

Global and China Photovoltaic Glass Industry Report, 2019-2025

May 2019

STUDY GOAL AND OBJECTIVES

This report provides the industry executives with strategically significant competitor information, analysis, insight and projection on the competitive pattern and key companies in the industry, crucial to the development and implementation of effective business, marketing and R&D programs.

REPORT OBJECTIVES

- ◆ To establish a comprehensive, factual, annually updated and cost-effective information base on market size, competition patterns, market segments, goals and strategies of the leading players in the market, reviews and forecasts.
- ◆ To assist potential market entrants in evaluating prospective acquisition and joint venture candidates.
- ◆ To complement the organizations' internal competitor information gathering efforts with strategic analysis, data interpretation and insight.
- ◆ To suggest for concerned investors in line with the current development of this industry as well as the development tendency.
- ◆ To help company to succeed in a competitive market, and

METHODOLOGY

Both primary and secondary research methodologies were used in preparing this study. Initially, a comprehensive and exhaustive search of the literature on this industry was conducted. These sources included related books and journals, trade literature, marketing literature, other product/promotional literature, annual reports, security analyst reports, and other publications. Subsequently, telephone interviews or email correspondence was conducted with marketing executives etc. Other sources included related magazines, academics, and consulting companies.

INFORMATION SOURCES

The primary information sources include Company Reports, and National Bureau of Statistics of China etc.

Abstract

In China, PV installed capacity has ramped up since the issuance of photovoltaic (PV) subsidy policies, reaching 53GW in 2017, or over 50% of global total. However, the domestic PV demand was hit by the launch of the Notice on Matters Concerning Photovoltaic Power Generation in 2018 (“531” Policy). In 2018, China added PV installed capacity of 44GW, a 17% drop from a year earlier, according to the data from the National Energy Administration.

In price's terms, PV glass price in China presented a choppy downtrend in the first half of 2018, and even nosedived after the launch of “531” Policy. In July 2018, the price of sheet glass ranged at RMB12.5-13.5/m²; that of coated glass plunged by over 30% to RMB20-20.5/m² compared with what it was at the beginning of the year. PV glass price began to pick up after September 2018 as a result of the fact that production cuts and cold repair of companies eased some oversupply pressures and that prices of upstream raw materials climbed. As of January 2019, typical price of 3.2mm coated glass stood at RMB24/m², down by 23% from the same period last year; that of 3.2mm sheet glass suffered a 26% slump to RMB15.5-16/m².

With production technology barriers broken in 2006, Chinese PV glass companies led by Xinyi Solar Holdings Limited has been pressing ahead with construction of PV glass production lines vigorously over the past decade, in a bid for localized production and substitution for imports. Up to date, China has already been the biggest producer of PV glass in the world. Globally, more than 90% of crystalline silicon PV modules use the China-made PV glass. Many a foreign player like AGC has withdrawn from the market, and only a few such as Saint-Gobain still have some small kilns producing PV glass. Chinese PV glass leaders such as Xinyi Solar Holdings Limited and Flat Glass Group Co., Ltd. have embarked on overseas expansion, mainly in the Southeast Asia since they ruled the roost in home market. For instance, Xinyi Solar Holdings Limited set up a manufacturing base in Malaysia and Flat Glass Group Co., Ltd. had one in Vietnam.

PV Glass Capacity Distribution of Xinyi Solar Holdings and Flat Glass Group

Company	Total Operating Capacity (ton/day)	Production Line	Operating Capacity (ton/day)	Cold Repair (ton/day)	Planned/Being Constructed (ton/day)	Time of Operation
Xinyi Solar Holdings	6,700	Dongguan		300		Jan 2008
		Wuhu		500		Aug 2009
		Tianjin	500			Apr 2011
		Wuhu	500			Mar 2011
		Wuhu		600		Mar 2011
		Wuhu	900			Jul 2014
		Wuhu	900			Oct 2014
		Malaysia	900			Nov 2016
		Wuhu	1,000			Nov 2016
		Wuhu	1,000			Feb 2017
		Malaysia	1,000			Dec 2018
		Malaysia			1,000	Being constructed and to become operational in late 2019
		Malaysia			1,000	Being constructed and to become operational in early 2020
Flat Glass Group	3,690	Jiaxing		300		Nov 2008
		Jiaxing		300		Jun 2009
		Jiaxing	490			Jun 2010
		Jiaxing	600			Apr 2012
		Jiaxing	600			Apr 2013
		Fengyang	1,000			Dec 2017
		Fengyang	1,000			Jun 2018
		Fengyang			1,000	Being constructed and to become operational in 2019Q1
		Vietnam			1,000	Being constructed and to become operational in 2019H1

By the latest capacity, two bellwethers, Xinyi Solar Holdings Limited and Flat Glass Group Co., Ltd. command over half of the market, of which the former takes a 32% share and the later makes up 19%. They are expanding their capacity quickly, the move rarely seen among other players. Current capacity expansion plans of companies demonstrate that the two leaders will seize a combined share of nearly 60% after all of their production lines are brought into operation, given that all of other producers (led by Henan Ancai Hi-tech Co., Ltd. and Changzhou Almaden Co., Ltd.) carry out their expansion plans and those with small capacity (a share of less than 10% together) are to be eliminated in the next two years.

Global and China Photovoltaic Glass Industry Report, 2019-2025 highlights the following:

- PV glass industry (definition, classification, industry chain, related fields and technology roadmap);
- Global PV and PV glass industry (market size, competitive pattern, prospect, etc.);
- China PV and PV glass industry (market environment, market size, competitive pattern, prospect, price, etc.);
- PV glass market segments (ultra-clear patterned glass, TCO glass, etc.);
- 15 PV glass manufacturers like Xinyi Solar Holdings, Flat Glass Group, Caihong Group, AVIC Sanxin, Henan Ancai Hi-tech, etc. (operation, main products, production layout, production & sales, development strategy, etc.).

1 PV Glass

- 1.1 Definition and Classification
- 1.2 Application
- 1.3 Characteristics
- 1.4 Production Technology
- 1.5 Industry Chain

2 Global PV Glass Industry

- 2.1 Development Environment
 - 2.1.1 Policy Environment
 - 2.1.2 Industry Environment
- 2.2 Market Size
 - 2.2.1 PV
 - 2.2.2 PV Glass

3. China PV Glass Industry

- 3.1 Policy Environment
- 3.2 Market Situation
 - 3.2.1 PV
 - 3.2.2 PV Glass
- 3.3 Capacity
- 3.4 Competitive Scale
- 3.5 Price

4 Main PV Glass Products

- 4.1 Ultra-clear Patterned Glass
 - 4.1.1 Introduction
 - 4.1.2 Market Size

- 4.1.3 Competition Pattern
- 4.2 TCO Glass
 - 4.2.1 Introduction
 - 4.2.2 Market Size
 - 4.2.3 Competition Pattern
- 4.3 PV Anti-reflective Glass
 - 4.3.1 Introduction
 - 4.3.2 Market Size
 - 4.3.3 Competition Pattern

5 Main Applications

- 5.1 Solar Cell
 - 5.1.1 Global
 - 5.1.2 China
- 5.2 Solar Cell Module
 - 5.2.1 Market Status
 - 5.2.2 Competition Pattern

6. Major PV Glass Companies Worldwide

- 6.1 AGC
 - 6.1.1 Profile
 - 6.1.2 Operation
 - 6.1.3 PV Glass Business
 - 6.1.4 Development in China
- 6.2 Saint-Gobain
 - 6.2.1 Profile
 - 6.2.2 Operation

6.2.3 PV Glass Business
6.2.4 Development in China
6.3 NSG
6.3.1 Profile
6.3.2 Operation
6.3.3 PV Glass Business
6.3.4 Development in China
6.4 PPG Industries
6.4.1 Profile
6.4.2 Operation
6.4.3 PV Glass Business
6.4.4 Development in China
6.5 Sunarc
6.5.1 Profile
6.5.2 Operation
6.5.3 Development in China

7. Major Chinese PV Glass Companies

7.1 Xinyi Glass Holdings
7.1.1 Profile
7.1.2 Operation
7.1.3 PV Glass Business -- Xinyi Solar Holding
7.2 CSG Holding
7.2.1 Profile
7.2.2 Operation
7.2.3 PV Glass Business
7.3 Topray Solar

7.3.1 Profile
7.3.2 Operation
7.3.3 PV Glass Business
7.4 AVIC Sanxin
7.4.1 Profile
7.4.2 Operation
7.4.3 PV Glass Business
7.5 Almaden
7.5.1 Profile
7.5.2 Operation
7.5.3 PV Glass Business
7.6 Jiangsu Xiuqiang Glasswork Co., Ltd.
7.6.1 Profile
7.6.2 Operation
7.6.3 PV Glass Business
7.7 China Glass Holdings
7.7.1 Profile
7.7.2 Operation
7.7.3 PV Glass Business
7.8 Shandong Jinjing Science & Technology Co Ltd
7.8.1 Profile
7.8.2 Operation
7.8.3 PV Glass Business
7.9 Zhuzhou Kibing Group Co., Ltd.
7.9.1 Profile
7.9.2 Operation
7.9.3 Glass Business



- 7.10 Henan Ancai Hi-tech Co., Ltd.
 - 7.10.1 Profile
 - 7.10.2 Operation
 - 7.10.3 PV Glass Business
- 7.11 IRICO Electronics
 - 7.11.1 Profile
 - 7.11.2 Operation
 - 7.11.3 PV Glass Business
- 7.12 Guangdong Golden Glass Technologies Limited
 - 7.12.1 Profile
 - 7.12.2 Operation
 - 7.12.3 PV Glass Business
- 7.13 Luoyang Glass Co., Ltd.
 - 7.13.1 Profile
 - 7.13.2 Operation
- 7.14 Shanghai Yaohua Pilkington Glass Group
 - 7.14.1 Profile
 - 7.14.2 Operation
 - 7.14.3 PV Glass Business
- 7.15 Flat Glass Group Co., LTD.
 - 7.15.1 Profile
 - 7.15.2 Operation
 - 7.15.3 PV Glass Business



- Classification of PV Glass
- Application of PV Glass in Crystalline Silicon Battery Module
- Application of PV Glass in Thin-film Battery Module
- Application of PV Glass in BIPV
- Production Technology of PV Glass
- PV Glass Industry Chain
- PV Industry Policies in Major Countries
- PV Building Incentive Policy System in Japan
- Global PV Installed Capacity, 2016-2025E
- Cumulative Grid-connected PV Installed Capacity in Major Countries, 2018
- New Grid-connected PV Installed Capacity in Major Countries, 2018
- Global PV Demand Distribution, 2018
- Global PV Installed Capacity
- New PV Installed Capacity Forecast in China, 2019
- New PV Installed Capacity Forecast in Other Countries, 2019
- New GW-level Countries, 2018
- Module Output in China, 2010-2019
- Global Consumption of Main PV Glass Products and YoY Change, 2016-2025E
- Global PV Glass Demand Structure by Product, 2018/2025E
- Revenue of Major PV Glass Companies Worldwide, 2013-2018
- Main PV Industry Policies in China
- PV Subsidy Policies of Main Provinces/Municipalities in China
- European Union's MPI Adjustment Plan for China, 2018
- New and Cumulative PV Installed Capacity in China, 2016-2025E
- PV Glass Demand Growth Forecast, 2019
- New PV Installed Capacity Structure in China, 2018
- PV Installed Capacity in China by Province/Municipality, 2018
- PV Glass Capacity in China, 2016-2025E




PV Glass Output and YoY Growth in China, 2016-2025E
PV Glass Demand in China, 2015-2025E
PV Glass Prices in China Since 2013
PV Glass Prices in China Since 2018
PV Glass Demand Estimate
Ultra-clear Patterned Glass Kilns in China and Their Number of Production Lines
Operating Ultra-clear Patterned Glass Capacity in China
Revenue and Net Income of Major PV Glass Companies in China, 2018
Capacity of Major PV Glass Companies in China, 2018
Competition Pattern of PV Glass Market in China, 2018
Changes in Main PV Glass Production Lines in China, 2018
Cost Structure of Solar PV Module
Price Trend of PV Glass in China, 2016-2018
Price Trend of Ultra-clear Patterned Raw Glass (3.2mm) in China, 2016-2018
Classification and Application of PV Glass
Sketch Map of Ultra-clear Patterned Glass
Unit Consumption of Ultra-clear Glass for Solar PV Cell
Global Consumption of Ultra-clear Patterned Glass, 2016-2025E
Ultra-clear Patterned Solar Glass Consumption in China, 2016-2025E
Ultra-clear Patterned Solar Glass Capacity in China, 2016-2018
Changes in Ultra-clear Patterned Glass Production Lines in China
Structure of Thin-film Solar Cell
Performance Comparison between Three Kinds of TCO Glass
Cost Structure of Thin-film Solar Cell
Global TCO Glass Consumption, 2016-2025E
TCO Glass Industrialization in China
Major TCO Glass Manufacturers and Their Capacity in China
Major TCO Conductive Glass Manufacturers Worldwide



Structure of Anti-reflective Coated Glass
Performance of PV Anti-reflective Glass
Capacity of Major PV Anti-reflective Glass Manufacturers in China
Major Manufacturers of Anti-reflective Coating for Ultra-clear Rolled Glass Worldwide
Applications of PV Glass
Global Solar Cell and Module Price Trend, 2011-2018
Classification of Solar PV Cell
Performance Comparison between Thin-film Battery and Crystalline Silicon Battery
Global Solar Cell Output and YoY Growth, 2016-2025E
Global Solar Cell Output Structure by Product, 2016-2025E
Capacity of Major Thin-film Solar Cell Manufacturers Worldwide, 2018
Solar Cell Output and YoY Growth in China, 2016-2025E
Capacity of Major Solar Cell Manufacturers in China, 2018
Solar Cell Export Value Structure in China by Country/Region, 2018
Global Solar Cell Module Output, 2016-2025E
Global Solar Cell Module Output Structure by Product, 2018
Solar Cell Module Export Volume in China by Region, 2013-2018
Solar Cell Module Export Structure in China by Province/Region, 2018
Capacity and Output of Major Solar Cell Module Manufacturers Worldwide, 2018
Glass Production Lines of Asahi Glass Co., Ltd. (AGC) by Region
Revenue and Operating Income of Asahi Glass Co., Ltd. (AGC), 2013-2018
Major Subsidiaries of Asahi Glass Co., Ltd. (AGC) in China
Marketing Network of Asahi Glass Co., Ltd. (AGC) in China
Revenue and Net Income of Saint-Gobain, 2013-2018
Market Position of Saint-Gobain's Flat Glass Business
Saint-Gobain's Revenue and Profits from Flat Glass Business, 2017-2018
Revenue and YoY of Saint-Gobain in China, 2013-2018
Layout of Saint-Gobain in China

Major Companies of Saint-Gobain in China Involved in Glass Business
Revenue and Net Income of NSG, FY2013-FY2018
Revenue Breakdown of NSG's Major Products by Region, FY2018
Operation of NSG's Architectural Business, FY2015-FY2018
Subsidiaries of NSG in China
Factory Distribution of PPG by Region, 2018
Revenue and Net Income of PPG, 2013-2018
PPG's Cooperation in Glass Business in China
AR Glass Transmission Rates of Sunarc (by Field)
Revenue and Net Income of Xinyi Glass Holdings Limited, 2013-2018
Marketing Network of Xinyi Solar Holdings Limited in China
Daily Melting Capacity of Ultra-clear PV Raw Glass of Xinyi Solar Holdings Limited, 2013-2018
Ultra-clear PV Raw Glass Capacity of Xinyi Solar Holdings Limited, 2014-2018
Solar Glass Revenue of Xinyi Solar Holdings Limited, 2013-2018
Scale of Grid-connected PV Power Plants of Xinyi Solar Holdings Limited, 2014-2018
PV Glass Capacity and Capacity Planning of Xinyi Solar Holdings Limited
PV Power Plant Projects of Xinyi Solar Holdings Limited, 2018
Industrial Structure of Aviation Sanxin Co., Ltd.
Revenue and Net Income of Aviation Sanxin Co., Ltd, 2013-2018
Gross Margin of Aviation Sanxin Co., Ltd by Product, 2013-2018
Specialty Glass Production Bases of Aviation Sanxin Co., Ltd
Production Bases of Aviation Sanxin Co., Ltd
Revenue and Net Income of Aviation Sanxin Solar PV Glass Co., Ltd. 2013-2018
Revenue and Net Income of Changzhou Almaden Co., Ltd., 2013-2018
Production and Sales Volume of PV Glass of Changzhou Almaden Co., Ltd., 2013-2018
Revenue and Gross Margin of PV Glass Business of Changzhou Almaden Co., Ltd, 2013-2018
Marketing Network of Jiangsu Xiuqiang Glasswork Co., Ltd. Worldwide

Revenue and Net Income of Jiangsu Xiuqiang Glasswork Co., Ltd., 2013-2018
Solar Glass Products of Jiangsu Xiuqiang Glasswork Co., Ltd
Marketing Network of Solar Glass of Jiangsu Xiuqiang Glasswork Co., Ltd in China
Production and Sales Volume of PV Glass of Jiangsu Xiuqiang Glasswork Co., Ltd, 2013-2018
Revenue of Solar Glass Business of Jiangsu Xiuqiang Glasswork Co., Ltd, 2013-2018
TCO Glass Capacity of Jiangsu Xiuqiang Glasswork Co., Ltd, 2013-2018
Leading Products of China Glass Holding Limited
Revenue and Net Income of China Glass Holding Limited, 2013-2018
Gross Margin of China Glass Holding Limited by Product, 2013-2018
Main PV Production Lines of China Glass Holding Limited
Revenue and Net Income of Shandong Jinjing Science & Technology Stock Co., Ltd, 2013-2018
Glass Production Lines of Shandong Jinjing Science & Technology Stock Co., Ltd
Global Marketing Network of Zhuzhou Kibing Group Co., Ltd
Revenue and Net Income of Zhuzhou Kibing Group Co., Ltd, 2013-2018
Production Bases of Zhuzhou Kibing Group Co., Ltd.
PV Glass Production Lines of Zhuzhou Kibing Group Co., Ltd
Revenue and Net Income of Henan Ancai Hi-tech Co., Ltd, 2013-2018
Revenue and Gross Margin of PV Glass Business of Henan Ancai Hi-tech Co., Ltd, 2010-2018
Revenue and Gross Profit of IRICO Group Electronics Company Limited, 2013-2018
PV Glass Production Lines of IRICO Group Electronics Company Limited
Revenue of PV Glass Business of IRICO Group Electronics Company Limited, 2013-2018
Revenue and Net Income of Guangdong Golden Glass Technologies Limited, 2013-2018
Revenue of PV Glass (Module) Business of Guangdong Golden Glass Technologies Limited, 2013-2018
Revenue and Net Income of Luoyang Glass Co., Ltd, 2013-2018
Marketing Network of Shanghai Yaohua Pilkington Glass Group Co., Ltd.
Subsidiaries of Shanghai Yaohua Pilkington Glass Group Co., Ltd.
Glass Industry Chain and Main Products of Flat Glass Group Co., Ltd.
Revenue and Net Income of Flat Glass Group Co., Ltd., 2013-2018



Main PV Glass Production Bases of Flat Glass Group Co., Ltd.
PV Glass Revenue and Sales of Flat Glass Group Co., Ltd., 2015-2018
Unit Price, Cost and Gross Profit of PV Glass of Flat Glass Group Co., Ltd., 2015-2018
PV Glass Capacity and Capacity Planning of Flat Glass Group Co., Ltd.
Changes in PV Glass Capacity of Flat Glass Group Co., Ltd.
Current Core Technologies of Flat Glass Group Co., Ltd.

You can place your order in the following alternative ways:

1. Order online at www.researchinchina.com
2. Fax order sheet to us at fax number: +86 10 82601570
3. Email your order to: report@researchinchina.com
4. Phone us at +86 10 82600828

Party A:			
Name:			
Address:			
Contact Person:		Tel	
E-mail:		Fax	

Party B:			
Name:	Beijing Waterwood Technologies Co., Ltd (ResearchInChina)		
Address:	Room 801, B1, Changyuan Tiandi Building, No. 18, Suzhou Street, Haidian District, Beijing, China 100080		
Contact Person:	Liao Yan	Phone:	86-10-82600828
E-mail:	report@researchinchina.com	Fax:	86-10-82601570
Bank details:	Beneficial Name: Beijing Waterwood Technologies Co., Ltd Bank Name: Bank of Communications, Beijing Branch Bank Address: NO.1 jinxiyuan shijicheng, Landianchang, Haidian District, Beijing Bank Account No #: 110060668012015061217 Routing No #: 332906 Bank SWIFT Code: COMMCNSHBJG		

Title	Format	Cost
Total		

Choose type of format

PDF (Single user license)2,700 USD
 Hard copy 2,900 USD
 PDF (Enterprisewide license)..... 4,100 USD

※ Reports will be dispatched immediately once full payment has been received.
 Payment may be made by wire transfer or credit card via PayPal.

About ResearchInChina

ResearchInChina (www.researchinchina.com) is a leading independent provider of China business intelligence. Our research is designed to meet the diverse planning and information needs of businesses, institutions, and professional investors worldwide. Our services are used in a variety of ways, including strategic planning, product and sales forecasting, risk and sensitivity management, and as investment research.

Our Major Activities

- ❑ *Multi-users market reports*
- ❑ *Database-RICDB*
- ❑ *Custom Research*
- ❑ *Company Search*

RICDB (<http://www.researchinchina.com/data/database.html>), is a visible financial data base presented by map and graph covering global and China macroeconomic data, industry data, and company data. It has included nearly 500,000 indices (based on time series), and is continuing to update and increase. The most significant feature of this base is that the vast majority of indices (about 400,000) can be displayed in map.

After purchase of our report, you will be automatically granted to enjoy 2 weeks trial service of RICDB for free.

After trial, you can decide to become our formal member or not. We will try our best to meet your demand. For more information, please find at www.researchinchina.com

For any problems, please contact our service team at: