

Global and China Photovoltaic Glass Industry Report, 2014-2018

Jan. 2015

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

Featuring controllable light transmitting, energy-saving & generation and environmental friendliness, photovoltaic glass (PV glass) is primarily applied in solar cell module, and its transparency directly affects conversion efficiency of solar cell. PV glass consists mainly of crystalline silicon PV glass and thin-film PV glass.








PV glass is an important accessory in solar cell industry, growing along with development of PV industry. During 2000-2014, Global installed PV capacity recorded CAGR of 42.9%, compared with 70.7% in China.

Driven by PV industry, China's PV glass consumption has increased gradually, exceeding 200 million m² in 2014. Since 2006, promoted by big profits and favorable policies, various domestic manufacturers has invested to build PV glass production lines, combined with the shifting of foreign companies into China, thus leading to rapid expansion of PV glass capacity in China. Standard Conditions for the Photovoltaic Manufacturing Industry issued in 2015 lifted access threshold of PV industry, thus decelerating expansion pace of PV glass capacity.

With improvement in return on investment (ROI) in PV-related industries, foreign companies like AGC explore high-end PV glass business via cooperation; domestic flat glass manufacturers including CSG Holding and Xinyi Glass actively expand PV glass capacity; new entrants such as IRICO Electronics and China National Building Materials also make investment in PV glass field.

Projects Proposed/under Construction of Major PV Glass Manufacturers in China at the Beginning of 2015

● Under Construction ● Proposed

Company	Project Location	Construction Content	Proposed/ Under Construction
	Wujiang	A 650t/d solar-energy rolled glass production line	●
	Qingyuan	A 1 millionm²/a high-performance ultra-thin glass (photovoltaic module cover plate) production line	●
	Dongguan	Investing RMB390 million to construct a on-line coating Production Line	●
	Malaysia	Spending HKD77.3 million in purchasing land to construct an ultra-clear photovoltaic glass factory	●
	Wuhu	A 1800t/d solar PV glass production line	●
	Bengbu	An "AR Coated Glass-dedicated Coating Solution" technology transfer project	●
	Duba	Investing RMB190 million on an ultrathin double-glass PV plate factory that has an annual capacity of 400,000 pieces	●
	Changzhou	Investing RMB43.76 million in a "PV Coated Glass Technological Upgrading" project	●
	Changzhou	Investing RMB390 million to construct an "ultrathin double-glass BIPV model" production project	●
	Suqian	Investing RMB110 million in a " 600,000 m²/a high-transmission visible light AR coated glass" project	●
	Ningxia	A 360kt/a solar ultra-clear glass and float glass project	●
	Zhuzhou	A 1,300t/d ultra-clear glass production line	●

Source: Global and China Photovoltaic Glass Industry Report, 2014-2018; ResearchInChina

Copyright 2012ResearchInChina

AGC: Established partnership with Rolith in 2013 to co-develop advanced anti-reflective glass; entered into a strategic cooperation agreement with Spanish Onyx Solar in 2014 to promote and sell PV glass within North America manufactured by Onyx Solar

CSG Holding: In Mar. 2014, Wujiang CSG ultra-white rolled solar glass production line was completed and put into operation, with capacity of 650t/d and costs down more than 30% than that of the first and second production lines; in Nov. of the same year, the company completed high-performance ultra-thin glass production line mainly for the production of touch screen and PV module cover plate.

Xinyi Glass: In Nov. 2014, the company spent HK\$ 77.31 million to buy the land in Malacca, Malaysia for the construction of an ultra-clear glass production plant, with products targeting Thailand, the Philippines and Singapore.

IRICO Electronics: The company sold shares twice, totaling 10 million, and obtained RMB76.40 million for development of solar PV glass and new electronic chemical materials.

China National Building Materials: The company has, in recent years, set foot in ultra-clear PV glass, TCO glass, etc, and built dozens of ultra-clear PV glass. In Sep. 2014, Bengbu Design & Research Institute for Glass Industry of CNBM acquired Avancis under France Compagnie de Saint Gobain, which manufactures thin-film solar cell and CIGS thin film cell, to further promote thin film solar industry chain.

Global and China Photovoltaic Glass Industry Report, 2014-2018 by ResearchInChina covers the following:

- Policy environment and industry environment for the development of global PV glass industry;
- Global and Chinese PV glass market size, market demand of main products, competitive landscape;
- Status quo of global and China solar cell and solar module market;
- Operation, revenue structure and layout in China of 5 foreign PV glass companies;
- Operation, revenue structure and competitive landscape of 18 domestic PV glass companies

1. Overview of PV Glass

- 1.1 Definition and Classification
- 1.2 Application
- 1.3 Characteristics
- 1.4 Manufacturing Technology

2. Development Environment of PV Glass

- 2.1 Policy Environment
 - 2.1.1 Japan
 - 2.1.2 China
- 2.2 Industry Environment

3. Development of PV Glass Industry

- 3.1 Global
 - 3.1.1 PV
 - 3.1.2 PV Glass
- 3.2 China
 - 3.2.1 PV
 - 3.2.2 PV Glass

4. Main PV Glass Products

- 4.1 Super Clear Patterned Glass
 - 4.1.1 Profile
 - 4.1.2 Global Market Demand
 - 4.1.3 Status Quo of Chinese Market
 - 4.1.4 Competitive Landscape
- 4.2 TCO Glass

4.2.1 Profile

4.2.2 Global Market Demand

4.2.3 Status Quo of Chinese Market

4.2.4 Competitive Landscape

4.3 PV Anti-reflective Glass

4.3.1 Profile

4.3.2 Status Quo of Chinese Market

4.3.3 Competitive Landscape

5. Solar Cell Industry

5.1 Solar Cell

5.1.1 Global

5.1.2 China

5.2 Solar Cell Module

6. Major PV Glass Companies Worldwide

6.1 AGC

6.1.1 Profile

6.1.2 Operation

6.1.3 Revenue Structure

6.1.4 PV Glass Business

6.1.5 Development in China

6.2 Saint-Gobain

6.2.1 Profile

6.2.2 Operation

6.2.3 Revenue Structure

6.2.4 PV Glass Business

6.2.5 Development in China

6.3 NSG

6.3.1 Profile

6.3.2 Operation

6.3.3 Revenue Structure

6.3.4 PV Glass Business

6.3.5 Development in China

6.4 PPG Industries

6.4.1 Profile

6.4.2 Operation

6.4.3 Revenue Structure

6.4.4 PV Glass Business

6.4.5 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 CSG Holding

7.1.1 Profile

7.1.2 Operation

7.1.3 Revenue Structure

7.1.4 Gross Margin

7.1.5 PV Glass Business

7.2 Xinyi Glass Holdings

7.2.1 Profile

7.2.2 Operation

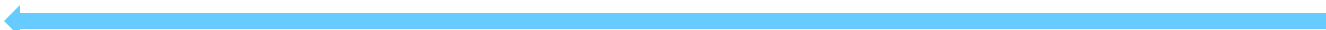
7.2.3 Revenue Structure
7.2.4 PV Glass Business——Xinyi Solar Holding
7.3 Topray Solar
7.3.1 Profile
7.3.2 Operation
7.3.3 Revenue Structure
7.3.4 Gross Margin
7.3.5 Main Production Base
7.3.6 PV Glass Business
7.4 AVIC Sanxin
7.4.1 Profile
7.4.2 Operation
7.4.3 Revenue Structure
7.4.4 Gross Margin
7.4.5 PV Glass Business
7.5 Almaden
7.5.1 Profile
7.5.2 Operation
7.5.3 Revenue Structure
7.5.4 PV Glass Business
7.5.5 Development
7.6 Jiangsu Xiuqiang Glasswork Co., Ltd.
7.6.1 Profile
7.6.2 Operation
7.6.3 Revenue Structure
7.6.4 PV Glass Business

7.7 China Glass Holdings
7.7.1 Profile
7.7.2 Operation
7.7.3 Revenue Structure
7.7.4 Gross Margin
7.7.5 PV Glass Business
7.8 Shandong Jinjing Science & Technology Co Ltd
7.8.1 Profile
7.8.2 Operation
7.8.3 Revenue Structure
7.8.4 PV Glass Business
7.9 Zhuzhou Kibing Group Co., Ltd.
7.9.1 Profile
7.9.2 Operation
7.9.3 Revenue Structure
7.9.4 PV Glass Business
7.10 Henan Ancai Hi-tech Co., Ltd.
7.10.1 Profile
7.10.2 Operation
7.10.3 Revenue Structure
7.10.4 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 Revenue Structure
7.12.4 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 Revenue Structure
7.14.4 Gross Margin
7.14.5 PV Glass Business
7.15 Other
7.15.1 FLAT Solar Glass Group
7.15.2 Henan Yuhua PV New Materials Co., Ltd.
7.15.3 Henan Succeed Photovoltaic Materials Co., LTD.
7.15.4 Zhejiang Hehe Photovoltaic Glass Technology Co., Ltd

8. Summary and Forecast

8.1 Market
8.2 Company

- 
- Application of PV Glass in Crystalline Silicon Battery Module
 - Application of PV Glass in Thin-film Battery Module
 - Application of PV Glass in BIPV
 - Manufacturing Technology of PV Glass
 - PV Subsidy Policies in Main Countries, 2014
 - PV Subsidy Policies in Japan, 2014
 - Main PV Subsidy Policies in China, 2014
 - Average Spot Price of Solar Module in China, 2013-2014
 - Global Installed PV Capacity, 2005-2015E
 - Global Consumption of and Demand for Main PV Glasses, 2012-2018E
 - Sales of Major Global PV Glass Companies, 2011-2014
 - China's Installed PV Capacity, 2006-2015E
 - Revenue and Net Income of Major Chinese PV Glass Companies, Jan.-Sep. 2014
 - Classification and Application of PV Glass
 - Sketch Map of Ultra Clear Patterned Glass
 - Global Consumption of Ultra Clear Patterned Glass, 2007-2014
 - Consumption of Ultra Clear Patterned Glass in China, 2005-2014
 - Capacity of Ultra Clear Patterned Glass in China, 2013-2014
 - Performance Comparison between Three Kinds of TCO Glass
 - Consumption of TCO Glass Worldwide, 2008-2014
 - TCO Glass Industrialization in China
 - Major TCO Conductive Glass Companies in the World
 - Performance of PV Anti-reflective Glass
 - Major PV Anti-reflective Glass Companies in China
 - Major Manufacturers of Anti-reflective Coating for Ultra Clear Rolled Glass in the World

- 
- Classification of Solar PV Cell
 - Performance Comparison between Thin-film Battery and Crystal Silicon Battery
 - Output Structure of Solar Cell by Product Worldwide, 2001-2014
 - Output and Proportion of Solar Cell and in China, 2011-2014
 - Output Structure of Solar Cell by Region in China, Jan.-Sep.2014
 - Capacity and Output of Solar Cell Module Worldwide, 2008-2015E
 - Capacity and Shipment of Major Solar Cell Companies Worldwide, 2014
 - PV Cell Module Expansion Plan of Major Companies Worldwide, 2015
 - PV Cell Module Expansion Plan of Major Companies in China, 2015
 - Glass Production Lines of Asahi Glass Co., Ltd. (AGC) by Region
 - Revenue and Net Income of Asahi Glass Co., Ltd. (AGC), 2008-2014
 - Revenue Breakdown of Asahi Glass Co., Ltd. (AGC) by Business, 2010-2014
 - Revenue Breakdown of Asahi Glass Co., Ltd. (AGC) by Region, 2011-2013
 - Major Subsidiaries of 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, 2009-2014
 - Revenue Breakdown of Saint-Gobain by Business, 2009-2014
 - Revenue Breakdown of Saint-Gobain by Region, 2009-2014
 - Revenue and YoY of Saint-Gobain in China, 2002-2013
 - Layout of Saint-Gobain in China
 - Major Companies of Saint-Gobain in China Involved in Glass Business
 - Revenue and Net Income of NSG, FY2009-FY2015
 - Revenue Breakdown of NSG by Business, FY2009-FY2015
 - Revenue Breakdown of NSG by Region, FY2013-FY2014
 - Revenue Breakdown of NSG's Major Products by Region, FY2014

- 
- Subsidiaries of NSG in China, 2014
 - Factory Distribution of PPG by Region, as of 2013
 - Revenue and Net Income of PPG, 2008-2014
 - Revenue Breakdown of PPG by Business, 2009-2013
 - Revenue Breakdown of PPG by Region, 2011-2013
 - PPG's Cooperation in Glass Business in China
 - AR Glass Transmission Rates of Sunarc (by Field)
 - Global Marketing Network of CSG Holding Co., Ltd.
 - Three Major Industrial Chains of CSG Holding Co., Ltd.
 - Revenue and Net Income of CSG Holding Co., Ltd., 2007-2014
 - Revenue Breakdown of CSG Holding Co., Ltd by Product, 2008-2014
 - Revenue Breakdown of CSG Holding Co., Ltd by Region, 2008-2014
 - Gross Margin of CSG Holding Co., Ltd by Product, 2008-2014
 - PV Glass Subsidiaries of CSG Holding Co., Ltd.
 - Revenue and Net Income of Xinyi Glass Holdings Limited, 2007-2014
 - Revenue Breakdown of Xinyi Glass Holdings Limited by Product, 2007-2014
 - Revenue Breakdown of Xinyi Glass Holdings Limited by Region, 2007-2014
 - Marketing Network of Xinyi Solar Holdings Limited in China
 - Revenue Breakdown of Xinyi Solar Holdings Limited by Product, 2012-2014
 - Revenue Breakdown of Xinyi Solar Holdings Limited by Region, 2012-2014
 - PV Glass Production Lines of Xinyi Solar Holdings, 2014
 - Revenue and Net Income of Shenzhen Topraysolar Co., Ltd., 2008-2014
 - Revenue Breakdown of Shenzhen Topraysolar Co., Ltd by Product, 2009-2014
 - Three Overseas Marketing Companies of Shenzhen Topraysolar Co., Ltd.
 - Revenue Breakdown of Shenzhen Topraysolar Co., Ltd by Region, 2009-2014

- 
- Gross Margin of Shenzhen Topraysolar Co., Ltd. by Product, 2009-2014
 - Three Major Production Bases of Shenzhen Topraysolar Co., Ltd.
 - Revenue from PV Glass Business of Shenzhen Topraysolar Co., Ltd., 2010-2014
 - Financials of Major PV Glass Subsidiaries of Shenzhen Topraysolar Co., Ltd., 2013-2014
 - Industrial Structure of Aviation Sanxin Co., Ltd.
 - Revenue and Net Income of Aviation Sanxin Co., Ltd, 2007-2014
 - Revenue Breakdown of Aviation Sanxin Co., Ltd by Product, 2008-2014
 - Revenue Breakdown of Aviation Sanxin Co., Ltd by Region, 2008-2014
 - Gross Margin of Aviation Sanxin Co., Ltd by Product, 2008-2014
 - Specialty Glass Production Bases of Aviation Sanxin Co., Ltd, 2014
 - Production Bases of Aviation Sanxin Co., Ltd
 - Revenue and Net Income of Aviation Sanxin Solar PV Glass Co., Ltd. 2011-2014
 - Revenue and Net Income of Changzhou Almaden Co., Ltd., 2008-2014
 - Revenue Breakdown of Changzhou Almaden Co., Ltd. by Product, 2012-2014
 - Revenue Breakdown of Changzhou Almaden Co., Ltd. by Region, 2009-2014
 - Production and Sales Volume of PV Glass of Changzhou Almaden Co., Ltd., 2012-2013
 - Revenue and Gross Margin of PV Glass Business of Changzhou Almaden Co., Ltd, 2012-2014
 - Marketing Network of Jiangsu Xiuqiang Glasswork Co., Ltd. Worldwide
 - Revenue and Net Income of Jiangsu Xiuqiang Glasswork Co., Ltd., 2008-2014
 - Revenue Breakdown of Jiangsu Xiuqiang Glasswork Co., Ltd by Product, 2009-2014
 - Revenue Breakdown of Jiangsu Xiuqiang Glasswork Co., Ltd by Region, 2010-2014
 - 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, 2012-2013
 - Revenue of Solar Glass Business of Jiangsu Xiuqiang Glasswork Co., Ltd, 2009-2014

- 
- TCO Glass Capacity of Jiangsu Xiuqiang Glasswork Co., Ltd, 2011-2014
 - Major PV Glass Projects under Construction of Jiangsu Xiuqiang Glasswork Co., Ltd, 2014
 - Leading Products of China Glass Holding Limited
 - Revenue and Net Income of China Glass Holding Limited, 2007-2014
 - Revenue Breakdown of China Glass Holding Limited by Product, 2010-2014
 - Revenue Breakdown of China Glass Holding Limited by Region, 2008-2013
 - Gross Margin of China Glass Holding Limited by Product, 2010-2014
 - Main PV Production Lines of China Glass Holding Limited
 - Revenue and Net Income of Shandong Jinjing Science & Technology Stock Co., Ltd, 2006-2014
 - Revenue Breakdown of Shandong Jinjing Science & Technology Stock Co., Ltd by Product, 2008-2014
 - Revenue Breakdown of Shandong Jinjing Science & Technology Stock Co., Ltd by Region, 2008-2014
 - 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, 2008-2014
 - Revenue Breakdown of Zhuzhou Kibing Group Co., Ltd by Product, 2008-2014
 - Revenue Breakdown of Zhuzhou Kibing Group Co., Ltd by Region, 2008-2014
 - Production Bases of Zhuzhou Kibing Group Co., Ltd
 - PV Glass Production Lines of Zhuzhou Kibing Group Co., Ltd
 - Financials of Major PV Glass Subsidiaries of Zhuzhou Kibing Group Co., Ltd, 2013-2014
 - Revenue and Net Income of Henan Ancai Hi-tech Co., Ltd, 2008-2014
 - Revenue Breakdown of Henan Ancai Hi-tech Co., Ltd by Product, 2012-2014
 - Revenue and Gross Margin of PV Glass Business of Henan Ancai Hi-tech Co., Ltd, 2009-2012
 - Revenue and Gross Profit of IRICO Group Electronics Company Limited, 2008-2014
 - PV Glass Production Lines of IRICO Group Electronics Company Limited
 - Revenue of PV Glass Business of IRICO Group Electronics Company Limited, 2010-2014

- 
- Revenue and Net Income of Guangdong Golden Glass Technologies Limited, 2008-2014
 - Revenue Breakdown of Guangdong Golden Glass Technologies Limited by Product, 2010-2014
 - Revenue Breakdown of Guangdong Golden Glass Technologies Limited by Region, 2010-2014
 - PV Project Progression of Guangdong Golden Glass Technologies Limited, 2014
 - Revenue of PV Glass (Module) Business of Guangdong Golden Glass Technologies Limited, 2010-2014
 - Revenue and Net Income of Luoyang Glass Co., Ltd, 2008-2014
 - Marketing Network of Shanghai Yaohua Pilkington Glass Group Co., Ltd.
 - Subsidiaries of Shanghai Yaohua Pilkington Glass Group Co., Ltd.
 - Revenue and Net Income of Shanghai Yaohua Pilkington Glass Group Co., Ltd., 2007-2014
 - Revenue Breakdown of Shanghai Yaohua Pilkington Glass Group Co., Ltd. by Product, 2008-2014
 - Revenue Breakdown of Shanghai Yaohua Pilkington Glass Group Co., Ltd. by Region, 2008-2014
 - Gross Margin of Shanghai Yaohua Pilkington Glass Group Co., Ltd. by Product, 2006-2014
 - Operations of Major PV Glass Subsidiaries of Shanghai Yaohua Pilkington Glass Group Co., Ltd., 2013-2014
 - Industrial Chains of Henan Succeed Photovoltaic Materials Corporation
 - Newly Installed PV Capacity Growth in China and Worldwide, 2006-2014
 - Consumption of Major PV Glass Worldwide, 2007-2014
 - Revenue Growth of Major PV Glass Companies Worldwide, 2007-2014

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/ 82601561

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

Party B:			
Name:	Beijing Waterwood Technologies Co., Ltd (ResearchInChina)		
Address:	Room 502, Block 3, Tower C, 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)2,350 USD
 Hard copy 2,500 USD
 PDF (Enterprisewide license)..... 3,600 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: