

Stock Code:1802



TAIWAN GLASS IND. CORP.

Spokesperson: Lin, C M
GM, Finance Dept.

Provide satisfactory products to our customers through advanced technology and Total Quality Management (TQM).

2017-11-30

- This brief and the related information issued meanwhile were obtained from internal and external data of the Company and the operation perspectives, it reflected the viewpoints to the future. If there is any change or adjustment in the hereafter, the Company has no responsibility to remind or update.
- The Company did not issue financial forecasts. The financial, business or Q&A explanations may differ from actual result in the future. The reasons of differences may include the changed market demand, unsettled factory and material price, industrial competition, international economic situation, exchange rate fluctuation, suppliers and retailers supply chain, and etc. which can not be controlled by the Company.

- Introduction of Taiwan Glass Group
- Production Facilities
- Product Introduction
- General Operation Situation of 2017
- Situation and Development of the Market
- Q&A

Founded on	1964
Capital	NTD\$29.08 billion
Chairman	Mr. Lin, Por Fong
Number of Employee	14,957 (until 2017.9.30)
Date of Listing	Listed in 1973
Main Products	Flat Glass Fiberglass Glassware

Introduction of Taiwan Glass Group

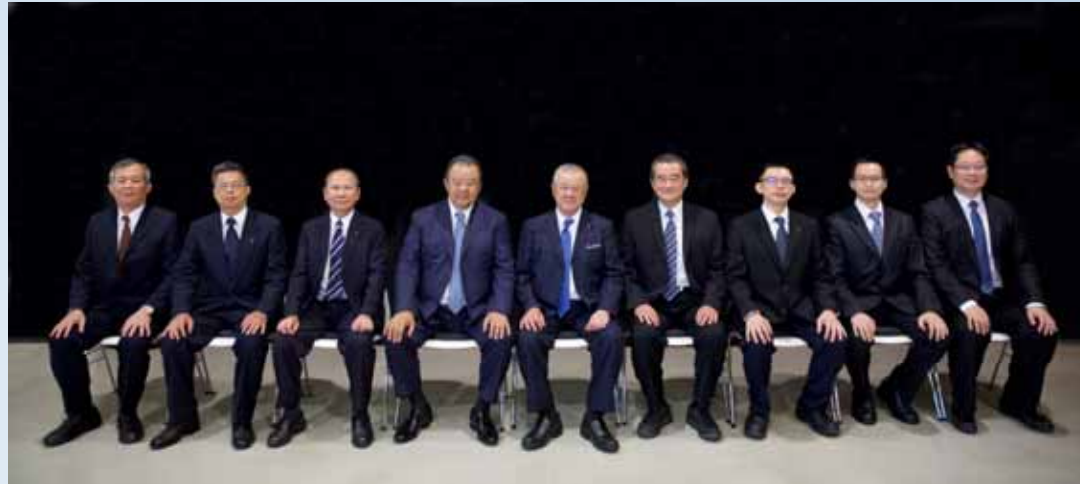
TGI Directors & Managers



TGI Directors (number is from left side to right side)

Lin, P F	Front Row 5	Lin, P S	Front Row 4	Lin, P C	Front Row 3				
Lin, F C	Front Row 6	Chen, C C	Front Row 7	Hwang, T Y	Front Row 8				
Chang, P S	Front Row 2	Lim, H T	Front Row 9	Hsu, L L	Front Row 1	Tsai, T M			
Lin, C H	Back Row 4	Lin, C Y	Back Row 5	Lin, C M	Back Row 6	Su, Y T	Back Row 3	Chen, C C	Back Row 1

Introduction of Taiwan Glass Group



TGI Managers (number is from left side to right side)

Chairman	Lin, P F	Front Row 5	President & CEO	Lin, P S	Front Row 4	Executive Director	Lin, P C	Front Row 6
COO, Fiber	Su, Y T	Front Row 3	COO, China Prod. COO, Flat	Lin, C H	Front Row 7	GM, Fiber	Lin, C Y	Front Row 8
GM, Finance	Lin, C M	Front Row 9	VGM, Purchasing	Tsai, T M		GM, TBF	Chen, C C	Front Row 1

Production Facilities - Flat Glass



Taiwan Taichung Factory (TF)	Taiwan Lukang Flat Glass Factory (TF-4)	TG Tianjin Glass Co., Ltd. (TJG)	TG Qingdao Glass Co., Ltd. (QFG) Qingdao Rolled Glass Co., Ltd. (QRG)	TG Donghai Glass Co., Ltd. (DHG)
250,068 M ²	260,343 M ²	300,448 M ²	429,126 M ²	398,096 M ²
1 Furnace 140,000 mt/y	1 Furnace 200,000 mt/y	1 Furnace 180,000 mt/y	1 Furnace 150,000 mt/y	1 Furnace 400,000 mt/y

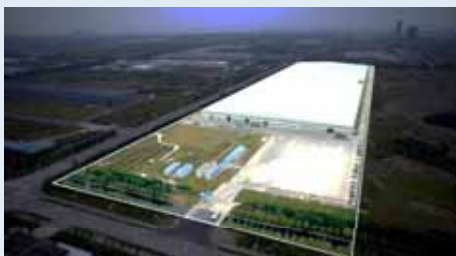


TG Xianyang Glass Co., Ltd. (TXY)	TG Changjiang Glass Co., Ltd. (CFG) TG Kunshan Glass Co., Ltd. (TKG)	TG Anhui Glass Co., Ltd. (TAH)	TG Chengdu Glass Co., Ltd (CDG)	TG Huanan Glass Co., Ltd. (HNG)
452,703 M ²	404,770 M ²	572,643 M ²	452,027 M ²	364,907 M ²
1 Furnace 438,000 mt/y	3 Furnace 602,000 mt/y	1 Furnace 438,000 mt/y	2 Furnace 547,500 mt/y	1 Furnace 328,500 mt/y

Production Facilities - Low-E Glass

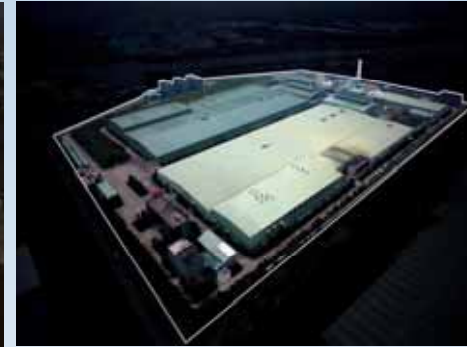


Taiwan Changpin Factory (TC)	TG Tianjin Glass Co., Ltd. (TJG)	TG Xianyang Glass Co., Ltd. (TXY)	TG Changjiang Glass Co., Ltd. (CFG)
272,480 M ²	300,448 M ²	452,703 M ²	404,770 M ²
1 Line 4,000,000 m ² /y	1 Line 4,000,000 m ² /y	1 Line 4,000,000 m ² /y	1 Line 4,000,000 m ² /y



TG Taichang Architectural Glass Co., Ltd. (TTAR)	TG Wuhan Architectural Glass Co., Ltd. (TWAR)	TG Chengdu Glass Co., Ltd (CDG)	TG Huanan Glass Co., Ltd. (HNG)
199,525 M ²	222,000 M ²	452,027 M ²	364,907 M ²
1 Line 4,000,000 m ² /y	1 Line 4,000,000 m ² /y	2 Line 8,000,000 m ² /y	1 Line 4,000,000 m ² /y

Production Facilities – Fiberglass Reinforced / Fiberglass Fabric



Taiwan Taoyuan Factory (TT)	Taiwan Lukang Factory (TL)	Taichia Glass Fiber Co., Ltd. (TGF)	Taichia Chengdu Glass Fiber Co., Ltd. (TCD)
181,181 M ²	260,343 M ²	323,539 M ²	362,668 M ²
2 FRP Fiberglass Fabric 72,000mt/y	2 Electronic Grade FRP Fiberglass Fabric 25,000 mt/y	3 Electronic Grade FRP Fiberglass Fabric 30,000 mt/y	1 Electronic Grade FRP Fiberglass Fabric30,000 mt/y

Production Facilities – Container & Tableware / Ultra-Thin Glass / Photovoltaic Glass / Automotive Glass

Container & Tableware



Ultra-Thin Glass



Photovoltaic Glass



Taiwan Hsinchu Factory (TS)

129,090 M²

5 Container : 170,000 mt/y

2 Tableware & Kitchenware :
10,000 mt/y

Taiwan Taichung Factory (TF-5)

250,068 M²

1 Ultra-Thin Glass
15,000 mt/y

TG Fujian Photovoltaic Glass Co., Ltd. (FPG)

388,822 M²

1 Photovoltaic Glass
219,000 mt/y

TG Yueda Solar Mirror Co., Ltd. (TYSM)

266,400 M²

Solar Mirror Glass
72,000 mt/y

Automotive Glass



Taiwan Autoglass Ind. Corp. (TAG)

250,068 M²

1 Automotive Glass
250,000 units

TG Yueda Autoglass Co., Ltd. (TYAU)







132,755 M²

4 Automotive Glass
500,000 units

Product Introduction

TGI's main products include flat glass, fiberglass and glassware.

Flat glass is one of the core products of TG. With production plants based in Taiwan and China, TG's major markets reach Taiwan, China, Japan, Korea, North America, Middle East, Australia, Europe, South Africa and so forth.

Flat Glass	Fiberglass	Container, tableware & kitchenware
		
		

Note: For product details, please scan the respective QR Code with your smart phone.

Flat Glass

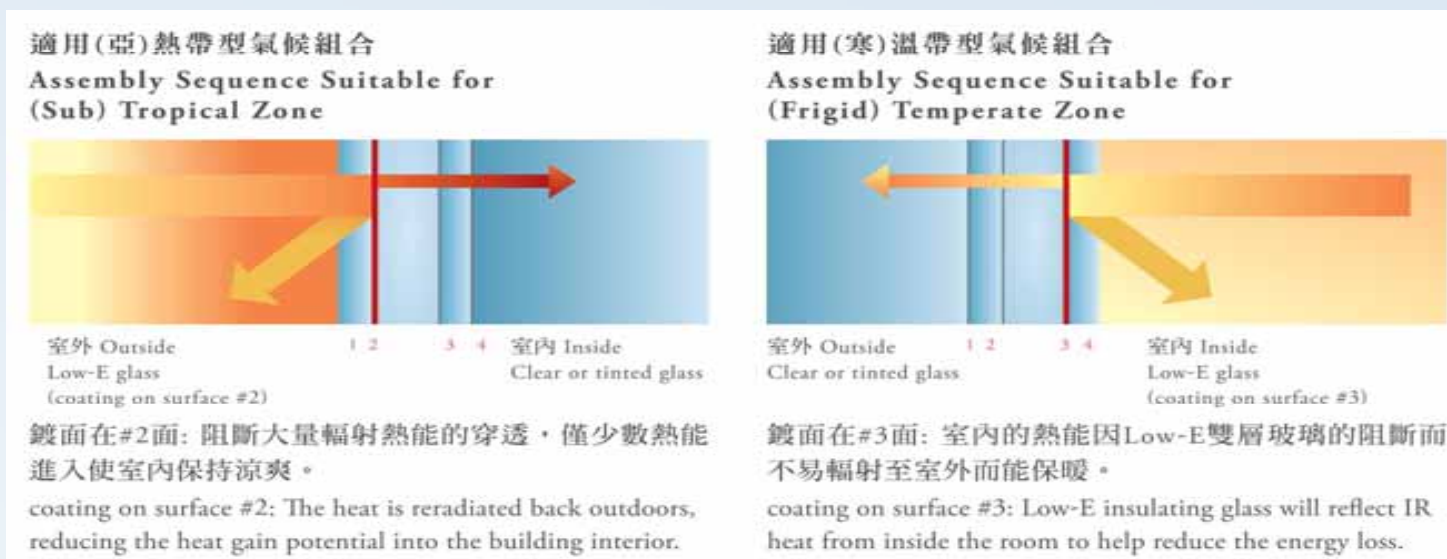
TGI's flat glass has 100% passed the EU CE, US ANSI, Taiwan CNS and other relevant standards. In the production of the flat silver mirror TGI uses advanced lead-free copper process, to avoid heavy metal pollution. TGI also actively promotes the hot-dip process to strengthen glass, even if broken it will become small pieces to reduce harm. Laminated Glass has the PVB interlayer withstands penetration from impact. Even if the glass cracks, splinters will adhere to the interlayer and not scatter. In comparison with other kinds of glass, laminated glass has much higher strength to resist shock, burglary, burst and bullets. Cladding, coating, vacuum and other energy-saving glass has more excellent thermal insulation so it can reduce the heat exchange of indoor and outdoor to save air conditioning usage, and indirectly reduce greenhouse gas emissions.

Flat Glass Related Certification						
						
CE(EUR)	ANSI(USA)	CNS(TW)	ISO-9001	ISO-14001/SGS	PASMARK	IGCC

Green Product - Flat Glass

The new generation energy-saving Low-E glass products can effectively block the radiation from sunlight while allowing most sunlight to enter, which solves the problem of lighting and heat insulation. This product also significantly reduces energy consumption from air conditioners. TGI's Low-E glass products are in compliance with CNS12681 standard and certified with ISO 9001 standard and IGCC. Currently the product has been vastly used in buildings.

TGI actively promotes the green building concept. The Low-E Glass can reduce 30% energy consumption of air-conditioning, and Low-E vacuum energy-saving glass insulation performance is 4-6 times of ordinary glass chip. The energy-saving products can better conserve energy than other industrial products. Therefore energy-saving buildings will become a key to the energy conservation energy of the country.



Fiberglass

Our Fiberglass Department actively promotes the application of fiberglass in daily life products. Compared to metal supporters, fiberglass has better resistance to corrosion and elements. Fiberglass is low-cost, more durable and has great a strength/weight ratio. Different types of fiberglass, based on their structures and features, are extensively used in thermal insulation, heat insulation, fireproof material and reinforcement.

TG's fiberglass products all meet RoHS and REACH requirements. For food contact products, a total of 4 meet US FDA standards; 8 meet EU 10/2011 regulation and have Germany's BfR approval; 2 meet France's requirements for drinking water (CAS). The quality of our products meets CNS national standards. We print the CNS logos on labels according to different customer requirements. The packaging labels of fiberglass fabric and fiberglass yarn are marked with RoHS compliance logos.



Glass container, tableware, and kitchenware

Glass containers, with excellent transparency, showcase the real color of anything inside the container. They also have the advantages of easy sealing and flavor preservation. Furthermore, glass containers can be heated up gradually without deforming. TG's glass containers come in various shapes. A suitable container can further highlight your product's texture.

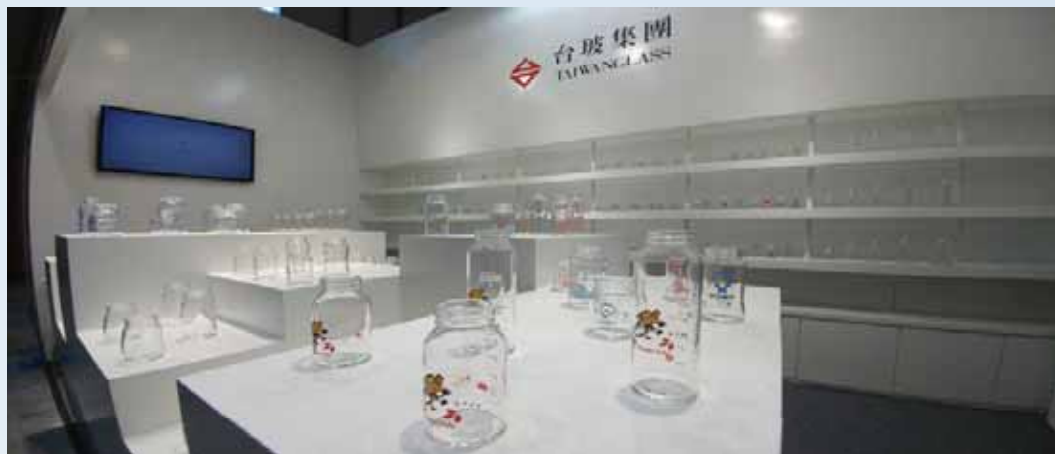
The manufacturing facility of container, tableware and kitchenware has received FSSC 22000 certification. All products meet Taiwan's Sanitation Standard for Food Utensils, Containers and Packages. TG can also provide products that meet RoHS and REACH standards based on clients' requests. For our heat-resistant products, all of our baby feeding bottles meet EU's latest EN 14350 standard. All of our coffee pots come with heat-resistant labeling. TG has established a waste glass recycling factory where waste glass is cleaned and recycled. This company periodically sends samples from this factory to SGS to test for lead content. Due to an increase in export-share, TG has an USD 5,000,000 global product liability insurance covering all the products.



Green Products – Glassware

TGI began acquiring German NNPB glass-blowing technology in 1983 in order to meet the needs of the market and enhance environmental protection. This technology produces attractive, lightweight bottles of uniform thickness. More recently, TGI has participated in technological cooperation with Germany's Heye-Glass Group, producing more than 200 million bottles per year. Lightweight bottles are the product of future trends in the glass container market. Besides helping customers cut production costs, lightweight bottles are environmentally friendly, as their production consumes less resources and energy.

Asia's top quality heat-resistant baby feeding bottle



Starting on June 1, 2011, China banned the baby bottles containing bisphenol A, which is also regulated in countries worldwide. TGI container factory started the production of heat-resistant borosilicate bottles from April of 2013. These bottles have the CTE of 33, which is certified by AGR (American Glass Research) with leading quality in Asia.

Achievements of Green Production in 2016

260 million NTD	In 2016 invested a total of 260 million in the plan to promote environmental policy.
190,000 tons	Recycled 190,000 tons of scrap glass in 2016.
67%	Taoyuan Factory recycled 67% of its waste in 2016.
-76,416 tons	In 2016 all factories reduced water consumption by 76,416 tons compared to 2015.
-1.55%	Total graywater discharge reduced by 1.55% in 2016.
10%	Environmental equipment, pollution handling expense, environmental management system and training expenses increased by 10% compared to 2015.
-1,956 _{GJ}	Diesel consumption was 56,120 liters lower than 2015 and the heating value dropped by 1,956GJ.
ISO 50001	The Hsinchu Factory, for better energy management, implemented the ISO 50001 energy management system to maximize its energy efficiency through systematic examinations.
8.99%	Changpin Factory increased its water recycle rate by 8.99% compared to 2015.

General Operation Situation of 2017



Consolidated Statements of Income		NTD : thousand dollars (Except EPS)			
Items	2016	Q1 of 2017	Q2 of 2017	Q3 of 2017	Q1~Q3 of 2017
Operating Revenues	43,097,625	9,717,784	10,661,220	11,911,330	32,290,334
Gross Profit	5,973,165	1,562,467	1,664,429	2,073,127	5,300,023
Gross profit margin	14%	16%	16%	17%	16%
Operating Income	730,184	405,893	519,666	832,740	1,758,299
Operating Profit Margin	2%	4%	5%	7%	5%
Non-operating Income and Expenses	(2,480,608)	(371,097)	(67,346)	74,542	(363,901)
Income (Loss) before Income Tax	(1,750,424)	34,796	452,320	907,282	1,394,398
Net Income (Loss)	(1,903,381)	(24,857)	404,801	831,332	1,211,276
Profit margin	-4%	0%	4%	7%	4%
EPS (NTD)	(0.62)	-	0.13	0.28	0.41

General Operation Situation of 2017

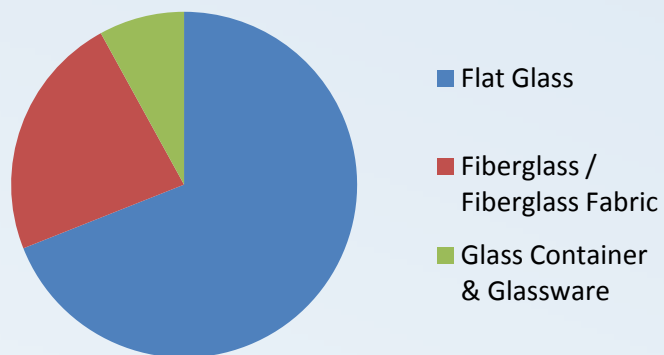
Consolidated Balance Sheet								
Items	2016.12.31		2017.03.31		2017.06.30		2017.09.30	
	NTD000	%	NTD000	%	NTD000	%	NTD000	%
Current Assets	23,736,248	28	22,211,838	28	24,165,045	29	24,768,734	29
Noncurrent Assets	61,947,460	72	58,781,286	72	59,134,069	71	59,234,057	71
Total Assets	85,683,708	100	80,993,124	100	83,299,114	100	84,002,791	100
Current Liabilities	25,072,512	29	24,048,407	29	24,194,178	29	23,575,986	28
Noncurrent Liabilities	13,353,871	16	11,716,225	15	12,462,467	15	12,078,497	14
Total Liabilities	38,426,383	45	35,764,632	44	36,656,645	44	35,654,483	42
Capital	29,080,608	34	29,080,608	36	29,080,608	35	29,080,608	35
Additional Paid-in Capital	1,918,910	2	1,919,147	2	1,917,463	2	1,875,231	2
Retained Earnings	14,507,014	17	14,512,998	18	14,905,503	18	15,707,140	19
Other Components of Equity	(1,409,868)	(2)	(3,252,989)	(4)	(2,469,710)	(3)	(1,840,260)	(2)
Non-controlling Interests	3,160,661	4	2,968,728	4	3,208,605	4	3,525,589	4
Total Equity	47,257,325	55	45,228,492	56	46,642,469	56	48,348,308	58

General Operation Situation of 2017

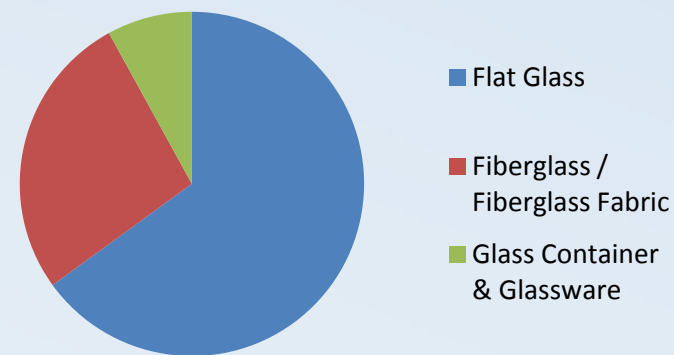
The proportion of major product revenue

Items	2016		Q1 of 2017		Q2 of 2017		Q3 of 2017		Q1~Q3 of 2017	
	NTD000	%	NTD000	%	NTD000	%	NTD000	%	NTD000	%
Flat Glass	29,657,184	69	6,085,172	63	7,098,261	67	7,877,032	66	21,060,465	65
Fiberglass / Fiberglass Fabric	9,886,117	23	2,866,504	29	2,645,296	25	3,091,366	26	8,603,166	27
Glass Container & Glassware	3,529,976	8	745,931	8	913,918	8	913,847	8	2,573,696	8
Others	24,348	-	20,177	-	3,745	-	29,085	-	53,007	-
Total	43,097,625	100	9,717,784	100	10,661,220	100	11,911,330	100	32,290,334	100

2016



Q1~Q3 of 2017



Flat Glass

China

The contradiction of supply and demand has been mitigated for the flat glass market in China and the price and quantity have increased and have been steady since the successful reduction of flat glass supply in China and the devaluation of RMB from the end of 2016 to the beginning of 2017 increased the exportation of flat glass in China. In addition, the profit of the Company has had obvious improvement due to the benefit of steady material and fuel cost.

The increase of fuel and soda ash price and the elimination of capacity due to environmental crack down in 2017 can support the price of glass so the profit is stable. The forecast for flat glass price fluctuation in 4th quarter of 2017 and 2018 will be slight due to the demand for renovation of old houses although the Property Curbing policy is still undergoing in China.

Taiwan

Taiwan Glass Ind. Corp. is the only sizable glass manufacturer in Taiwan with the only Coating Production Line for architecture in Taiwan. It introduced the vacuum sputtering coating equipment and technology of Von Ardenne to produce high effect energy-saving glass with high transparency and low heat transmission to apply to green buildings, being the leader of the market in Taiwan.

Flat Glass

The sales volume of flat glass in 2017 reached a plateau due to the decreased real estate transaction. The Company strives for government infrastructure, private construction projects, and orders from malls. Taiwan Glass Ind. Corp. has the most advanced production technology, on-site production advantages and geographic convenience to meet the demands of the architecture market. It can assist designers and clients to plan the needs on glass types, colors and energy-saving to reach the goal of aesthetic appearance and design quality. The sales volume of flat glass may be promoted in 2018 if the economic environment improves, the business of construction companies are increased and the public has aspiration to buy houses.

To sum up, the flat glass production capacity of 2018 is approximately equal to the production capacity of 2017. There is no plan for expansion. The quality of flat glass produced by Taiwan Glass Ind. Corp. is good enough to meet the demands on market changes for secondary processing. Taiwan Glass Ind. Corp. develops its market steadily by providing clients with excellent products and quality service, building clients' trust in the products and the Company.

Fiberglass Reinforced

Fiberglass reinforced is a replacement material for metal, widely applied to architecture, shipbuilding, chemical piping, automobile, aviation and wind power generation. Its applied fields are expanding due to the large market around the world, especially with the high demand from the emerging countries such as India and Southeast Asia.

In recent years, the application of thermoplastic products is growing fast under the rising demand for environmental protection. The thermoplastic fiberglass is mature enough to sell to European, American and Japanese clients. The Company can develop high-end to apply to resin, 6.5 μm fiberglass to apply to special filter and battery separator, 1.5mm chopped strand to apply to motor component, and flat fiberglass to apply to the thin case of electronic products. On the market, the demand is higher than supply.

The Company will keep striving to develop high value added products to break away from low-price competition, and continue to increase capacity of flat fiberglass, develop low dielectric and high strength fiberglass to meet the market for electronic grade thermoplastic fiberglass.

Fiberglass Fabric

Taiwan Glass Group's capacity of fiberglass fabric is ranked top two among the world, being the largest supplier on the market. The third production facility in Bengbu of China will start production in the fourth quarter of 2018 to meet growing market demand. The Company is establishing new production capacity to service clients that are expanding geographically, and to stay close to clients to providing the fastest service.

The high-end field of fiberglass fabric is mainly divided into mobile devices and automotive market with high demand for ultra thin fabric and high reliability. For example, the growth of the automotive market is over 15% per year during the past three years. It is predicted to continue to expand in the future. In the market of mobile devices, the Company will keep its leader position to support the development of fiberglass fabric.

The electronic devices and equipment are developed toward high-speed and high-frequency such as 5G devices, basic construction and high-speed automotive receiving equipment. Taiwan Glass Ind. Corp. has the abilities to develop and scale up production for future products, and to meet the demands of the future market and maintain its leading advantage in the industry.

Glass Container

The Dept. of Glassware was set up decades ago and has started to actively develop the market of export sales since 2007. In recent years, the Company confronted the competition of alternative packing materials. PET and carton have the advantages of lightweight, low-priced, and flexible in design, however, the glass packing material being irreplaceable for high-priced refrigerated beverage, beer and wine. The Company has lightweight bottle technology to reduce clients' production costs, and its experienced technology can lower the limitation of product design. Taiwan Glass Ind. Corp. continues to popularize the environmental aspect to clients by developing glass packing material.

Moreover, the Company invested in equipment for producing heat-resistant bottle in 2003, which is only the third one in the world. After introducing and promoting to clients for years, the quality and technology are accepted by international famous brand companies supplied to European laboratory equipment and glass feeding bottles in Asia.

The company continues to improve the automated inspection equipment and employee training, and passed all food safety regulations certifications. It strives to maintain clients in niche market, avoid the threat of low-price competition, and move toward the B2C market by boosting the development of high value added products.

Q&A

Thanks for your attention.
Have a great day.