry average

Reduction of land costs 8%,  
installation costs 6% and BOS cost  
5%

<2% annual power degradation, PID  
test achieve the best level [Class A]



#### High Reliability

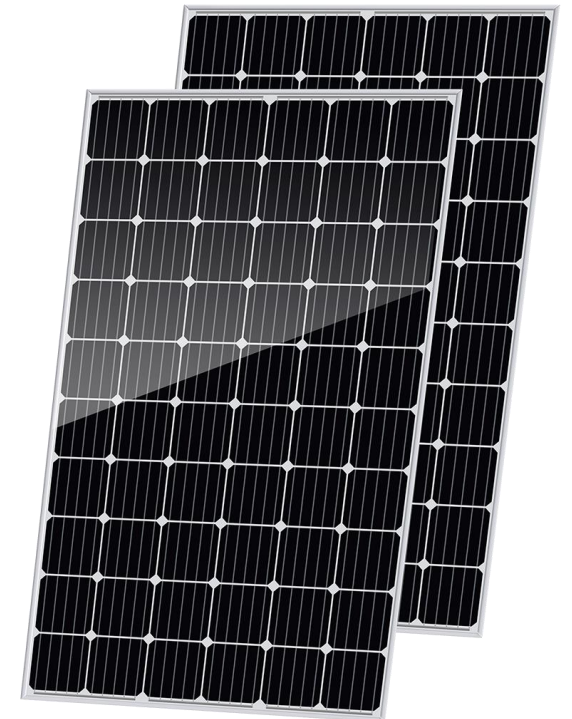
Fully automated production  
facilities using state-of-the-art plant  
technology from Germany

Three level electroluminescence  
(EL) tests guarantee fault-free  
modules

Double-printing cell processing to  
Lower contact resistance and  
optimize soldered connections

Optimized low-light output  
performance

## Premium, 20W>industry average





## Products

### Janus I Modules (Double Glass)

Mono 60 cell: 290-300wp

Poly 60 cell: 265-275wp



#### High Efficiency

Outstanding Cell efficiency 21.8%,  
Module 19.2%

Approx. 10% more power output  
per unit, >20Wp per panel than  
industry average

Reduction of land costs 10%,  
installation costs 9% and BOS cost  
8%

<2% annual power degradation, PID  
test achieve the best level [Class A]



#### High Reliability

Fully automated production  
facilities using state-of-the-art plant  
technology from Germany

Three level electroluminescence  
(EL) tests guarantee fault-free  
modules

Double-printing cell processing to  
Lower contact resistance and  
optimize soldered connections

Optimized low-light output  
performance

## Premium, 20W>industry average



## Products

### Janus II Modules (Bifacial Double Glass)

Mono 60 cell: 295-315wp

Mono 72 cell: 340-370wp



#### High Efficiency

Outstanding Cell efficiency 21.8%,  
Module 19.2%

Approx. 10% more power output  
per unit, >20Wp per panel than  
industry average

Reduction of land costs 10%,  
installation costs 9% and BOS cost  
8%

<2% annual power degradation, PID  
test achieve the best level [Class A]



#### High Reliability

Fully automated production  
facilities using state-of-the-art plant  
technology from Germany

Three level electroluminescence  
(EL) tests guarantee fault-free  
modules

Double-printing cell processing to  
Lower contact resistance and  
optimize soldered connections

Optimized low-light output  
performance

**Premium, 20W>industry average**



# Products

## Certificates---product

TUV



MCS



VDE



UL



INMETRO

<b>Energia</b> (Elétrica)		<b>MÓDULO FOTOVOLTAICO</b>
Fabricante	Changzhou Eging	
Marca	Resolida Technology Co. Ltd	
Modelo	Eging PV EG-290MO-C	
<b>Mais eficiente</b>	<b>A</b>	<b>A</b>
<b>Menos eficiente</b>	<b>E</b>	
<b>EFICIÊNCIA ENERGÉTICA (%)</b>	<b>17,80</b>	
Área Externa do Módulo (m <sup>2</sup> )	1,63	
Produção Média Mensal de Energia (kWh/m <sup>2</sup> )	36,3	
Potência nas Condições Padrão (W)	290	
<p>Registre-se no site do Procel para obter o Manual de Instalação e Manutenção para o Produto e o Manual de Segurança para o Produto. Para obter o Manual de Segurança para o Produto, consulte o site do Procel.</p> <p><b>PROCEL</b> PROGRAMA NACIONAL DE CONSUMIDORES CONSCIENTES DE ENERGIA ELÉTRICA</p> <p><b>INMETRO</b></p> <p>IMPORTANTE: A REMOÇÃO DESTA ETIQUETA ANTES DA VENDA, ESTÁ EM DESSACORDO COM O CÓDIGO DE DEFESA DO CONSUMIDOR</p>		

CE



JET



CB







# Products

## Certificates---management

OHSAS 18001



ISO14001:2004



ISO 9001:2008



IECQ





Products



Certificates---awards



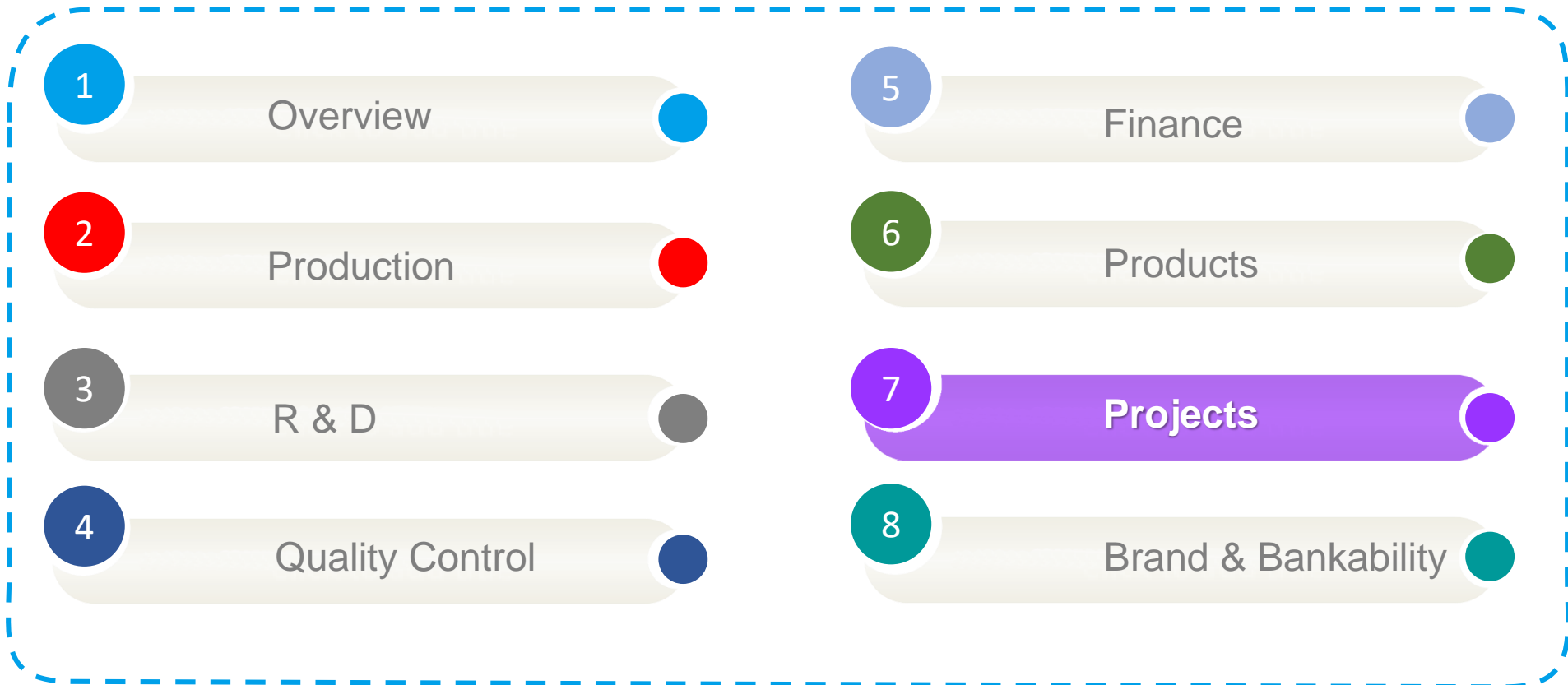
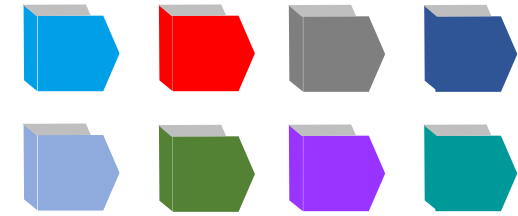
Social  
Responsibility

Customers  
Services

Technological  
Innovation

Products  
Reliability

Content





# Project References



# Global Footprint

# Worldwide installation

**10GW**



\*Data till 1Q17  
wafer and cell shipments are excluded



## Project References

### Case Study

EGing is supplying both its premium and standard panels to the utility, commercial and residential applications, explore more about it at <EGing Project References>

### Download



EGing Project References



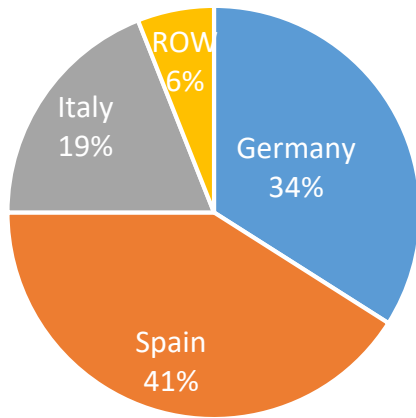
100MW, China  
Biggest fishery solar  
project in China  
Commissioned in  
3Q15



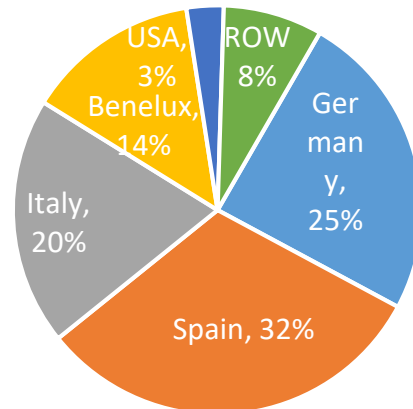
60MW, Denmark  
Biggest solar project  
in Denmark  
Commissioned in  
1Q16

## PROJECTS

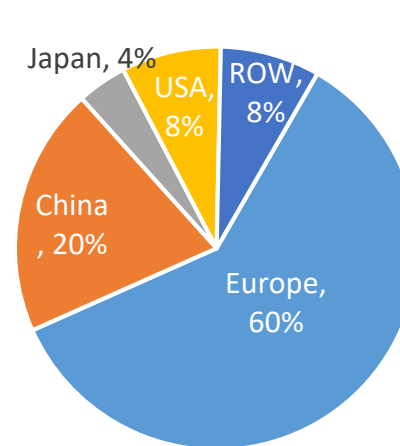
### Geographic Diversification



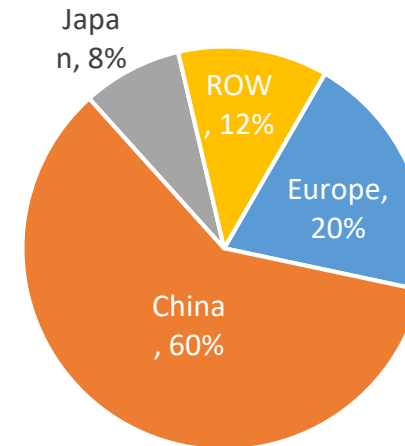
**2011**  
400 MW



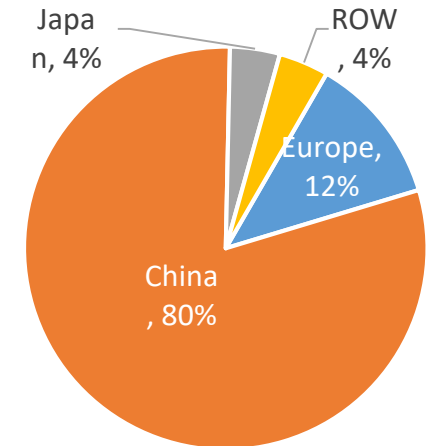
**2012**  
600 MW



**2013**  
800 MW



**2014**  
1000 MW



**2015**  
1500 MW

Module shipment since 2005, EU market dominated

JP market keep stable shipment since 2012

EU market declined since 2014, EGing still keep stable shipment about 200MW the MIP quota per year

EU market declined since 2014, EGing still keep stable shipment about 200MW the MIP quota per year

CN market keep solid position since 2013, Top5 panel supplier in domestics

## PROJECTS



Europe

Solid position in Europe market

10+ year  
project  
references

2 local  
company  
doing the  
sale and  
after sale  
service

200MWp  
annual  
shipment  
under MIP

Top brand  
on the  
market

Solid market  
position and  
remarkable  
profit

Close  
cooperation  
with big EPC,  
supplied the  
biggest project  
60MW in  
Denmark in  
2015

Premium  
equipment;  
Premium  
quality;  
Premium  
panel

PROJECTS

China

Solid position in China market

5+ year project references

Top 5 shipment in domestics market

Pure panel supply

Top brand on the market

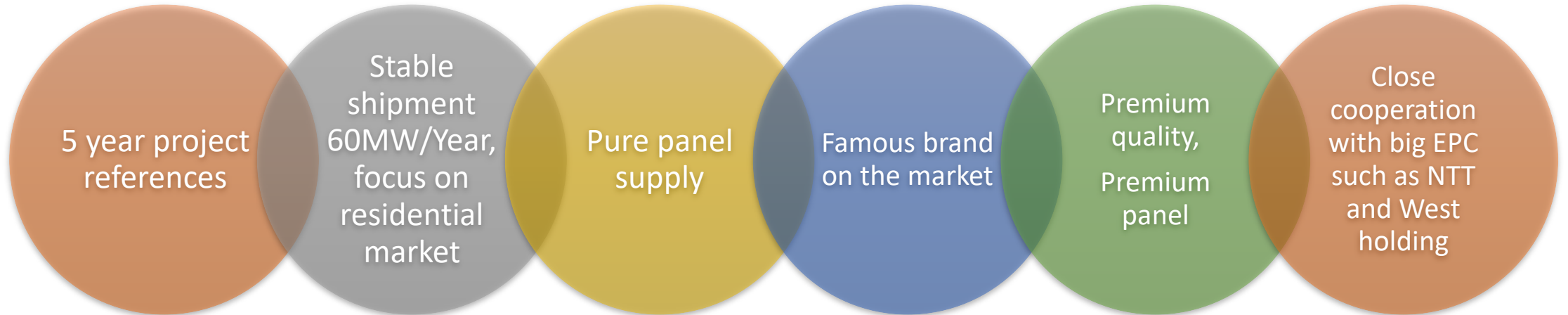
Solid market position and remarkable balance sheet

Close cooperation with 5 biggest local developer/EPC

PROJECTS

Japan

Stable shipment in Japan market





## PROJECTS

Emerging market

Focus on emerging marketing expansion from 2016, with its non-profit oriented strategy opening the main market in India, South America, Middle East, South Asia

Moved into  
Malaysia  
market in  
2015

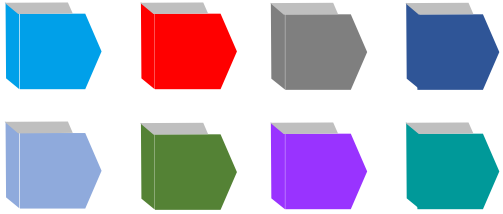
Moved into  
Egypt market  
in 2013

Moved into  
Brazil market  
in 2016

Close  
cooperation  
with channel  
partners in  
India to open  
this important  
market

Both economic  
and premium  
panels to  
satisfy all  
demands

Non-profit  
oriented  
strategy in  
2016 for  
emerging  
market



1	Overview	5	Finance
2	Production	6	Products
3	R & D	7	Projects
4	Quality Control	8	<b>Brand &amp; Bankability</b>

## BANKABILITY



1

BNEF Tier1

2

Listed 2years continuous

3

White list in various banks

## BRAND

 EGING PV



1

China PV Brand Top10

2

Since FY12

3

Listed 4years continuous



EGing Balance Sheet



EGing Company Presentation



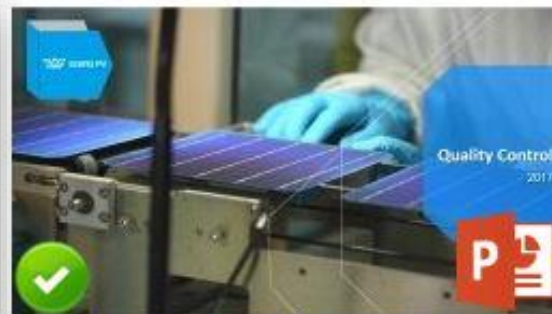
EGing Leading Production



EGing Product Innovation



EGing Projects References



EGing Quality Control

Thank you!

Leo Lu

*Explore more of the colorful EGING PV*