

# **About This Report**

Since its founding in 1964, Taiwan Glass Industry has been committed to the development of the industry, through the constant pursuit of innovation and the development of new products. TGI fulfills corporate social responsibility as a good global citizen. Since the first Corporate Social Responsibility Report was published in 2013, TGI has issued three Corporate Social Responsibility Reports, demonstrating to the public and all stakeholders TGI's continued commitment to civic responsibility and the pursuit of sustainable social development as well as sharing the fruits of this sustainable development. This report is divided into five major parts: "Efficient Operation and Strengthening Forces - Corporate Operation and Governance", "Corporate Social Responsibility Management - Promotion and Implementation ", "Advanced Technologies and High Quality - Responsibilities and Products", "Green Strategy and Energy Management - Environmental Sustainability", "Harmonious Labor Relations and Creatinge a Win-Win Working Environment". These themes use data from 2015 to demonstrate TGI's efforts and achievements in the economic, environmental, labor care and human rights spheres, as well as product quality and indicators of sustainable development.

For the public and stakeholders to learn more about TGI CSR initiatives, TGI created a designated section on the company website. In this corporate responsibility section, not only can this report be downloaded, there are also regularly updated sustainable development objectives, strategies and results. To strengthen the interaction with our stakeholders and others, we even added an online survey form function, as an extra channel of communication with TGI's stakeholders.

In this report, TGI, and the Company or we, all refer to Taiwan Glass Industrial Co., Ltd., For other key terms, letter abbreviations, or technical terms, used in this reportwill be noted in the same pages. The content of the report was arranged through a systematic analysis model to identify the priorities and decide interested parties' for being the reference base of information disclousure.

### Report Coverage and Calculation Basis

This report covers TGI's results in corporate social responsibility from January 1, 2015 to December 31, 2015. Some content also relates to projects in 2015 and beyond, as well as future policies, objectives and plans, which all form part of the report.

The scope of the 2015 annual report covered Taiwan Glass' Taipei headquarters and manufacturing facilities in Taiwan (Taoyuan plant, Hsinchu plant, Taichung plant, Lukang

plants, Lukang flat panel plant and the Changhua Coastal plant). If the index relates to other regions, these are separately described in the report. The 2015 data is presented in international generic indicators. Any estimated numbers will be noted so in related chapters. All financial figures have been audited and confirmed by Ernest & Young and are all in NT dollars. This report's coverage is similar to that of the same report in 2014.

#### Report Writing Principles and Programme

The content and structure of TGI's 2015 Corporate Social Responsibility Report is in line with international standards by following Global Reporting Initiative's G4 Sustainability Reporting Guidelines. It uses substantive analysis to identify the sustainability issues that stakeholders are conserned about, decide priorities and analyze sustainability issues, related strategies, objectives and measures, with reference to the following related initiatives:

- Global Reporting Initiative's G4 Sustainability Reporting Guidelines
- Accountability's AA1000 Series of Standards (2008 version)
- International Standard on Assurance Engagements 3000
- ISO 26000 Social Responsibility Guidance Standards
- Earth Charter and OECD Guidelines for Multinational Enterprises
- United Nations Global Compact
- TWSE Corporation Rules Governing the Preperation and Filing of CSR Reports by TWSE Listed Companies.

# **Report Editing, Review and Verification**

#### Editing

The editing of this report was planned, edited and revised by the TGI CSR group which was also responsible for the overall planning, communication, integration, information compilation and editorial revisions. The CSR group was composed of executive team members as well as those from the company and relevant sectors in the factories.

#### Audit of Report

A draft of the report was submitted to the CSR group and individual team members proofread and revised their particular areas of data and content. After finalization an impartial third party verified the final content. It was then sent to the Chairman for final reading prior to publication.

#### Verification

The Ernst & Young accounting firm, an independent and credible accounting firm, was commissioned to conduct limited assurance in accordance with the provisions of the Joint Standards Publication on verification of non-historical financial information or review on TGI's 2015 CSR Report, which was complied according to the Global Reporting Initiatives G4 Sustainability Reporting Guidelines. Once the assurance was done, we have communicated with the governance units over the result. For the scope and detailed conclusions of the independent assurance, please see the independent assurance report in the appendix of this report.

#### Report Released

TGI regularly publishes the CSR Report each year Current version: Published in June 2016 Previous version: Published in June 2015

### Contact

We hope that through this report the general public and relevant stakeholders can learn more about TGI's efforts in the promotion of sustainable development. If you have any questions and suggestions on TGI's 2015 Corporate Social Responsibility Report, please contact us as follows:

Taiwan Glass Industrial Co., Ltd. Report of contact: Wei-Fan, Mao, Management Department Tel: 886-2-2713-0333 Fax: 886-2-2715-0333 Email: CSR@taiwanglass.com Website: http://www.taiwanglass.com

# Message from the Chairman



Continuing with the sluggish situation of global economic growth in 2015, the economic situation of the frst half of 2016 is still weak. Particularly, the advantage of manufacturing cost in China has lessened because of rising costs, and at the meantime, import and export of Taiwan and most global countries have decreased, showing that it is still difcult for the global economy to grow signifcantly in 2016.

In fat glass, both production and marketing of the TF-2 and TF-4 fat glass production lines in TGI's Taichung Factory are running smoothly. Te new TF-5 ultra-thin production line for 0.33mm and 0.7mm ultra-thin touch screens has reached mass production scale, however improvements can still be made to the yield and cost reduction to win over orders. Under the environment of excess capacity, and imbalanced demand for uneven real estate, the growth of market for fat glass industry in China is limited. Even though we has strategies to eliminate outdated production lines and optimize industrial structure, this problem cannot be improved in short term. Tere are still other manufacturers that use coal or other polluted fuels to make fat glass, causing pressure to our sales and profts. Te capacities at TJG and QFG have been partially converted to supply automotive glass to boosting operation performance. TGI hopes to make high-quality products and perfect service to provide high value added energy-saving glass and diversity productions for clients.

In fberglass, TGI's Lukang Factory continues to develop ultra-thin fberglass fabric to stay in step with the development of higher-level mobile devices for the next generation. TGI's Taoyuan Factory invests in new R&D items of higher strength, higher abrasion resistance and higher density technical standards to develop the market of high-tech products. Furthermore, TGI's TCD Factory has started production successfully. In general, TGI's high-quality fberglass fabric and fberglass yarn are well received by internationally renowned manufactures to use on high-end digital mobile products.

In container glass, TGI continues to develop high value added products to increase profts. Te high quality of container products has been well received by American clients, and the orders have been expanding stably. Te heat-resistant baby feeding bottles are well received by Japanese, American, Chinese and Taiwanese manufacturers of brand name of infant products, and our products have entered the international market already. The containers with various handles and doublewall glass which are made of  $\alpha$ -33 heat-resistant glass are artistic, practical, and high value added. Tey continue to win orders from famous domestic and international brands. Meanwhile, TGI is also the only glass company manufacturing heat-resistant glass that has met the CNS standard.

During 2015, TGI was awarded technological development R&D subsidies of a total of NT\$ 33 million by the Ministry of Economic Affairs. We will continue research and development in high-tech energy-saving products to meet customer demand, and also hope to make consumers to choose more efficient energy-saving products to reduce energy use and contribute to a sustainable environment. TGI promoted environmental policies by investing a total of NT\$230 million in the environment protection measures in 2015, and achieved significant results in water management. Compared to 2014, the plant water consumption was reduced by 105,341 tons, and the amount of wastewater discharged was reduced by 20.17%. In energy consumption, the amount of electricity saved was 2,965,450 kWh. The saved natural gas was 400 M<sup>3</sup>, which is equivalent to a reduction of carbon emissions of approximately 1,545.8 tons. In supply chain management, TGI renewed its Certification of AEO to ensure the safe quality of goods throughout the supply chain, reduce the risk of intellectual property loss, and meet customs and customer security requirements. Since TGI made distribution on boosting safety of cross-border supply chains, in this May, the Ministry of Finance issued an AEO certificate to TGI.

Looking to the future, TGI will keep focusing on the core business of glass production, curtail operation cost, develop talents, refne research and development, and improve manufacturing processes. Building on the existing foundation, TGI will continue to innovate, increase profts, keep carrying out corporate social responsibility, and welcome challenges of the future.

Taiwan Glass Chairman

Lin, Por Fong

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# **1.Operating Efficiency and Strengthening Forces**

- Corporate Governance and Operations

# The company's governance and operation results in 2015

 $\frac{18\%}{18\%}$  +18% / In 2015, the export rate of TGI's glass tableware was 43%, 18% higher than 2014.

12% +12% / In 2015, the export rate of TGI's glass kitchenware was 92%, 12% higher than 2014.

**33** million

From 2014 to 2015, TGI earned a total of NT \$ 33 million in R&D subsidies from the Ministry of Economic Affairs Technological Development Plan.

**TGI's social contributions of 2015 is** approximately NT\$ 7,015,651.

2015 CORPORATE SOCIAL RESPONSIBILITY REPORT

**S** NT\$ **3.15** million glass products

In 2015, TGI donated glass products worth NT\$ 3,156,302 to National Yang-Ming University for the establishment of Top Medical R&D Building.

# 8 NT\$ 584,508

In 2015 TGI sponsored Taiwan Society for Burn Injuries and Wound Healing for the Formosa Fun Coast powder explosion through donating NT \$ 584,508.

**& Silver** 

TGI entered the Taiwan TOP50 Corporate Sustainability Report Award of Taiwan Corporate Sustainability Awards in 2015 for the first time, and earned "Traditional Manufacturer Silver Award".

# **& Merit Award**

In 2015 TGI earned the merit award of water conservation and watersaving in the industry group.

# **Outstanding** Factory

TGI's Lukang Factory and Lukang Flat Glass Factories earned the award from Changhua County Government for the 2015 outstanding disability employment and hiring the disabled beyond employment quota.

5	3	Employees	3 employees earned the 2015 Model Labor Award from Changhua County (including disabled employee)
5	0	Violation /	/ In 2015 TGI did not make any political contributions as well as any significant violation with heavy fines.

# 1.1 About Taiwan Glass Industry

# 1.1.1 Company Profile

Founded in 1964, Taiwan Glass, for the last 50 years, has been following the company founder Lin Yu-Chia's business principles of honest hardwork and focus on our core business of glass. As the leader in the glass industry in China, Hong Kong and Taiwan, Taiwan Glass has put Taiwan in an important position in the global glass industry. In the future, Taiwan Glass will continue to implement advanced technologies and company-wide quality management to provide our clients with satisfying products. We will continue to develop even advanced technologies, improve our supply, production, distribution, and service to achieve sustainability and make contributions to the society as an important player in the global market.

#### 🗲 TAIWAN GLASS IND. CORP.

Market	Oversea Chinese/foreign investment/publicly traded, TWSE listed company				
Stock Code	1802, Taiwan Glass Industrial				
	Manufacturing and sale of flat glass				
Industry	Manufacturing and sale of glass fabric and fiberglass reinforced				
	Manufacturing and sale of glassware				
Founded on	August 25, 1964				
Date of listing July 15, 1973					
Capital NT\$25,080,608 thousand					
Turnover	NT\$13,073,437 thousand				
Number of employees	Employees in Taiwan: 4,339				
Headquarters	11F., Taiwan Glass Building, No.261, Sec. 3, Nanjing E. Rd., Songshan Dist., Taipei City 105, Taiwan (R.O.C.)				

Operating Efficiency and Strengthening Forces - Corporate Governance and Operations

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#### Management Team



# **TGI Group Production Base Layout**

01 TAIWAN GLASS IND. CORP.

#### FLAT GLASS

- 02 TAICHUNG FACTORY
- 03 CHANGPIN FACTORY
- 03-1 TG TECO VACUUM INSULATED GLASS CORP.
- 04 TG QINGDAO GLASS CO., LTD.
- 05 TG CHANGJIANG GLASS CO., LTD.
- 06 TG KUNSHAN GLASS CO., LTD.
- 07 TG CHENGDU GLASS CO., LTD.
- 08 TG HUANAN GLASS CO., LTD.
- 09 TG DONGHAI GLASS CO., LTD.
- 10 TG TIANJIN GLASS CO., LTD.
- 11 TG XIANYANG GLASS CO., LTD.
- 12 TG TAICANG ARCHITECTURAL GLASS CO., LTD.
- 13 TG ANHUI GLASS CO., LTD.
- 14 TG WUHAN ARCHITECTURAL GLASS CO., LTD.
- 15 QINGDAO ROLLED GLASS CO., LTD.
- 16 LUKANG FLAT GLASS FACTORY

#### FIBERGLASS REINFORCED, FIBERGLASS FABRIC

- 16 LUKANG FACTORY
- 17 TAOYUAN FACTORY
- 18 TAICHIA GLASS FIBER CO., LTD.
- 19 TAICHIA CHENGDU GLASS FIBER CO., LTD.
- 20 TAICHIA BENGBU GLASS FIBER CO., LTD.

#### ULTRA-THIN GLASS

21 TAICHUNG ULTRA-THIN GLASS FACTORY

#### PHOTOELECTRIC GLASS

- 22 TG FUJIAN PHOTOVOLTAIC GLASS CO., LTD.
- 23 TG YUEDA SOLAR MIRROR CO., LTD.

#### GLASS CONTAINER TABLEWARE & KITCHENWARE

- 24 HSINCHU FACTORY
- 24-1 HARIO TG GLASS CORP.

#### AUTOMOTIVE GLASS

- 25 TAIWAN AUTOGLASS IND. CORR.
- 26 TG YUEDA AUTOGLASS CO., LTD.

#### SILICA SAND

- 27 TG HANZHONG SILICA SAND CO., LTD.
- 28 TG FENGYANG SILICA SAND CO., LTD.
- 29 YINAN SILICA SAND CO., LTD.
- 30 TG ZHANGZHOU SILICA SAND CO., LTD.

#### **SODA ASH**

- 31 SHIHLIEN CHEMICAL INDUSTRIAL JIANGSU CO., LTD.
- 32 HUAIAN SHIHYUAN BRINE CO., LTD.

#### 2015 Highlights

TG YUEDA SOLAR MIRROR CO., LTD. Production Taichia Chengdu Glass Fiber Co., Ltd. Production

# **TGI Affiliates**

Last updated: 2015-12-31



# **1.1.2 Main Business and Products**

Division	Product Category			
Flat Glass <ul> <li>Clear Float Glass</li> <li>Tinted Float Glass</li> <li>Ceramic Silkscreen/Spandrel Glass</li> <li>Rolled Glass</li> <li>Heat Strengthened Glass</li> <li>Low-E Glass</li> <li>Low-E Vacuum Glass</li> <li>Reflective Glass</li> <li>Mirror Glass</li> </ul>				
Material	▶ Electronic Grade Ultra-Thin Glass			
Solar	► Super Clear Glass ► Low Iron Photovoltaic Cover Glass			
Automotive Glass	• Auto Glass			
Fiberglass	► Fiberglass Yarn ► Glass Yarn ► Glass Fabric			
Container & Tableware	<ul> <li>Container</li> <li>Tableware</li> <li>Kitchenware</li> <li>Tableware/Kitchenware Glass Processing</li> </ul>			
Salt Chemical	▶ Ammonium Chloride			

TGI Group draws world-class technology and equipment suppliers and accumulates its own R&D experience to make efforts in technology improvement and new product research and development. In addition to obtaining a number of quality and environmental certificates, in response to global green energy issues, TGI reduces pollution from production process to mitigate environmental impact, and devotes to develop environmental and energy saving related products.



# **1.1.3 Participating Organizations**

TGI is actively involved in national organizations and commercial enterprises, crossstrait exchanges, regional economic and trade, industry associations and other sustainable and environment-related organizations, hoping to interact with other companies in the industrial and help one another grow by participating in various activies.



Organization	Title					
1. Industrial and Commercial Enterprise Groups						
Chinese National Association of Industry and Commerce	Chairman					
Chinese National Federation of Industries	Director					
Taiwan Chamber of Commerce & Industry	Director					
The Third Wednesday Club	Vice Chairman					
2.Cross-Strait Exchange Organ	izations					
Straits Exchange Foundation	Director					
Straits Economics & Cultural Interchange Association	Managing Director					
Cross-Strait CEO Summit	Director					
3. Regional Economic and Trade Organization						
Chinese Association for Reinforced Plastic	Director					
4. Industry-Related Associa	tions					
Taiwan Glass Industry Association	Chairperson of Board of					
	Supervisors					
Taiwan Photovoltaic Industry Association	Member					
Taiwan Flat Panel Display Materials & Devices Association	Member					
Taiwan Green Building Material Council	Member					
Chung-Hwa Railway Industry Development Association	Member					
Taiwan Fire Safety&Material Association	Member					
Taiwan Composites Association	Managing Director					
Taiwan Printed Circuit Association	Member					
Taiwan Weaving Industry Association	Member					
Chinese Association for Industrial Technology Advancement	Member					

Organization	Title				
Taoyuan Guanyin Industrial Park Association	Member				
Taichung Harbor Related Industrial Park	Member				
Lukang Changhua Coastal Industrial Park	Member				
5. Environmentally Sustainable Development Related Organizations					
Center for Corporate Sustainability	Advisory Director				

# 1.1.4 Annual Awards

# ┢ Head Office

TGI signed up the Taiwan TOP50 Corporate Sustainability Report Award of Taiwan Corporate Sustainability Awards in 2015 for the first time, and earned "Traditional Manufacturer Silver Award".



Picture of the Vice President at the TCSA Award Ceremony



◆常永康相受常購 TOPS0 企業定業構成



# 🗲 Lukang Factory, Lukang Flat Glass Factory

✿ 2015 Water Conservation Outstanding Performance Award-Excellent Unit Award and Certificate of Merit for Water-saving in the Industry Group.





2015 Water-saving Award Trophy and content description





Group photo taken at the award ceremony for the 2015 Water Conservation Outstanding Performance Award-Excellent Unit Award and Certificate of Merit for Water-saving in the Industry Group

Photo of President Lin at the award ceremony for 2015 Water Conservation Outstanding Performance Award-Excellent Unit Award and Certificate of Merit for Water-saving in the Industry Group

- In May there was newspaper and network news coverage of Lukang factory's care and assistance to its disabled employees.
- Activities of Changhua County's 2015 Outstanding disability employment and hiring the disability beyond employment quota award.
- Activities of Changhua County's 2015 model labor award.



Photo of Jiang Zhe-Jin and Teachers from Tsz-Ai Mercy Hospice



Activities of Changhua County's 2015 Outstanding disability employment award ( Left: Mr. Kiang Zhe-Jin )



Changhua County model labor commendation, 2015-Chen Ying-Xiong & Liu Yu-Xiu

# **1.2 Operation Summary**

#### 2015 Economic Performance Management Approach

#### 🍾 Economic Performace Policy

- 1. Provide satisfactory products to our customers though advanced technology and Total Quality Management (TQM).
- 2. Control financial expenses, factory electricity, water, procurement, and raw materials cost.

#### 🔦 Economic Performance Objectives

- 1. Accelerate the R&D of high value-added products and brand marketing.
- 2. Devote to promote the government to involve the Low-E energy-saving glass into relevant building codes to create market opportunities.

#### **Solution** Investment in Organizations and Resources of Economic Performance Enhancement

- 1. Taichung Factory TF-5 invested in the construction of electronic grade ultra-thin glass production line.
- 2. Make innovative research and development of Low-dk low dielectric fiberglass cloth products.
- 3. Establish Department of Brand and popularize the private brand.
- 4. Invest in the development of high value-added energy-saving glass.

#### **Solution** Investment in System of Economic Performance Enhancement

Hold meetings of production and marketing for each product line and each factory, and make annual sales plan.

#### 1.2.1 Concept and Vision

Since its foundation in 1964, TGI has upheld its belief in building a high-quality autonomous glass industry, laying a solid foundation by being a focused business, a global macro perspective, and a solid and sound financial basis. In 1973, TGI went public on Taiwan Stock Exchange, becoming a blue chip company on the open market. Nowadays TGI has become a leading company across the Taiwan Strait, putting Taiwan in an important position in the global glass industry. TGI's basic philosophy is that by using spiritual guidance, which must be rooted in each person of TGI, we can achieve our company's target and mission together.



#### **Our Philosophy**

Make Taiwan Glass a highly effective organization with outstanding achievement through global perspective, sound operating strategy and strong financial foundation.

# Our Goal

Create strong customer relationships through delivering outstanding quality and comprehensive service at reasonable prices to satisfy customers; make contributions to society through rewarding shareholders and taking care of employees.

# **Our Quality Policy**

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

#### **1.2.2 Operation and Finance**

The overall economy in 2015 is expected to perform better than last year although the recovery will be relatively slow. Taiwan, as one of the members in the global village on top of being highly dependent on foreign trade, should lay more emphasis on strengthening competitive dynamics against global commerce and take necessary measures to respond to various situations. Looking to the future, TG will still uphold the core value of efficient operation insisted by founder Lin Yu-Chia. We will keep moving toward refinements in our technology, material supply, coordination of production and marketing, comprehensive after-sales services, making good returns to its stockholders, carrying out corporate social responsibility, and striving toward a glass industry with sustainable operation.

Financial Information (Condensed Consolidated Income Statement - Individual) Unit: 1,000 N						
Items/Year	2013	2014	2015			
Operating revenue	12,966,911	14,159,321	13,073,437			
Operating costs	11,962,886	11,994,912	10,968,357			
Gross profit	1,004,025	2,164,409	2,105,080			
Operating expenses	1,904,242	2,144,891	1,982,880			
Operating profit (profit and loss)	(900,217)	19,518	122,200			
Non-operating income and expenses	(89,346)	170,689	(4,778,584)			
Profit before tax	(989,563)	190,207	(4,656,384)			
Net income from continuing operations (Net income or loss after tax)	(896,175)	153,261	(4,687,597)			
Other comprehensive income (loss)	2,462,041	2,016,259	(1,648,449)			
Total comprehensive income (loss)	1,565,866	2,169,520	(6,336,046)			
EPS (NT\$) (Adjusted retroactively)	(0.38)	0.06	(1.97)			
Personal expenditure	2,613,692	2,404,912	2,781,393			
Financial contribution to the Government (Taxes, donations, fees)	1,814	60,391	3,822			

Note 1: All figures have been audited and certified by a CPA

Note 2: The company has adopted the International Financial Reporting Standards since 2013

### Production and Sales

Taiwan Glass Group 2015 Annual Capacity for Each Product						
	Taiwan		China		Total	
Product	Furnaces	Metric tons	Furnaces	Metric tons	Furnaces	Metric tons
Float glass	2	340,000	12	3,192,000	14	3,532,000
Electronic grade ultra-thin glass	1	15,000	-	-	1	15,000
Photovoltaic cover glass	-	-	1	219,000	1	219,000
Solar mirror	-	-	1	72,000	1	72,000
Rolled glass	-	-	1	39,600	1	39,600
Glass fabric	1	20,000	5	90,000	6	110,000
FRP fiberglass reinforced	1	60,000	-	-	1	60,000
Glass container	6	165,600	-	-	6	165,600
Glass tableware/ kitchenware	2	11,000	-	-	2	11,000
Total	13	611,600	20	3,612,600	33	4,224,200

# Percentage of Annual Production Capacity of Each Product of Taiwan Glass Group



TGI Group's Total Production Capacity of Low-E							
	Taiv	van	Chi	na	То	tal	
Product	Production line	1,000 M <sup>2</sup>	Production line	1,000 M <sup>2</sup>	Production line	1,000 M <sup>2</sup>	
Low-E glass	1	4,000	9	31,400	10	35,400	
Low-E vacuum glass	1	300	-	-	1	300	
Total	2	4,300	9	31,400	11	35,700	

# Ratio of Low-E Total Capacity (%)



TGI Group's Total Production Capacity of Automotive Glass							
	Taiwan		China		Total		
Product	Production line	Thousand cars	Production line	Thousand cars	Production line	Thousand cars	
Auto glass	1	250	1	300	2	550	

# Ratio of Total Capacity of Automobile Glass (%)



# Distribution of Sales Regions

	Sale Areas of Main Products in 2015							
Serial number	Product category	Ratio of domestic sales	Ratio of export sales	Sale areas				
1	Flat glass	90% (including cooperative export)	10%	Asia, Central & South America, Australia, Europe, Africa and North America.				
2	Glass fabric and glass fiber	41%	59%	Europe, USA, China,Japan, South Korea, Middle-East, Southeast Asia, New Zealand and Australia.				
3	Glass container	55%	45%	USA, New Zealand, Australia, China and Germany.				
4	Glass tableware	75%	25%	Taiwan, India, South Korea, Germany and Australia.				
4	Glass kitchenware	20%	80%	China				
5	New material- thin glass	5%	95%	China				

Domestic I	Market	Share	in 2015
Domestici	viui ket	Unare	

Serial number	Product category	Market share
1	Flat glass	About 80% of the domestic market
2	Glass fabric	About 35% of the domestic market
3	Glass fiber	About 55% of the domestic market
4	Glass container	About 35% of the domestic market
5	Glass tableware/kitchenware	About 35% of the domestic market
6	New material- thin glass	About 10% of the China market

### Government Research Subsidies

1. Ministry of Economic Affairs Division specialized industry plan:

Project Title	Description	Period	Funds (Unit: thousand NTD)
Economic Development Ministry of Science and Technology research project leading new product development plan.	In collaboration with ITRI material for photoelectric level of ultra-thin soda lime glass development plan is under running.	2014/09/01~ 2016/02/28	Project total subsidy: NTD 20,000 thousand As of December 2015, the project was granted a total of NTD 20,000 thousand in subsidy.

2. Ministry of Economic Affairs, development of scientific and technological research projects:

Project Title	Description	Period	Funds (Unit: thousand NTD)
High-speed high- frequency board material - low dielectric constant glass fiber cloth development plan.	In cooperation with the Industrial Technology Research Institute to develop high-speed high- frequency board material - low dielectric constant glass fiber cloth.	2015/09/01~ 2017/02/28	Project total subsidy: NTD 20,000 thousand. As of December 2015, the project was granted a total of NTD 13,000 thousand in subsidy.

3.In accordance with the Statute for Upgrading Industries, exempted from business income tax for five years (2014 - 2018): application of TGI's factories are Zhangbin Factory, Hsinchu kiln TS-7 and Taoyuan kiln TT-1.



2015-01-28 Briefing at the Taipei City Glass Association (Explanation of ultra-thin glass products)



2015-06-30 Display of ultra-thin glass products (0.55mm, 0.7 mm, 1.1mm)

# **1.3 Corporate Governance**

	Corporate Governance Policy	7
• Establishment of effective corporate governance structure	<ul> <li>Protection of shareholders' interests</li> </ul>	<ul> <li>Strengthening the board functions</li> </ul>
<ul> <li>Making use of the audit committee functions</li> </ul>	<ul> <li>Respecting the interests of stakeholders</li> </ul>	<ul> <li>Increasing information transparency</li> </ul>

TGI adheres to transparent operations, focusing on shareholders' equity, and believes that Operating Efficiency and Strengthening Forces - Corporate Governance and Operations

a sound and efficient corporate governance of the board is an excellent foundation for this. We believe that good corporate governance, builds a solid foundation for the operation and development of the market to provide high-quality products and services, while enhancing the long-term value of the company. The main corporate governance policies are the "publicly traded corporate governance code of practice" and relevant laws and norms apply. Under this principle, the Board has established a Salary Compensation Committee, Audit Committee, Corporate Social Responsibility Committee (CSR Committee) to assist the Board in fulfilling its oversight responsibilities. Articles of Association of the committees are approved by the Board, the Chairman of the Committee's report on its activities and decisions to the Board on a regular basis. **TG Company Structure** 



#### Board of Directors

TG's 2015 Board of Directors included 15 directors. Each director, supervisor and legal person/representative has rich academic or business operation experience. Among them, 3 were independent directors. TG's sustainability relies on these directors' rich knowledge, insight and sense of business. Each director has a 3-year term, elected by the shareholders' meeting from among the persons with disposing capacity. Directors may be eligible for re-election. A chairman of the board of directors shall be elected among the directors. The chairman will lead the board of directors on behalf of the company. Taiwan Glass' chairman does not serve as the company's CEO concurrently. The board meeting is held at least once in each quarter and TG held 6 board meetings in 2015. There are two types of shareholder meetings: regular and special. Regular shareholder meetings are held at least once a year, convened by the board of directors based on the law within six months after close of each fiscal year. Special shareholder meetings are held based on the law when necessary.



# The 18th Directors of Taiwan Glass Industry Corporation (2015-2018)

TG Board Members						
Title	Name	Gender	Job Title/ Experience	Concurrent Position at TG		
Chairman	Lin Por Fong	Male	TG General Manager	None		
Director	Lin Por Shih	Male	TG Managing Director	TG General Manager		
Director	Lin Por Chun	Male	TG Managing Director	None		
Director	Yun San Corporation Chang Po Shin	Male	Chairman, Chang Hwa Bank	None		
Director	Lin Han Tong	Male	Chairman, Bo Chi Investmen	None		
Director	Lim Ken Seng Kah Kih Corp. Hsu, Li Lin	Female	Sunrise Department Store General Manager	None		
Director	Tai Feng Investment Su Yu Ted	Male	GM, Fiber	COO, Fiber		
Director	Tai Feng Investment Lin Chia Hong	Male	GM, China Prod.	COO, China Prod.		
Director	Tai Feng Investment Lin Chia Yo	Male	VGM, Fiber	GM, Fiber		
Director	Tai Chien Investment Lin Chia Ming	Male	VGM, Finance	GM, Finance		
Director	Ho Ho Investment Chen Cheng Chang	Male	Plant Director, Lukang Plant	Project VGM, Fiber		
Director	Ho Ho Investment Lin Bao Tsun	Male	Plant VGM, Taichung Plant	GM, New Glass		
Independent Director	Lin Feng Cheng	Male	Minister of the Interior	None		

Title	Name	Gender	Job Title/ Experience	Concurrent Position at TG
Independent director	Chen Chin Chi	Male	Chairman, Wan Hai Lines	None
Independent director	Huang Chin Yuang	Male	Director, TWSE	None

Note: 12 directors over the age of 50; 3 directors between 30 and 50.

#### Duties of the Board of Directors

The Board of Directors is the center of the company's major decisions. The board is responsible for hiring and supervising the company's management as well as the company's overall performance. The board's second responsibility is guiding the management team. TG's board of directors listens to the management team's reports periodically, which also cover economic and environmental protection issues. The board also spends a lot of time communicating with the management, which has to propose company strategies to the board. The board evaluates the feasibility of these strategies, keeps track of their progress and urges the management team to make adjustments when needed.

#### The Audit Committee

For the establishment of good corporate governance, under regulations for prescribed public company audit, the committee exercises of authority.

	TG Audit Committee					
Title	Name	Gender Job Title/Experience		Concurrent Position at TG		
Convener	Lin Feng Cheng	Male	Minister of the Interior Minister of Transportations and Communications	None		
Member	Chen Chin Chi	Male	Teaches at NTU VP/Chairman, Wan Hai Lines	None		
Member	Huang Chin Yuang	Male	Director, TWSE President of Daiwa Securities SMBC (Hong Kong)	None		

With effect from August 2015, all the members of the audit committee are independent directors, and at least one of whom must have accounting or financial expertise.

Duties of the Audit Committee:

- 1. Set or modify internal control system in accordance with the provisions of Article 14-1 of the Securities and Exchange Act.
- 2. Assess the effectiveness of internal control system.
- 3. Set or modify the Regulations Governing the Acquisition and Disposal of Assets, the Guidelines for Derivatives Trading, the Operational Procedures for Loaning Funds and the Operational Procedures for Endorsements/Guarantees according to the provisions of Article 36-1 of the Securities and Exchange Act.
- 4. Deal with the matters relating to the personal interest of directors.
- 5. Deal with the material assets or derivative transactions.
- 6. Deal with the major monetary loans, endorsement or guarantee provided.
- 7. Raise, issue or make private placement of equity-type securities.
- 8. Appoint, dismiss the visa accountants and deal with their remuneration.
- 9. Appoint and dismiss financial, accounting or internal auditing officer.
- 10. Make reports of annual financial statement and semi-annual financialstatement.
- 11. Deal with the important matters prescribed by other companies or authorities.

#### Remuneration Committee

To build a sound remuneration system for this company's directors, supervisors and managers, the Remuneration Committee Charter (referred to as "this charter" hereafter) was drafted based on Regulations Governing the Appointment and Exercises of Powers by the Remuneration Committee of a Company Whose Stock is Listed on the Stock Exchange or Traded Over the Counter. This committee aims to, professionally and objectively, evaluate the remuneration policy and system for this company's directors, supervisors and managers. The committee offers relevant suggestions to the board of directors for decision-making when needed. Members of this committee shall be appointed by resolution of the board of directors after nominations by the chairman. The committee shall not be fewer than three members, one of whom shall be the convener. Members of this committee shall meet the professional qualification requirements and be independent based on Article 5 and Article 6 in Regulations Governing the Appointment and Exercises of Powers by the Remuneration Committee of a Company Whose Stock is Listed on the Stock Exchange or Traded Over the Counter.

TG Remuneration Committee				
Title	Name	Gender	Job Title/Experience	Concurrent Position at TG
Convener	Huang Chin Yuang	Male	Director, TWSE	None
Member	Su Sun Mao	Male	VP, Fiberglass Fabric Sales	None
Member	Zhang Ke Cheng	Male	Tiawan Glass Industry Association Secretary General	None

#### Duties of the Remuneration Committee

- 1. Review this charter and propose suggestions for revision periodically.
- 2. Set and periodically review annual and long-term performance objectives, remuneration policy, system, standard and structure for this company's directors, supervisors and managers.
- 3. Periodically evaluate the progress of this company's directors, supervisors and managers on their performance goals and set individual remuneration package.

This committee, when fulfilling the aforementioned duties, will do so based on the following principles:

- 1. Ensure that the company's remuneration meets legal standards and is capable of attracting talents.
- 2. With respect to the performance assessment and remuneration of directors, supervisors and managerial personnel of the company, it shall refer to the typical pay levels adopted by peer companies, and take into consideration invidual work hours, work duties, progress on personal goals, performance in other positions, company's remuneration for other workers with equal positions and the reasonableness of the correlation between remuneration and company's progress on short-term and long-term goals, company's finance, individual performance, company performance and future risk exposure.
- 3. Shall not encourage directors and managerial personel to engage in actions that exceed the company's risk appetite for better remuneration.
- 4. It shall take into consideration the characteristics of the industry and the nature of the company's business when determining the ratio of bonus payout based on the short-term performance of its directors and senior management and the time for payment of the variable part of remuneration.
- 5. Members of this committee will not be allowed to discuss or vote over any decisions regarding their own remuneration.

"Remuneration" as used in the preceding four paragraphs includes cash compensation, stock options, profit sharing and stock ownership, retirement benefits or severance pay, allowances or stipends of any kind, and other substantial incentive measures. Its scopes shall be consistent with that of remuneration for directors, supervisors and managerial officers as set out in Regulations Governing Information to be Published in Annual Reports of Public Companies. Remuneration for the directors and managerial personnel at this company's subsidiaries, which requires a decision from this company's board of directors, will be submitted to the board for discussion after this committee offers its suggestions for the matter.

#### 📂 Internal Audit Department

The Internal Audit Department (IAD) of TG is an independent unit under the board of directors. IAD has a suitable number of eligible auditors who, in addition to regular presentations during the board meetings, report to the chairman, supervisors and independent directors on a regular basis or when necessary. This company has its own Internal Audit Implementation Rules, based on which the IDA reviews and assesses the company's internal control system, business performance and efficiency. The IDA then offers timely suggestions for improvement to ensure that the internal control system is implemented continuously and effectively. Its scope of audit covers all operations of this company and our subsidiaries. The IAD mainly conducts audits based on the audit plan passed by the board of directors. The audit plan is based on recognized risks. The IAD also conducts audit on a case-by-case base when necessary. The aforementioned general and case-by-case audit help the company's management keep track of the internal control functions and understand existing flaws or potential risks in time. The internal audit reviews the self-inspections of all units and subsidiaries. The self-inspection results, the internal control flaws and any matters that need improvement discovered by the IAD will be reported to the chairman and board of directors as a reference in the evaluation of the internal control system's effectiveness and the foundation of Management's Reports on Internal Control.

Note: On 2015-06-09, with the amendment to the constitution, the audit committee is composed of all independent directors instead of supervisors

# **1.4 Honest Business**

#### 2015 Compliance Management Policy

#### 💊 The Importance of Compliance

Honest Business" is TGI's important core value. TGI company's operating regions are throughout the world. The regulations and policies of the various regions and legislation all have a significant impact on the company's business and finances.

#### 🍾 Compliance Policy

Honest Business in TGI corporate culture

#### 💊 Compliance Management Objectives

All employees understand the relevant laws and regulations and must abide by the norms and guidelines.

#### Scompliance Resources

- 1.Expanding legal advice resources: To appoint a large law firm as adviser for the relevant compliance consultation and guidance to reduce litigation, reduce violations and improve the company's social image.
- 2. The cost of education and training: To provide education related to staff training to ensure that employees are able to understand the relevant conventions and rules.

#### **Compliance System**

- External system: Corporate Law, Securities Exchange Act, commercial accounting law, political contributions law, corruption Offences Ordinance, the Government Procurement Law, the relevant laws and regulations related to publicly traded.
- Internal system: TGI company operating integrity of the Code, internal control system, ISO 14001 environmental protection laws and regulations, the Board of Directors of procedure norms, employee codes of practice, to perform their duties Affidavit, Affidavit confidential.

"Honest Business" is always TG's core principle and the company's promise and responsibility to our stakeholders. TG's boards of directors and management have, in various public occasions, vowed to run an honest business. In 2015 TGI never engaged in any activities violating business integrity and therefore was never fined.

#### Avoidance of Conflict of Interest

TG's rules of procedures for meetings of its board of directors include clauses for avoidance of conflict of interest for directors. If any director or a juristic person represented by a director is an interested party with respect to any agenda item, the director may express his/her opinions and answer questions at the respective meeting. When the relationship is likely to prejudice the interests of the company, the director may not participate in discussion or voting on that agenda item, and further, shall enter recusal during discussion and voting on that item and may not act as another director's proxy to exercise voting rights on that matter. Furthermore, this company has professional and unbiased independent directors, who offer unbiased and objective suggestions based on their expertise and experience as the company formulates strategies. The board of directors will fully consider the independent directors' opinions when discussing any agendas. Any reasons or opinions for agreement or objection will be recorded while staying in line with the principle of avoidance of conflict of interest to fully protect this company's interests.

#### Anti-corruption

(1) Where there is a meal invitation between manufacturers or they offer gifts, these should be declined on principle. (2) If invited to dinner entertainment, this should be reported; if offered accepting gifts or money, these should given reported and handed over for official handling the same day. (3) Employee shall not exploit their relationship with manufacturers for private business dealings or money. Taiwan Glass makes sure to help each new employee understand relevant agreements and rules. In 2015, no employee of Taiwan Glass was involved in corruption, bribery or extortion. Any donations or sponsorships from Taiwan Glass to other parties will be processed according to relevant laws and regulations as well as the company's internal rules to prevent bribery or illegal political donations Taiwan Glass did not make any political donations in 2014.



#### 🗲 Complaints Mechanism

As Taiwan Glass pursues growth, the company has, as an honest business, established its accounting and internal control systems to ensure that all operations in the company stay in line with relevant laws and regulations, including Company Act, Securities and Exchange Act and any other laws related to listed and OTC companies and other business activities. This company has a dedicated line, email address to which employees can file their complaints. There is also an email address on the company's website that the public can use to file complaints or provide suggestions. TGI has both internal and external complaints consultation procedures as follows:

 Internal staff can download a staff complaint form from the company's internal bulletin. All the detailed supporting information should be attached. Spurious and unfounded or blackmailing complaints are strictly prohibited.

Complaints shall be treated in a confidential manner. Depending on the type of problem the complaint, the complaints will be delivered to the relevant departments (personnel, audit, legal units, etc.) directly, or will be sent by personnel for response. The complaints can be sent directly to corporate headquarters or E-mail to: Human Resources (02) 2715-8060 / E-mail:pn@taiwanglass.com Audit Department (02) 2715-8051 / E-mail:ad@taiwanglass.com

2. The contact information on the website includes the e-mail address for communication. Any email to the company will be forwarded to the corresponding department (personnel, audit, legal department and so on) accordingly.

Company website:http://www.taiwanglass. com/contactus.php?langeno=tw&sid=272

最新派息 新闻预介	工廠介紹 產品介紹 應用資額 考	「新文中	企業責任	空間出出	海拔去甲	#約我們	Hi
12.4	释话我们 > 嘉闻						
1大陸					13年人間(	27 GO 分期投	8 15
1於東東國語的							
	台灣破職工業股份有限公司						
	電話: 886-2-2713-0333						
	際頁: 866-2-2715-0333						
	戰子信箱: tgi@taiwanglass.com						
	哪址:http://www.taiwanglass.com						
	平板	94	łć.				
	電子信箱: 前@itaiwanglass.com	π	子伯稱: ef@	itaiwanglass.	com		
	10.00	Å	.85				
	電子信箱: gf@taiwanglass.com	-	子信箱: prod	ataiwanglass	.com		

Image from the official website

# 1.5 Risk Management

#### 📂 Risk Management Strategy

To prevent risk to continuous operation or sudden disruption of operation, Taiwan Glass has all departments conduct comprehensive risk evaluations and reviews periodically, implement various planned risk management measures for a sound and comprehensive risk management. The risk management involves lowering the possibility and reducing the impacts of recognized risks. Lowering business risk exposure, improving crisis management and sustainability are the objectives of risk management.



	Countermeasures for Financial Risk Management					
Prioritization	Risk	Impacts and Future Countermeasures				
1	Interest rate risk	We always maintain a good financial structure, as a financial institution and negotiating favorable bargaining chips, and in close contact with the banks in order to obtain more favorable borrowing rates.				
1	Exchange rate change risk	Due to non-functional currency of the purchase or sales of the risk arising to netting, our exchange rate risk is not significant.				
	inflation	No significant impact on our Company.				
2	<ul> <li>High risk and highly leveraged investment</li> <li>Loans to others</li> <li>Endorsements and Guarantees</li> <li>Policy derivative transactions, the profit or loss</li> </ul>	In 2015 we had no high risk and highly leveraged investment, and no loans to others. Only the loans and endorsements to our subsidiaries in China were implemented for construction and working capital.				

Countermeasures for Plant Operations Risk Management						
Risk	Countermeasure	Response				
Production risk	To avoid take-machine folder wounding, TGI mounted infrared electric eyes. It will immediately stop taking the glass sheet and has alarm beep if staff entered, to reduce the risk of personal injury.		Name of operation Hazard identification and consequences Existing protective measures Risk assessment Control measures aken Control measures Control measures Contro		Sheet glass collecting machine.         Staff injured when the sheet glass collecting machine was working.         Safety hedge.         Safety hedge.         No safety hedge on the side of the retraction frame, and personnel can still enter from this side.         Installation of infrared electric eye to detect any entry of personnel at the retraction frame side. Sheet glass collection will immediately stop and the warning tone will go off when the entry of personnel is detected.         The stop of sheet glass collection will affect the production efficiency, and sheet glass may need to be discarded if necessary, resulting in production losses. However, the personnel safety can be guaranteed. Therefore, education and training of personnel should be reinforced, and personnel can enter the sheet glass collection area only when permitted.	

Risk	Countermeasure	Response
Environ- ment, security and health risk	To prepare for any environmental or security ememergies, the Engineering Safety Section should formulate a emergency response plan and conduct an investigation when incidents occur. The Factory Affairs Section should plan training sessions and have all departments collaborate with the section. Each factory has its own emergency response plan for incidents such as fires, accidents in the waste water treatment facilities, air pollution, oil or chemical leaks and explosions. The Engineering Safety Section can revise the plan based on the circumstances in the factories.	Situations occur   Initiates the contingency plan   Initiates the contingency plan   Image: Determines if the incident can be contained effectively and immediately   Image: Determines if the incident can be contained effectively guards will conduct the emergency broadcast and contact the authorities   Image: Determines if the incident can be contained effectively and immediately   Image: Determines if the incident can be contained effectively and immediately   Image: Determines if the incident can be contained effectively and immediately   Image: Determines if the incident can be contained effectively and immediately   Image: Determines if the incident can be contained effectively and immediately   Image: Determines if the incident can be contained effectively and immediately   Image: Determines if the incident can be contained effectively and immediately   Image: Determines if the incident can be contained effectively and immediately   Image: Determines if the incident can be contained effectively and immediately   Image: Determines if the incident can be contained effectively and immediately   Image: Determines if the incident can be contained effectively and immediately   Image: Determines if the incident can be contained effectively and immediately   Image: Determines if the incident can be contained effectively and immediately   Image: Determines if the incident can be contained effectively and immediately   Image: Determines if the incident can be contained effectively and immediately   Image: Determines if the incident can be contained effectively and immediately   Image: Determines if the incident can be contained effect

#### Photos of Emergency Response Activities



Fire-fighting training courses



Fire emergency drill-Status report and communication


Drill of fire emergency preparedness groupevacuation and taking refuge



Drill- fire from a paper bag in the CS package material storage area



Emergency drill of Sulfur dioxide leak



Demonstration of escape using the slow descending device

# **1.6 Social Care and Participation**

To give back to the society, TG founded Taiwan Glass Foundation which participates in charitable activities all over Taiwan. This foundation aims to bring the community closer, promote school development, assist communities and encourage TG's own employees to participate in charitable activities to give back to the society. In addition to taking actions to give back to the society, the foundation also leads and encourages other organizations to participate in charitable activities to make our society a better place.

Year	Activity	Location	Descriptions
2015	Scholarship	Taipei City	140 students awarded scholarships, each issued \$ 10,000.
2014	Scholarship	Taipei City	129 students awarded scholarships , each issued \$ 10,000.
2013	Scholarship	Taipei City	143 students awarded scholarships , each issued \$ 10,000.
	Culture & Art	Taipei City	131 Beautiful Taiwan (Taiwan from the Air) movie tickets.
2012	Scholarship	Taipei City	196 students awarded scholarships , each issued \$ 10,000.
	Art Exhibition	Taipei City	Co-organized and sponsored "Alvaro Siza: The Beauty of Function".

### Foundation Activities

Year	Activity	Location	Descriptions
2011	Scholarship	Taipei City	180 students awarded scholarships , each issued \$ 10,000.
	Art Exhibition	Taipei City	Co-organized and sponsored "Alvaro Siza: The Beauty of Function".
	Scholarship	Taipei City	160 students awarded scholarships , each issued \$ 10,000.
2010	Movie Premiere Taipei City		Co-organized special screening for "Let the Wind Carry Me" with 200 attendants. TG used this opportunity to promote excellent Taiwanese movies and develop more talents in the movie industry.
	Green Building Lecture	Taipei City	"Taipei Beautiful: Green Building Lecture": 300 participants. TG worked with Department of Urban Development, Taipei City Government on this urban renewal plan. In addition to renovating old houses, this project also aims to make buildings more environment- friendly.

### 2015 TGI Social Care Events

### Donations:

TAIWANGLASS donated glass products worth NTD 3,156,302 to the establishment of the top medical R&D building of Yangming University.



Reason of donation:

To construct a modernized research room and education center of Biomedical Technology and Interdisciplinary teaching, National Yang-Ming University planned to build a R&D Building. For promoting the development of Biomedical Technology domestically, in July of 2015 TGI donated green environmental protected products such as Low-e Glass and Ceramic Spandrel/Silkscreen Glass which can effectively block sunlight heat, significantly reduce the air conditioning electricity consumption and greenhouse gas emissions. The design of this new R&D Building was full with green building concept, reflected to actual construction and obtained the Green Building Label. Through this donation, TGI expects to see National Yang-Ming University's more excellent performance on the areas of Medical Education, Biomedical Technology and Life Science. National Yang-Ming University is a research-type university mainly with Medical Education and Biomedical Technology. It has been operated and developed for 36 years and outstanding at teaching and research of Clinical Medicine, Biomedical Technology and Life Science. However the space in the campus is nearly full, and rooms for teaching and research are not enough to use as well. Otherwise, each college and its departments located in different buildings are unfavorable to teaching, research and integration of resources. Presently the existed dormitories are old building with aging structures, leaking problem, crowded space and limited research development. TGI hopes this Top Medical R&D Building will provide faculty and students higher quality environment of teaching and research after the construction is complete, and make more significant contributions to the development of Biomedical Technology.

### Donation activity:

TGI donated NT\$ 584,508 to the Taiwan Society for Burn Injuries and Wound Healing with for the explosion in Formosa Fun Coast.



Certificate of Appreciation from TSBIWH

### Reason of Donation:

In June of 2015, the powder explosion happened in Formosa Fun Coast, injuring to a large number of people. It is the accident of Taiwan with most injured people following 921 Earthquake in 1999, and this event brought charities of many Taiwanese. TGI developed its enterprise culture of caring about employees to spare no efforts to the patients of powder explosion, provided "paid leave" to staff and sponsoring the "2015 TSBIWH Annual Meeting and Symposium of Powder Explosion in Formosa Fun Coast", and afforded partial accommodation fee of international scholars and specialists to improve the related activities of TSBIWH.

Prioritization	Organization Title	Total Donation (NTD)
1	National Yang-Ming University	3,156,302
2	Chinese National Association of Industry and Commerce	1,200,000
3	Taiwan Chamber of Commerce & Industry	1,000,000
4	Taiwan Society for Burn Injuries and Wound Healing	584,508
5	The Third Wednesday Club	300,000
6	Taiwan Institute for Sustainable Energy	280,000
7	Tiawan Glass Industry Association	150,000
8	Taiwan Ladies Professional Golf Association	100,000
9	Modern Architectural Institute of Taiwan	99,932
10	Straits Economic & Culture Interchange Association	80,000
11	Xue Xue Foundation	44,909
12	Catholic Non-profit Tsz-Ai Mercy Hospice	10,000
13	Taiwan Golf & Country Club	10,000
	Totle	7,015,651

## Friendly Communities Relationship

In addition to the head office of the social care and other activities above mentioned, TGI constantly strengthen the establishment of coexistence with local friendly relations, rooted in the present and for years the idea of sustainable local, positive feedback place to do your neighbor, green environment, priority into the local population in order to create employment opportunities for local economic prosperity. Otherwise, we are also willing to sponsor our products to the schools and organizations of the community. In 2015 we did not have any conflict with community residents.

### Blood Donation

Based on the spirit of community feedback and in response to "a bag of donated blood, save a life" idea, we encourage our employees to participate in charity every year by cooperate with Taichung organized blood donation center for blood donation to provide ample medical blood, and relief injured patients. Our employees are enthusiastic to participate in this publicly beneficial activity.



Blood donation of the employees in Taichung Factory

### A Friendly Environment for Employment of Disability

We have total 17 disability employee in Lukang Facorty, 7 in Twisting Section and 10 in Weaving Section. TG's Lukang factory has a LCD writing tablet at the Yarn Twisting, Weaving and Factory Affairs Department to help the employees communicate with the hearing-impaired workers. Teachers from the Tsz-Ai Hospice also visits these hearing-impaired workers at the Lukang factory and will increase the number of visits when there are new hearing-impaired workers to 3 to 4 days a week. TG, from this point forward, will spare no efforts in creating a better and more diverse working environment for workers with disabilities. TGI founded a sign language club in 2015 and has activities irregularly for members. Otherwise, we invite sign language teachers of Tsz-Ai Hospice to teach sign language for employees who are interested. This creates a high-quality job and pluralistic environment for the disabilities.



### Education and Culture Sponsorship

To improve the understanding of the glass industry to domestic students, we provide visiting activities to college students who are major in related departments. Students can make understanding on the R&D of products and application through the visiting activities to boost their learning effects. In 2015 there were total 70 teachers and students of National United University to visit the production and products in Taichung Flat Glass Factory.



Introduction of types and uses of various glass products to the teachers and students of National United University in Taichung Factory



Banner of Appreciation from the National United University

### 🗲 Green Environment

To enhance the corporate image and create a value of green plant, we made the employees a comfortable working environment. Through involving in the industrial area of green landscaping adoption activities, we hope to make a contribution to the local area's green environment.



Beautification of the roadside trees around Taichung Factory



Certificate of Appreciation for the green environment

# 2. Corporate Social Responsibility Management

- Promotion and Implementation



In May 11, 2015 TGI developed corporate social responsibility codes of practice which were promulgated by the Board of Directors.

**8** 1st year /

**8 2015** /

Established the Corporate Social Responsibility Committee.

**Silver** Award

TGI signed up the Taiwan TOP50 Corporate Sustainability Report Award of Taiwan Corporate Sustainability Awards in 2015 for the first time, and won the "Traditional Manufacturer Silver Award". 8 categories including shareholders/investors/financial institutions, employees, business customers, suppliers, contractors, outsourcers, distributors and government agencies/authorities.

**8 271** copies

In 2015, 271 people responded TGI's CSR questionnaires, of which 255 were valid. 16 impact questionnaires by TGI executives were also received.

TGI identified eight categories of stakeholders,

**8** 17 major issues

In 2015, we identified a total of 17 major issues and an effective management solution was assigned to each of these issues.

# 2.1 Corporate Social Responsibility Committee

### Corporate Social Responsibility Code of Practice

TGI was founded more than fifty years ago. "Honest Business" has always been our main core value. Fulfilling corporate social responsibility has been our continuous concern and objective. To fulfill our corporate social responsibility, promote economic, environmental and social progress and achieve sustainable development, on May 11, 2015 we developed corporate social responsibility codes of practice, which was approved by the Board of Directors before its implementation. Our corporate social responsibility practices follow the principles below:

The Practical Principles of Corporate Social Responsibility

- 1. Implement corporate governance
- 2. Develop a sustainable environment
- 3. Maintain social welfare
- 4. Strengthen CSR disclosure of Information

By drafting the policy of corporate social responsibility and institutional or management policy, TGI's operation personnel submitted their specific plans to the Board of Directors. The directors endeavor to their administrative duties by supervising and assisting operation personnel in the practice of social responsibility, and constantly review the effectiveness of the implementation and continuous improvement. The Board of Directors is responsible for the following items to enable the company to fulfill its corporate social responsibility: 2015 CORPORATE SOCIAL RESPONSIBILITY REPORT

#### The Board of Directors' CSR Duties

- 1. Propose the CSR mission and vision, formulate CSR policies, practices or related management approaches.
- 2. Involve CSR into the activities and development of TGI's operations, and examine the specific plan for promotion of CSR.
- 3. Ensure the timeliness and accuracy of any CSR information disclosure.

### Composition of Corporate Social Responsibility Committee

To achieve the goal of sustainable development by ensuring the implementation of CSR policies, promoting economic, environmental and social progress, TGI established the Corporate Social Responsibility Committee in 2015 to promote sustainable development issues, plan strategies and review the effectiveness of CSR's implementation. It is comprised of the Chairman and the CEO as the conveners, independent directors as the advisory committee, and a number of executive committee. The Committee was set up five working promotion groups in charge of "corporate governance", "staff care", "environmental protection", "social welfare", and "customer concern." It is hoped to create a win-win situation on environmental protection, economic development and social care. The CSR Committee meeting is set to be held once every six months. However, if necessary, the number can be flexible but must be at least once a year.



#### Members of the CSR Committee of Taiwan Glass Ind. Corp Gender Title Name **Concurrent Position at TG** Convener Lin Por Fong Male Chairman Lin Por Shih Male CEO Convener Advisory Huang Chin Yuang Male Independent director Commissioner Executive COO of Fiberglass Business Su Yu Ted Male Commissioner Department Executive Vice President of Hong You Qin Male Commissioner Management Department Executive Manager of Management Li Jing Tian Male Commissioner Department Executive Manager of Secretary Pan Ya Lun Female Commissioner Department

Committee Members

### Responsibilities of Corporate Social Responsibility Committee

Based on the communication with stakeholders, CSR Working Group edits the CSR Report to disclose economic, environmental and social issues arising from TGI's operating. By following the PDCA concept, the groups investigate topics concerned by stakeholders and act as a channel for assessment and review of company's executive status and response measures to these topics. They start to edit the reports and make the preliminary draft after discussion before all members of the working team proofread and revise the content. The finalized content should be sent to third-party impartial verification and then submitted to the chairman for review before release by following the administrative procedures.

In addition to preparing the report, the groups also actively participate in CSR related courses, including the Taiwan business continuity Institute (CCS) courses, the Chinese Industrial Innovation workshop etc. Through these courses they exchange information of sustainable development measures and recent trends with many different industries, enhancing practice knowledge of editing to raise awareness of risk management.

2015 CORPORATE SOCIAL RESPONSIBILITY REPORT





### Performance of Corporate Social Responsibility Committee

It was the first time TGI signed up the Taiwan TOP50 Corporate Sustainability Report Award of Taiwan Corporate Sustainability Awards in 2015, and earned "Traditional Manufacturer Silver Award". This award was evaluated by 145 trained specialists with related background who serve as volunteered trainee judges according to three aspects –completeness, reliability, communication, GRI and ACCA Award standard as well to review CSR reports published by each corporation. Corporations were commended for the completeness, reliability, and communication of revealed information, representing corporations' endeavor of social responsibilities and promotion of sustainability.



Gropu photo of Taiwan Corporate Sustainability Awards



# 2.2 Identify and Communicate with Stakeholders

## 2.2.1 Identify Stakeholders

To fulfill its commitment to stakeholders and respect and safeguard their legitimate rights and proper interests, the company has a variety of communication and appeals procedures. TGI upholds the honest business principle, timely handling and positive response. TGI's working groups discusses issues with the heads of internal departments, and takes other industry groups' stakeholders as reference. In 2015, TGI identified and listed eight categories of stakeholders, including shareholders / investors / financial institutions, employees, corporate clients, suppliers, contractors, outsourcers, distributors, government / authorities and so on.



### 2.2.2 Communicate with Stakeholders

TG believes that a company's sustainable development relies on good communications with stakeholders. The Board of Directors authorizes the CSR Committee to review the progress and results in corporate social responsibility periodically. In response to performance assessment, strategic planning is proposed and measures are taken to further the implementation of corporate social responsibility by the groups.

In TGI 2015 re-identified its stakeholders. Through a survey it collected issues of concern from these stakeholders and started communication on economic, environmental and social issues. 255 valid questionnaires were collected and the issues they raised were taken as the main foundation for TGI's corporate social responsibility measures. TGI maintains interaction in many forms with stakeholders. On the official website there is an email address dedicated to external communication: tgi@taiwanglass.com. This is the basis of communication method with stakeholders. The main contents are roughly divided into: product information, business opportunities, investor services, job opportunities, and corporate social responsibility. TGI has dedicated personnel to handle all the emails sent to this address and forwards them to the responsible departments. TGI always tries to solve the issues and make adjustments when there are complaints. TG has the following communication platforms with stakeholders:

Stakeholders	Methods and Frequencies of Communication
shareholders/ investors/ financial institutions	<ol> <li>Report revenue information regularly. (reports the revenue of the previous month on the 10th of current month)</li> <li>Annual financial report and individual financial statement: published within 3 months after the end of a fiscal year.</li> <li>Annual shareholder meeting: Convened within 6 months after the end of a fiscal year.</li> <li>Spokesperson and acting spokesperson: telephone number and email.</li> <li>The "Information Disclosure" section on the company website lists TG's financial statements, annual financial reports, stock affairs, audits and major news.</li> <li>Investor conference: non-regular.</li> </ol>
Employees	<ol> <li>Internal information system: Send and publish information to company employees any time.</li> <li>Mutual communication between company operator and the man- agement : at least once a year</li> <li>Telephone line, fax and email (any time): Employees can file com- plaints about sexual harassments. TG will send dedicated person- nel to handle any complaints.</li> <li>Face to face meetings between the management and union repre- sentatives: regular.</li> <li>Various organizations for communication (e.g. labor-management meeting, welfare committee) : Regular/non-regular.</li> </ol>

Stakenolders	Methods and Frequencies of Communication
Corporate clients	<ol> <li>Questionnaire: once a year for flat glass and fiber glass clients and once every 6 months for container &amp; tableware clients.</li> <li>Customer support email : non-regular.</li> <li>In addition to usual communication, customer satisfaction survey is also conducted annually to understand and further improve the matters that the customers mention in the survey. (Once a year for flat glass/ glass fiber, and twice a year for container/tableware &amp; kitchenware.)</li> <li>Participate relevant product exhibitions to understand our clients and the current market trend: The flat glass department : attends building material exhibi- tions in Taiwan and Germany every two year; The fiber glass department : attends the China Composites Expo and the JEC Composites in France every year; The container/tableware department : attends the Hong Kong Houseware Fair and the Children-Baby-Maternity Expo in Shanghai every year.</li> </ol>
Dealers	<ol> <li>Visits (or contact via phone calls/email) serve as a communication platform between the clients and the company. These visits will help TG understand the clients' needs and help them solve issues at hand : Non-regular.</li> <li>Project briefing, wind pressure deflection, glass strength design, glass type planning, provisions review, etc.</li> <li>Assist in processing orders, samples, customer complaints, quality, equipment maintenance, technical services, etc.</li> <li>Client satisfaction survey : once a year.</li> <li>Attend the Taipei building material exhibition every year and the building material exhibition in Germany every two years.</li> </ol>
Suppliers	<ol> <li>Use telephone, fax or email to communicate with suppliers and contractors. Any information will be forwarded to the responsible department which will take actions to handle any reported issues.</li> <li>Supplier evaluation: There is an evaluation every quarter.</li> </ol>
Contractors	<ol> <li>Questionnaire: once a year.</li> <li>Communicate over face-to-face meetings or phone calls.</li> <li>Construction contractors have to fill out safety commitments before entering our factories for any construction work.</li> </ol>

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Stakeholders	Methods and Frequencies of Communication
Sub-contractors	<ol> <li>Questionnaire: once a year.</li> <li>Sub-contractor evaluation : non-regular.</li> <li>Complaint line, fax or email for sub-contractors (non-regular). Any information will be forwarded to the responsible department which will take actions to handle any reported issues.</li> </ol>
Government / Authorities	<ol> <li>Maintain a good interaction with the competent authorities and attend the public hearings held by the competent authorities : non-regular.</li> <li>We distribute the regulations identified and fines to the responsible department by our management system to contact with competent authorities.</li> <li>Each factory has a dedicated department to handle documents and discussions with the local competent authorities.</li> <li>Invite government/competent authorities to visit the factory and energy-saving product launch press conferences : non-regular.</li> </ol>

Returned Copies of Questionnaire of CSR Stakeholders' Issues of Concern and Business Impact Questionnaire								
Shareholders/ Investors/ Financial Institutions	Employees	Corporate Clients	Dealers	Suppliers	Contractors	Sub- contractors	Government / Authorities	TGI Executives
21	116	13	16	11	46	18	14	16

# 2.3 Management of Major Aspects

### Stakeholder Identification Process

discussion

2015, TGI introduced substantive analysis to the corporate sustainability report in the hope that through a systematic analysis, the sustainability issues, which the stakeholders concerned or interested in can be identified as the basic information to be disclose in the report to have effective communication with the various stakeholders. TGI's substantive analysis model was divided into:

Identify stakeholders	TGI's working groups discusses issues with the heads of internal departments, and takes other industry groups' stakeholders as reference. TGI identified $8$ categories of stakeholders, including shareholders / investors / financial institutions, employees, corporate clients, suppliers, contractors, outsourcers, distributors, government / authorities and so on.
Collect sustainability issues	The issues can be collected from external and internal sources. The external sources include the G4 Sustainability Reporting Guidelines published by Global Reporting Initiative. First of all, the $46$ categories and aspects listed in GRI's G4 Guidelines will be the foundation. Secondly, major international issues and standards will be included. These two will be compiled into a list of concerned aspects, which will be first reviewed by the stakeholder representatives into a preliminary list of concerned aspects. The internal sources include feedbacks and opinions from stakeholders collected from various sources.
Analyses of major aspects	To evaluate the value of the assessment by the results of returned questionnaires which were sent to different stakeholders and TGI executives with various concerned level. In 2015 TGI collected $271$ CSR questionnaires, of which 255 were valid, 16 impact questionnaires from TGI executives were received.
	<b>Stakeholder survey /questionnaire</b> Topics:Economics (4questions), environmental (12questions), social aspects (30 questions) Degree of concern: very concerned, ordinary concern, not concerned, little concerned Impact: very high impact, high-impact, ordinary, low-impact, minimal impact
Ranking substantial issues	According to the results of the questionnaires, and considering the weighting for each issue in different assessment criteria and the extent of the impact of sustainable development as considered by company management, TGI calculated a risk for each issue, made a prioritization of disclosure, and considered each aspect in adopting an effective management approach. In 2015 TGI identified $17$ substantial issues after analyzing the survey and discussed internally.
CTITO C	The internal and external object and scopes were identified by internal discussion

according to the priority of major aspects from the substantial analysis. It will be

considered as the cornerstones of TGI's CSR Report disclosure.

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## **Prioritization of Major Aspects**

1.Economic Performance	13. Raw Material	25. Grievance Mechanisms for Impact on Community	37. Supplier Assessment for Labor Practices
2. Product and Service Labeling	14. Occupational Health and Safety	26. Indirect Economic Impact	38. Equal Remuneration for Women and Men
3.Codes Compliance of Product	15. Training and Education	27. Supplier Community Impact Assessment	39. Non-discrimination
4. Emissions	16. Employment Relations	28. Overall Situation	40. Investment
5. Energy	17. Products and Services	29. Child Labor	41. Freedom of Assembly and Collective Bargaining
6. Customer Health and Safety	18. Customer Privacy	30. Anti-competitive Actions	42. Supplier Human Rights Assessment
7. Marketing Communications	19. Biodiversity	31. Procurement Practices	43. Public Policy
8. Codes Compliance of Environment	20. Labor Practices Grievance Mechanisms	32. Transport	44. Assessment
9. Effluents and Waste	21. Environmental Grievance Mechanisms	33. Local Communities	45. Security Practices
10. Codes Compliance of Society	22. Market Presence	34. Forced and Compulsory Labor	46. Indigenous Rights
11. Labor Relations	23. Anti-corruption	35. Employee Diversity and Equal Opportunity	
12. Water	24. Supplier Environmental Assessment	36. Human Rights Grievance Mechanisms	

## Prioritization of Major Aspects, Chapter Disclosure of Management Approach and Analysis of Scopes after Analyzing

• represents a significant issue. The management approach and performance indicators will be disclosed in this report.

▲ represents a significant issue. TGI will continue to strengthen the management and disclose the related information in this report by using the CSR evaluation and analysis of subsidiaries and suppliers.

Pri-	Major Responding		Internal Organization		External Organization		
oritization	Aspects	Chapters	TGI	Subsidiaries	Suppliers	Contractor	Sub- Contractors
1	Economic Performance	1.2 Economic Performance Management Approach	•	•			
2	Product and Service Labeling	3.4 Management Guidelines for Customer Satisfaction	•	•			
3	Codes Compliance of Product	3.3 Customer Health and Safety Management Policy	•				•
4	Emissions	4.3 Pollution Control Management Approach	•				
5	Energy	4.2.2 Energy Management Approach	•				
6	Customer Health and Safety	3.3 Customer Health and Safety Management Policy	•				
7	Marketing Communications	3.4 Management Guidelines for Customer Satisfaction	•				
8	Codes Compliance of Environment	4.4 Environmental Compliance Management Guidelines	•		•	•	•
9	Effluents and Waste	4.3 Pollution Control Management Approach	٠				
10	Codes Compliance of Society	1.4 Compliance Management Policy	•	•	•	•	
11	Labort Relations	5.1 Employee Relationship Management Policy	٠				
12	Water	4.3 Pollution Control Management Approach	•	<b></b>			
13	Raw Material	4.2.1 Raw Material Management Policy	٠	•			
14	Occupational Health and Safety	5.3 Occupational Health and Safety Policy	•		•		
15	Training and Education	5.2 Employee Education and Training Management Policy	٠				
16	Employment Relations	5.1 Employee Relationship Management Policy	٠				
17	Products and Services	4.1.2 Climate Change Policy	٠				

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# 3.Advanced Technology and High Quality



# 2015 Product Performance and Accountability

<b>8 0</b> violations	/ No violations in health and safety of products, labeling and marketing regulations.
<b>&amp; 100</b> % /	No violations in health and safety of products, labeling and marketing regulations.
<b>&amp; 100</b> % /	Glass fiber products were 100% compliant with ROHS and REACH specifications.
<b>&amp; 100</b> %	/ 100% of glass food container products met Taiwan food container and packaging hygiene standards, and all facto- ries met FSSC 22000 certification for environmental protec- tion and food safety.

# **& ISO 14001** /

Gained the international ISO 14001 Environmental Management System Certification.

# **& ISO 50001** /

Gained international ISO 50001 Energy Management System Certification.

**& ISO 14064-1** 

In 2015, the Taichung factory established the greenhouse gas management committee, to implement related measures and creates inventory reports. As the result, the factory was certified under ISO 14064-1: 2006 by a third-party certifying unit.

# **& USD2,000,000**

Glass food container products obtained liability insurance coverage up to USD 2,000,000 globally.

TGI Received the Renewed Certification of AEO in 2015. Under the AEO safety measures of supply chain, the safe quality of TGI's products in supply chain can be protected, the safety can be strengthened, the risk of Intellectual property loss can be reduced and the safety needs of customers and clients can be satisfied.

**8 0** violations

**& AEO** 

In 2015 TGI Group has no violations of customer privacy and losses of customer data.



TGI has approximately 2,067 transactions with domestic and foreign suppliers. Most material and supplies are procured from Taiwan's local suppliers, accounting for about 67%.

**8** 14 compliances

8 EN 14350

A total of 4 products comply with US FDA regulation for parts used in food contact. 8 products gained the EU's EU 10/2011 and the German drinking water BfR certification, and 2 products met the drinking water requirements for CAS France.

In the heat-resistant product line, 100% of milk bottles gained the latest EU EN 14350 certification, 100% of coffee makers were marked on the outer carton with heat temperature range for customers.

85% / In 2015 all departments showed above 85% satisfaction in customer surveys.

In November 2015 the tempered glass and laminated **SGCC** glass products of Changpin Factory gained the US SGCC certificiation for the first time.

**CNS** / In Taiwan, TGI is the only manufacturer which passed the CNS inspection standard of heat-resistant glass.

# 3.1 Supply Chain Management

### Purchasing Policy

Taiwan Glass implements a fair, just and transparent procurement policy to supply our factories with materials with acceptable quality, reasonable prices and such materials are also low polluting, do not contribute to public hazards and compromise the supply chain's safety. Every quarter Taiwan Glass evaluates the prices, delivery punctuality and quality of suppliers that might affect our product quality for the reference of future procurements.

Currently the limestone and dolomite used in the factories come from Hualien. Other major materials (silica sand, sodium carbonate and kaolinite) are imported since Taiwan does

not have mines for such minerals. As the result, TGI imports 61% of the minerals and procures 39% of them locally. With the exception of premium diesel (from Formosa Petro), TGI purchases fuel oil, natural gas and L.P.G from CPC Corporation. Electricity is 100% supplied by Taiwan Power Company. In 2015, 2,067 suppliers conducted business with Taiwan Glass. Taiwan Glass prefers local suppliers in Taiwan. In addition to the flexibility and fast response from such suppliers, Taiwan Glass also wants to support Taiwan's industries by choosing local suppliers (provided 67% of the supplies). This can create job opportunities, boost regional economic developments, conserve energy consumption in transportations and enhance the suppliers' quality, green awareness and skills.



### **Raw Materials Procurement Ratio**

## 3.1.1 Suppliers / Outsourcer Qualified Job Evaluation and Audit

Each quarter, Taiwan Glass uses 1-PO-B05-08 (supplier evaluation form) to evaluate the prices, punctualities and qualities of suppliers that might affect our product quality. The result serves as reference for future procurements. For supplier evaluations, our procurement units evaluate the suppliers' prices; material units evaluate the suppliers' punctuality and the quality assurance units evaluate the suppliers' product quality. The evaluation results are recorded for reference of future procurements. Our procurement staff uses the evaluation results above to calculate and produce run charts every quarter. They analyze and compare the data every 6 months and conduct in-depth analysis once a problematic trend is discovered in order to solve the problems or confirm the feasibility or effectiveness of our procurement system. TGI evaluates its suppliers each quarter to make sure that our suppliers meet our requirements and maintain a long-term and quality cooperation with quality suppliers.



Review and Recommendations:

- 1. The above chart showed there is no C-class manufacturer, which meets TGI's requirements.
- 2. Manufacturers are required to provide high quality material only and do so punctually. They are also to provide the lowest prices possible.

### Details:

- 1. Evaluation Schedule:
  - 1-1 Annual evaluations are conducted at the end of every December and are completed by the 20th of the following month. 115 Environmental Subcontractor Qualifications and Evaluations Every year Taiwan Glass uses 1-PO-B05-12 (environmental subcontractor evaluation form) to evaluate these subcontractors. During the evaluation cycles, if a subcontractor commits a severe violation of any environmental, labor safety and health regulations, it will be reported to the chairman or president and the said contractor will be disqualified as a TG contractor. Based on TG's requirements, subcontractors should have necessary licenses/certifications or receive training in order to have smooth cooperation with TG.
  - 1-2 Quarterly evaluations are conducted every March, June, September and December and completed before the 15th of the following months.
- 2. Class:We categorize our suppliers as A, B and C classes.
  Class A:Continue cooperation (≥90 points)
  Class B:Barely acceptable (70-89 points)
  Class C:Terminate (≤69 points)

- 3. Quality assurance units (and the units that actually use the materials) are responsible for evaluating quality items; units that submit purchase requisitions or the material units are responsible for evaluating the delivery; procurement units are responsible for evaluating prices and calculating the total numbers in the surveys.
- 4. Quarterly evaluation results will be preserved by the procurement units for future reference. Annual evaluation results will be submitted to the chairman or president.

# 3.1.2 Environmental Subcontractor Qualifications and Evaluations

Every year Taiwan Glass uses 1-PO-B05-12 (environmental subcontractor evaluation form) to evaluate these subcontractors. During the evaluation cycles, if a subcontractor commits a severe violation of any environmental, labor safety and health regulations, it will be reported to the chairman or president and the said contractor will be disqualified as a TG contractor. Based on TG's requirements, subcontractors should have necessary licenses/ certifications or receive training in order to have smooth cooperation with TG.



Assessment Form of Environmental Subcontractors

## 3.1.3 Supply Chain CSR Management

In addition to fulfilling our own corporate social responsibility, Taiwan Glass also extends the concept of sustainability to our supply chain. TGI realized, in 2014, that traditional evaluations are no longer sufficient for the suppliers. Sustainability management should also be included in evaluations in order to manage supply chain's risk and enhance their values. Therefore Taiwan Glass introduced the "Supply Chain CSR Management Evaluation" in 2015, assessing the environmental impact, labor conditions, human rights, social impact and product liabilities of part of the new suppliers and current suppliers. The evaluation aims to encourage our suppliers to improve their methods and fulfill their corporate social responsibility voluntarily.

### CSR Evaluation Analysis:

TGI evaluated the corporate social responsibilities of its subsidiaries and suppliers and analyzed the scores from all aspects. The evaluation was conducted by using information disclosure questionnaires, which became the foundation of our suppliers' CSR evaluation results. Questionnaires were collected from three subsidiaries and 18 suppliers and the results of the subsidiaries were all excellent. However, generally speaking, scores for labor-oriented questions were low; results indicated 77.78% of the suppliers as excellent and qualified suppliers were about 22.22%. There were no suppliers who needed improvement (0%). Overall results for each aspect showed that the environmental control should be stressed further. Whether this was labor issues of subsidiaries or environmental issues of suppliers, perhaps in the future TGI will review the score and analysis methods and continue tracking the progress of improvement. 4 of 18 suppliers have issued CSR related reports. The following is the results of the analysis:

### Subsidiary

r -	Fotal Sco	ore Analysis		<b>Evaluation Accounting Classification (%)</b>
Classification	Score	Number of Subsidiaries	Percentage	
Gold (good)	105~85	3	100%	Gold
Silver (qualified)	84~60	0	0%	(good) Silver (qualified)
Bronze (to be improved)	<60	0	0%	Bronze (to be improved)
Total		3	100%	

Aspect	Score (%)	Room for Improvement (%)	Total Score (%)
Environment (EN)	97.53	2.47	100
Labour (LA)	77.78	22.22	100
Human Rights (HR)	100	0	100
Social Aspect (SO)	95.56	4.44	100
Product (PR)	98.52	1.48	100



Total Score Analysis				Supplier Evaluation Grade Percentage (%)
Classification	Score	Number of Subsidiaries	Percentage	
Gold (good)	105~85	14	77.78%	0.00%
Silver (qualified)	84~60	4	22.22%	(good) ■ Silver (qualified)
Bronze (to be improved)	<60	0	0%	T7.78%
Total		18	100%	

### Suppliers, Outsourcers and Contractors



# 3.2 Main Product

TGI's main products include flat glass, fiber glass and glassware. There was no any violation of regulations related to product health & safety, labeling and marketing and no product's sale was prohibited in 2015. TGI was not involved in no anti-competitive behavior, anti-trust and monopoly practices or legal proceedings in 2015.

## 3.2.1 Flat Glass

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.



Purpose	Product Category and Description			
Building materials	Clear Float Glass / Tinted Float Glass: Clear float glass features smooth and flat surfaces, low distortion, and high transparency. With a prescribed quantity of tint agent, it can be turned into tinted float glass, which reduces solar heat transmission to save energy and offers diverse exterior colors for buildings to create higher added-value.			
	Rolled Glass: Rolled Glass not only provides the function of visual screen but also enables shifts between light and shade.			
	Low-E Glass: Low-E glass has the best performance of thermal insulation and offers high transparency and energysaving properties that are required for green buildings and construction materials. The Low-E Glass supplied in developed countries is all made into insulating glass (which offers better insulation and soundproof performance and prevents misting by using dry air in the unit). All TG's Low-E glass can achieve an emissivity coefficient between 0.02 and 0.12.			
	Low-E Vacuum Glass : Consists of one pane of float glass and one pane of Low-E glass, with a 0.2mm vacuum in between. This is a new-generation energy saving glass with advantages of Low-E coating and vacuum spacing. It presents excellent thermal, acoustic and anti-mist performance, its insulative ability is 2 to 3 times better than normal insulating glass and 4 to 6 times than single glass, creating wonderful living environment.			

Purpose	Product Category and Description			
Building materials	Reflective Glass: Reflective glass can deflect incident sunlight and provide high thermal performance for indoor comfort. It can save the energy, and meanwhile improve the aesthetic appeal of the building.			
	Tempered Glass: Tempered glass is 3-5 times stronger than annealed glass and improves the safety of glass application. Once broken, the glass crumbles into small granular chunks, which are less likely to cause injury. It can also withstand sudden changes in temperature. To avoid the spontaneous breakage, tempered glass should undergo heat soak test to improve safety in use.			
	Heat Strengthened Glass: Heat strengthened glass is 2 times stronger than annealed glass with less distortion, and less likely to occur spontaneous breakage.			
	Laminated Glass / Sound Control Laminated Glass: Laminated glass has features of enhanced safety, security, protection from ultraviolet rays, control over transparency levels and shatter-prevention. The color laminated glass can raise the aesthetic appeal of the building, reduce the solar heat transmission to save energy and improve the comfort of living areas. In addition to the features above, sound control laminated glass, developed by TG, also provides an excellent sound insulation properties, ranging from medium to high frequency.			
	Ceramic Spandrel Glass / Ceramic Silkscreen Glass: Ceramic spandrel and ceramic silkscreen glass provide a variety of stable and durable colors. They can also reduce air-conditioning cost by insulating solar heat. After being tempered to improve safety, spandrel and silkscreen glass can be a substitute for stone and tile to reduce the structural load on the external wall. The printing of the glass can also reduce glare. Various colors and graphics can be custom-made to meet designing needs as well as create particularity of space design.			
	Bent Glass / Bent Tempered Glass: Buildings glazed with bent glass can improve spectacular and aesthetic appeal and have the advantages of diversified facade and interior partition. After tempering process, bent tempered glass, which is 3-5 times stronger than ordinary bent glass, can meet the requirements for larger sizes and exceptional optical quality.			
	Silver Mirror: Mirror glass provides clear and exact reflections. Its back paint resists acid and humidity. Environmentallyfriendly silver mirror is produced by copper/lead free process to prevent metal contamination, meeting environmental requirements around the world.			

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Purpose	Product Category and Description
Consumer electronics	Electronic Grade Ultra-Thin Glass: The TF5 furnace in Taichung Factory is a newly established production line for electronic grade ultrathin glass. Introducing the installations of Computerized Automated Production Management System, cleanroom and mechanical arms for collecting glass panes, this line started production in November 2014 with mass production for 1.1mm and 0.7mm glass and production of 0.33mm glass. All of the products undergo strict inspections before shipment. The high quality product is able to compete with Japanese manufacturers and provide for major electronic manufacturers at home and abroad to produce consumer electronic goods.
	Electronic Grade Ultra-Thin Glass
For Solar Panel	Super Clear Glass: Super clear glass has better optical performance with higher visible light and infrared transmittance than ordinary clear glass and greatly enhances solar heat transmittance. Super clear glass can be used for any applications and products that require high transmittance and transparency, i.e. the application of BIPV solar module and advanced construction materials, to respond to the issues of oil resource depletion and the requirements of clean and renewable energy.
	Low Iron Photovoltaic Glass: Mainly used as the cover of crystalline silicon solar modules with the advantageous features of low iron content, high transmission, low reflecting rate, high flatness, high mechanical strength, low probability of spontaneous breakage, anti-weathering, high impact resistance and so forth.
Automotive use	Auto Glass: Taiwan Autoglass Ind. Corp., the main supplier of automotive glass in Taiwan with 40% market share, produces various laminated windshield glass, sunroof glass, side windows, and tempered rear windows. Its glass products not only are awarded the quality and safety certifications around the world, including VSCC in Taiwan, ECE in European Union, JIS in Japan, AS in the U.S., and CCC in China, but also are supplied as Original Equipment and Automotive Glass Replacement for several international car makers, such as TOYOTA, FORD, MAZDA, HONDA, NISSAN, HYUNDAI, and SUZUKI.



Taipei Songshan Tobacco Factory -Cultural & Creative Park Building



The Okura Prestige

Taipei



Hsinchu High Speed Rail Station

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.

### **Technical Cooperation**

- ▶ 1980 TAA with Pilkington PLC (UK) for the introduction of float glass production know-how.
- ▶ 1984 Off-line sputtering coating technology and equipment from Leybold AG (Germany).
- ▶ 1999 Off-line sputtering & Double Low-E coating technology and equipment from Applied Films (USA).
- > 2003 Off-line sputtering & Double Low-E coating technology and equipment from Von Ardenne(Germany).
- ▶ 2012 Cooperated with TECO to develop continuity Nano vacuum glass manufacturing technology.



Once breakage occurs, the glass disintegrates into small cubical fragments which are relatively harmless to human body.



### Green Product - Flat Glass

The largest daily energy consumption in architecture is air-conditioning and lighting. In summer, the air-conditioning consumers around  $40 \sim 50\%$  of electricity and  $30 \sim 40\%$  for lighting. Therefore, the most effective energy-saving methods for buildings are on air-conditioning and lighting. Glass has been widely used in architecture for its characteristics of transmittance and aesthetics. Meanwhile, in recent years the development of energy-saving glass reaches the goal of reducing air-conditioning and lighting energy consumption. On the other hand, due to the durability of the building, the cumulative effect of energy saving is far better than other industrial products. We can even say that the energy-saving design of architecture is the most promising part of the national energy saving policy.

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.



Assembly Sequence Suitable for (Sub) Tropical Zone Coating on surface #2:

The heat is reradiated back outdoors, reducing the heat gain potential into the building interior.



Assembly Sequence Suitable for(Frigid) Temperate Zone Coating on surface #3:

Low-E insulating glass will reflect IR heat from inside the room to help reduce the energy loss.

### Low-E Glass Introduction

#### Structure of Low-E glass

- ▶ Glass
- Coating layer
- Aluminum bar
- ▶ Glass
- Spacing
- Desiccant
- Butyl rubber
- Silicone structural adhesive

### **Coating Layer**

- ▶ Single silver Low-E coating
- Double silver Low-E coating





### Low-E Glass Cladding

Low-E glass cladding layer has the following characteristics:

- Effectively blocks thermal radiation, conduction and convection: Low-E coating can effectively block thermal radiation, with multiple glazing filled with an inert gas or vacuum processing, can block thermal convection and heat conduction.
- Design Low-E coating layers according to different climatic characteristics: in the Tropical Zone it can block the outdoor temperature, in Frigid Zone it can prevent indoor heat dissipation and keep the transparency. For a large area with great vision Low-E coating has a visible range of high transmittance in the spectrum holding; sophisticated high-tech manufacturing in Asia gives the largest area of 6x3 meters, a large field of view but also energy-saving, safe and comfortable for living. Using Low-E glass cladding can give significant savings in air-conditioning expenses, enhancement of noise-blocking and keep the building safe and comfortable.

### Low-E energy-saving glass cladding:

In summer, Low-E glass can block the sun's ultraviolet light and infrared light, as well as infrared thermal radiation emitted from the ground outside and other buildings. The lower SC (shading coefficient) can reduce the solar heat transmittance to enter interior of building and save the air-conditioning expenses.

In winter, Low-E glass reflects indoor heating, heat from appliances and other sources of infrared heat radiation, like a surface heat reflector, back into the room to prevent the indoor heat from loss. It can effectively reduce the heating energy consumption to save heating costs.

In blocking heat radiation Low-E glass does not prevent visible light from entering the room, it makes good indoor natural light, and maintains adequate brightness. Low-E glass is composed of multiple glazing to achieve the goal of saving home lighting electricity use. Energy-saving glass, according to an example on the TGI website (refer http://www.tglowe. com/tw/#!e\_saving.html) calculated in Taipei in a 25 floor apartment building, can save NTD 6,200 per year of electricity.

### **Energy-Saving Glass Vacuum**

Vacuum glass consists of two clear glass or colored glass. There are tiny spacers to form a gap between two glass plates. After degassing, the frit is used on glass edges to enclose the space, forming a vacuum layer. It can block much heat conduction and convection than an air layer.





Vacuum glass has the following characteristics:

- ▶ Low U Value: Significantly reducing power consumption for air conditioning, pollution and greenhouse gas emissions for better environmental protection, energy conservation and carbon emission reduction.
- Heat Insulation and Soundproofing: In hot summer, effectively block solar heat and keep interior cool; in cold winter, possess high performance of heat loss insulation, keep interior warm and comfortable. Vacuum layer effectively blocks noise transmission and blocks up to 39dB of noise.
- Anti-Dew Forming: The lowest condensation temperature of Low-E Vacuum Glass is about -40°C without any condensation or inner dew, reducing the energy consumption of the antifogging function.

- Lower Cost of the Window Frames: The vacuum layer in the vacuum glass is only 0.2mm in thickness, compared to at least 6mm in air space between different layers of glass in multi-layer glass. As the result, the total thickness is thinner, reducing costs of the frames. If replacing glass in "old project" with TGI's vacuum glass, there is no need to redesign and replace the existing frames in use.
- Longer Service Life for Low-E Windows: The vacuum layer in TGI's vacuum glass has the pressure of less than 0.1Pa. With getter in the vacuum layer, it can prevent the oxidation of the coating (which will decrease the vacuum efficiency) on Low-E glass, extending the service life to more than 20 years.

How vacuum glass conserves energy:

The vacuum glass developed by TG TECO has been certified by China Building Material Test & Certification Group Co., Ltd (CTC) with the highest level of thermal insulation when used in windows. When compared to Low-E glass of identical thickness, vacuum glass' heat transfer coefficient is only 60% of that of multi-layer glass, which makes it more energy efficient with a lower condensation temperature and less energy consumption for heating glass to remove condensation.

### 3.2.2Fiber Glass



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

Fiber Glass Product Categories:

Product Category	Purpose	Description	Product Series
Fiberglass Reinforced	F. R. P. Industry (Fiber Reinforced Plastic)	Fiberglass reinforced is a fiber- like material manufactured by rapidly cooling melted glass filaments. The industry uses fiber glass to reinforce plastic composites, widely applied to the fields including: shipbuilding, construction, corrosion resistant engineering, engineering plastics, sports/recreation, electronics, transportation, military and aerospace, etc.	The products of TG fiberglass reinforced include Chopped Strand Mat (CSM), Conventional Roving (CR), Direct Roving (DR), Woven Roving (WR), and Chopped Strand (CS/O-CS). With outstanding characteristics of high impact strength and excellent electrical insulation properties, fiberglass reinforced is widely used in FRP industry.
Fiberglass Yarn	Printed circuit board material / Reinforcement materials	Fiberglass Yarn is the product of select materials mixed in a specific proportion, melted in high temperature furnaces and drawn into filament under strict control. TG fiberglass yarn is not only woven in large volume into E-glass fiberglass fabric for the production of printed circuit boards (PCB), but also in an extensive range of applications requiring strengthening, reinforcement, and other related uses.	TG is capable of producing a variety of quality fiberglass yarn with single filament diameters in G (9μm), E (7μm), D(5μm) and BC (4μm).
Fiberglass Fabric	Printed circuit board material	TG supplies fiberglass fabric to domestic and overseas Copper Clad Laminate (CCL) manufacturers to be reworked as prepreg and laminate, the preparatory status of PCBs. By adhering to the highest quality standards, TG has become an internationally renowned and trusted manufacturer.	By making fiberglass yarn in house, TG weaves a complete series of E-glass fiberglass fabric such as #7628, #2116, #1080, #106, #1027 and etc, ranking it among the world's top two manufacturers by production scale.



TG's glass fiber products all meet RoHS and REACH requirements. For food contact glass fiber 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.



2015 CORPORATE SOCIAL RESPONSIBILITY REPORT
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## 3.2.3 Glass Containers for Food, Kitchen

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.

Product Category	Purpose	Description	Product Series
Glassware	Container	Glass containers possess the special advantages of excellent transparency, easy sealing and flavor preservation. Furthermore, glass containers can be heated up gradually without deforming. It is also 100% recyclable and, therefore, environmentally friendly, fully aligned with government's environment protection policy and supported by social environmental consciousness groups. In light of market demand and environmental concerns, TGI has put emphasis on NNPB technique to produce lightweight glass bottles, consistent wall thickness and good appearance, with production capacity more than 200 million pieces each year. Besides saving cost for customers, lightweight bottles require less raw materials and energy, therefore are more environmentally friendly. Glass containers are classified by shape: narrow neck bottles, wide mouth jars, lightweight bottles (NNPB) and by color: flint, amber, green (emerald, antique, champagne green), cobalt blue, etc.	Liquor, wine & beer Food jar, pepper, spice, sauce, oil & vinegar Soft drink, juice & milk Pharmaceutical

Product Category	Purpose	Description	Product Series
Glassware	Tableware	Tableware glass includes blown-wares with thin walls and press-wares for thicker walls or glasses with handles. With its high transparency and clarity, various colors (ex. black, charcoal, blue, green, purple) are available for clients to choose from. The fine quality of our tableware products have been approved to meet CNS, FDA, REACH and other standards. In addition, a new borosilicate press line for products such as casseroles, roasters and food containers will meet the requirements for retail and catering markets as well as enhancing competitiveness.	Bowls and plates Water tumbler Wine glass Mugs Color Storage jar & box Ashtrays Candleholder
Glassware	Kitchenware	Kitchenware glass is made of $\alpha$ -33 borosilicate material with thermal resistant to 150°C temperature difference with better alkali and acid-resistance than sodalime glass, enhancing the safety and diversity of products. Product range includes coffee / teapots, pitchers, jars, etc, and we continue to add value by developing handle-attaching and double-wall glassware.	Tea pot Pitcher
Glassware Kitchenware Processing		TG cooperated with HARIO, a Japanese borosilicate glass manufacturer, to increase know-how and build a plant for glass processing as well as parts-assembling which will enhance the diversity of the product range. Design and Brand Name: TG has invited renowned Japanese industrial designer Fukasawa Naoto to manage product designs that are simple yet high quality to build a lifestyle brand separate from the current market segment.	Bubble ball Storage jar Coffee pot Glass cover

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 2,000,000 global product liability insurance covering all the products.











#### **Green Products - Glassware**

#### Lightweight Bottle Technology

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



#### Advantages of Lightweight Bottle

- Conserves raw materials use. It has the same strength despite a thinner bottle wall.
- ▶ Reduces energy consumption.
- ▶ Reduces clients' production costs.
- ▶ Glass containers are 100% recyclable and will not destroy the earth's ecological environment.

#### Product Column - TGI Food Security Controls



Heat-resistant baby feeding bottle certification: The only one manufacture of Taiwan passed CNS inspection standard heat-resistant baby feeding glass bottle.



#### Certification:

The Food and Drug Administration (FDA) issued the latest result of random inspection of plastics baby feeding bottles and pacifiers on September 23, 2015. Portion of the samples of PES and PP plastics baby feeding bottles contained BPA. BPA is Endocrine Disrupting Chemicals (EDCs) to disrupt endocrine. Animal experiment confirmed that it may cause infertility and impact of brain growth with a lot of exposure in long-term. The use of BPA in baby bottles and other baby products has already been banned in China, the EU, Australia, and the United States. France announced that from January 2015, the production, import, export or sale of any food packaging containing BPA were banned totally to avoid such substances pose a potential hazard to consumer health.



SGS test report

To protect Taiwan infant food safety, TGI built a heatresistant production line in Hsinchu Factory by investing in NTD 350 million to produce the heat-resistant baby feeding bottles which are capable of withstanding thermal shock up to  $150^{\circ}$ C, madding of heat-resistant  $\alpha$  -33 material. TGI is the only corporation using Power Coating Feeder (PCF) to produce products, which meets the requirements of CNS, FDA and EN-14350. We provide safer choice with products which are absolutely free from Bisphenol A (BPA) and Plasticizer.

# **3.3 Management System Introduced**

## 2015 Customer Health and Safety Management Policy

#### **%** The Importance of Customer Health and Safety

The competition among the glass industry is becoming fiercer day by day. It is not easy to control the quality of recycled crushed glass from various sources, and there are many external competitions so that consumers often encounter dishonest manufacturers and industries, resulting in consumers 'incorrect use of glass products causing loss of life and property. To follow the law and regulations is the most important step to protect life and property. TGI in Taiwan is a leader in flat glass and it complies with the relevant laws and regulations to protect clients, consumers and food safety, company's reputation and to avoid fines.

#### **Solution** Customer Health and Safety Policy

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

#### Customer Health and Safety Management Objectives

- 1. Increase the added value of products, serve high-quality brand image.
- 2. Improve customer and consumer confidence, and improve the willingness to change plastic bottles to glass bottles.

#### Customer Health and Safety Management Resources

- 1. Each factory has Quality Control Section.
- 2. Continually purchases advanced automatic inspection equipment of appearance, mouth and bottom parts to completely rule out the shortcomings which cannot be eliminated by manpower and old-fashion machines.

#### 💊 Customer Health and Safety Management System

External system:

- 1. Flat glass products are 100% compliant with Taiwan CNS norms, and California 65 standards.
- 2. Comply with EU CE, US ANSI, and other related standards.
- 3. Obtained Taiwan's Ministry of the Interior green building materials certificate mark.
- 4. Obtained AEO safety certification.

#### Internal system:

- 1. Obtained ISO 22000 Food Safety Management System.
- 2. Included in ISO9001.

To achieve economic growth and prosperity, social prosperity and sustainable living environment, reduce the incidence of risk and its impact, TGI actively introduced systems of product quality, product safety, ESH, transportation security and risk management.

## Quality Systems

Good quality management system gives a good product quality, meets customer needs, and improves economic efficiency. TGI factories meet ISO 9001 quality management system certification. Flat glass products obtained CNS Certificate from Bureau of Standards, Metrology and Inspection, Green Building Material Certificate from Ministry of the Interior, Certificate of Australia CSi Safe Glass Certificate Authority and the Certificate of United States IGCC Multilayer Glass Certification Association. Fiberglass products have obtained Norway's DNV certification and Germany's GL certification. In November 2015 the Changpin Factory's Tempered Glass and Laminated Glass products newly obtained the Certification of United Stated SGCC.



## Environment, Health, and Safety System

The global ecological environment is getting worse day by day. TGI, as a part of the global village, knows the importance of environmental protection and sustainability of the earth. In the part of environment management, TGI's Hsingchu Factory gained the certificate of ISO 14001 and Taichung Factory obtained the certificate of ISO 14064-1. TGI's Taichung Factory was among the 2nd batch of companies/factories to report its greenhouse gas emission following EPA's "Greenhouse Gas Emissions Reporting Guidelines". Thus, in 2015, Taichung Factory established a committee of promoting greenhouse gas management to implement measures and report on these.

It obtained third-party verification SGS compliance with ISO 14064-1: 2006 Greenhouse Gas review statement to achieve the target of waste reduction and protecting the global ecological environment effectively through ISO management procedure.



#### Product Health and Safety System

In recent years, tainted food incidents are quite common. To meet our food industry clients' food safety requirements and to improve our international competitive advantages, since 2010, the Hsinchu Factory has actively imported ISO 22000 food safety management system for process hazard control. On March 7,2011 it was SGS verified, and issued the "FSSC 22000 food safety management system certificate". The Taoyuan Factory also met Lloyd's Register product safety certification for shipbuilding and the TÜV safety certificate for food container manufacturing.



#### Product Transport Safety System

In 2014, TGI was among the top 500 blue-chip manufacturers for import and export and was awarded Bureau of Foreign Trade's certification. TGI, as a partner, also helped Customs implement comprehensive supply chain security measures to obtain substantial and convenient customs clearances. On 19 April 2012, Taiwan glass obtained an AEO certification (for excellent enterprises with compliances) from the Keelung Customs Department. On April 19, 2015, the certificate was extended for another 3 years. By implementing AEO supply chain security

measures, TGI can ensure the safety and quality of its products throughout the supply chain, strengthening safety, reducing the risk of loss of intellectual property and meeting customs and clients' safety requirements.



## 🖢 Energy Management System

After the Kyoto Protocol took effect, the global warming and climate change have become an important sustainable development issue. Greenhouse gas emission reduction has become important in each country. To fulfill corporate social responsibility, TGI seeks to reduce greenhouse gas emissions, improve energy efficiency, and implement energy source management. In 2014 it began to introduce the "ISO 50001: 2011 Energy Management System". On November 21, 2014 the Taichung Factory was certified and received the certificate from Bureau Veritas Certification Taiwan.



## Accounting Systems

The Company's financial report was prepared based on the FSC standards, recognized by the international financial reporting Associate, the International Accounting Standards, International Financial reporting interpretation and Interpretations establishment.



# **3.4 Customer Satisfaction**

## 2015 Management Guidelines for Customer Satisfaction

#### **%** The Importance of Customer Satisfaction

The glass industry has matured, with many useful product applications. Since there is considerable competition, many competitors will compete using low-priced products. Therefore TGI needs to use service as its advantage and keep customers in mind to establish a quality brand image. Increasingly stringent food safety regulations mean a need for improve utilization of reliable glass containers. TGI takes the initiative to make customers understand the relevant test specifications that meet food safety standards to avoid misunderstandings, which can lead to customer complaints.

#### Customer Satisfaction Management Policy

Improve the quality consistency, professional competence, the ability to fill rush orders, operational staff attitude, complaint handling and prompt response on all aspects of the service.

#### Customer Satisfaction Management Objectives

- 1. Reduce production costs, increase professional competence and enhance corporate profits.
- 2. Maintain a good reseller channel to provide a stable quality, reasonable price and high quality service.
- 3. Provide lines with food safety standard glass containers, to protect the interests of consumers.
- 4. Reduce the impact of low-priced foreign products.
- 5. Avoid customer complaints / violations, fines and improve satisfaction.
- 6. No customer quality complaints, ideally, reduce customer complaints to zero.

#### **%** Customer Satisfaction Management Resources

- 1. Establishment of Flat Glass R & D Department.
- 2. Establishment of Technical Services Department.
- 3. Establishment of an independent inspection laboratory.
- 4. Increase in product liability insurance coverage to USD 2,000,000.

#### **%** Customer Satisfaction Management System

- 1. Introduce Management System of ISO 22000 and ISO 9001 to provide product features on the official website and improve customer service.
- 2. Compile with food safety regulations, and send samples monthly to SGS for inspection of lead content.
- 3. Analyze and review the annual / semiannual customer satisfaction surveys.

TGI has been in business for over 50 years and attaches great importance to customer feedback. Therefore getting customers recognition and trust is a key objective, which is what TGI works towards every year. TGI every six months or every year conducts a "customer satisfaction survey", covering seven issues including "complaints response speed", " message feedback - correctness", " message feedback - promptness", "business attitude", "ability to fill rush orders", "professional competence" and " quality consistency ". Based on customer response the indicators are reviewed and analyzed for follow-up meetings about improvement measures and to implement issues raised in customer feedback. In 2015, the company's various departments customer satisfaction survey showed an average of more than 85% in customer satisfaction.



To practice personal data security management, TGI follows the relevant provisions of "personal data security maintenance management approach" and the "personal data protection act." We provide new staff education and training in personal profile protection to strengthen the awareness. Every six months staff from each department will be assigned to the education and training of personal profile protection. This is to reduce possible legal risks for the company and employees, protect the interests of customers and maintain the credibility of the company and enhance colleagues' handling capability of information security. The jobs are in line with AEO Standard 11.3, and passed AEO certification.

In addition, we are also committed to protecting customers' confidential information. To prevent data leakage, our information equipment has strict permissions control, and all employees are required to protect customers' confidential and proprietary information carefully, and prevent inappropriate loss of customer data. There is also regular information security training and enhanced use of computer passwords for employees. In 2015, TGI Group has no complaints of violations of customer privacy or losses of customer data.



Information Security Seminar

Each department also regularly visit customers, or participates in exhibitions, creating a direct and face-to-face communication with the clients: Flat Glass Business regularly attends Taiwan and Germany Building Materials Exhibition; Fiberglass Business participated in China Composites Show, France JEC exhibition, Container & Tableware Glass Business took part in the Hong Kong Houseware exhibition and infant supplies exhibition in the Shanghai.

## 2015 Immediate Response Communication Events

TGI upholds active review of principles for the media or the public release of negative publicity; it has a daily grasp of public opinion, through the company's website for immediate response or balanced reporting, reducing the negative effects of continued expansion. In 2015 immediate response communication events were as follows:

# News: About 40% Patterns Glass Contained Heavy Metal from Random Inspection in Taichung

#### Source:network news, website:

http://www.ttv.com.tw/news/view/default.asp?i=10501130029700H

On January 13, 2016, the consumer ombudsmen of Taichung City Government implemented random inspection in department stores, retailers and web stores, and found that six products' labeling did not meet the standards and four patterned glasses contained traces of lead or cadmium in their surfaces. However, due to a lack of related standards or regulations to impose a fine for heavy metal of the surface of containers, or to demand stores to remove such products off the shelves, the consumer ombudsmen can only continue to educate consumers, reminding them to pay more attention when shopping. In addition, six products' labeling did not meet the regulations. Their manufacturers/ importers have been informed to correct the labeling within a time limit to ensure the interests of consumers!

#### **Incident Handling**

TGI Declared for the News of Heavy Metal Contained for the Marks and Patterns Interior and Surface of Glass Sold on the Market with Random Inspection by Consumer Ombudsmen:

- 1. According to "Sanitation Standard for Food Utensils, Containers and Packages", the specified dissolved capacities of Pb and Cd of container interior are: Pb is not more than 5 ppm and Cd is not more than 0.5 ppm within 1.1L. Regarding the surface of containers, there is not any related standard or specification.
- 2. The containers, tableware and kitchenware TGI produced are under Act Governing Food Safety and Sanitation, received the Certification of Food Sanitation and Safety Management Systems and third party inspection. Our quality of products conforms to the standards of CNS, FDA, REACH and SVHC, and there is not any heavy metal contained in the interior of our containers, tableware and kitchenware after doing inspection. For the surface, TGI is devoted to using environmental printing material to make sure the safety of usage for consumers.
- 3. In response to environment protection and provide healthier and safer products, TGI has started to use low-lead material, whose dissolved capacities of heavy metal is zero, to print patterns on surface of container, tableware and kitchenware but with fewer colors for choosing and vividness.

We hereby declare our announcement to our customers above. Please feel safe to use TGI's products.



**230**million NTD /

In 2015 invested a total of 230 million in the plan to promote environmental policy.

**60,000** square meters

In 2015 produced 60,000 square meters of energy-saving vacuum glass, next year's target is 100,000 square meters

The largest production lines

TGI has the largest production lines of  $6 \times 3$  meters Low-E coating in Asia.

**Invested 697.2** *K* / In 2015 invested 697.2K in Triple Low-E and steel Double Low-E film R & D.

The highest level Product performance certified by third-party verification unit, for example vacuum glass was verified by "CTC China Building Material Test Certification Center" to meet the highest level of classification in national building insulation properties for windows and doors.

**105,341** tons / In 2015 all plants reduced water consumption by 105,341 tons compared to 2014.

**5** -20.17% / In 2015 all plants reduced the total amount of waste water by 20.17% compared to 2014.

**8 -12.73**%

In 2015 compared to 2014, the emissions of Flat Glass greenhouse gas increased 7.64%, Fiberglass decreased 12.73%, and glass containers reduced 5.09%.

**8 -12.31**%

In 2015 compared to 2014, the emissions of Flat Glass greenhouse gas increased 7.64%, Fiberglass decreased 12.73%, and glass containers reduced 5.09%.

3 296 million kWh

In 2015 TGI saved 2,965,450 kWh of electricity and 400M<sup>3</sup> of gas in total, reducing total carbon emissions by about 1,545.8 tons.

Compared to 2014 in products categories, in 2015,

**6** -10.18%

**8 -9.52**%

Flat Glass reduced water consumption by 10.18%, Fiberglass by 4.19%, glass containers by 6.93%.

Compared to 2014, 2015, NOx emissions was reduced by 4.46%, VOCs emissions increased by 0.50%, particulate matter emissions by 9.52%, SOx emissions increased by 1.91%.

# 4.1 Environmental Management

## 4.1.1 Environmental Expenses

TGI continued its investment in equipment related to environmental protection, pollution treatment, environmental management systems and environmental education related personnel training, to achieve compliance with environmental legislation, lower environmental pollution, and achieve sustainable environmental management. In 2015, TGI invested a total of NT\$230 million in environmental protection, 7% higher compared to 2014.

Year	Environmental Expenditure (Unit: 1,000 NTD)
2013	165,660
2014	220,209
2015	235,290





## 4.1.2 Climate Change Policy

Global warming and extreme weather caused by climate change has an impact on the world and Taiwan as well. Human society and businesses are facing unprecedented challenges. TGI tries to understand the core of the problem, reflect on environmental ethics and has a sense of responsibility for climate change. It adopts policies of positive development and actively participates in carbon reduction programs as a response to climate change.

TGI's Factories (Taoyuan, Hsinchu, Taichung, Lukang, Lukang flat glass, and Changpin Factories) are located in industrial zones and conform to the environmental impact assessment for industrial areas. They are not located in any ecological conservation zones or protected habitats. In terms of biodiversity, the company's activities, products and services have no significant impact on conservation areas or other areas important to biodiversity. Since the factories opened there have never been any petitions about their effect on the ecology.



## 2015 Climate Change Management Policy

#### **%** The Importance of Climate Change Management

In 2015 Taiwan suffered the worst drought in 67 years - 10 counties started the first phase of water restrictions, seven cities and counties started the second phase of water restrictions, and there were even two counties that started the third phase of water restrictions. It is necessary to face the challenges of extreme weather and promote water conservation measures. In 2015 the government passed the Greenhouse Gas Emissions Reduction Management Act. TGI will urgently implement carbon reduction measures to help prevent climate change.

#### Sclimate Change Management Policy

- 1. Water Shortage: Improve efficiency of water usage and prefer water-saving equipment when procuring. Strengthen awareness of green production and fulfill corporate social responsibility.
- 2. Continue recycling crushed glass: Continue to manufacture lightweight glass containers for the reduction of raw material consumption.
- 3. Carbon reduction: Regularly participate in the latest session of Environmental Protection Agency for emissions discharge requirements to achieve the best management standards.
- 4. Energy-saving products: Provide satisfactory products to our customers through advanced technology and Total Quality Management (TQM).

#### Sclimate Change Management Objectives

- 1. Crushed glass recycling: Recycled glass target ratio is 65% or more.
- 2. Energy-saving products:
  - In 2015 produced 60,000 square meters of energy-saving vacuum glass. Next year's target is 100,000 square meters
  - Strengthen the promotion of energy-saving glass; increase the added value of products, giving more room to grow in the gradually shrinking construction window market.
  - Participated in technological cooperation with Germany's Heye-Glass Group, and developed over 100 types of lightweight bottles.

While developing the product performance, we adjust the manufacturing process to reduce carbon emissions and energy consumption.

#### Nesources Invested in Climate Change Management

- 1. Establish recycled glass processing center, reusing, cleaning and recycling glass. Regularly send samples to SGS for verification of the lead content.
- 2. In 2015 invested NT\$697.2K into R & D to develop Triple Low-E and steel Double Low-E film.
- 3. Continue to purchase the latest production equipment of lightweight glass containers from Germany's Heye-Glass Group, and regularly send people to the plant for learning.
- 4. Establish Flat Glass R & D Department.
- 5. EstablishTechnical Services Department.

#### 💊 Climate Change Management Objectives

External system:

Product performance was verified by a third-party certification unit, such as the vacuum glass by "CTC China Building Material Test Certification Center" to meet the highest level of classification in national standards for building insulation properties of windows and doors.

Internal system:

- ▶ Introduced the ISO 14001 environmental policy standard certification.
- There is the insulation factor U-value for inquiry in energy-saving glass, and t TGI introduced ISO 9001 quality management system as well.

## 4.1.3 Environmental Input and Output The 2015 Environmental Input and Output Diagram of TAIWANGLASS



# 4.2 Green Resources

## 4.2.1 Raw Materials Management

## 2015 Raw Material Management Policy

#### **%** The Importance of Raw Materials Management

Raw materials are the most essential element to maintain a stable and good product quality. Selection of raw materials and raw materials distribution for production line are closely related to the company's product quality and production scheduling.

#### 💊 Raw Materials Management Policy

Control the use of raw materials, resources of raw materials and the cost of raw materials.

#### **& Raw Materials Management Objectives**

The selection and usage of raw materials and the manufacturing process will affect the product yield and also indirectly affect the company's reputation. There must be quality control of raw material. Under a constant quality in the finished product, the ratio of recycled glass in food containers achieved 65%. To adjust methods of equipment production appropriately and satisfy clients, TGI create its original production value. The stability of raw material quality and effective use of resources can reduce costs and make the company more competitive.

#### Nanagement of Raw Materials Resources

- 1. Established <Abrasive> and <Ingredients> departments responsible for the supply of raw materials in line with the standard process.
- 2. Established a dedicated <Test> sector, to test each batch of raw materials rigorously to ensure compliance with material specification.
- 3. Hsinchu Factory established a waste glass recycling plant to enhance Taiwan's waste glass recycling rate.

#### **%** Raw Material Management System

External System: the Ministry of Economic Affairs's Industrial Waste Recycle and Management Guidelines.

Internal System: ISO 9001 Quality Management System and ISO 14001 Environmental Management System.

## Material Consumption

Taiwan Glass' main products include flat glass, fiberglass and glassware. The major materials used in production include silica sand, limestone, dolomite, soda ash and recycled scrap glass (cullet). In 2015, TG used approximately 326,000 tons of silica sand, more than any other material. The consumption of these materials is listed below:



Note: 1. Other material including kaolin, colemanite and nepheline was only used in an insignificant amount and therefore was not listed above.

2. Compared with the 2014 report, the statistics of main raw material usage were changed to consumption of raw materials statistics in the data table.

## Environmental Protection and Recycle of Scrap Glass

Glass is highly recyclable and therefore does not affect the environment significantly. Thanks to this feature, in the future the government and the society certainly will support the use of glass as packing material due to environmental concerns. In recent years, TG has been dedicated to participating and building a recycle system for scrap glass. The company has built a scrap glass recycling plant in 1996 in order to encourage the recycle of scrap glass in Taiwan and fulfill the company's corporate social responsibility.



Lukang flat glass recycling plant

#### Flat Glass

In 2015, our flat glass factories used a total of 89,481 tons of recycled glass, accounting for 19.24% of all the raw materials used.

## Ratio of Recycled Glass Flat Glass in 2015



Note: Comparisons with the 2014 report, the statistics of main raw material usage were changed to consumption of raw materials statistics in the data table.

#### **Glass Container Plant**

In 2015 glass container factories used a total of 98,339 tons of recycled glass, accounting for 50.99% than that using raw materials

## Ratio of Recycled Glass in Glass Containers in 2015



Note: Comparisons with the 2014 report, the statistics of main raw material usage were changed to consumption of raw materials statistics in the data table.

## 4.2.2 Energy Management

## 2015 Energy Management Approach

#### **Solution** Importance of Energy

The main energy source used in the production of glass is electricity, heavy oil, natural gas and diesel. A stable energy supply is crucial to a normal production of glass.

#### 💊 Energy Policy

To improve efficient use of energy and continuously improve energy performance. An energy management system and full participation in carbon reduction has been implemented.

#### Senergy Management Objectives

Follow the ISO 50001 energy management system and reduce energy consumption a year by 1% from 2015 to 2019.

#### 🔦 Energy Management Resources

- 1. Modify and improve on-site practices or equipment operations.
- 2. Establish an energy-saving team.
- 3. The use of high-efficiency motors and inverter control.

#### 💊 Energy Management System

External system: Legislation on reduction of greenhouse gas emissions and management.

Internal system: Import the ISO 50001 energy management system.

The main energy sources for TGI factories are: electricity, heavy oil, natural gas and diesel fuel, there is no sale of electricity or energy (electricity, heat, cold, or steam), Each TGI factory improves its energy efficiency in the production of glass, through a furnace heat storage exchange chamber and the best available control technology, with energy-saving kiln oxyfuel specific measures to reduce the operating costs in terms of environmental impact. The energy usage of each factory in 2015 is in the following table. Compared to 2014, the energy consumption of flat glass production increased by 7.55%, decreased by 12.31% in fiberglass, and decreased by 5.90% in glass container production.

Energy Consumption of Various Products, 2015						
Energy / Product items	Flat glass	Fiberglass	Container, tableware & kitchenware	Total	Calorific value (GJ)	
Heavy crude oil (KL)	66,676	16,441	23,124	106,241	4,269,371	
Diesel (Liter)	446,069	101,324	234,000	781,393	27,476	
Natural gas(M <sup>3</sup> )	957,791	19,715,907	10,062,378	30,736,076	1,029,290	
Liquefied petroleum gas(KG)	0	4,377	20,200	24,577	1,241	
Electricity (kWh)	159,618,478	245,495,809	94,149,600	499,263,887	1,797,330	



# Glass Container Energy Consumption Intensity (GJ/Ton)



## 4.2.3 Greenhouse Gas Inventory

Greenhouse Gas Assessment Policy

Every member of the Taiwan Glass is contributing to energy conservation, carbon reduction and greenhouse gas emission reduction. We also promote the awareness of green production and fulfill our corporate responsibility.

Taiwan Glass' greenhouse gas emissions can be divided into two categories: direct and indirect. The direct category includes the energy (such as heavy crude oil, diesel and natural gas) used during production and the decomposition of the material (dolomite, limestone and soda ash) used in production. The indirect category mainly consists the electricity purchased from external sources. Please note that this report does not include the 3rd category or fugitive emission sources and only lists major emission sources. In 2015, Taiwan Glass emitted approximately 740,000 tons of CO<sub>2</sub>e. Compared to 2014, the emission from flat glass increased by 7.64%, fiber glass dropped by 12.73% and container, tableware & kitchenware increased by 5.09%.



## 2015 Product Greenhouse Gas Emission

1 16

2015



Note: 1. The emissions have not been verified by a third party organization.

2. Energy heat content emission factors are based on the Greenhouse Gas Emission Factor Chart 6.0.2 with the "Control" approach.

3. Added dolomite / limestone / soda ash process decomposition greenhouse gas emissions and amended the 2014 report data

## 4.2.4 Energy Conservation & Carbon Reduction

In 2015 TGI continued to promote energy conservation and take action on carbon reduction. Taiwan Glass mainly relies on electricity, heavy crude oil, natural gas and diesel. Based on corporate social responsibility and the pursuit of green production and sustainability, our Taichung factory introduced ISO 50001:2011 (energy management system) and was certified on November 21, 2014 with the certificate from Bureau Veritas Certification Taiwan. The main purpose was to provide a structure for necessary procedures by establishing energy management principles and methods. The structure will allow TG to optimize its energy efficiency without affecting current operations while staying in line with the company's strategies and objectives. On top of this, the PlanDo-Check-Action mechanism can continue improving the way TG uses energy. By lowering energy cost and reducing greenhouse gas emissions, Taiwan Glass will achieve sustainability and be more environment-friendly. The experience from the Taichung factory will be replicated at other factories.

Energy conservation and carbon reduction measures and results from 2015 are listed in the table below. In 2015, TG conserved a total of 2,965,450 kWh of electricity, 400 m<sup>3</sup> of natural gas and reduced 1,545.8 tons of CO<sub>2</sub>e in emission.

#### • Taoyuan Factory

The Taoyuan factory took voluntary action to achieve reduction of indirect energy consumption through the (ISO 14001) environmental management system management program. Every year it implements energy saving measures, mainly including lighting energy consumption reduction, production process improvement, equipment deprecation or

compressor performance adjustment. From 2011 to 2015 these energy saving measures made total electricity savings about 2,138,559 kWh; total heavy oil savings about 8,845 kiloliters; approximately 50,523 cubic meters of natural gas; and about 4,378 liters of diesel. The Taoyuan factory implemented energy management measures, and was voluntarily compliant with national greenhouse gas reduction legislation.

Energy Conservation and Carbon Reduction Measures and Results at Taoyuan Factory						
Measures	Energy Conserved	Amount Conserved	CO <sub>2</sub> Reduced (ton)	Related Photos		
Reduce electricity consumption in CFR-1,2SILANE TANK ultrasonic vibrator	Electricity (KWH)	91,460	47.7 (*coefficient 0.521kgCO <sub>2</sub> e/ KWH/1000)	Disabled CFR ultrasonic transducer, ultrasonic transducer to reduce electricity consumption		
Reduction of gas burning test	Natural Gas (M <sup>3</sup> )	400	0.8 (*coefficient 1.879kgCO <sub>2</sub> e/ KWH/1000)	Added detection instrument and sampling hole, and examine the oxygen content in the PA system to ensure compliant heat content in order to reduce fuel gas consumption		
SB-2 low-voltage distribution chamber axial fan disabled	Electricity (KWH)	52,992	27.6	Indoor low-voltage power distribution room cooling with axial fan 4 is deactivated to reduce electricity expenditure		
Other measures	Electricity (KWH)	3,616	1.9			
Total		148,068 Electricity (KWH) 400 Natural Gas (M <sup>3</sup> )	77.9			

## Hsinuchu Factory

TAIWANGLASS joined in MOEA's Voluntary GHG Reduction Program in 2012 and was reviewed and approved by the Green Foundation commissioned by MOEA.

Energy Conservation	n and Carbon	Reduction M	easures and Resu	lts at Hsinchu Factory
Measures	Energy Conserved	Amount Cnserved	CO <sub>2</sub> Reduced (ton)	Photos
TS-3 IS Mold Cooling Fan 215HP was modified with IE2 inverter motor +2 frequency inverter	Electricity (KWH)	280,320	146.0	Fs-3 IS Mold Cooling Fan 215HP was modified with IE2 inverter motor + frequency inverter
Replaced TS-3 fans with two 300HP and interter screw air compressors with frequency inverter	Electricity (KWH)	336,614	175.4	Replaced TS-3 fans with two 300HP and interter screw air compressors with frequency inverter
TS-3 IS Mold Cooling Fan 280KW was modified with IE2 inverter motor +1 frequency inverter	Electricity (KWH)	245,280	127.8	The second secon
TS-3 IS Dead Plate Cooling Fan60HP was modified with IE2 inverter motor+1 frequency inverter	Electricity (KWH)	39,420	20.6	
TS-3 EP ID Fan 125HP was modified with IE2 inverter motor +1 frequency inverter	Electricity (KWH)	81,468	42.4	TS-3 EP ID Fan 125HP was modified with IE2 inverter motor + frequency inverter
The TS-3 EP Insulator Protection System was modified with the temperature control + air inlet position	Electricity (KWH)	58,254	30.4	

Measures	Energy Conserved	Amount Conserved	CO <sub>2</sub> Reduced (ton)	Photos
The TS-3 EP Insulator Protection System was modified with the temperature control + air inlet position	Electricity (KWH)	58,254	30.4	
Replaced the the original TS-3 mercury lamp with electrodeless lamp (High ceiling light 150w×14 lamps, high ceiling light 100w×24 lamps, projection lamp 150w×42lamps)	Electricity (KWH)	28,908	15.1	
Other measures	Electricity (KWH)	23,085	12.0	
Total		1,093,349	569.6	

## Taichung Factory

As a corporation and a natural person with the contract capacity exceeding 800 kWh, the Taichung factory, in accordance with the Article 9 of the Energy Management Act, it set the annual goal in 2015 of 1% deduction in electricity consumption and 0.421% in fuel oil. However the actual performance did not reach this target. The main reason is because the 2015 targets were based on the 2014 performance. In November 2014, the Taichung Factory had a new production line (TF-5) put into operation. On top of this, the original production line (TF-2) had a heavier LOAD. Therefore the energy consumption exceeded that of 2014. Nevertheless, each unit in Taichung Factory continued efforts to implement energy efficiency programs in all areas. In 2015 the Taichung Factory successfully saved 1,084,279 kilowatt of electricity, and reduced carbon dioxide emissions by about 564.9 tons.

Energy Conservation and Carbon Reduction Measures and Results at Taichung Factory						
Measures	Energy Conserved	Amount Conserved	CO <sub>2</sub> Reduced (ton)			
Modified Mixer of min. Mixing time (reduce electricity costs)	Electricity (KWH)	11,561	6.0			
<tf1> reduced copper and iron loss transformer loss in each district</tf1>	Electricity (KWH)	199,290	103.8			

Measures	Energy Conserved	Amount Conserved	CO <sub>2</sub> Reduced (ton)
TF1 S / B PROCESS WATER PUMP reduced operating frequency from 55HZ to 45HZ	Electricity (KWH)	43,800	22.8
Produce hydrogen by the field of TF-1 instead of TF-2	Electricity (KWH)	778,346	405.5
Due to the lack of efficacy and inadequate for the regeneration heater of nitrogen absorber inTF-1, it was replaced by a larger power and more efficient heater	Electricity (KWH)	11,340	5.9
Holiday shut case	Electricity (KWH)	19,776	10.3
Other measures	Electricity (KWH)	20,167	10.5
Total		1,084,280	564.9

## Lukang Factory

From 2011, Lukang Factory and Lukang Flat Glass Factory joined the Industrial Development Bureau's Greenhouse Gas Emission Voluntary Reduction Program. The Industrial Development Bureau commissioned the Taiwan Green Productivity Foundation to inspect the factory from June to July, 2015. In 2014, the Lukang factory implemented 13 voluntary reduction measures, resulting in voluntary reduction of 3042.1 tons of carbon dioxide emissions.

Energy Conservation and Carbon Reduction Measures and Results at Lukang Factory						
Measures	Energy Conserved	Amount Conserved	CO <sub>2</sub> Reduced (ton)	Photos		
Improve energy saving efficiency of the burling machines	Electricity (KWH)	178,988	93.3	Burling machines connected to an electricity saving device		

Measures	Energy Conserved	Amount Conserved	CO <sub>2</sub> Reduced (ton)	Photos
Replaced hallway lights with LED bulbs	Electricity (KWH)	21,082	11.0	LED bulbs in the lamps
Disabled F / N-7 1500KVA TR.	Electricity (KWH)	13,530	7.0	Disabled transformer 1500KVA for energy conservation
Reduced air pressure level of S / B NO.2 PAC to conserve energy	Electricity (KWH)	84,780	44.2	Reduced air pressure level to conserve energy
Replaced spotlights with LED bulbs at the east side of the plant	Electricity (KWH)	12,780	6.7	Flant spotlights were replaced with LED bulbs
Reduced energy consumption of the S / B (1) manufacturing cooling water pump	Electricity (KWH)	60,480	31.5	Reduced energy consumption of the manufacturing process cooling water pump
Lowered wind output of the blowers at the equalization tanks at the wastewater processing facility	Electricity (KWH)	73,440	38.3	Reduced blower output to conserve energy

Measures	Energy Conserved	Amount Conserved	CO <sub>2</sub> Reduced (ton)	Photos
Adjust the temperature of the LINE HEATER in summer and winter accordingly to reduce electricity consumption	Electricity (KWH)	12,207	6.4	With the second secon
Shimadzu generation machine manufacture added a KVA SWITCH, reducing the number of operation screens to reduce power consumption	Electricity (KWH)	11,750	6.1	Reducing the number of operation screens to reduce power consumption
Other measures	Electricity (KWH)	7,777	4.1	
Total		476,814	248.4	

## Changpin Factory

With growing problems of climate anomalies, coupled with limited conventional energy reserves, major countries of the world all implement carbon reduction strategies. The Changpin Factory is aware of the importance and urgency of climate change so it actively improved equipment and adjusted production modes, for the development of a green energy industry, and to help create a sustainable low-carbon society and develop a low-carbon economy.

Energy Conservation and Carbon Reduction Measures and Results at Changpin Factory				
Measures	Energy conserved	Amount conserved	CO <sub>2</sub> reduced (ton)	Photos
Intensive production furnace is not heated on holidays and only heated pre-production, lowering power consumption from constant heating	Electricity (KWH)	40,800	21.3	Image: A state of the state

Measures	Energy Conserved	Amount Conserved	CO <sub>2</sub> Reduced (ton)	Photos
ACV furnace modified to improve production efficiency	Electricity (KWH)	34,300	17.9	ACV furnace modified to increase the amount placed in it
Cooling water circulating pump runs down operation from 50HZ to 40HZ on holidays.	Electricity (KWH)	87,840	45.8	Cooling water circulating pump runs down operation on holidays
Total		162,940	84.9	

## 4.2.5 Water Resources Management

#### Water Resources Management Policy

TG improves water efficiency and conducts priority procurement of waterconserving equipment. We promote awareness of green production and fulfill our corporate social responsibility.

In response to extreme climate change, development and allocation of water resources has become an important issue worldwide. Therefore, water management, water conservation and water shortage emergencies became an important part of corporate climate change adaptation and disaster risk management. In view of this, TGI continue to spare no effort to promote water conservation. In addition to improving facilities and equipment, TGI also conducted outreach to staff on water use for behavioral changes to improve the efficiency of water conservation.

The way in which TGI obtains water for each factory does not have a significant impact on the local water supply. Water is obtained from Taiwan Water Company, Area 11, Liyutan Reservoir, etc. For water supplies of less than 5%, water sources for each factory are in the following table:

Factory	Water Source
Taoyuan	Taiwan Water Corporation 2nd Branch
Hsinchu	Dongxing waterworks
Taichung	Water Management Area 4, 1 <sup>st</sup> Branch
Lukang Factory/ Lukang Flat Glass Factory	Taiwan Water Corporation 11th Branch
Changpin	

In 2015, all TG factories consumed approximately 1.74 million tons of water. Compared to 2014, water consumption intensity for flat glass dropped 10.18%, 4.19% for fiber glass and 6.93% for container, tableware & kitchenware. TG's water consumption in 2015 was 105,341 tons lower than 2014.

Product Water Consumption				
Project / Factory	Flat Glass Factory	Fiber Glass Factory	Container, Tableware & Kitchenware Factory	Total
2014 Water Consumption (Ton)	174,653	1,032,580	638,756	1,845,989
2015 Water Consumption (Ton)	156,871	989,275	594,502	1,740,648
Water Consumption Trend Percentage (%)	- 10.18%	- 4.19%	- 6.93%	- 5.71%

## 2015 Product Water Consumption (ton)



## Flat Glass Water Consumption Intensity (Water/ Flat Glass (ton))



## Container, Tableware & Kitchenware Water Consumption Intensity



## Factory Water Recycling and Conservation Measures

In the manufacturing process for processed glass, glass edging, anvil and drilling all require water. TGI, after assessments, upheld the principle of water resources recycling, continued assessment and applications of water-saving techniques to reduce water consumption. The entire factory's water consumption includes water for industrial use, water for daily use and recycled water (used in part for the waste gas emission system). The factories use recycled water instead of tap water, reducing the water consumption. The following table shows each TGI factory's amount of water recycled and recycle rate in 2015:

TGI 2015 Factory Recovery and Recycling of Water Resources					
Project / Factory	Taoyuan Factory	Hsinchu Factory	Lukang Factory	Lukang Flat Glass Factory	Changpin Factory
Recycled Amount(M <sup>3</sup> )	99,620	452,433	139,240	12,231,333	60,117
Recycle Rate(%)	20.5%	76.10%	21.6%	99.5%	53.34%

Notes: 1. Processing capacity: the amount of waste water flowing to the recycling system.

2. Recycled Amount: the amount of water used after processed in the recycling system.

3. Recycle Rate: (Recycled amount  $\div$  processing capacity)  $\times$  100%.

4. The Taichung Factory does not have a flow meter and therefore unable to provide related numbers.

## Water Conservation Measures

For environmental protection, TGI continues to spare no effort to promote water conservation. In addition to improving facilities and equipment TGI also conducted outreach to staff to change their water consumption mindsets and improve water efficiency, reducing the cost of water and implementing proper use of water resources.

Factory	Wate	r-saving Measures
Taoyuan Factory	<ol> <li>All manufacturing machinery ar water recycling and waste water is water generated by the production was about 63.3% and the manufa sources in the surrounding environ</li> <li>Promotion of water conservation is</li> <li>Used recycled water instead of cle waste water plant.</li> </ol>	nd equipment have lower water consumption. A recycling system was established to recycle waste in process. Over four years the total recycling rate acturing process has not had an impact on water ment. In kitchens and foreign worker dormitories. It is an water to wash the sludge drying system in the sludge drying system sl



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Factory	Water-saving Measures					
Changpin Factory	1. The reusable water will be sent to the original water tank after the waste water being preceded. The reusable water will be filtered and softened and provided to be used in the manufacturing process again.					
	2. Condensed pour water flows into the irrigation tank and recirculating cooling water tank to reduce wastewater discharge.					
	3. Ball float valves were added in the sinks of the washing machines (P1), which can control water supply.					
	4. The 4 sinks are connected pipes that can reduce water overflows during manufacturing and increase water circulation to conserve water.					
	Reverse osmosis and     Washing machine     The 4 sinks are connected       electro-deionization     circulating water tank     with pipes					
	equipment					

# **4.3 Green Production**

## 2015 Pollution Control Management Approach

#### **%** The Importance of Pollution Control Management

Pollution and emission control is a corporate social responsibility and must comply with national laws and regulations. Effective controls should not only be a good indicator of a company's environmental protection cost, but also meet all the legal requirements. The stricter the requirements are for waste processing, the fewer companies will be qualified to process waste. That is why the price of waste processing is so high to the point where some companies simply cannot process all of their waste and meet the legal emission standards. TGI will continue to implement sustainable manufacturing technologies to protect the environment and will commit itself to reducing waste and waste water in the environment.

#### **Section Prevention Management Policy**

- 1. Compliance with government regulations related to environmental protection at all stages and other requirements.
- 2. Establish an environmental management system, with full participation from the staff, to fully implement environmental protection measures and inspect the results.
- 3. Through education and training, promote environmental protection and develop an emergency response capability.
- 4. Improve manufacturing efficiency and prevent pollution.
- 5. Enhance efficiency and recycling of various types of energy and resources.
- 6. Communicate with subcontractors and clients over environmental protection issues.

#### **Solution Prevention and Management Objectives**

Ensure compliance with emission regulations and standards at all stages. Reduce emissions and waste.

#### Note: Note:

- 1. Built high efficiency air pollution control equipment and sludge reduction equipment with an investment of NT\$7.8 million.
- 2. Set dedicated staff for air pollution control, waste and wastewater treatment and outsource regular testing to a company, ask people to call, do environmental monitoring.
- 3. Implement environmental management systems.
- 4. Establish a Utilities Section with dedicated staff.
- 5. Investment NT\$8 million in water and RO concentrated water recycling project.

#### Solution Prevention Management System

External system: Air pollution emission standards, Trash Clearance Act, and waste water discharge standards.

Internal systems: ISO 14001 Environmental Management System.
#### 🗲 Green Production Strategy



#### **4.3.1 Air Pollution Control**

For air pollution prevention, TG starts with reducing the pollutants in the exhaust. Our priority is to comply with EPA' emissions standards and reduce pollutants emitted every year. TG follows the ISO 4001 management system and complies with air pollution prevention guidelines. We have departments in charge of periodically checking and maintaining our equipment. Should there be any control or emissions anomalies, these departments will respond by carrying out contingency plans. They will determine the cause of the anomalies and have them under control immediately to reduce the burden our manufacturing imposes on the environment.

Air pollutants from all TG factories in 2015 are listed in the figure below. Compared to 2014, our NOx emissions dropped by 4.46%, VOCs increased by 0.50%, particulate matter dropped by 9.52% but SOx increased by 1.91%.









# Flat Glass Air Pollutant Emissions Intensity





Unit: (kg/flat glass(ton))



Particulate matter 0.08 0.07 0.07 0.06 0.06 0.05 0.05 0.04 0.03 0.02 0.01 0.00 2013 2014 2015



#### Container, Tableware & Kitchenware Air Pollutant Emissions Intensity

Unit: (kg/container, tableware & kitchenware(ton))

# **4.3.2 Water Pollution Prevention**

In 2015, TG factories discharged a total of 1,103,488 tons of waste water, 20.17% lower than 2014. All detected values of discharged waste water by TG factories in 2015 complied with their respective local discharge standards.

2013		Taoyuan Factory	Hsinchu Factory	Taichung Factory	Taichung Processing Factory	Lukang Factory	Changpin Factory
Waste Water (Ton)		559,404	401,052	79,145	70,759	294,048	41,017
Detected COD(mg/1	COD(mg/l)	213	32	20	4	188	ND
Values	SS(mg/1)	19	8	9	4	32	5
Discharge Standards	COD(mg/l)	<700	<100	<600	<600	<800	<800
	SS(mg/l)	<600	<50	<400	<400	<500	<500



2014		Taoyuan Factory	Hsinchu Factory	Taichung Factory	Taichung Processing Factory	Lukang Factory	Changpin Factory
Waste Water (Ton)		455,592	437,875	74,002	66,051	291,204	57,563
Detected	COD(mg/l)	188	58	41	29	45	20
Values	SS(mg/1)	25	12	37	3	20	7
Discharge Standards	COD(mg/l)	<700	<100	<600	<600	<800	<800
	SS(mg/1)	<600	<50	<400	<400	<500	<500



	2015	Taoyuan Factory	Hsinchu Factory	Taichung Factory	Taichung Processing Factory	Lukang Factory	Changpin Factory
Waste	Water (Ton)	386,733	295,994	71,550	7,891	302,089	39,231
Detected	COD(mg/l)	267	35	14	ND	46	24
Values	SS(mg/l)	19	16	6	7	23	4
Discharge C Standards	COD(mg/l)	<700	<100	<600	<600	<640	<800
	SS(mg/l)	<600	<50	<400	<400	<400	<500



#### Waste Water Processing at Each TG Factory

For water pollution prevention, TG first reduces pollutants from manufacturing that go into wastewater. The wastewater discharged will first go through treatment equipment that filters out the pollutants and helps the wastewater meet the influent standard. Below are the factories and their waste water treatment.

- Taoyuan Factory: For water pollution prevention, this factory starts with decreasing the pollutants from manufacturing entering wastewater. Next, part of the wastewater from manufacturing is recycled to the exhaust system to reduce total wastewater. Wastewater from manufacturing and domestic wastewater will go through treatment and be discharged to the wastewater treatment facility in the industrial park with water quality in line with the influent standard by Guanyin Industrial Park Service Center.
- Hsinchu Factory: For water pollution prevention, this plant has a recycle/process system for wastewater from manufacturing and a discharge/treatment system for domestic wastewater. For wastewater from manufacturing, the system mainly removes

the COD, SS and oil from the wastewater to that it can meet the recycling requirements for Gob Chute cooling water. For domestic wastewater, the system processes the wastewater in line with the legal standard to be discharged into surface water.

- Taichung Factory: The Taichung factory includes a processing plant. Two sources of wastewater were examined and therefore there are sets of numbers. For water pollution prevention, Taichung Factory (includes the manufacturing plant, processing plant and flat glass plant) first reduces pollutants from manufacturing that go into wastewater. The wastewater and domestic wastewater discharged will first go through treatment equipment that filters out the pollutants and helps the wastewater and domestic wastewater meet the influent standard before flowing to the Taichung Harbor Specific District Water Recycling Center. The processing plant also has a UF wastewater recycling system, which is estimated to recycle up to 21,000 tons of waste water into the manufacturing process.
- Lukang Factory: Since the Chunghua Coastal Industrial Park Service Center has tightened up its influent standard, Lukang Factory starts with decreasing the pollutants from manufacturing entering wastewater. Wastewater from manufacturing and domestic wastewater will go through treatment and be discharged to the wastewater treatment facility in the Changhua Costal Industrial Park with water quality in line with the influent standard by Changhua Coastal Industrial Park Service Center. In 2015, Lukang Factory implemented the EMS-15-011 management project (recycling water discharged from the O2 water cooling system), which can reduce 210 tons of wastewater per month. The "Water and RO Concentrated Water Recycling" project is estimated to conserve 24,000 tons of water per month.

Lukang Flat Glass Factory: This plant commissions the Lukang Factory to handle its wastewater processing.

Changpin Factory: Since the Chunghua Coastal Industrial Park Service Center has tightened up its influent standard, Changpin Factory has been discharging its waste water in compliance with the Changhua Coast Industrial Park Waste Water Processing Standard and always uses tractor shovels when handling waste glass. This plant starts with decreasing the pollutants from manufacturing entering wastewater. Wastewater from manufacturing and domestic wastewater will go through treatment and be discharged to the wastewater treatment facility in the Changhua Costal Industrial Park with water quality in line with the influent standard by Changhua Coastal Industrial Park Service Center. Changhua Coastal Industrial Park has tightened up its waste water sewage system influent water quality standard and the effluent water quality standards became 80% more strict starting on January 1, 2016: BOD (biological oxygen demand) went from 500mg/1 to 400mg/1; COD (chemical oxygen demand) went from 800mg/1 to 640mg/1; SS (suspended solids) went from 500mg/1 to 400mg/1, which are all in line with the legal standards for wastewater discharge.

		ry Unit: Ton			
Year	2013	2014	2015	Treatment	Taoyuan Factory reduces waste by lowering the rejection rate during manufacturing
Waste	194	202	195	Incineration	and recycling reusable waste. The waste is approximately 10,000 tons a year and
Waste Silk	5,266	7,347	5,925	Buried	mainly contains waste silk, sludge, waste, waste pallets and unwound varn. Burial.
Waste Pallet	73	80	47		physical treatment, incineration and recycling are the main methods the recycle
Unwound Yarns	1,636	2,156	5,782	Recycled	companies commissioned use to treat the waste from this factory. On average, 1,733 tons of waste pallets and unwound yard
Sludge	618	848	1,438	Physical treatment	are recycled every year. The recycle rate in 2014 (20% on average) is similar to that in 2013. Taoyuan Factory will continue to manage its waste.
Total	7,787	10,633	13,387		

#### 4.3.3 Waste Management and Recycle

		Unit: Ton			
Year	2013	2014	2015	Treatment	
Waste Plastic	173	173	168		Waste from the Hsinchu Factory
Waste Rubber Mixture	1	1	1	1     Recycled or dominant       1     incinerated as       308     con	domestic waste and mixtures such as waste plastic, waste rubber and
Domestic Waste	277	279	308		waste glass. Certified cleaning companies are commissioned to
Waste Glass Mixture	605	200	324	Buried	collect and transport these waste to the incinerators and landfills of Environmental Protection Bureau
Sludge	647	818	615		of Hsinchu City. Sludge from
Waste Paper	524	762	734	Recycled	wastewater treatment is recycled by qualified cleaning companies.
Scrap Iron	1,077	292	880		

Year	2013	2014	2015	Treatment	Recyclable waste including waste
Waste Wood	172	124	167		paper, scrap iron and waste plastic is recycled by certified recycling
Waste Aluminum Caps	603	575	536	Recycled	companies. Hsinchu Factory will continue to ask all departments to sort and recycle the waste in order to reduce the total waste.
Total	4,079	3,224	3,733		

			Taichu	ng Factory	
Year	2013	2014	2015	Treatment	Taichu
Waste Plastic	13	18	14		qualifi collect
Waste Paper	15	21	16	Incineration	waste nature
Waste Fiber	21	29	23	memeration	(1)Tł
Domestic Waste	79	113	86		pa
Waste Glass	633	447	729	Buried (non- recyclable)	fil
Waste Wood	0	30	4	As fuel	(2)D re
Inorganic Sludge	68	71	67	Heat Treatment	wa wi
Human Waste	100	84	88	Biological treatment	Waste
Wate Fire Bricks	1,098	80	19		flamm
Civil Engineering Waste	179	5	0	Recycled	wood; glass human produc report related compa the fac waste. glass.
Total	2,206	898	1,046		

Unit: Ton

Caichung Factory commissions pualified cleaning companies to collect and recycle its waste. The waste is categorized based on its nature:

- (1)The Factory Affairs Section will sell waste including waste paper, waste metal, waste PVB films and waste oil with marked prices.
- 2)Domestic waste reduction and recycling measures: Promote waste reduction and recycling with clear labels (waste plastic, waste lamp and cans).

Waste from Taichung Factory ncludes flammable and nonlammable waste (waste glass and dudge), recyclable waste (waste wood; recycled glass from flat glass factory), copper sludge and numan waste. All production lines produce aforementioned waste and report the waste complying with related regulations. External recycle companies are commissioned by he factory to collect and handle the waste. Most of the waste is waste glass.

		Unit: Ton			
Year	2013	2014	2015	Treatment	
Domestic Waste	181	186	70	Incineration	
Sludge	1,307	1,296	906	Buried	To protect the environment and conserve energy, Lukang Factory
Waste Fiber Glass	2,189	2,175	2,484	recycles its business was a dedicated department r	recycles its business waste and has a dedicated department response for
Waste Oil Mixture	12	2	13	Reuse	recycling valuable resources in the waste.
Waste Glass	526	479	279	Physical treatment	
Total	4,215	4,138	3,752		

Lukang Flat Glass Factory Unit: 7											
Year	2013	2014	2015	Treatment	To protect the environment and						
Domestic Waste	24	16	8	Incineration	conserve energy, Lukang Flat Glass						
Waste Oil Mixture	0	2	0	Reuse	and has a dedicated department						
Waste Glass	-	-	297	Physical treatment	response for recycling valuable resources in the waste.						
Total	24	18	305								

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		I were	<u> </u>

Year	2013	2014	2015	Treatment	Changpin Factory checks waste sorting
Domestic Waste	116	114	102	Incineration	from all departments. Departments that do not meet the standards will receive a warning and be asked to improve the waste
Sludge	20	30	21	Heat Treatment	sorting immediately. This will help the factory reduce waste. Changpin Factory tries to find recycle companies that can
Waste Glass	1,491	1,985	1,218	Physical treatment	recycle the waste (after solidification or heat treatment if necessary) so that the waste can become resources for the company.
Total	1,627	2,129	1,341		

# 4.4 Compliance with Environmental **Regulations**

#### 2015 Environmental Compliance Management Guidelines

#### **%** The Importance of Compliance with Environmental Regulations

Follow the relevant national environmental regulations to avoid fines, reduce the impact on the environment and establish a good corporate image.

#### Solicy on Compliance with Environmental Regulations

Apart from compliance with the relevant laws and regulations, safety, environmental protection and quality remain TG's top objectives.

#### Solution Compliance with Environmental Regulations

Providing green, safe and high-quality products that minimize the impact on the environment. Comply with the government's environment-related laws and regulations with safety, environmental protection and quality as the goals. Adopt standard operating procedures to avoid being fined.

#### **Wanagement Resources for Compliance with Environmental Regulations**

- 1. Implement environmental management systems and monitor expenses.
- 2. Establish an "Industrial Safety" department which is responsible for occupational safety, environmental protection and fire protection.
- 3. Upgrade equipment to implement environmental management systems.

#### **Wanagement of Compliance with Environmental Regulations**

External System: environmental regulations

Internal system:

- 1. Implement ISO 14001 Environmental Management System
- 2. Implement of occupational health and safety management plan

Taiwan Glass has Legal Department and Audit Department to ensure that all units' operations comply with environmental, labor safety, product and any related regulations and Labor Standards Act. We offer education and training to help and ensure that each employee understand related rules and regulations. TG believes in honesty and hard work and always complies with governmental regulations. Under the "environmental protection and occupational safety first" principle, TG pursues the objective of "zero pollution and occupational hazards" by

complying with the government's environmental protection policies while ensuring occupational safety to fully fulfill the company's corporate social responsibilities. No major leakages occurred at any TG facilities in 2015 and there was no complaint about environmental impacts. Any violations were dealt with immediately. Compliance with environmental regulations at TG plants is listed in the table below:

Plant	Violations	Fine (NTD)
Taoyuan	Particulate pollutants from CR-2, before entering the tube, were leaked from the seams and eaves of the plant and not collected effectively in a close environment, which is a violation of the operating license.	100,000
Hsinchu	None	
Taichung	Operated withoout a stationary pollution source operating permit.	100,000
Lukang	None	
Lukang Flat Glass	None	
Changpin	None	

Note: "Major leak" refers to any leak with a fine of more than NT\$1 million and required to be reported to TWSE.

#### Taoyuan Factory Violation Details

In April 2015 the EPA conducted an inspection and discovered that the pollutants from CR-2, before entering the tube, were leaked from the seams and eaves of the plant and not collected effectively in a close environment, which is a violation of the operating license. This was a violation of Article 24 of Air Pollution Control Act with a fine of NT\$100,000.

#### **Response Strategy:**

- 1. Repair the cracks in the plant's eaves to prevent leakage.
- 2.Add another suction motor at the extractor hood to suck in more smoke into the blowdown stack.
- 3.Use glass fabric to shield the oven from the crack in the eaves and install a metal board to isolate the oven for effective collection of the pollutants.
- 4.All the measures were completed before May 24 of the same year.

#### • Taichung Factory Violation Details:

In 2015, EPA conducted an inspection at flat glass plant 3 at Taichung Factory and discovered unauthorized operations without a stationary pollution source operating permit, a violation of the Air Pollution Control Act with a fine of NT\$100,000.

#### Response Strategy:

The factory applied for and obtained a stationary pollution source operating permit. All operations are in compliance with the regulations now.

# 5.Harmonious Employer/Employee **Relations Create a Win-Win Situation**

- Best Workplace

99.9% of TG's supervisors are Taiwanese, creating many job opportunities for the local community and taking care of the locals.

**Con average, TG has 73 employees with disabilities,** 23.73% higher than 2014.

899.9%

**10.46**% / In 2015, TG employed 402 new employees with a new recruitment rate of 10.46%.



In 2015, 58 employees retired with an average of 25 years of service with the company. Senior supervisors were presented with medals from the chairman/president as a token of appreciation for their service over the years.

**4,188** people A total of 4,188 people received a health check-up in 2015.

# **5.1 Employee Relations**

#### Employee Relationship Management Policy in 2015

#### **%** The Importance of Employee Relations

In this era of labor rights awareness, TG believes that employees are the most important company asset, indispensable for the company's continuous growth and development. Therefore, handling and maintaining a good working relationship between staff and the company is a key to the sustainable business development. Harmonious labor relations are essential to enhance the competitiveness of the company and a key factor in its success.

#### Employee Relations Policy

- 1. Ad hoc assessments of the overall trends in the economic environment, reasonable adjustment of staff salaries, and working together to create a win-win situation for both the employer and the employees.
- 2. Build a smooth process for staff and management to promote a good working atmosphere and achieve the goal of a pleasant working environment.

#### Solution Objectives of Employee-Employer Relations

- 1. Continue to recruit excellent new talents.
- 2. Create a harmonious working atmosphere.
- 3. Build a competitive workforce with great team spirit.

#### Resources of Employee Relations

Introduce an e-HR human resources system to provide more timely and efficient service.

#### **Employee Relationship Management System**

External system: 1. Labor Standards Act.

- 2. Act of Gender Equality in Employment.
- 3. Occupational Safety and Health Act.

Internal system: 1. ISO 9001 quality management system.

- 2. Quarterly worker-employer meetings.
- 3. Quarterly occupational safety and health committee meetings.
- 4. An internal complaint system (including advice / unlawful

incidents / sexual harassment / workplace violence, etc.).

Taiwan Glass treats employees as the company's most valuable assets therefore we want to build the best working environment that helps our employees grow. We also believe in taking good care of our employees and have established various communication channels within the company. Multiple employee relation projects help build a workplace that allows our staff to enjoy working and enjoy living. Labor rights are also the company's top priority. In addition to compliance with various labor-related regulations, TG implements humanized management. Taiwan Glass has a comprehensive system in talent development and employee benefits, providing our staff a fair and reasonable salary based on their position and personal experience. When determining an employee's salary, TG reviews that employee's education level, experience, expertise, skills, number of years of service in the industry and the average salary in the industry. Taiwan Glass provides a starting salary that is higher than the legal minimum wage in the areas where TG operates. Our compensations and benefits are also better than our competitors. Gender, race, religion, political affiliation, marital status or union/social club membership will not affect an employee's basic salary. All management systems and rules were formulated with compliance with Labor Standards Act and other regulations. Various levels of managers provide assistance to employees inside and outside the company. At Taiwan Glass, we are just like one big family.

#### **5.1.1Human Resources Structure**

By the end of 2015, Taiwan Glass has employed 1,189 local supervisors. Among them, only one is a foreigner and the rest (99.9%) are all ROC nationals. This shows that TG has created many job opportunities for the local people. All the employees are salaried workers, no contracted employees, making a stable and healthy workforce. Our employees are located in various locations in northern, central and southern Taiwan. They are all either fixed-term or non fixed-term contracted workers. The employee structure is listed below:

Employee Gender Structure								
Item		Male		Fen	nale	Total		
	Category	Number	Percentage (%)	Number	Percentage (%)	Number	Percentage (%)	
Nationality	Taiwanese Employees	3,309	76.26%	535	12.33%	3,844	88.59%	
	Foreign Blue Collar Employees	464	10.69%	31	0.71%	495	11.41%	
	Sub-total	3,773	86.96%	566	13.04%	4,339	100.00%	



Employee Age Structure								
Item	Category	Μ	ale	Fen	nale	Total		
		Number	Percentage (%)	Number	Percentage (%)	Number	Percentage (%)	
	Under 30	809	21.05%	148	3.85%	957	24.90%	
	31~40	1,432	37.25%	248	6.45%	1,680	43.70%	
Age	41~50	738	19.20%	129	3.36%	867	22.56%	
	51 or older	330	8.58%	10	0.26%	340	8.84%	
	Sub-total	3,309	86.08%	535	13.92%	3,844	100.00%	

\*Foreign blue collar workers not included





Employee Seniority Structure								
Item		Ma	ale	Fen	nale	Total		
	Category	Number	Percentage (%)	Number Percentage (%)		Number	Percentage (%)	
	Under 5 years	1,209	31.45%	198	5.15%	1,407	36.60%	
	6~15 years	1,160	30.18%	177	4.60%	1,337	34.78%	
Seniority	16~25 years	662	17.22%	149	3.88%	811	21.10%	
	26 years or above	278	7.23%	11	0.29%	289	7.52%	
	Sub-total	3,309	86.08%	535	13.92%	3,844	100.00%	

\*Foreign blue collar workers not included



# Seniority Distribution Ratio of Employees

	Employee Education Level Structure								
Item		Male		Fen	nale	Total			
	Category	Number	Percentage (%)	Number	Percentage (%)	Number	Percentage (%)		
Education	Master or higher	130	3.38%	6	0.16%	136	3.54%		
	College	1,991	51.80%	342	8.90%	2,333	60.69%		
	High school or below	1,188	30.91%	187	4.86%	1,375	35.77%		
	Total	3,309	86.08%	535	13.92%	3,844	100.00%		

\*Foreign blue collar workers not included





Salaried/Contract Employees								
Item	Category	M	ale	Fen	nale	Total		
		Number	Percentage (%)	Number	Percentage (%)	Number	Percentage (%)	
	Salaried Employees	3,252	84.60%	523	13.61%	3,775	98.20%	
Туре	Contract Employees	57	1.48%	12	0.31%	69	1.80%	
	Total	3,309	86.08%	535	13.92%	3,844	100.00%	

\*Foreign blue collar workers not included



Management Structure							
Nature of work	Gender	Number	Total	Ratio	Total Percentage		
Conoral staff	Male	2,678	2 1 / 2	61.72%	72.41%		
General stan	Female	464	5,142	10.69%			
Supervisors	Male	994	1 097	22.91%	25 05%		
	Female	93	1,007	2.14%	25.0570		
Managara	Male	88	07	2.03%	2.24%		
Managers	Female	9	91	0.21%			
Everytives	Male	13	12	0.30%	0.30%		
Executives	Female	0	15	0.00%			
total		4,3	339	100%			

#### Recruitment

Taiwan Glass complies with laws and regulations of Labor Standards Act to safeguard our employees'human rights and privacy and keeps them from being discriminated against. Our recruitment process is fair, just and honest. All recruitment, employee selection and employment comply with the government's rules and regulations. No employee is discriminated against (including compensation discrimination) based on his/her race, social status, language, thought, religion, political party, place of origin, birthplace, gender, sexual orientation, age, marital status, appearance, facial features, disability, or past membership in any labor union. TG offers compensation better than other companies in the same industry. An employee's compensation is determined based on the education level, job responsibilities, position rank, experience and professional background. A new recruit's outfit, demeanor, mental situation, reaction and logic during the interview will also be factored in.

In 2015, the flat glass produced by the Taichung Factory went to Taiwan Mirror Glass Enterprise, a company who took orders from IKEA and therefore must comly with IKEA's requirements for human rights. Taiwan Glass, as a supplier for the processed glass products of Glass Mirror Glass Enterprise, was a part of the supply chain and therefore was required to release a statement stating that TG does not hire any child labors and is in compliance with related regulations.

IWAY 執行標準 Taiwan Mirror Glass Enterprise Co., Ltd. No. 49 HAMOU SIC CHADILON RE, PANTLAN SILANG SECLENCE HUDESH Tel : 885-4-8891237 Fax : 886-4-8891232 E-8611 : taggitag. REAL BL. BB. DB. Joury 10,007 Representative Axian Datag B1-2 BLUR. Appr 21,200 IKEA 是明書 ацерина, валадае - Вангаеве англа ва - Бангаеве социна Намилла социна - Коран согла - Т 1. IWAY & Жартура 宜家禁止雇用煮工准则 定某集团公司(宣軍) 承认重工规委领卖存在于沙求国家这一事实,然后, 宣家送 高景工, 希家斯希特情的上便完成工, 重工利题的复杂过希爱特性的主题努力者 最获得广泛而持久的遗步, 人所达到我们的首称, 确保没有计何官官产品是希望工 Z IKEA 禁止產用重工率則第三版(中文版) 2. 我们就是不是这些,这些要是她来说是希望的。这些我们就是我们的情况,只是我们们的事实却不完成。 11、不是这些这些这些这些可能的意思。」并且也是我们就是你这些事件。我们就是你这些事情。如此是你们的事情。 我们就是你们的事情。」在我们就是你们的事情。你就是你的你们就是你们的。我们就是你们的事情。」如果你们的事情。」如果你们的事情。我们就是你们的你们的。你们就是你们的你们的。你们就是你们的你们的。你们就是你们的你们的。你们就你们们们就是你们的你们。" 本公司管顾意遵守二份文件各項规定 NARAMANIALINGUNAL RENISSIONANI - DEGENINANI - DEGENINGUNALIR RENESSIONANI - DEGENINGUNA 这份关于整工的行为承担。 也是《宣家家共用品采购集组》 (BWAY) 的一个部分。 AR 1.2.1011.00年4月,年期間に満地に対応した。 人気がないたかを見たました。 不見ためためからればい、気化などの目的の使用の適当、からの物理をされてあいた の思想を見たき。 不良がなりため。 不良がなりため。 白明彩企業股份有限公司 Taiwan Mirror Glass Enterprise Co., Ltd. 工艺文件包含以1400 节调电影 (人里我书公约) 。 (北京整山東房重工完会) 以上 这个约约款下基因为基础。 第3 名,"大人及约一切讨论,我应认人我的进入并能力在重考虑。" 第323 名,"大业教作之时分子,以及它达得到的承认审问起的考试即将人里来算 两句书 几度重要点件。心思,确实 建碳化合义是因为了方。" 1.3 NRM TAPOTREZENSINGELEDINGENDAG, TRADUCTIONEN VICTORESENSINGELEDINGENDAGE, TRADUCTIONEN 第27日の72 かたしい日本のでありる・単金の学校のもある一日の大学校内たちたが構成・目台大型金代札( の、男が日本のかの) 立書人:我發仁 工客人: 报 報 仁 地址: 白无节南京主局三段 261 號 10 後 紙一編發: 11914002 AT市工程展展的175、40年、展示、在集局已至20月15-2 点件、设计力增加运营于回路可目前的(他生工有年的1930)。(第138号公约 1975年),最优点计、大量型估计和中的工艺的注意)。从来当然结构现在 的现在现在又是有自然定量是不能说是,则以我是这些举为地。然后,对于 一件下的的发明(常年、其用书品)把你说的是是这些学的力化。然后,却不 2.5493 812417 #2212.84034118(67)677787587528 · @16 : 02-2713-0333W1215 我们为他利益相合了回导党工程间的《关于进枪集参与形式集工公约》(第182 9 公约,1999年)。 100801888 AIIGHN 2. 快行 文庫所有用先車工的目電用的加速分子 中午 大学 大学 大学 文字事之所有的 前次自業可用合成 (人業代報)(1) 网络中国市 中市市下市 国家市政市政 用品 通用祭款 **今華氏語 164 年 09 月 23 Ⅱ** 用合語 1년 1999년 1월 1992년 1월 1992년 1월 1993년 1월 1월 1993년 1월

There are no risks of forced or compulsory labor in any operations of the company. The relevant labor conditions are in compliance with the Labor Standards Act. Please refer to the following table. In 2015, there were no complaints concerning the use of child labor or major labor-related issues.

Plant	Date of Inspection	Number of Times	Violation Details	Follow-up Action Plans
Hsinchu	2015-06-09 2015-12-02	2	No external human rights review or impact assessment	
Taichung	2015-01-30 2015-05-14	2	The extension of working hours exceeds the statutory limit and no day off for every seven days worked. Penalty: \$ 40,000	Send documents to various units in the company, asking for better compliance with laws and regulation
Lukang	2015-04-09 2015-06-25 2015-08-26 2015-12-10	4	Improper workload with a fine of NT\$30,000	In October 2015, TG filed an administrative lawsuit to the Taipei High Administrative Court. The proceedings are still in progress.
Lukang Flat Glass	2015-02-15 2015-04-20 2015-08-26 2015-09-23	4	No external human rights review or impact assessment	

Plant	Date of Inspection	Number of Times	Violation Details	Follow-up Action Plans
Changpin	2015-07-21	1	Violation of Item 2, Article 32of the Labor Standards Act with a fine of NT\$120,000.	<ol> <li>Increase manpower.</li> <li>Adjust the shifts.</li> <li>Cross-unit manpower support</li> </ol>

Note: Taoyuan plant and head office have not been inspected and therefore no violation records.

#### Staff Turnover Rate and Resignation Rate

In 2015, 416 employees resigned from Taiwan Glass with a resignation rate of 10.82%, similar to that of 2014. In the last three years, Taiwan Glass has had a resignation rate below 15% annually. The company pursues the most optimal rather than the lowest resignation rate to ensure that new employees have a chance to work at TG and the company has a healthy turnover rate. Taiwan Glass hired 402 new employees with a new recruitment rate of 10.46%. This practice will also boost local employment opportunities.

2015 Region Resignation	2015	Ge	nder	Age								
	Resignation			Male				Female				
	Rate	Male	Female	Under 30	31~40	41~50	51 or Older	Under 30	31~40	41~50	51 or Older	
Northern Region	200	172	28	95	70	6	1	21	6	1	0	
Central Region	216	193	23	105	82	3	3	13	9	0	1	
total	416	365	51	200	152	9	4	34	15	1	1	

New	New	Ger	nder	Age							
Region	Recruits in			Male				Female			
	2015	Male	Female	Under 30	31~40	41~50	51 or Older	Under 30	31~40	41~50	51 or Older
Northern Region	187	141	46	93	36	9	3	34	10	2	0
Central Region	215	200	15	124	71	3	2	13	2	0	0
total	402	341	61	217	107	12	5	47	12	2	0

Note: 1. The number of new employees and those who left the company does not include those who applied for a leave without pay, those retired and those transferred from other plants.

2. Northern Region includes the Head Office, Taoyuan Factory and Hsinchu Factory; Central Region includes Taichung Factory, Lukang Factory, Lukang Factory, Lukang Factory, and Changpin Factory.

#### A Diverse and Friendly Working Environment

Taiwan Glass complies with the law regarding Employment Quota Policy with disabilities. Being in the traditional manufacturing industry, TG is still dedicated to creating a stable, friendly and positive work environment for the employees with disabilities. As the end of 2015, Taiwan Glass on average has 73 employees with disabilities monthly, 23.73% higher than 2014 and 69.77% higher than the legal minimum. In the future, we will continue to create quality job opportunities and work environment for employees with disabilities. In addition, TG had 30 aboriginal employees in 2015, a testament of our diversified workforce. There was no event against aboriginal employees'human right in 2015.

#### 5.1.2 Employee Benefits

#### Special Report -A Blessing to Our Employee

News Story: Formosa Fun Coast Dust explosion event

June 27th, 2015, there was an explosion at a poolside party at the Formosa Fun Coast. The party was "Color Play Asia" party organized by Color Play Asia and RBC International Integrated Marketing Co., Ltd. The color powder, made of corn starch and food dye, exploded during the party, resulting in a total of 15 casualties and 484 injuries. Due to this incident, Formosa Fun Coast closed on June 28 of the same year. On the very same day, Premiere Mao Chi-Kuo banned the use of colored powders in any events.

Taiwan Glass' Response:

Wang, a section chief at Taiwan Glass, is the father of a victim in the incident. His daughter suffered from second to third degree burn with a burn percentage of 34%. Wang was the only one taking care of his daughter when she was in the ICU. Seeing Wang trying to keep up with work and the heavy burden of taking care of his daughter, our chairman specifically requested that the company provides full support to Wang, giving him unlimited paid leave until his child recovered and returned home. Thankfully, after a full treatment, Wang's daughter was discharged on July 27 of the same year. She's been making great progress recovering from the injury at home.

#### Feedback - Thank you letter:

"I would like to thank the chairman for understanding what I was going through as a father. Right after the explosion happened, I received a call from the HR department relaying chairman's message to me and asking if I needed any help. This gave me support and comfort when I needed them the most."

Section Chief Wang, 25 years with Taiwan Glass

#### 📂 Fair Performance Management System

The company believes that our staff is the most valuable asset and therefore provides compensations better than legal minimum wages. We assess our employees based on their education level, experience, expertise, seniority and performances. Gender, race, religion, political affiliation, marital status and membership in unions/social clubs will not affect our employee assessments. With the exception of foreign blue collar workers and local workers still on probation, all Taiwan Glass employees receive regular performance assessment mainly based on their job performances. Their work efficiency and sense of responsibility are also evaluated. Each employee receives a different bonus based on the company's overall performance and his/her performance and contribution to the company. Taiwan Glass pays great attention to employee compensation and benefits.

#### Union and the Benefits Committee

#### • Union

Taiwan Glass' labor management measures are all in compliance with governmental regulations, including Labor Standards Act, Act of Gender Equality in Employment, Occupational Safety and Health Act and Labor Insurance Act. To maintain an open communication channel between the company and the employees, Taiwan Glass established labor union, which holds meetings with directors, supervisors and members regularly. Taiwan Glass' related personnel also attend such meetings to respond all the suggestions for improvement proposed during the meetings. Issues such as employee health and safety are also discussed during the meetings. The labor union holds meeting every 3 months and member representative meetings every year. Representatives are selected with majority vote. The union holds meetings regularly to discuss employee related affairs such as employee dining in the factories, group casualty insurance, travel and year-end feasts. There is also an online suggestion box, bulletin board and phone number, which the employees can take advantage of to express their opinions. This allows the company to respond and deal with issues in a timely manner. Since some factories do not have unions in them, a total of 1,577 employees are union members, accounting for about 35.85% of the entire company staff.

	Union Participation							
Plant	Hsinchu	Taichung	Lukang					
Male	857	474	Not Available					
Female	72	35	Not Available					
Total	929	509	139					
Ratio	100%	79.9%	14.6%					

NOTE:

1. The number of employees in Hsinchu Factory does not include that of foreign workers, and all the employees are union members in Hsinchu Factory.

2.No union was established in Taoyuan Factory, Lukang Flat Glass Factory and Changpin Factory.



Representative Meeting



Employees' Online Suggestion Box and Bulletin Boards

#### Benefit Committee

To provide adequate support to employees and ensure their living conditions, Taiwan Glass provides or sponsors the promotion of relevant welfare programs in addition to providing basic protection according to the law and organizes the staff benefit committees to take charge (planning and implementing) of the benefit measures of all colleagues. The current welfare measures are as follows:

	Employee Benefit and Welfare Measures
Benefit Measures	Company annual trip, cash incentives for birthday, wedding , funeral, mid- autumn festival, dragon boat festival and Chinese New Year and social club activity subsidies.
Company Measures	Factories have dormitories and cafeterias, providing affordable, safe and convenient room and board for our employees.
Meal Allowances	Encourage employees to participate in company meal plans with 50% subsidy.
Excellent Insurance	TG provides our employees the best care and protection. In addition to labor insurance and health insurance, TG has taken out a group insurance policy for our staff to give them even better protection and coverage.
Staff Health Management	<ul> <li>Regularly carry out employee health checks, covering general health checks, special health checks and other items.</li> <li>Follow up for employees with abnormal health check results</li> </ul>
Comprehensive Employee Care	<ul> <li>Shall any family member of our employees requires personal care by our employee due to mishaps, our employee can apply and take a 2 year leave without salary after the company approves.</li> <li>Employee's family members can pay and take out the same company group casualty insurance as TG employees.</li> <li>Employee family care consultation service (employee care program).</li> </ul>

	Employee Benefit and Welfare Measures
Retirement & Pension	Taiwan Glass has its own employee retirement program. We also provide comprehensive pension to families of our employees who suffer from injuries or even loss of life on duty.
Further Education and Training	To help our employees learn new skills or when company business requires, Taiwan Glass selects and sends our hard-working employees to other countries to observe and study, on internship or receive training. The company also holds lectures, on-job trainings or commissions professional training institutions to help our staff grown and enhance their professional skills.
Scholarship for Employee's Children	Taiwan Glass awards scholarships to all employee's children every year, to encourage their academic excellence and stimulate their motivation to study.





Employee activities of the Head Office



Hiking Club – Trip to Zion Mountain



Badminton club activity of Taichung Factory



Trip for foreign labors - Trip to Leofoo Village



I Runner Jogging Club

#### 🝃 Parental Leave

42 TG employees took a parental leave in 2015, 16 more than 2014 and 80.95% of them were reinstated. Among those, female workers accounted for 42.86% and male workers accounted for 57.14%. TG believes in a balance between family and work and there will not be differential treatment based on gender when it come s to applying for a parental leave. In 2015, on average 83.33% of female workers and 79.17% of male workers are reinstated after a parental leave.

Reinstatement after Parental	Male		Fer	nale	Total	
Leave (2015)	Number	Percentage	Number	Percentage	Number	Percentage
A. Number of workers scheduled for reinstatement (=B+C)	24	57.14%	18	42.86%	42	100.00%
B. Number of reinstated workers	19	45.24%	15	35.71%	34	80.95%
C. Number of workers that resigned after parental leave	5	11.90%	3	7.14%	8	19.05%
Reinstatement Rate (B/A)%	79.17%		83.33%		80.95%	

Between 2014 to 2015, 18 employees were reinstated after a parental leave in 2014. For the 12 among them, 2015 marked 1 year since their reinstatement at TG with an average retention rate of 66.67%. The retention rate for female workers is 60% and 75% for male workers.

Reinstatement after Parental	Male		Fe	male	Total	
Leave (2014-2015)	Number	Percentage	Number	Percentage	Number	Percentage
E. Number of reinstated workers after a parental leave in 2014	8	44.44%	10	55.56%	18	100.00%
F. Number of reinstated workers after a parental leave in 2014 with 2015 marking one year after their reinstatement	6	33.33%	6	33.33%	12	66.67%
Retention Rate (F/E %)	75.00%		60.00%		66.67%	

#### Retirement System

Taiwan Glass, based on Labor Standards Act and Labor Pension Act, has formulated a retirement policy. Employees that joined the company before June 30, 2005, will enjoy pensions calculated based on the old labor pension system. If an employee chooses the new pension system, he/she can enjoy the new system's seniority. Taiwan Glass appropriates the legal amount of pension to the labor pension reserve fund for employees with the old pension system. For those with the new pension system, the company appropriates their pension to their personal pension accounts. In addition to appropriating pension to the respective accounts regularly, Taiwan Glass has a professional accounting consultant that precisely calculates the pension to ensure that the company appropriates enough pension every month so that our employees can receive pension after retirement.

According to Labor Standards Act, a worker may apply for voluntary retirement when he/she attains the age of fifty-five and has worked for fifteen years, has worked for 25 years or above, or attains the age of sixty and has worked for ten years. In Taiwan Glass, our work rules state that any employee who attains the age of forty-nine and has worked for fifteen years or has worked for nineteen years may apply for early retirement with the company's approval. This rule is more favorable to employees than Labor Standards Act.

Taiwan Glass's retirement policy not only guarantees the employees their pensions in the future, but the clear rules regarding employee retirement can be implemented precisely and help our employees plan their retirement. In 2015, 58 employees retired, with an average of 25 years of service. Senior supervisors were presented with medals from the chairman/president as a token of appreciation for their service over the years.

#### Minimum Period of Advance Notice of Labor Contract Termination

Where Taiwan Glass terminates a labor contract pursuant to Article 11 or the provisions of Article 13, the provisions set forth below shall govern the minimum period of advance notice:

- 1. Where a worker has worked continuously for more than three months but less than one year, the notice shall be given ten days in advance.
- 2. Where a worker has worked continuously for more than one year but less than three years, the notice shall be given twenty days in advance.
- 3. Where a worker has worked continuously for more than three years, the notice shall be given thirty days in advance.

# **5.2 Staff Development**

#### 2015 Employee Education and Training Management Policy

#### **%** The Importance of Education and Training

To meet high market demand, the company should cultivate glass professionals with good education and training. In addition to assisting employees to enhance their functions, education and training can prevent the lack of skilled labors. Talented workforce is the locomotive of Taiwan Glass' sustainable development.

#### **Section and Training Policy**

Organize staff training programs regularly to meet the staff's self-growth needs and improve their technical and management performance.

#### Education and Training Objectives

- 1. Establish a job description for each position.
- 2. To plan the education and training system and increase the number of hours of primary and secondary education (24 hours / year) and staff education and training to 15 hours / person, with an increase rate of 8%.

#### **Education and Training Resources**

- 1. Establish a dedicated education and training center.
- 2. According to the demands of skills and techniques, plan suitable courses, lecturers, teaching methods and hours.
- 3. Make full use of government-related training resources and actively seek subsidies for training programs.

#### **Section and Training System**

External system: Taiwan Training Quality System (TTQS), led by the VTC of the Executive Yuan.

Internal system: 1. Training quality management manual.

2. ISO 9001 and ISO 14001

To develop professional talents, provide diverse learning opportunities and pass down the company's mission, vision and core values, Taiwan Glass has established a well-rounded staff training policy and procedure for the company's sustainability. The company provides staff orientations, common courses, professional courses, management courses, self-development courses and an array of diverse options. Each year Taiwan Glass plans training courses based on the company's strategy, needs of various departments and a survey on staff for their training needs. The orientation for new employees includes courses on human rights and related

regulations. Taiwan Glass provides training courses to develop talents, improve factory productivity, product quality and manufacturing efficiency. These courses, combined with continuous process improvements, will help this company reach sustainability.



In cooperation with Hsinchu General Union in the Multi-beneficiary Vocational Training Program in 2015,

we held three training courses (Subordinate Training Skills, Workplace English and AUTO CAD 2D) and had good results.

To implement the education and training, TG set up a dedicated manpower and teaching unit for the planning of education and training and the development of annual training plan. The professional curriculum planning, training and exercise programs all aim at developing the necessary glass-related technical and management talents. If a type of job requires competency in other skills (such as education, skills or license, experience, etc.), then the Factory Affairs Section will select and evaluate new recruits. If a new recruit does possess this type of skills, his/ her company record will reflect it. For example, the operation of overhead cranes and forklifts requires a professional license from a government registered external training institution. Education and training can also familiarize the employees with safety and health regulations and manufacturing techniques. This can boost the skill levels of the employees, product quality, environmental safety management and company's performance. As the result, the product quality can be consistent and stable and therefore meet our clients' needs.

In response to the needs of the future high-tech market, developing photovoltaic, energysaving, touch-responsive glass professionals to enhance competitiveness and avoid lack of skilled labors in Taiwan Glass. The company's good training and education can improve the competitiveness, such as: standardization of primary level employees' duties and enhancement of supervisors' management. Taiwan Glass also continues to promote the education of work safety and health, helping our staff develop great work habits. As our staff continues to improve, our working environment can be conducive to their continuous growth.

Taiwan Glass believes in improving the professional skills of the staff to enhance the quality of our manpower. Therefore the company provides employees with a variety of learning channels as below:

Edu	cation and Training System for Taiwan Glass Employees
New employee orientation and education	<ol> <li>Common courses (including corporate culture, history, system regulations, etc.)</li> <li>Professional courses (including professional document reading, factory internship, etc.)</li> </ol>
On-the-job education and training	<ol> <li>Annual education and training plan: All units and departments report the needs for the courses at the end of the year to determine the planning and schedules of the courses for the following year.</li> <li>Application for external training: Depending on the needs of each department, employees will be selected to participate in the external training to strengthen professional knowledge.</li> </ol>
Skill training	To cultivate talents with professional skills, staff with excellent performance will be selected to go abroad for observation, practice and training.



Orientation education and training at the Head Office



On-the-job education and training in the factory

2015 TG Staff Education & Training Statistics								
Employee	Facility	M	ale	Fen	nale	Total		
	Facility	Number	Hours	Number	Hours	Number	Hours	
	Headquarter	38.0	730.5	31.0	290.0	69.0	1,020.5	
	Taoyuan	530.0	11,018.0	98.0	2,037.0	628.0	13,055.0	
	Hsinchu	999.0	13,851.0	63.0	873.0	1,062.0	14,724.0	
	Taichung	595.0	7,873.0	38.0	387.0	633.0	8,260.0	
Salaried Employees	Lukang	762.0	8,993.0	186.0	2,170.0	948.0	11,163.0	
Limpleycee	Lukang Flat Glass	171.0	3,479.0	11.0	182.0	182.0	3,661.0	
	Changpin	421.0	7,452.0	31.0	465.0	452.0	7,917.0	
	Total	3,516.0	53,396.5	458.0	6,404.0	3,974.0	59,800.5	
	Average Hours		15.2		14.0		15.0	

In 2015, salaried and contract workers at TG received an average of 15 and 13.7 hours of staff education & training respectively.

Employee	The <b>s</b> <sup>11</sup> /s <sup>11</sup>	Male		Fen	nale	Total		
	Facility	Number	Hours	Number	Hours	Number	Hours	
	Headquarter	0.0	0.0	0.0	0.0	0.0	0.0	
Contract Employees	Taoyuan	0.0	0.0	0.0	0.0	0.0	0.0	
	Hsinchu	48.0	665.5	10.0	139.0	58.0	804.5	
	Taichung	4.0	47.0	0.0	0.0	4.0	47.0	
	Lukang	1.0	9.0	0.0	0.0	1.0	9.0	
	Lukang Flat Glass	0.0	0.0	0.0	0.0	0.0	0.0	
	Changpin	1.0	17.0	0.0	0.0	1.0	17.0	
	Total	54.0	738.5	10.0	139.0	64.0	877.5	
	Average Hours		13.7		13.9		13.7	

Note: Education and training items: Orientation, on-the-job training and off-the-job training

# 5.3 Staff Health and Workplace Safety Management

#### 2015 Occupational Health and Safety Policy

#### 🗞 The Importance of Occupational Health and Safety

Since the promulgation of the revised Occupational Safety and Health Act on July 3, 2013, the competent authorities have formulated relevant measures and standards to ensure the implementation of various safety and health protection plans. Only a good working environment can ensure the normal operation of the company, in addition to reducing the risk of accidents leading to delays in production and enhancing the company's image, which will attract more talented people.

#### The Importance of Occupational Health and Safety

Promote the workplace health, strengthen health management and create a working environment that is green, safe and clean.

#### Occupational Health and Safety Objectives

- 1. Reduce occupational disasters: Reduce Disabling Injury Frequency Rate (FR) and Disabling Severity Rate (SR) by 20%.
- 2. Implement risk assessment and disaster prevention management to avoid disasters and achieve the goal of zero occupational disasters.

#### Occupational Health and Safety Resources

- 1. Arrange medical personnel to manage employee's health, prevent occupational diseases and promote employees health.
- 2. Factory medical officers and safety and health management personnel should hold education and training sessions for the entire factory staff.

#### Soccupational Health and Safety System

#### External system:

Implement occupational safety and health management plans. Internal system:

- 1. Import ISO 9001 quality management system.
- 2. Import ISO 14001 environmental management system.
- 3. Import 7S management system.

#### **5.3.1 Employee Health Promotion**

#### Employee Physical Examination

Based on the relevant provisions of the Regulations of the Labor Health Protection", Taiwan Glass regularly arranges employees to receive physical examinations to provide a healthy and hygienic working environment for employees. The company has commissioned professional physicians to manage the employees' health on the basis of the physical examination results. 2,326 employees received general physical examinations and 1,862 received special physical examinations, a total of 4,188 in 2015.

Physical Examination Statistics									
	Special Physical Examination								
Facility / Item	High Temperature	Dust	Noise	n-Hexane	Chromic Acid and Chromates	Ionizing Radiation Tota		Physical Examination	Total
Headquarters	-	-	-	-	-	-	-	201	201
Taoyuan	-	29	242	-	7	-	278	0	278
Hsinchu	-	171	584	-	-	-	755	869	1,624
Taichung	107	124	-	-	-	-	231	0	231
Lukang	-	18	445	6	-	-	469	779	1,248
Lukang Flat Glass	33	27	-	-	-	12	72	136	208
Changpin	-	57	-	-	-	-	57	341	398
Total	140	426	1,271	6	7	12	1,862	2,326	4,188

#### 📂 Staff Health Management

# Health Monitoring-ups ((pre-employment physical examinations and regular employee physical examination):

New employees must complete a physical examination before starting working at TG. The company uses the examination report to assign new employees to a suitable position, place them in the correct category for management, provide health education and keep track of the employee's health. Our formal employees receive a health checkup every two years. For those in hazardous positions, they receive sanitation and health education four times a year and a special physical examination. The results are submitted to the company's nurse practitioners stationed at each factory who analyze and preserve the reports to understand the employees'health. Nurse practitioners will provide health education to those at high health risk and arrange them for repeat doctor visits to keep track of their health condition and help them receive treatment if necessary. The nurse practitioners will follow up with employees'health conditions and evaluate whether or not they are fit for their current positions. When needed, they will help employees get reassigned to other positions. Health-promoting activities are planned based on the staff's health conditions.

To enhance our employees'work safety and sanitation knowledge, Taiwan Glass provides occupational safety and health training, emergency response and fire drills and off-site professional training for new employees. In addition, this company holds environmental safety and health training sessions for employees monthly.

Depending on the season and current epidemics, Taiwan Glass provides related health information in the company's regular announcements and company's electronic bulletin board to help our employees prevent themselves from getting the disease. For our high risk employees, we recommend that they receive a vaccine. The company also provides information for family care for our employees.

Our health center is equipped with a full body composition monitor, which can measure body weight, body fat, body age, BMR, visceral fat and the subcutaneous fat and skeletal muscle of the entire body, arms, torso and feet. This equipment helps our employees manage their health and weight loss progress.

#### Plan to Prevent Disease Caused by Unusual Workload:

Taiwan Glass keeps track and evaluate risks of our employees' health conditions, nature of work (shifts, night shifts, long work hours and unusual workload) and work hours. For employees with potential health risks, Taiwan Glass arranges doctors to provide them with health education or refers them to seek medical assistance. The company also helps such workers adjust their workload and shares with them about health-promoting activities. All the measures aim to prevent brain and cardiovascular diseases among our employees and reduce their mental load to be healthy both physically and mentally.

#### S Ergonomic Injury Prevention:

Taiwan Glass collects data on the employees' nature of work and analyzes it to divide employees into different categories for management. Then this company offers suggestions to help employees improve their work condition, recover from any muscle/bone injuries and prevent them from repeated muscle/bone injuries by creating a better, safer and more ergonomic working environment.



**Employee Physical Examinations** 



Education and training – Noise hazard control



Education and training- Ergonomic Hazard Prevention Program and prevention of repetitive muscle/bone injuries

#### Fitness Test:

Under the recommendations by Sports Administration of the Ministry of Education, TG conducts fitness tests for its employees, helping them understand their current physical conditions. Employees, after the tests, can train to improve their weaknesses. The tests can also help them see the progress and results of their training and keep them healthy.





Fitness Test

#### **5.3.2 Employee Safety Measures**

#### Safety Management Policy

- 1.Legal compliance to protect the employees' safety and health.
- 2.Risk management, damage control and prevention.
- 3.Promote safety and health knowledge and awareness among all staff members.

4. Regular reviews and measures to improve the safety and health environment.

#### Labor Safety and Health Committee

Taiwan Glass' management takes environmental safety and health very seriously. The company has safety and health guidelines in place and always notifies the relevant authority when needed. Our Labor Safety and Health Committee's mission is to formulate safety and health-promoting strategies, company-wide safety, environmental and health-promoting objectives and to implement and revise relevant plans when necessary. The headquarters and all factories of Taiwan Glass all have a safety and health committee, which provides an open channel for communication. 1/3 of the committee members are employee representatives, as required by law. The committees hold quarterly meetings to discuss safety and health related issues. The meetings serve as formal platform allowing horizontal communications between all departments and vertical communications between the management and the employees. The headquarters and the factories all have dedicated labor safety management units (Labor Safety Section), which conduct an labor safety inspection every month to detect problem and take precautionary measures as early as possible. The Labor Safety Sections in all facilities are committed to promoting environmental safety & health as well as risk control. They also report to the highest-ranked supervisor, relevant authorities and labor representative during safety and health committee sessions every quarter. The "5s" plan provides education and training to new recruits and current employees to enhance their working safety awareness and ability to handle situations at work and prevent accident to ensure staff safety and health and a safe and healthy working environment.

Main Issued Discussed During the Labor Safety and Health Committee Sessions:

- 1. To make recommendations on occupational safety and health policies.
- 2. Coordinate and propose occupational safety and health management plan.
- 3. Review the safety, health education and training implementation plans.
- 4. Review the operational environmental monitoring plan, monitoring results and measures.
- 5. Review the health management, occupational disease prevention and healthpromoting measures.

- 6. Reviews various safety and health proposals.
- 7. Review the automatic inspections and safety & health audits of all business units.
- 8. Review the disaster prevention measures of machinery, equipment or raw materials and materials.
- 9. Review the occupational injury investigation reports.
- 10. Assess on-site safety and health management results.
- 11. Review the operational safety and health management matters in contracted work.
- 12. Other matters related to occupational safety and health management.



Labor Safety and Health Committee of Changpin Factory



Labor Safety and Health Committee of the Head Office

Committee Member/Employee Representative Ratio in 2015								
Item	Headquarters	Taoyuan	Hsinchu	Taichung	Lukang	Changpin	Total	
Committee Members	15	18	16	25	15	52	141	
Employee Representatives	5	7	6	13	5	18	54	
Ratio	33.33%	38.89%	37.50%	52.00%	33.33%	34.62%	38.30%	

Note: Based on the law, Lugang flat glass factory does not need to establish a labor safety and health committee, but it still continues to promote employee education and training programs every year to strengthen the occupational safety and health awareness.





#### Occupational Safety Management

The objective of the disaster management is to reduce the disability frequency (FR) and the severity of the disability injury (SR) by 20%, as the starting point of the zero disaster target and as an indicator to enhance the safety activities of the factories. The accident management system of TG requires the unit/supervisor of the injured person to complete and file "Employee Injury Report" and "Employ to/from Work Injury Report" within 3 days of the accident. The reports must be signed by the unit safety manager, department supervisor, Labor Safety Section and Safety & Health supervisor (in this order) before being submitted to the highest supervisor. The original of the reports will be archived by the Labor Safety Section and the duplicates will be archived by the Human Resource Department and Injury/Accident Unit. This practice ensures that all accidents are reported and investigated and improvement measures are taken accordingly. Taiwan Glass also compiles the occupational injury/accident numbers every six months to understand the causes and make them the first thing to prevent in the facilities. The company notifies all units of the results and preventive measures to prevent the same types of injuries or lower the severity of such injuries. If major accidents take place in other businesses, TG will notify all units and ask them to promote safety further in all operations with the risk of identical accidents. The 2015 safety indicators are as follows:

Safety Performance Indicators						
Indicator/Year	2015					
Disabling Frequency Rate (FR)	Male	9.10				
Total Disabling Incidents (more than 8 hours of rest) x 1,000,000/ Total	Female	6.33				
Manhours	Total	8.74				
	Male	0				
Occupational Disease Rate (ODR). Total Occupational Diseases x 1,000,000/ Total Manhours	Female	0				
1 , ,	Total	0				
	Male	150				
Disabling Severity Rate (SR) Days Charged x 1,000,000/Total Manhours	Female	45				
	Total	137				
	Male	0.0103				
Absence Rate (AR) Total Number of Davs Lost / Total Davs Worked	Female	0.0205				
Total Product of 2 age 20007 Total 2 age Horked		0.0116				

Note:1. Compared to the 2014 report, the total number of hours worked and the total number of working days are calculated in 2015 based on the number of monthly payrolls.

2. Total days of absentee include the number of days of leave, sick leave, and work-related injury leave.
| Plant                | Occupational Safety Violations  | Fine (NTD) |
|----------------------|---|------------|
| Taoyuan              | None  | None       |
| Hsinchu              | Storage tank for public hazardous items   | 20,000     |
| Taichung             | Violation of Occupational Safety and Health Act   | 60,000     |
| Lukang               | None  |            |
| Lukang Flat<br>Glass | No hedge or safety door with interlocking device is set for the automatic sheet glass collecting machine for flat glass | 60,000     |
| Changpin             | None  |            |

In 2015, there were individual violations in the factories of Taiwan Glass, which were immediately improved. The status of each factory was as follows:

#### Hsinchu Factory violation details:

On May 28, 2015, the Hsinchu City Fire Department conducted an inspection of our factory's heavy oil tank. The factory could not provide the leak test certificate, which is a violation of public hazardous substance regulations and received a NT\$20,000 fine.

#### Response strategy:

TG proposed to the Hsinchu City Fire Department its plan to improve the storage tanks of public hazardous substnace (including heightening the height of the anti-spill embankment to the 110% of the storage tank capacity the installation of lightning protection equipment, etc.). After the measures are completed and confirmed, TG will obtain the certificate.

#### • Taichung Factory violation details:

While conducting a routine maintenance, one employee did not shut down the machine and put on cotton gloves first, resulting in the right hand being caught in the drive sprocket.

#### Response strategy:

- 1. Equipment improvements:
  - 1.1 Install an additional interlocking power device. Once the cover is open, the drive sprocket will stop running immediately.
  - 1.2 Put additional warning signs on the protective cover to remind employees of operation safety.
  - 1.3 Move the opening of the lubricant tank outside the cover so maintenance can be done in a safe manner.
- 2. Management improvement:
  - 2.1 Remind the staff of operation safety before they begin.

- 2.2 Formulate the SOP of adding the lubricants in the machine, and remind the staff to shut down the machine before doing any maintenance to prevent any more accidents.
- 2.3 This should be included in the annual safety and health education materials, so all staff have education and training, and regularly inspect the site operations.
- 2.4 Enhanced on-the-job training and job safety training.

#### Lugang Flat Glass Factory violation details:

In accordance with Article 21 of the "Industrial Robot Hazard Prevention Standard", the factory sets up photoelectric safety devices at the entrances and exits. One employee did not follow the SOP when using the loader machine and as the result the left arm was injured. The factory was fined NT\$60,000.

#### Response strategy:

- 1. Add a set of photoelectric safety devices at the entrance of the automatic loader machine: Originally there was a photoelectric safety device at 90cm high. But to prevent any operator from accidentally triggering the device, we added another set of photoelectric safety devices right below the entrance/exit of the glass loader machine to prevent any disasters.
- 2. Additional alarm: When an operator goes through the entrance of the loader machine, the light sensor of the safety device will detect the movement and the robotic arms will stop operation. At this time, the alarm will go off, reminding the operator that the arms have come to a complete stop, ensuring the operator's safety.
- 3. Draw a yellow channelizing line on the ground at the entrance/exit of the glass loader machine: Originally, there are yellow line zones outside the loader machine, keeping non-related personnel from entering the loader machine area. To further enhance operators' safety awareness, we have added yellow channelizing lines on the ground at the entrance/exit of the loader machines. These lines will remind the operators to make sure that the robotic arms have come to a complete halt before they entering the working zone with potential risks.

# 5.4 Mother-Friendly Workplace

## Health Protection Program for Mother Employees

For pregnant women and women within one year after giving birth, we conduct risk assessment of their work environment and categorize and manage their health conditions. Doctor visits are arranged to provide appropriate assessment and advice. We follow up regularly with mother employees and provide them health education information based on their stages

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of pregnancy. Their workload/duties can be adjusted accordingly to ensure their work safety. Pregnant employees at TG have their dedicated parking spaces. Our facilities are also equipped with breastfeeding rooms where mother employees can pump during working hours, allowing them to take care of their family and job at the same time.

#### Breastfeeding Rooms

Breast milk is the best food for babies. For the newborn, no food can replace the nutrition breast milk. Infants can absorb breast milk better than any other type of food as well. To stay in line with the Ministry of Health and Welfare's policy to promote breastfeeding, TG promotes a company culture of breastfeeding so that female colleagues in the workplace can balance their family needs. TG actively promotes a mother-friendly workplace and has set up breastfeeding rooms for mothers.

The breastfeeding room looks warm and welcoming. The soft colors can create the most relaxing and comfortable atmosphere. TG has formulated and put in place a guideline on breastfeeding rooms. The rooms come with locking doors, comfortable couches and breastfeeding pillows, breast milk refrigerator, pure water baby wipes, bottle sterilizer, spare breast milk bags and glass bottles. All the items are free of charge and all the breastfeeding rooms are cleaned everyday and the temperatures of the refrigerators are also monitored. TG also provides breastfeeding related information, activities and consultations. As a mother experiences physical changes during the pregnancy, TG provides necessary support and arranges other experienced colleagues to help these new mothers. All in all, TG strives to provide the friendliest workplace for mothers.

#### Breastfeeding Room Environment



Breastfeeding room locations on the bulletin board



Breastfeeding room guidelines on the bulletin board and the pantry room location on the floor plan



1. Dedicated breastmilk refrigerator, with user guidelines and suggested storage timetable.

- 2. A section with mothers' experience, tips and reminders with cute baby pictures, which can stimulate lactation.
- 3. Information on recent epidemics to remind mothers.



Breastfeeding information and magazines



- 1. Bottle sterilizers.
- 2. Hidden lockers for personal milk pumping equipment.
- 3. Breast milk bags and bottles for mothers that do not have any with them.



Breastfeeding consultations, care counseling

#### Annual Honors

Participated in "Changhua County 2015 Friendly Breastfeeding Room In Workplace Contest" with a total of 32 companies participating. After written review and experts field visits for evaluation, TG won the second place in the workplace group, recognition of the company's successful promotion of a mother-friendly workplace. The award is also another motivation for TG to continue to support hardworking mothers breastfeeding their babies to enhance their baby's health, which will also enhance the mothers' performances at work as well. All of this can thereby enhance TG's image.



Medal for breastfeeding room competition



Breastfeeding room award ceremony held by Changhua County Government

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# 6 Appendix

Appendix I :Global Reporting Initiative(GRI) Index

The following content has been verified by an independent third-party and the result is publicshed in the independent assurance report in Appendix IV.

#### "∗" indicates mjoar aspects while "●" indicates external verification.

Category/ Aspects	G4 / Notes	Indicator	External Verification	Chapter and Section	Page
	1. Strateg	gy and Analysis			
Core	G4-1	Provide a statement from the most senior decision-maker of the organization (such as CEO, chair, or equivalent senior position) about the relevance of sustainability to the organization and the organization's strategy for addressing sustainability	•	Message from the Chairman	4
Comprehensive	G4-2	Provide a description of key impacts, risks, and opportuni- ties.		Message from the Chairman 1.5 Risk Management	4 33
	2. Organ	izational Profile			
Core	G4-3	Report the name of the organization.	•	1.1.1 Company Profile	10
Core	G4-4	Report the primary brands, products, and services	•	<ul><li>1.1.2 Main Business and Products</li><li>3.2 Main Product</li></ul>	15 62
Core	G4-5	Report the location of the organization's Headquarters	•	1.1.1 Company Profile	10
Core	G4-6	Report the number of countries where the organization operates, and names of countries where either the organi- zation has significant operations or that are specifically rele- vant to the sustainability topics covered in the report.	•	1.1.1 Company Profile	10
Core	G4-7	Report the nature of ownership and legal form.	•	1.1.1 Company Profile	10
Core	G4-8	Report the markets served (including geographic break- down, sectors served, and types of customers and beneficia- ries).	•	1.2.2 Operation and Finance	20
Core	G4-9	<ul> <li>Scale of the reporting organization. Ÿ</li> <li>Total number of employees</li> <li>Total number of operations</li> <li>Net sales (for private sector organizations)or net revenues (for public sector organizations)</li> <li>Total capitalization broken down in terms of debt and equity (for private sector organizations)</li> <li>Quantity of products or services provided.</li> </ul>	•	1.1.1 Company Profile 1.2.2 Operation and Finance	10 20
Core	G4-10	<ul> <li>a. Report the total number of employees by employment contract and gender.</li> <li>b. Report the total number of permanent employees by mployment type and gender.</li> <li>c. Report the total workforce by employees and supervised workers and by gender.</li> <li>d. Report the total workforce by region and gender.</li> <li>e. Report whether a substantial portion of the organization's work is performed by workers who are legally recognized as self-employed, or by individuals other than employees or supervised workers, including employees and supervised employees of contractors.</li> <li>f. Report any significant variations in employment numbers (such as seasonal variations in employment in the tourism or agricultural industries).</li> </ul>	•	5.1.1 Human Resources Structure	122
Core	G4-11	Report the percentage of total employees covered by collec- tive bargaining agreements.	•	5.1.2 Employee Benefits	128

Category/ Aspects	G4 / Notes	Indicator	External Verification	Chapter and Section	Page
Core	G4-12	Describe the organization's supply chain.	•	3.1 Supply Chain Management	56
Core	G4-13	Report the percentage of total employees covered by collec- tive bargaining agreements. Describe the organization's supply chain.	•	1.1.1 Company Profile	10
Core	G4-14	Report whether and how the precautionary approach or principle is addressed by the organization.	•	<ol> <li>1.5 Risk Management</li> <li>3.3 Management System Introduced</li> </ol>	33 76
Core	G4-15	List externally developed economic, environmental and social charters, principles,or other initiatives to which the organization subscribes or which it endorses.	•	About This Report 3.3 Management System Introduced	1 76
Core	G4-16	<ul> <li>List memberships of associations (such as industry associations) and national or international advocacy organizations in which the organization:</li> <li>Holds a position on the governance body.</li> <li>Participates in projects or committees.</li> <li>Provides substantive funding beyond routine membership dues.</li> <li>Views membership as strategic</li> </ul>	•	1.1.3 Participating Organizations	16
	3. Identi	fied Material Aspects and Boundaries			
Core	G4-17	<ul><li>a. List all entities included in the organization's consolidated financial statements or equivalent documents.</li><li>b. Report whether any entity included in the organization's consolidated financial statements or equivalent documents</li><li>is not covered by the report.</li></ul>	•	About This Report 1.1.1 Company Profile	1 10
Core	G4-18	<ul><li>a. Explain the process for defining the report content and the Aspect Boundaries.</li><li>b. Explain how the organization has implemented the Re- porting Principles for Defining Report Content.</li></ul>	•	2.3 Management of Major Aspects	51
Core	G4-19	List all the material Aspects identified in the process for de- fining report content.	•	2.3 Management of Major Aspects	51
Core	G4-20	<ul> <li>For each material Aspect, report the Aspect Boundary within the organization, as follows:</li> <li>Report whether the Aspect is material within the organization.</li> <li>If the Aspect is not material for all entities within the organization (as described in G4-17), select one of the following two pproaches and report either: <ul> <li>The list of entities or groups of entities included in G4-17 for which the Aspect is not material or</li> <li>The list of entities or groups of entities included in G4-17 for which the Aspect is material.</li> </ul> </li> <li>Report any specific limitation regarding the Aspect Boundary within the organization</li> </ul>	•	2.3 Management of Major Aspects	51
Core	G4-21	<ul> <li>For each material Aspect, report the Aspect Boundary outside the organization, as follows:</li> <li>Report whether the Aspect is material outside of the organization</li> <li>If the Aspect is material outside of the organization, identify the entities, groups of entities or elements for which the Aspect is material. In addition, describe the geographical location where the Aspect is material for the entities identified</li> <li>Report any specific limitation regarding the Aspect Boundary outside the organization</li> </ul>	•	2.3 Management of Major Aspects	51
Core	G4-22	Report the effect of any restatements of information provid- ed in previous reports, and the reasons for such restatements.	•	About This Report	1

Category/ Aspects	G4 / Notes	Indicator	External Verification	Chapter and Section	Page
Core	G4-23	Report significant changes from previous reporting periods in the Scope and Aspect Boundaries.	•	About This Report	1
	4. Stakeł	nolder Engagement			
Core	G4-24	Provide a list of stakeholder groups engaged by the orga- nization.	•	2.2.2 Communicate with Stakeholders	47
Core	G4-25	Report the basis for identification and selection of stake- holders with whom to engage.	•	2.2.2 Communicate with Stakeholders	47
Core	G4-26	Report the organization's approach to stakeholder engage- ment, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the re- port preparation process.	•	2.2.2 Communicate with Stakeholders	47
Core	G4-27	Report key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholder groups that raised each of the key topics and concerns.	•	2.2.2 Communicate with Stakeholders	47
	5. Repor	t Profile			
Core	G4-28	Reporting period (such as fiscal or calendar year) for infor- mation provided.	•	About This Report	1
Core	G4-29	Date of most recent previous report (if any).	•	About This Report	1
Core	G4-30	Reporting cycle (such as annual, biennial).	•	About This Report	1
Core	G4-31	Provide the contact point for questions regarding the report or its contents.	٠	About This Report	1
Core	G4-32	<ul><li>a. Report the 'in accordance' option the organization has chosen.</li><li>b. Report the GRI Content Index for the chosen option (see tables below).</li><li>c. Report the reference to the External Assurance Report, if the report has been externally assured. GRI recommends the use of external assurance but it is not a requirement to be 'in accordance' with the Guidelines.</li></ul>	•	About This Report	1
Core	G4-33	<ul> <li>a. Report the organization's policy and current practice with regard to seeking external assurance for the report.</li> <li>b. If not included in the assurance report accompanying the sustainability report, report the scope and basis of any external assurance provided.</li> <li>c. Report the relationship between the organization and the assurance providers.</li> <li>d. Report whether the highest governance body or senior executives are involved in seeking assurance for the organization's sustainability report.</li> </ul>	•	About This Report	1
	6. Gover	nance			
Core	G4-34	Report the governance structure of the organization, includ- ing committees of the highest governance body. Identify any committees responsible for decision-making on economic, environmental and social impacts	•	1.3 Corporate Governance	24
Comprehensive	G4-35	Report the process for delegating authority for economic, environmental and social topics from the highest gover- nance body to senior executives and other employees.		2.1 Corporate Social Re- sponsibility Committee	43
Comprehensive	G4-36	Report whether the organization has appointed an execu- tive-level position or positions with responsibility for eco- nomic, nvironmental and social topics, and whether post holders report directly to the highest governance body.		2.1 Corporate Social Re- sponsibility Committee	43

Category/ Aspects	G4 / Notes	Indicator	External Verification	Chapter and Section	Page
Comprehensive	G4-37	Report processes for consultation between stakeholders and the highest governance body on economic, environmental and social topics. If consultation is delegated, describe to whom and any feedback processes to the highest gover- nance body		2.2.2 Communicate with Stakeholders	48
Comprehensive	G4-38	<ul> <li>Report the composition of the highest governance body and its committees by:</li> <li>Executive or non-executive</li> <li>Independence</li> <li>Tenure on the governance body</li> <li>Number of each individual's other significant positions and commitments, and the nature of the commitments</li> <li>Gender</li> <li>Membership of under-represented social groups</li> <li>Competences relating to economic, environmental and social impacts</li> <li>Stakeholder representation</li> </ul>		1.3 Corporate Governance	24
Comprehensive	G4-39	Report whether the Chair of the highest governance body is also an executive officer (and, if so, his or her function within the organization's management and the reasons for this arrangement)		1.3 Corporate Governance	24
Comprehensive	G4-41	<ul> <li>Report processes for the highest governance body to ensure conflicts of interest are avoided and managed.</li> <li>Report whether conflicts of interest are disclosed to stakeholders, including, as a minimum:</li> <li>Cross-board membership</li> <li>Cross-shareholding with suppliers and other stakeholders</li> <li>Existence of controlling shareholder</li> <li>Related party disclosures</li> </ul>		1.4 Honest Business	30
Comprehensive	G4-47	Report the frequency of the highest governance body's re- view of economic, environmental and social impacts, risks, and opportunities.		1.3 Corporate Governance	24
Comprehensive	G4-48	Report the highest committee or position that formally re- views and approves the organization's sustainability report and ensures that all material Aspects are covered.		About This Report 2.1 Corporate Social Re- sponsibility Committee	1 43
Comprehensive	G4-52	Report the process for determining remuneration.Report whether remuneration consultants are involved in deter- mining remuneration and whether they are independent of management. Report any other relationships which the re- muneration consultants have with the organization.		1.3 Corporate Governance	24
	7. Ethics	And Integrity			
Core	G4-56	Describe the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics.	•	1.4 Honest Business	30
Comprehensive	G4-57	Report the internal and external mechanisms for seeking advice on ethical and lawful behavior, and matters related to organizational integrity, such as helplines or advice lines.		1.4 Honest Business	30
Comprehensive	G4-58	Report the internal and external mechanisms for reporting concerns about unethical or unlawful behavior, and mat- ters related to organizational integrity, such as escalation through line management, whistleblowing mechanisms or hotlines.		1.4 Honest Business	30
	Econom	ic			
* Economic Performance	G4-DMA	Economic Performance DMA		1.2 Economic Performance Management Approach	18

Category/ Aspects	G4 / Notes	Indicator	External Verification	Chapter and Section	Page
* Economic	G4-EC1	Direct economic value generated and distributed. Ÿ – Revenues – Operating costs – Employee wages and benefits – Payments to providers of capital –Payments to government (by country) – Community investments	•	1.2.2 Operation and Finance	20
	G4-EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change.		4.1.2 Climate Change Policy	86
	G4-EC3	Coverage of the organization's defined benefit plan obliga- tions.		5.1.2 Employee Benefits	128
	G4-EC4	Financial assistance received from government.		1.2.2 Operation and Finance	20
Markat Drasan as	G4-EC5	Ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation.		5.1.1 Human Resources Structure	122
Market Fresence	G4-EC6	Proportion of senior management hired from the local com- munity at significant locations of operation.		5.1.1 Human Resources Structure	122
Indirect Eco- nomic Impacts	G4-EC7	Development and impact of infrastructure investments and services supported.		<ol> <li>Social Care and Participation</li> <li>3.2.3 Glass Containers for Food, Kitchen</li> </ol>	36 72
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		Matariala DMA		4.2.1 Raw Material	00
	G4-DMA			Management Policy 4.2.1 Raw Materials	90
* Materials	G4-ENI	Materials used by weight or volume.	•	Management	90
	G4-EN2	Percentage of materials used that are recycled input materials.	•	4.2.1 Raw Materials Management	90
	G4-DMA	Energy DMA		4.2.2 Energy Management Approach	92
	G4-EN3	Energy consumption within the organization.	•	4.2.2 Energy Management	92
* Energy	G4-EN5	Energy intensity.		4.2.2 Energy Management	92
	G4-EN6	Reduction of energy consumption.		4.2.4 Energy Conservation & Carbon Reduction	95
	G4-EN7	Reductions in energy requirements of products and services.		3.2.1 Flat Glass	62
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* Water	G4-EN9	Water sources significantly affected by withdrawal of water.		4.2.5 Water Resources Management	105
	G4-EN10	Percentage and total volume of water recycled and reused.		4.2.5 Water Resources Management	105
	G4-EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.		4.1.2 Climate Change Policy	86
Biodiversity	G4-EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.		4.1.2 Climate Change Policy	86
	G4-EN13	Habitats protected or restored.		4.1.2 Climate Change Policy	86

Category/ Aspects	G4 / Notes	Indicator	External Verification	Chapter and Section	Page
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	G4-EN16	Energy indirect greenhouse gas (GHG) emissions (Scope 2).	•	4.2.3 Greenhouse Gas Inventory	94
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	G4-EN24	Total number and volume of significant spills.		4.4 Compliance with Envi- ronmental Regulations	117
	G4-EN26	Identity, size, protected status, and biodiversity value of wa- ter bodies and related habitats significantly affected by the organization's discharges of water and runoff.		4.3.2 Water Pollution Prevention	110
	G4-DMA	Products and Services DMA		4.1.2 Climate Change Policy	86
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*Occupational	G4-LA5	Percentage of total workforce represented in formal joint management–worker health and safety committees that help monitor and advise on occupational health and safety programs.		5.3.2 Employee Safety Measures	141
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Investment and	G4-HR2	Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are		5.2 Staff Development	134

Investment and Human Rights	G4-HR2	Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employ- ees trained.		5.2 Staff Development	134
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Supplier Human	G4-HR10	Percentage of new suppliers that were screened using hu- man rights criteria.		3.1.3 Supply Chain CSR- Management	59
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	G4-DMA	Compliance DMA		1.4 Compliance Manage- ment Policy	30
*Compliance	G4-SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.	•	5.3.2 Employee Safety Measures	141
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	G4-DMA	Customer Health and Safety DMA		3.3 Customer Health and Safety Management Policy	76
*Customer Health and Safety	G4-PR1	Percentage of significant product and service categories for which health and safety impacts are assessed for improve- ment.		3.2 Main Product	62
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G4-DMA

G4-PR3

\*Product and Service Labeling and Customer

Satisfaction

Product and Service Labeling DMA

Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirements. 3.4 Management Guidelines

3.2 Main Product

for Customer Satisfaction

80

62

Category/ Aspects	G4 / Notes	Indicator	External Verification	Chapter and Section	Page
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	G4-PR6	Sale of banned or disputed products.		3.2 Main Product 3.4 Customer Satisfaction	62 80
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*Compliance	G4-DMA	Compliance DMA		3.3 Customer Health and Safety Management Policy	76
	G4-PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.	•	3.2 Main Product	62

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#### Appendix IV : International Standard on Assurance Engagements



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據資料及所取得之管理階層聲明;如必要時,則抽選樣本進行測試;

 閱讀台玻公司之企業社會責任報告書,確認其與本事務所取得關於企業社會 責任整體履行情況之瞭解一致。

三、 先天限制

因企業社會責任報告中所包含之非財務資訊受到衡量不確定性之影響,選擇不同 的衡量方式,可能導致績效衡量上之重大差異,且由於確信工作係採抽樣方式進 行,且任何內部控制均受有先天限制,故未必能查出所有業已存在之重大不實表 達,無論是導因於舞弊或錯誤。

四、 品質管制與獨立性

本事務所遵循審計準則公報第四十六號會計師事務所之品質管制之規範,建立並 維護完備之品質管制制度,包含遵循職業道德規範、專業準則及所適用法令相關 之書面政策及程序。本所亦遵循會計師職業道德規範中有關獨立性及其他道德規 範之規定,該規範之基本原則為正直、公正客觀、專業能力及盡專業上應有之注 意、保密及專業態度。

五、結論

依據本事務所執行之程序及所獲取之證據,未發現台玻公司所選定之永續績效資 訊有未依照適用基準編製而須作重大修正之情事。且本事務所未發現台玻公司 2015 年度企業社會責任報告書有未依據 G4 核心選項編製而須作重大修正之情 事。

安永聯合會計師事務所



民國一〇五年六月三十日

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附件一:						
編號	頁次	內文標題	標的資訊	適用基準		
1		符合性確信	台玻揭露 2015 年度企業社會責任 報告書係依據全球永續性報告協會 所發布之第四代永續性報告指南之 核心選項編製	第四代永續性報 告指南核心指標		
2	16	<ol> <li>1.2.2 營運概況與財</li> <li>務資訊</li> </ol>	2015 年度財務資訊	2015 年度個體財 務報表		
3	45	3.2 主要產品內容	台玻產品 2015 年無違反產品健康 與安全、標示及市場推廣相關法 規,亦無發生產品被禁止銷售之事 件	公司適用之商品 標示法、食品安 全衛生管理法、 國際反托拉斯 法、消保法		
4	67	4.2.1 原物料管理	2015年原料使用量統計	公司統計資料		
5	68	4.2.1 原物料管理	2015 年度平板玻璃回收玻璃使用 量佔比 19.24%,玻璃容器回收玻璃 使用量佔比 50.99%	公司統計資料		
6	69	4.2.2 能源管理	2015 年台玻各項產品能源的使用 量	公司統計資料		
7	70	4.2.3 溫室氣體盤查	2015 年台玻各產品溫室氣體範疇 一排放量(頓 CO2e)	公司統計資料		
8	70	4.2.3 溫室氣體盤查	2015 年台玻各產品溫室氣體範疇 二排放量(噸 CO2e)	公司統計資料		
9	86	4.3.3 廢棄物管理及 回收再利用	2015年台玻各廠廢棄物處理量	公司統計資料		
10	89	4.4 環保法規遵循	2015年環保違規事件裁罰金額	公司適用之環境 法規及公司統計 資料		
11	96	5.1.1 台玻人力結構	2015年員工離職之情形	公司統計資料		
12	96	5.1.1 台玻人力結構	2015 年新進員工之情形	公司統計資料		
13	100	5.1.2 員工福利	2015年育嬰留停之情形	公司統計資料		
14	108	5.3.2 員工安全作業	2015年失能傷害率、失能傷害嚴重 率、缺勤率	公司統計資料		
15	108	5.3.2 員工安全作業	2015 年職業安全違規罰款金額	公司適用之職業 安全法規及公司 統計資料		

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