



## 2012 TSRC CSR Report



The corporate mission of TSRC is “building our success by adopting eco-friendly manufacturing process to supply value-added products and using effective systematic problem solving approach to become a preferred polymer supplier and joint-development partner of our key customers.” And our core values –integrity, innovation, teamwork, professionalism, and excellence—are based on the foundations of corporate social responsibility (CSR): Corporate Governance and Integrity.

This corporate social responsibility report (CSR report) will disclose the holistic-oriented performance information to our stakeholders. It will include not only CSR management approaches, key topics, actions and responses but also environmental concerns and community cares.

This is TSRC's first official public CSR report with TUV-Nord assurance. Should you have any comment, suggestion or question, please feel free to contact us.

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## Boundary and Scope of the report

TSRC is an international corporation, so it is not easy to collect all of the necessary information. Therefore, the boundary of this report cannot cover all of the business entities which TSRC has significant influences on, and it will cover TSRC factories and office in Taiwan only. It will include Taipei Head office, Kaohsiung factory and Gangshan factory.

The CSR report of year 2013 will cover 5 subsidiaries of TSRC in Mainland China (TSRC Shanghai, TSRC Jinan, TSRC Nantong, TSRC-UBE and Shen Hua Chemical), and the CSR report of 2014 will include the subsidiary in the United States.

The scopes disclosed in this report cover the performance of economic, environment and society aspects.

## Reporting period

January 1~ December 31 in 2012. The relevant fact, policy, goal, and plan for the future will also be disclosed in this report.

## Data measurement techniques and the bases of the calculations

Global Reporting Initiative (GRI) version 3.1. This report discloses TSRC's strategies, ideas, measures and performances on CSR, and the discussed contents of the report and the defined process are in line with the requirements of the standard of the AA1000 (2008).

The financial statement figures in this report are calculated by NTD (new Taiwan dollars), and relevant performances of safety, health and environmental protection are expressed by the international indicators. On conditions of estimations or assumptions, we will notify in relevant chapters.

## Assurance for the report

The assurance has been commissioned and carried out by TUV Nord against AA1000 AS (2008) type 1, moderate level and GRI G3.1 application level B. The assurance statement is attached in appendix.

## Reporting cycle— scheduled to issue annually

Date of Current issue: May 2013

Date of next issue: Scheduled in June, 2014

## Channel of receiving the report

1. <http://www.tsrc.com.tw>
2. The book—TSRC CSR report

# ***Vision and Mission***

## **Vision**

Taking on social responsibilities, and continuing on innovative development  
Cherishing Earth's resources, improving human well-being  
Implementing Operation Performance, being an enterprise model

## **Mission**

Building our success by adopting eco-friendly manufacturing process  
to supply value-added products and using effective systematic problem  
solving approach to become a preferred polymer supplier and joint-  
development partner of our key customers.



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# To All Stakeholders



## Ladies and Gentlemen :

TSRC Company, founded in 1973, has been respected and trusted by customers with good and stable quality products and service. In the field of international rubber industry, we have been expanding the territory. In 2012 the NBR<sup>1</sup> rubber plant LANXESS-TSRC (Nantong), a joint venture with the German LANXESS in Nantong, China, has been in mass production smoothly and obtained the client's authentication gradually. In addition, SEBS<sup>1</sup> expansion project in our 100 % holding company TSRC (Nantong) has completed. R & D projects of SSBR<sup>1</sup>, a high-quality material for high-performance tires, received Product Innovation Award from the Ministry of Economic Affairs, and its commercialized products are under client authentication.

On environmental protection, we finished verification of the ISO/DIS 14067 product carbon footprint and water footprint, counseling and execution of greenhouse gas inventory and reduction with the reward of the Energy Bureau of the Ministry of Economic Affairs. On social cares, we focused on the health and human rights of workers, and strengthened the connection with the community. Also, with stakeholders and key topics screened out, we finished CSR counseling for the office and factories in Taiwan area and had the first public CSR report assured, disclosing our performances to be one of the Earth citizens.

### Business Plan in 2012 and Outlook for Risks and Opportunities in Short and Medium-term

In 2012, the growth of the car market in China slowed down, but the supply increased a lot for the new capacity of synthetic rubber in the whole industry. The synthetic rubber market was in intense competition. On the other hand, the price of butadiene, the main raw material, was lower due to decreased demand, but not as much as the price of the synthetic rubber. Overall, our profit declined but still better than that of competitors.

Our estimate for 2013 is that the global economy will have a slight growth, and the needs of automobile and synthetic rubber industries will also grow moderately. However, demand like this is unable to digest the rubber supply totally in the short term so the market will still be in a state of oversupply. On the other hand, the price of butadiene, the main raw material, is expected to remain relatively stable due to increased supply.

TSRC manages to achieve profit targets by increasing the sales of high-quality and high-margin products, maintaining a high operating rate, sourcing raw materials strategically, and controlling cost of raw materials and energy to lower operating expenses.

New investment projects like SIS in Nantong factory and ESBR in India will be gradually put into operation in 2013, and the construction<sup>2</sup> of Taiwan Advanced Materials Corporation, the joint venture company, will continue for growth in the future.

1 Product names like NBR, SEBS, SSBR...etc.-- Please see "Appendix 1 Abbreviation, Full Name and Application of TSRC's product.

2 Taiwan Advanced Materials Corporation, a joint venture company that TSRC, CPC Corporation, Taiwan and Fubon Financial Holding Venture Capital Co.Ltd. agreed to form, will manufacture C5 series of petrochemical products to fully extend the products value of C5 industrial chain. It is an important step forward for supply chain cooperation in Taiwan's petrochemical industry.

### Environmental Protection Research and Development

In order to comply with the global trend of the tire, TSRC has developed high-performance SSBR materials for energy-saving tires, and received Product Innovation Award in 2012. In 2013, we will continue to meet demands from customers to develop new specifications and solutions to expand the commercial scale, to continuously improve TPE process technology and quality of products, to develop new products, and to establish global technical services network to become a trustworthy supplier rapidly.

### Corporate Governance

TSRC's governance organization consists of several committees and the auditing office carrying out the regular assessment on corporate governance and the economic, environmental, social performances. The results are reported to the board of directors as warning mechanism on integrity and credibility and for the direction for future strategy. It also disclosed the declaration of the anti-corruption to further implement corporate governance.

### Strategy for Sustainability

TSRC will continue to uphold the concept of sustainability to achieve economic, social, environmental harmony, and has scheduled to start CSR counseling in subsidiaries in China in 2013. By expanding investment in the existing business and contributing to development of energy-saving materials and high-quality products, TSRC manages to obtain higher efficiency and operating performances to answer to the support and encouragement of all the stakeholders .



Chairman ► Shao-Yu, Wang

A handwritten signature in black ink, appearing to read "S. Wang".



President/CEO ► Wei-Hua, Tu

A handwritten signature in black ink, appearing to read "Tu Wei-Hua".

# Highlight 1

## Environmental protection CFP & WFP Inventory

1

- Purpose :** Total reduction and realization of impacts on life cycle<sup>1</sup> of products
- Methodolog :** ISO 14067 (DIS), PAS 2050:2011 and The Water Footprint Assessment Manual : 2011
- Target products :** 3 major products in BR, SBR and TPE for representativeness.



Styrene-Butadiene rubber



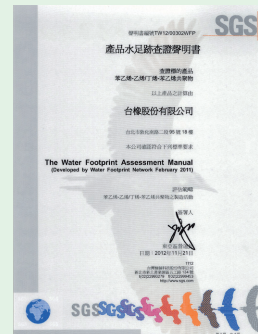
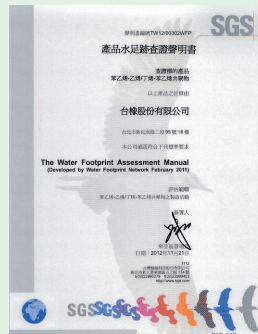
Poly Butadiene



Hydrogenated Styrene-Butadiene-Styrene

2

Certificates



3

Findings and follow-up: The top hot spot is steam consumption in the process in both GHG emission and water usage. So TSRC will switch the fuel of No. 3 boiler from heavy oil to natural gas.<sup>2</sup>

The other hot spots identified were also planned to be improved.

- TSRC's products are all business to business (B to B ), so it can consider only 3 stages-- raw materials, transportation and manufacturing--rather than all 5 stages --- the 3 mentioned above plus "use" and "disposal" ----as of Business to Customer (B to C).
- TSRC gained steam by burning heavy oil. The coefficients of it in calculations of the carbon footprint and water footprint are much higher than those of natural gas. So switch to natural gas will reduce the value of the CFP and WFP.



## Highlight 2

# Environmental protection ECO products

1

● Application of TSRC products : Mainly tires.

● Importance of rubber formulations :

It affects the grip, driving noise and wearable mileage

● Tires v.s. Energy : The frictional resistance of tires accounts for 15-25% of fuel consumption on vehicles

● EU regulations : From 2012 Nov, all imported tires must label fuel efficiency, wet grip performance, rolling resistance and noise level.



2

High performance SSBR rubber material is developed for Eco tires.

● Suitable for low resistance tires, high performance tires and all season tires.

● Efficiency : Reduce fuel consumption, correspondingly reducing emissions of vehicles.

● Other applications : soles, conveyor belts, rubber bands and sports equipment.

3

Successfully in mass production and supplied to markets in Japan, America, Germany and China.

1



Hard floor before exposed students to injuries.

Initiator TSRC

Recipient Leren Center<sup>1</sup>

Story CSR counselor—IST<sup>2</sup> bridged the 2 parties with puzzle floor mat.  
[57.31m<sup>2</sup>, special cushion needed.]

2

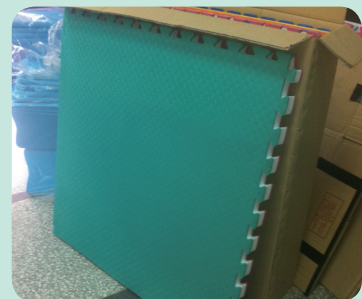
Target product : Special puzzle floor mat

Cooperating supplier : Long future Co., Ltd<sup>3</sup>

Responsible department in TSRC :

Sales section in Compound Department and Application Center

Story : TSRC provided raw materials and Long future provided manufacturing technique to make a perfect cushion for user's need in a semi-outdoor sport field.



1 Leren Center, <http://hn86874300.myweb.hinet.net/>

2 Integrated Service Technology (IST), [http://www.istgroup.com/english/3\\_service/03\\_01\\_list.php?MID=6](http://www.istgroup.com/english/3_service/03_01_list.php?MID=6)

3 Long future Co., Ltd, <http://www.eva-make.com>

### 3

Measurements and mats paved.

After 6 months, the situation of the mat is confirmed OK. TSRC also benefits from gaining a new application.



Sport field paved with the new floor mat.



Floor mat in multifunction rehabilitation room.



The slippery-proof floor mat increases comfortable feeling.



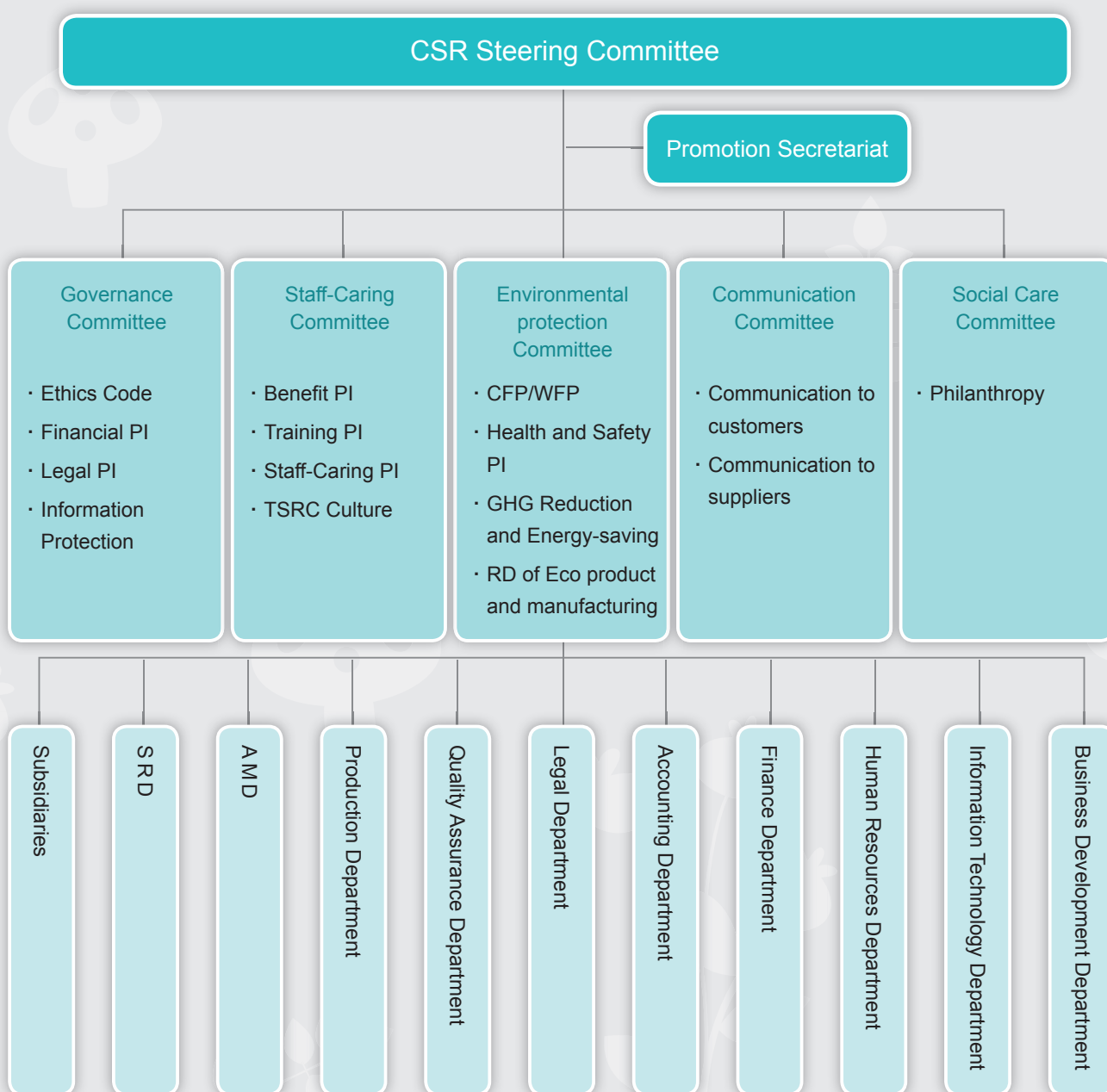
Loren Center's appreciation.



### ■ CSR Declaration and Organization

In order to practice good corporate citizenship and social responsibility, TSRC CEO Mr. Tu announced CSR Declaration to TSRC and the subsidiaries in 2012. It makes a clear specification on business ethics, the dignity of labors, health and safety of employees, environmental protection, corporate governance, management and evaluation, community involvement, etc..

Since 2010 TSRC has started CSR counseling, and updated CSR organization in 2012 to implant CSR spirit into performance indicators of daily management. CSR Promotion Secretariat is responsible to summarize the results and observations annually to report to the CSR Steering Committee. Also CEO will report performance and strategy to the Board.





## ■ Stakeholders and Key Topics

When the report is composed with serious analysis and procedures, it helps companies to identify key issues and their development to upgrade and supervise sustainability strategy.

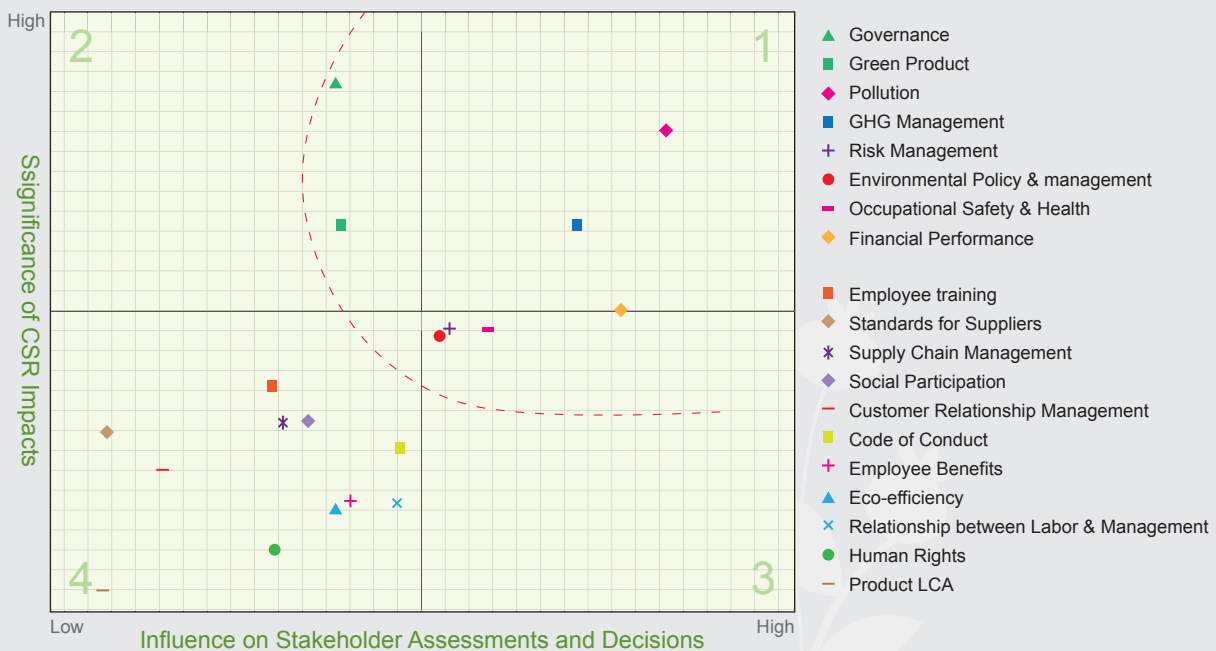
As for the screening of the stakeholders, CSR Promotion Secretariat and CSR members from the each department considered the importance of the contacting parties in daily operations and selected 6 types of stakeholders--customers, employees, investors, the media, suppliers and community. The analyzing methodology is failure mode effects analysis (FMEA) risk assessment, adapted from the concept of Mr. Chia-wei Hsu, assistant professor of Tungnan University. He screened out 20 CSR key topics from questionnaires of DJSI (Dow Jones Sustainability Index) and Taiwan's sustainable awards and CSR Reports from companies selected in DJSI to compose a questionnaire for stakeholders to collect different concerned levels and weigh the topics to give priorities. Those with high concerns and high impacts will be a priority included in the annual work plan and disclosed in this report.

Stakeholders	Concern Topics	Channels to Communicate
Customers	Risk Management Customer Relationship Management Financial Performance Governance	Annual customer satisfaction survey Annual interactive seminars Interview (email, telephone, interviews, questionnaires, etc.) Technical or industry seminars from time to time Exhibitions at home and abroad
Employees	Employee Benefits Relationship between Labor & Management Occupational Safety & Health Employee training	Staff forum in intranet as an ombudsman mechanism Talk to CEO (on demand) Union collective agreement (every three years) Labor Conference (quarterly) Trade union's cadre communication meetings (on demand) Annual corporate strategy development meeting Employee welfare committee (quarterly) Responsible care committee (Every February) Labor Safety and Health Committee (quarterly) Employees safety communication meetings (quarterly) Labor Pension Fund Supervisory Committee (quarterly) Organization of the joint operating agreement (on demand) Health promotion seminars (on demand)
Investors	Financial Performance Supply Chain Management Risk Management Employee Benefits	Annual shareholders' meetings MOPS, Market Observation Post System Stock Agent Office Description meeting of annual business operations Annual financial statements and operating reports Company Website



Stakeholders	Concern Topics	Channels to Communicate
The media	Pollution <sup>1</sup> Occupational Safety & Health Governance GHG Management Green Product Eco-efficiency Social Participation Relationship between Labor & Management	Visits, calls, or transcript from time to time
Suppliers	Standards for Suppliers Supply Chain Management GHG Management	Annual supplier satisfaction survey Annual supplier assessment Visits, emails, or questionnaires from time to time
Community	Pollution <sup>1</sup> GHG Management Social Participation Communication with Stakeholders	Visits from time to time Industrial District Manufacturers Association Industrial District Service Center

### Matrix of CSR Key Topics



1 Pollution here means hazardous substances and polluting emissions to the environment.



# Overview of Business Operations

## For 2012

TSRC's revenue is 17 billion (the consolidated revenue is NTD45.36 billion) with EPS3.27. The major markets are Japan, China, Germany and the United States.

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## For 2013

Our estimate is that the global economy will show a slight growth, and the needs of automobile and synthetic rubber industries will also grow moderately. However, demand like this is unable to digest the rubber supply totally in the short term so the market will still be a state of oversupply. On the other hand, the price of butadiene, the main raw material, is expected to remain relatively stable due to increased supply.

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## The Market

According to industry analysts, global demand for rubber is having a growth of nearly 5%. On supply side, competitors' capacity increase and on demand side, consumers are very sensitive to price. The regulators and consumers are getting to emphasize the environmental protection and energy-saving functions.

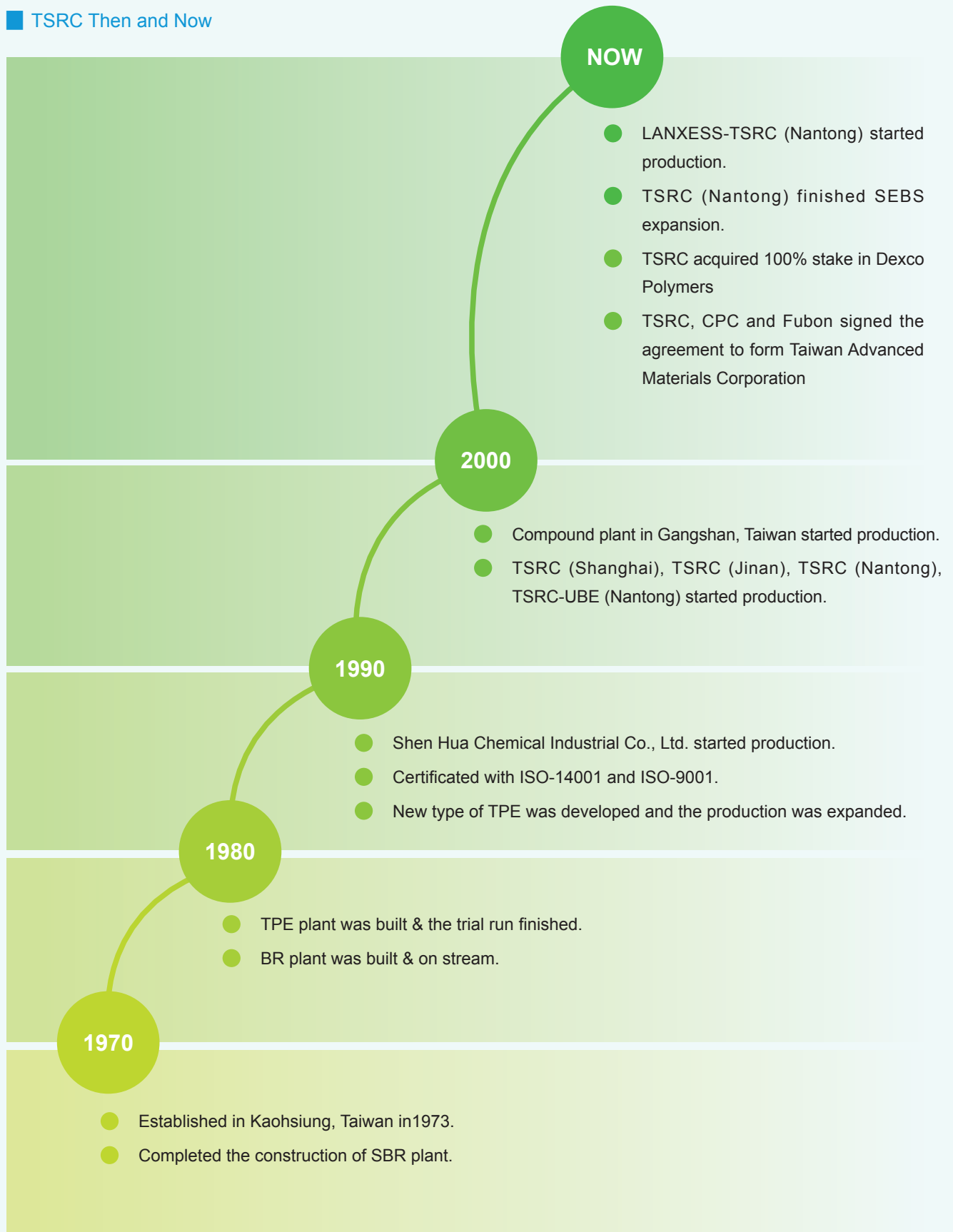
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## The Strategy

TSRC has been actively expanding overseas sales offices, and working through joint venture to assure territory in East Asia, Thailand, and India. Leveraging the successful management experience in China, TSRC manages to attract international specialty rubber makers for new opportunities. TSRC will get into other niche fields of rubber products with similar cooperation modes to actively seek international alliance with the upstream petrochemical raw materials manufacturers to ensure safe supply sources and carefully assess to investment opportunities of the new market.

## • Company Profile •

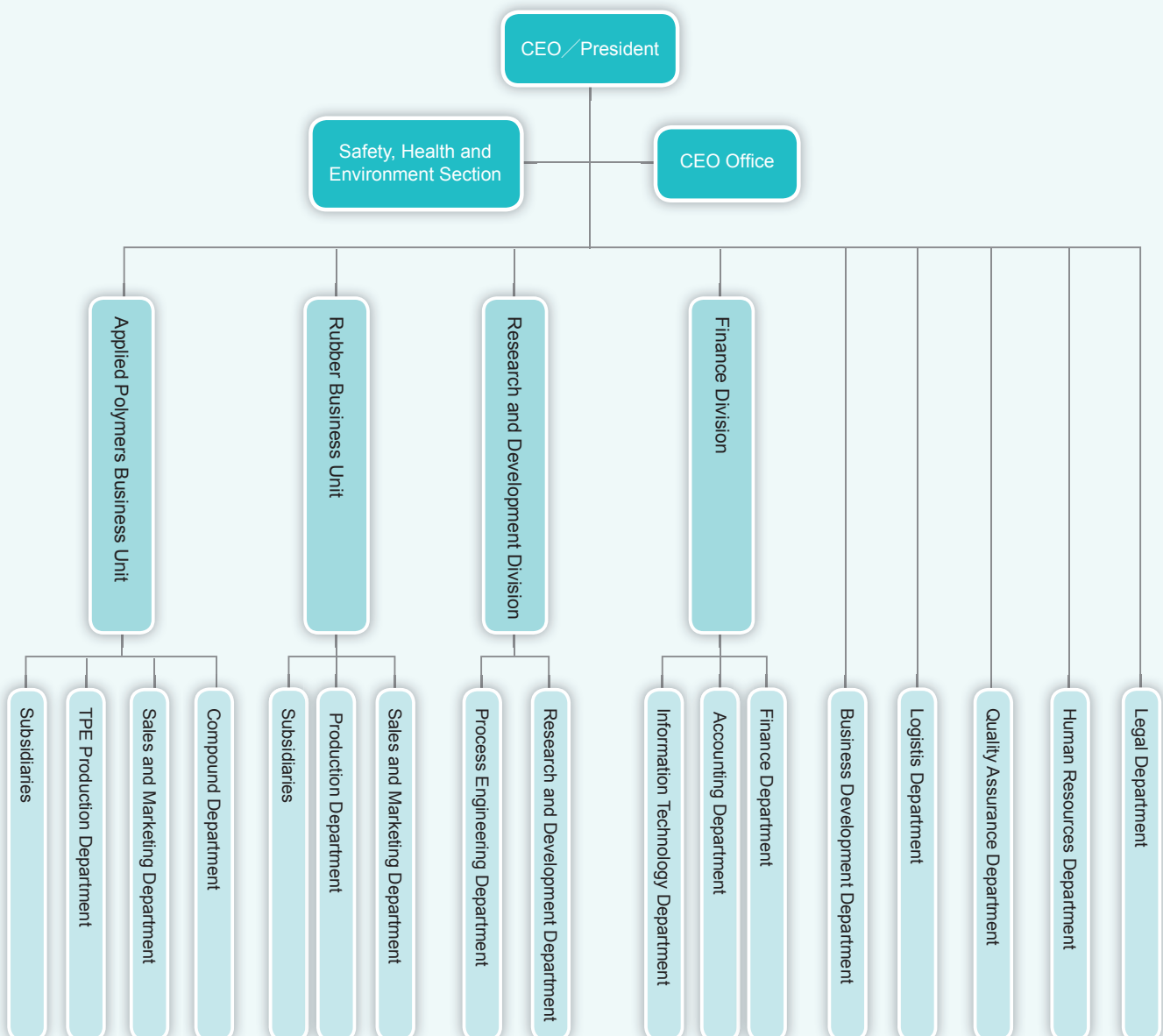
### ■ TSRC Then and Now



1. TSRC is a listed company (2103) in Taiwan stock market with shareholders of domestic and foreign legal entities and individuals.

TSRC Corporation was formerly known as Taiwan Synthetic Rubber Corporation. In response to the call of the government to develop the petrochemical industry, the founder Mr. Glyn T.H. Ing founded the Kaohsiung Factory in 1973 with capital of 1.3 billion in Dashe petrochemical industrial District in Kaohsiung County, Taiwan. Now, in addition to Kaohsiung Factory, in Taiwan area there are Gangshan Factory in Kaohsiung and a headquarter office in Taipei.

### TSRC Management Organization



TSRC's main business is to manufacture and sell a variety of synthetic rubber, and TSRC is still a brand company- the brand Taipol and T-Blend. The product lines contain ESBR, SSB, BR, TPE and TPR. Main applications are tires, shoe soles, conveyor belts, hoses, sports equipment, adhesives, toys and other industrial products.

In these years, TSRC actively engaged in globalization. The global planning is that on R & D and techniques, we are learning from Europe and America and has established operation centers in Europe and sales channels in Europe and the United States. On manufacturing, we set up factories in Asia. The major international investment cooperation and mergers are as follows.

The acquisition of Dexco Polymers Company in the United States for more than 145 patents to access to technology and the market.

TSRC began to invest and set up factories in mainland China in 1980s for the demand there. Now TSRC has several factories in China and they gradually contribute profits to TSRC.

A joint venture factory with the German LANXESS Group (Lanxess), LANXESS-TSRC Nantong, has started mass production of NBR in 2012.

A joint venture factory with Indian Oil Corporation, Indian Synthetic Rubber Ltd, is focusing on India's demand for rubber, and ensuring safe raw materials sources.

## 2. ESBR ,SBR, BR, NBR, TPE, and applied materials and their main markets are as below.

Unit : Tons/NTD1,000

Product Category	2012年度		Main Markets
	Quantity	Sales Amounts	
Rubber Business (ESBR, SBR, BR,TPE)	175,388	16,738,855	Japan, Thailand, China , Malaysia , Vietnam , the United States , Germany and India
Applied Materials (TPR)	2,490	243,705	China and Southeast Asia

## 3. Overview of Financial Status

Unit : NTD1,000

Development		2011	2012
Revenue	Net Operating Revenue	20,612,158	17,056,436
	Gain before Tax	7,035,301	2,746,496
Profitability	Gain after Tax	5,741,765	2,574,249
	EPS	7.30	3.27

In 2012, the growth of the car market in China has slowed down, but the supply increased a lot for the new capacity of synthetic rubber in the industry. The synthetic rubber market was in intense competition. On the other hand, the price of butadiene, the main raw material, was lower due to decreased demand, but not as much as the price of the synthetic rubber. Overall, our profit declined but still better than that of competitors.



#### 4. Research & Development Expenditure

Unit : NTD1,000

Development	2011	2012
Net Operating Revenue	20,612,158	17,056,436
R&D expenditure	255,519	260,554
R&D ratio	1.2	1.5

The R&D department actively develops a variety of different formulations for a variety of applications and demands to provide customers a total solution. The successful development of the technologies and products is as below.

Development	Achievement
Development of High-performance Solution Styrene-Butadiene Rubber for energy-saving tires	2012 Product Innovation Award from the Ministry of Economic Affairs
NBR product development	NBR development finished and in mass production
Development of new catalysts	Development of 3rd generation hydrogenated catalyst
Advanced process technology integration	The integration completed and enhanced the TPE product quality and performance.

In regard to patents, TSRC has actively focused on research, development and innovation of high-value products and energy-saving and environmentally friendly processes over the years.

In 2012, 4 items (19 patents) applied and 10 items (12 patents) approved.

#### 5. Organizations TSRC Engaged in

- ◆ Petrochemical Industry Association of Taiwan
- ◆ Taiwan Rubber & Elastomer Industries Association
- ◆ Da-she Petrochemical Industrial District Manufacturers Association
- ◆ Interlibrary Cooperation Association
- ◆ The Institute of Internal Auditors, R.O.C.
- ◆ Chinese society for quality
- ◆ Industrial Safety and Health Association of the R.O.C.
- ◆ Association for the advancement of labor safety and health, Ren Da Industry Park
- ◆ Taiwan Responsible Care Association
- ◆ ( IISRP, International Institute of Synthetic Rubber Producers )
- ◆ IPR Association of Chinese National Federation of Industries
- ◆ Chinese National Association of Industry and Commerce, Taiwan
- ◆ Safety & Health Association of Taiwan

## 6. Awards in 2012

- A. Award for International Trade from Ministry of Economic Affairs
- B. Product Innovation Award from Ministry of Economic Affairs for Successful development of high-performance SSBR for energy-saving tires
- C. Awarded for participation of the project for 10-year GHG Reduction & Offset, promoted by Bureau of Energy, Ministry of Economic Affairs, R.O.C.



Certificate of the 10-year GHG Reduction & Offset

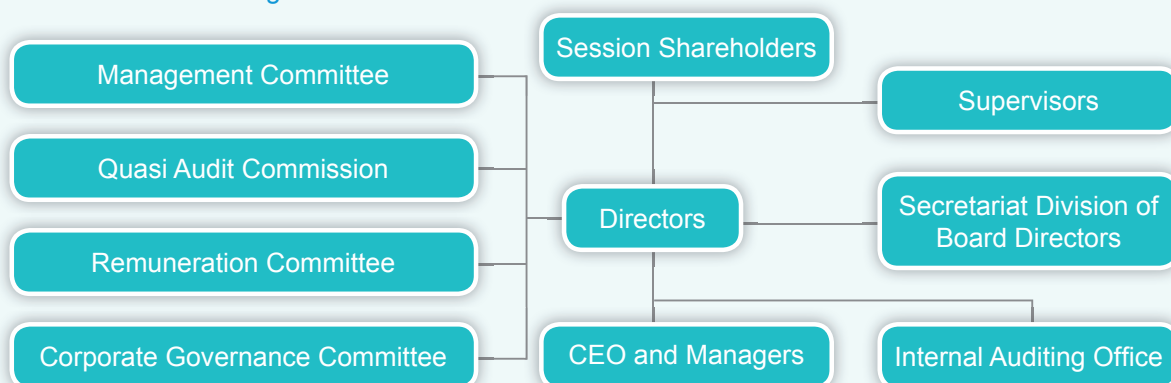
## • Corporate Governance •

TSRC's corporate governance system, to protect the rights of stakeholders, is built in accordance with "Company Act", "Securities and Exchange Act" and "Corporate Governance Best-Practice Principles for TWSE/GTSM Listed Companies".

In addition, TSRC's Code of Ethics is the protocol of integrity behaviors and procedures for directors, supervisors and managers to avoid an unfair advantage on their positions for themselves, their relatives or any other individuals. It specifies the principle of integrity principle, avoidance of conflicts of interests, protection of business secrets, fair trade, prevention of insider trading, protection and proper use of company's assets and at the same time, ombudsman system, disciplinary and complaints procedures.

Session shareholders, composed by all the shareholders, are the highest command authorities, electing directors as executive authorities and supervisors as supervisory authorities. The chairman of the directors is acting as the representative externally and has no administrative post in the company.

## ■ TSRC Governance Organization





## ■ Directors<sup>1</sup>

There are 9 directors (including 2 independent ones) in TSRC Board of Directors. 1 of the 9 is a woman, and the ages of the directors are over 50 years old. As the highest executive authorities, the board lawfully determines corporate governance mechanism and ensures its effectiveness, and develops strategies.

There are 4 functional committees under the board of directors-- Corporate Governance Committee, quasi Audit Committee, the Remuneration Committee and management committee. The directors are knowledgeable and experienced to lead, to judge on business operation, to analyze on accounting and finance, to administrate, to do crisis-handling, and to have international vision to govern the company.

## ■ Supervisor

2 supervisors exercise the power of supervision independently by law. In addition to attending board to present their views, they also attend various functional committees of the Board of Directors and can communicate with the department managers any time to understand and supervise the business.

## ■ The linkage between remuneration of managers and performance of TSRC

According to TSRC internal Articles, the remuneration of the directors and supervisors accounts for one percent of the surplus available for distribution. The plan of earning distribution is drafted by the Board of Directors and reported to stockholders. Remuneration for individual directors and supervisors and bonuses to employees are decided by the Board of Directors. The Remuneration Committee is responsible for reviewing the nomination and remuneration policy.

## ■ Policy of anti-corruption and privacy protection

As for the protection of business secrets, prevention of insider trading, antitrust regulations, fair trade, avoidance of interest conflicts and inadequate profits, and prohibition on bribery, dedication, etc., TSRC has clear instructions and regulations in Information Security and Confidentiality Policy, Privacy Policy, Standards of Business Conducts and Ethics-- all disclosed on the intranet for all employees. For example, when accepting gifts or hospitality on occasions of business, TSRC's employee should fill out "Gifts and Entertainment Declaration Form" with the supervisor's approval.

TSRC enables the employees to contribute to the protection of official secrets and understand the importance of the protection of customer information. We performed analysis and described countermeasures for employees on customer privacy. Up to now, TSRC has not received any complaints about invasion of customer privacy or sanction of penalty for violation of the financial and business-related domestic and foreign policies, laws and regulations.

## ■ Enforcement of Internal Control and Internal Auditing system

A quasi audit committee under the Board of Directors is responsible for auditing the processes of personnel, assets and finance among TSRC and affiliates. The internal auditing department executes measures of internal control and internal auditing and makes annual audit plans on accounting and internal control system to ensure risk control and regulatory compliance.

<sup>1</sup> Information of directors and supervisors-- Annual Report, <http://www.tsrc.com.tw>



# Green Activities of A Producer

## Product Responsibility and Customer Satisfaction

Producer's responsibility is not only to meet the needs of the users, but also not to impose any safety and health risks on the users. TSRC considers the impact of health & safety in important stages in production, communicating sustainability considerations in marketing process and tracks customer satisfaction annually.

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## GHG Reduction

TSRC's 2012 greenhouse gas (GHG) emission is 185,440 tons CO<sub>2</sub>e (carbon dioxide equivalent); among them the scope 1 accounts for 64 % and the scope2 36 %. Via the GHG inventory, the majority of GHG emissions are from burning fossil fuels, seconded by electricity. Therefore the key point of GHG reduction is the use of low-carbon fuels and electricity saving. For use of low-carbon fuel, in cooperation with Foundation of Taiwan Industry Service on the Project for GHG Reduction& Offset, TSRC obtains TAF confirmatory statement that after confirmed by the Environmental Protection Department, TSRC can have 10 years of crediting period. The reduction values of the project can be converted to economic value for upcoming domestic emissions trading market transactions or credits for total amount controlled. For energy saving, TSRC has worked through process improvement and integration, equipment replacement for efficiency and optimization of the operating conditions. TSRC will remain committed to making progress toward reducing energy consumption and GHG loading to the environment.

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## Water Management

In 2012 the overall water used is about 1.52 million tons with recycle rates 33.5% in TSRC. In the past three years, overall production water consumption has declined, while recycle rates increased.

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## Energy-Saving

TSRC is committed to setting up energy-saving goals to reduce energy consumption, to monitoring and improving energy efficiency continuously, updating equipment, recycling and encouraging office energy-saving activities. On green product development, TSRC has developed SSBR rubber material for demand for high - performance and environmental friendly tires to enhance energy conservation in the use stage.

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## Waste Management and Reuse on Raw Materials

The permission and tracking of waste disposal and other polluting gas emissions is compliant with the regulations. General industrial waste and hazardous industrial waste are managed systematically with sold storage management and tracking to prevent pollution to the environment. TSRC also announced lists of waste items and containers which need to be reused, and established a strict separation and recycle system. Also, by improving processes and integrate all kinds of technologies, TSRC manages to reuse/recycle all kinds of raw materials to reduce the impact on the environment.

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## Compliance

Up to the issue date of the report, TSRC has no records on failures to comply with environmental laws and regulations, and never fined or protested on environmental issues.

Cherish the Earth's resources to fulfill our environmental responsibilities;  
continuous improvement and run business with sustainability

### Principle

- Use resources reasonably. All raw materials, product and process development and improvement must be evaluated by internal regulations on safety, health, environmental protection to lower the impact on the environment.

- Set up goals and targets on saving energy and reducing waste, and actively improve via production and environmental management system.

### Enforcement measures

- Continuously educate all staff so that everyone understands and complies with safety and environmental health laws, regulations and related requirements.

- Running a business must keep balance thinking on product quality, environment improvement and the overall effectiveness. Any feasibility analysis must be equipped with an environmental impact assessment.

## • Product Responsibility and Customer Satisfaction •

Producer's responsibility is not only to meet the needs of the users, but also not to impose any safety and health risks on the users. TSRC considers the impact of health & safety in important stages in production, communicates sustainability considerations in the production and marketing process and tracks customer satisfaction annually.

### ■ Product Responsibility

In the following life cycle stages, TSRC reports here whether the health and safety impacts of all TSRC 8 major product lines are assessed for improvement :

Stages	Yes	No
Development of product concept	✓	
R & D	✓	
Certification		✓
Manufacturing and production	✓	
Marketing and promotion	✓	
Storage distribution and supply		✓
Disposal, reuse, or recycling		✓



## 1. Stages of Development of product concept & R & D--- health and safety regulation compliance

Category	Step	Process
Development on new products	Initial discussion	Assess compliance with laws of safety
	Trial run in Lab	
	Detailed assessment	
Development on new specification	Trial run in mass production lines	Work on compliance issues related to laws of safety
Development on new products/ specification	Mass production	Compliance issues related to laws of safety must be solved

As for compound products, only non-toxic and reusable raw materials are chosen at the beginning of R & D, and the blending processes are all physical mixing. Therefore, the output of both products and wastes of the development process are all reusable for the non - toxic characteristics. TSRC considers safety first, and continues recycle on raw materials for environmental protection.

## 2. Stage of Manufacturing and Mass Production

**[ Hazardous substances need to be compliant and systematic controlled ]**

TSRC upholds the absolute law-abiding attitudes to maintain best interests of consumers, and strictly control the hazardous substance in the manufacturing process as to be compliant with international and domestic environmental regulations. To further control of hazard substances, TSRC started establishing Hazardous Substance Process Management (HSPM) system to systematically manage hazardous substances in 2011, and passed third-party verification on IECQ QC 080000<sup>1</sup> in the same year. To suppliers, TSRC established environment-related substances management operating instructions document to let suppliers compliant with RoHS<sup>2</sup>, REACH<sup>3</sup> and other international environmental directives / regulations.

### Certificate of QC 080000



1 IECQ QC 080000: technical standards about hazardous substance management system published by IEC/IECQ

2 RoHS : Restrictions of Hazardous Substances, directive of the European Union.

3 REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals, directive of the European Union.

### 3. Stage of Marketing and promotion

Before shipment, sales division in TSRC informs the product limitation. TSRC reports the following sustainability information as below :

#### Sustainability products and services messages

TSRC's instructions clearly disclose consideration of sustainability in the following procedure.		
	Yes	No
The sourcing of components of the product	✓	
Content, particularly with regard to substances that might produce an environmental or social impact	✓	
Safe use of the product	✓	
Disposal	✓	

- A. In the procurement requirements of raw materials and packaging materials, TSRC gives priority to the purchase products approved by the environmental labels, with recycled materials, low pollution, energy - saving and recyclable products. Also, part of the promotion materials emphasized these recyclable qualities of TSRC products.
- B. TSRC procurement department started control measures on HSF (Hazardous Substance Free) toward suppliers and provided HSF supporting information. Quality assurance department has completed construction of hazardous substances database.
- C. TSRC cares on the responsibility of disclosure to the customer about the product. In the first delivery of whichever TSRC's all eight product categories, ESBR, BR, NBR, SIS, SBS, SEBS, SSBR, Compounds, is attached with SDS<sup>4</sup> which clearly discloses the prohibited substances information for customers to understand and archive. In addition, TSRC sales department provides declaration according to customer needs when relaying customers' HSF requirement to quality assurance department, performs the HSF quality satisfaction survey any time, and communicates TSRC's sustainable concepts when visiting clients or in public occasions such as seminars and product launch. TSRC periodically discloses sustainable and green information on the website.
- D. Waste treatment is clearly stated in the SDS and issued according to customer demand. Once the customer requests the special HSF waste treatment, TSRC will perform internal procedures for review and confirmation. In the future, sales will remind customers more frequently to help the waste treatment of the final products compliant.

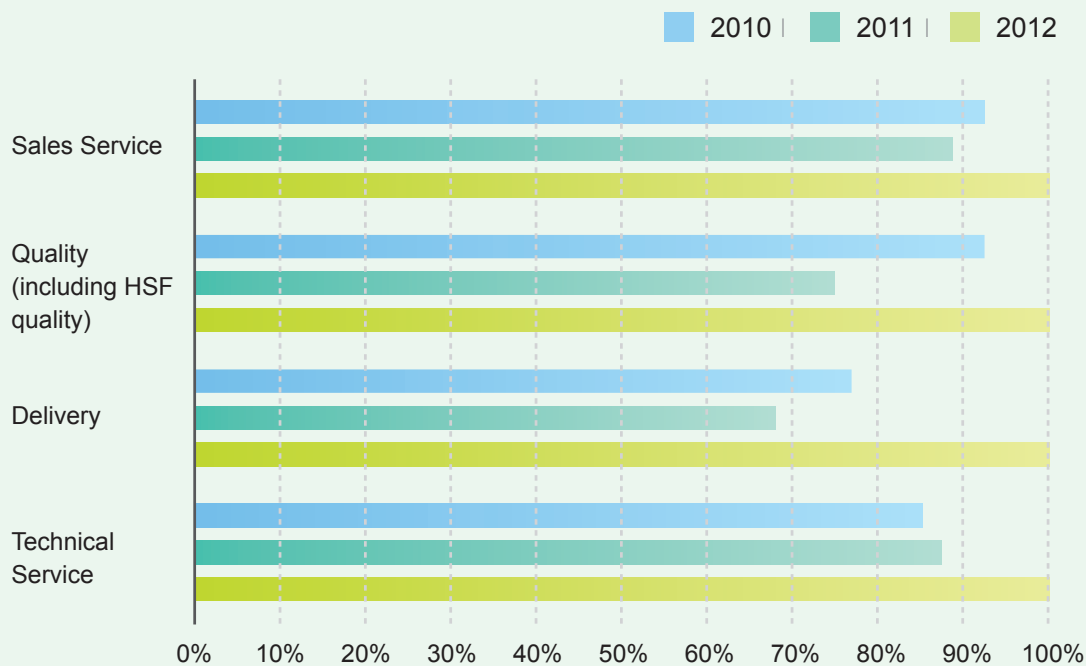
<sup>4</sup> SDS: Safety Data Sheet

<sup>5</sup> At the beginning of the procurement of raw materials, SDS of raw materials or semi-finished material from the supplier is a must to make sure raw materials used in TSRC product meet the requirement. SDS of TSRC's finished products (including the newly developed products) and SDS that customers asked for are managed and issued by TSRC QA department. R & D is responsible for the provision of relative information and confirmations of all information upon sales department requests.

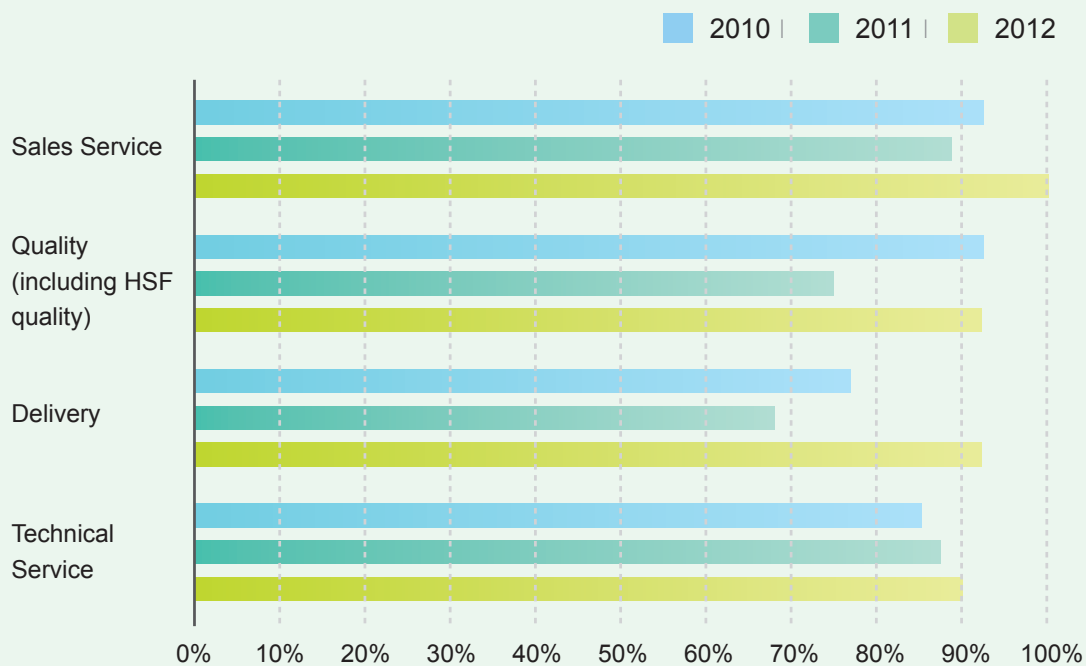
## Customer Satisfaction

Customer satisfaction survey is held annually from four dimensions—sales service, quality (including HSF), delivery and technical service.

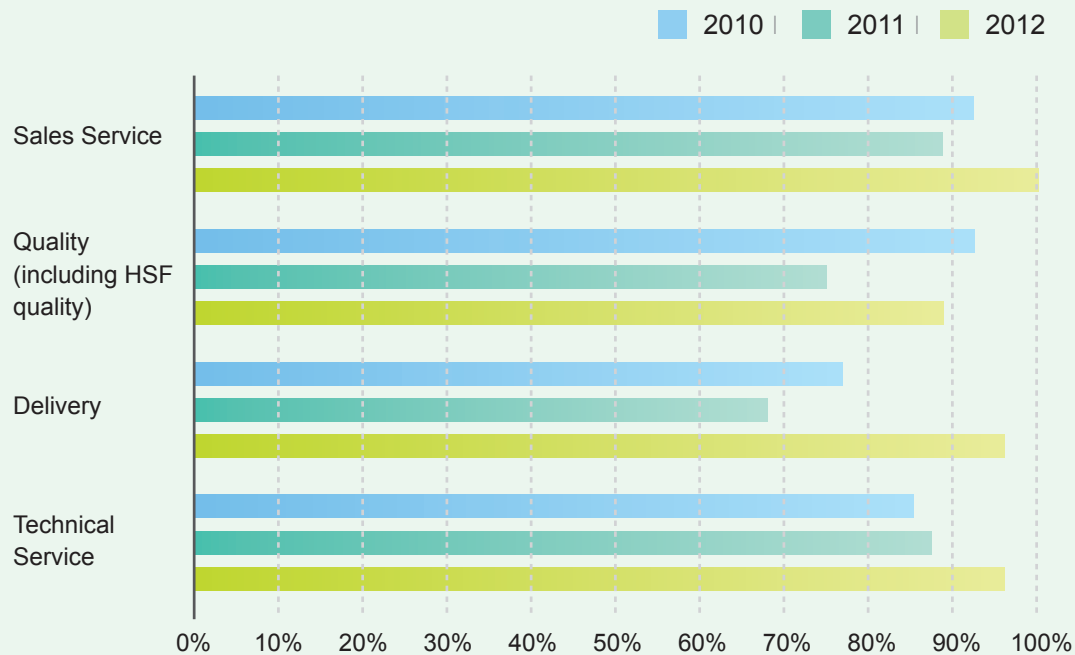
### 1. 2010~2012 Customer Satisfaction Survey Result (Rubber Business Unit)



### 2. 2010~2012 Customer Satisfaction Survey Result (Applied Polymers Business Unit -TPE)



### 3. 2010~2012 Customer Satisfaction Survey Result (Applied Polymers Business Unit -Compound)



Annual quality management review meeting is held to review and improve significant problem reflected by customers. Procedures of customer complaint and return operation are set up to handle issues like quality and HSF abnormal problems. By analyzing the reason for the return and review corresponding way to improve product quality, TSRC has created a spirit of customer-oriented service.

#### • GHG Reduction •

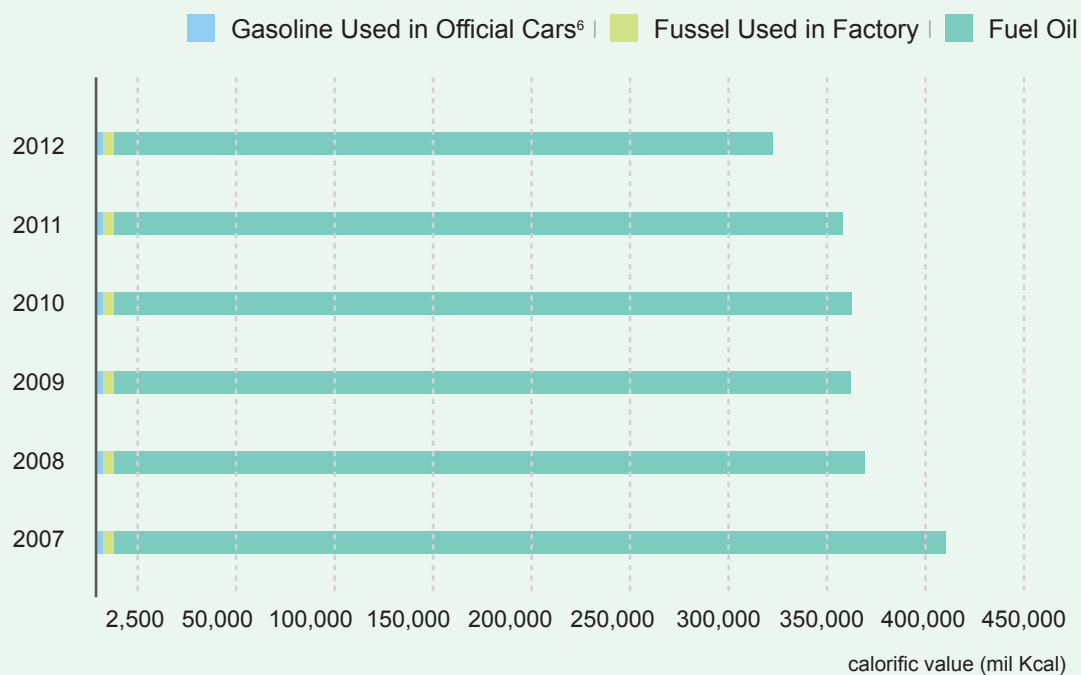
##### ■ Multi-consideration, Active Management and Reduction

TSRC has inventoried GHG annually since 2005, and registered the results in Environmental Protection Agency - National Greenhouse Gas Platform.

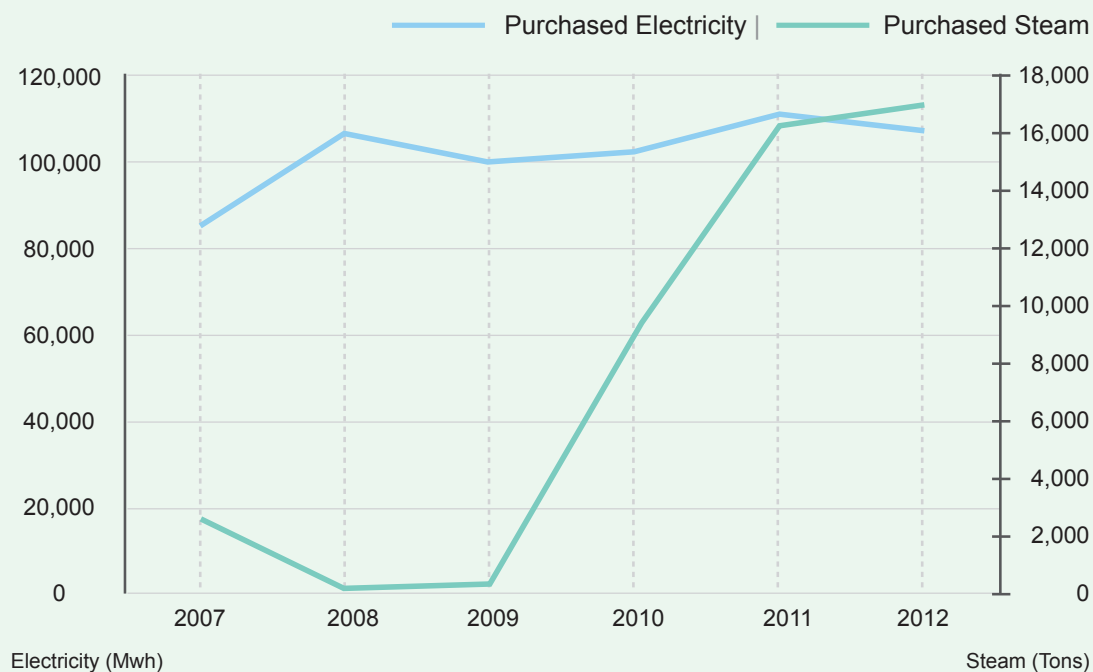
In order to improve the reliability and completeness of GHG data, comply with the relevant requirements of the authority, and as a subsequent reduction base, TSRC took the initiative to apply for external verification of the inventory based on ISO 14064-1 and EPD GHG inventory and registry guidelines. For the production factories in Kaohsiung District (including Kaohsiung Factory, and Gangshan Factory), TSRC received external verification in 2011 (Inventory from 2005 to 2010) and will continue holding the GHG inventory with the same methodology.

By GHG inventory, TSRC reviewed all sources of GHG emissions and established proper systems of control to save energy and reduce waste quickly. At the same time, in the planning reducing GHG emissions, TSRC easily caught the points.

## TSRC direct energy consumption - the largest direct energy use: fuel used in factory



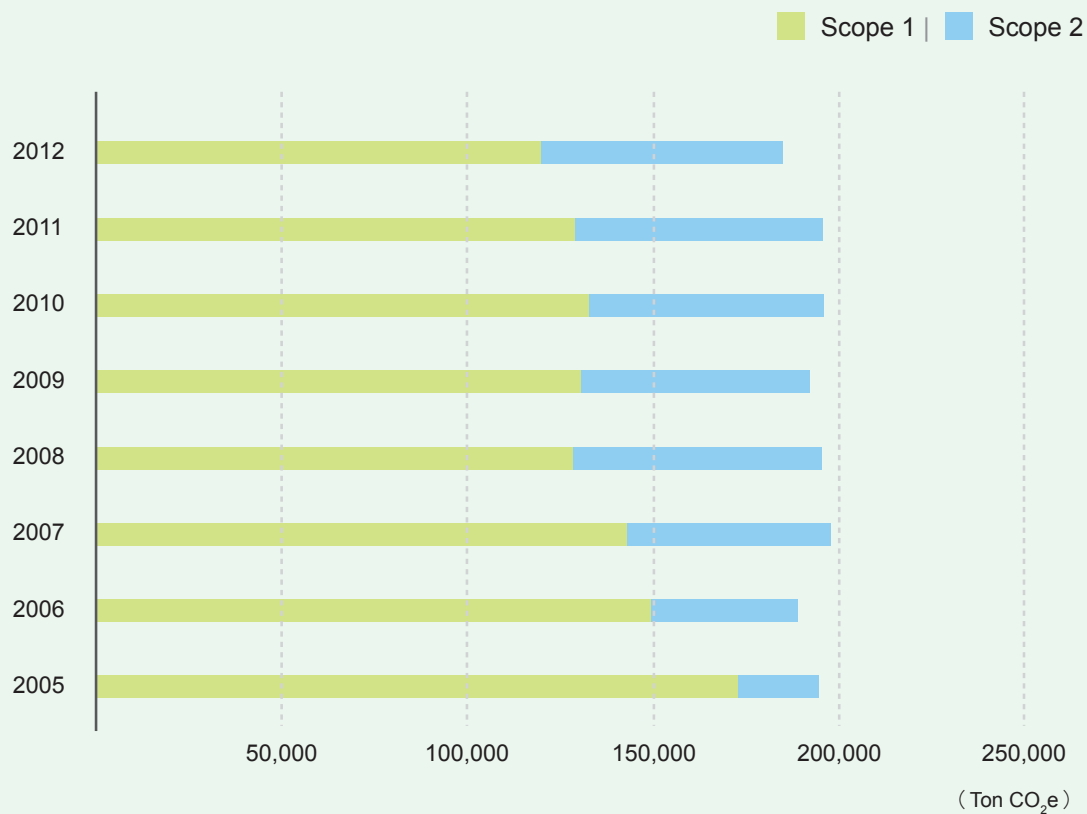
## Trend of TSRC indirect energy consumption



<sup>6</sup> The consumption for official cars is less than 100.

TSRC's total GHG emissions in 2012 calculated by the internal system is 185,440 tons CO<sub>2</sub>e, among them scope1 accounts for 119,496 while scope2 65,944 tons. GHG emission volume from 2005 to 2012 is as below.

**Trend of GHG emission<sup>7</sup> (scope1<sup>8</sup> & scope2<sup>9</sup>) from 2005 to 2012**



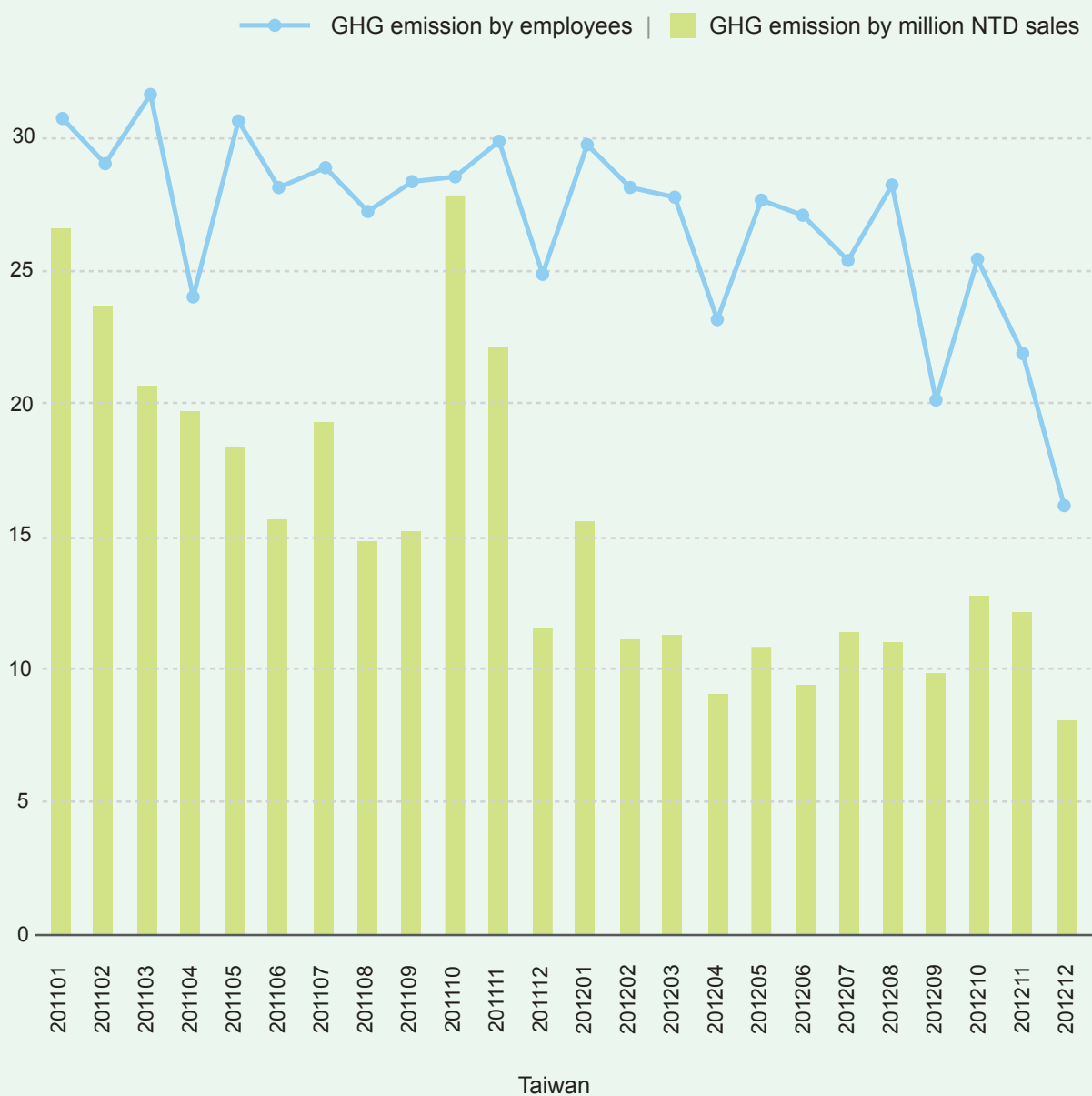
<sup>7</sup> The values of the GHG emissions from 2005 to 2010 are verified by third-party with organizational boundaries containing Kaohsiung Factory and Gangshan Factory; while those from 2011 and 2012 are calculated by the same methodology aligned with verification method with organizational boundaries containing Kaohsiung Factory, Gangshan Factory and Taipei office.

<sup>8</sup> Scope1 : Direct emission from fossil fuel combustion by the company

<sup>9</sup> Scope2 : Indirect emission from the electricity purchased by the company or district heating if applicable

Here is the trend of GHG emission by employee (blue) and GHG emission by NTD sales (green).

### Trend of GHG intensity from 2011 to 2012





## ■ GHG reduction plan and the effectiveness

TSRC supports not only Taiwan government reduction targets— enable GHG emission in 2020 to go back to that in 2005 and GHG emission in 2025 back to that in 2000, but also international action to reduce GHG emissions and to appeal to the efforts from the global community. In addition to continuous participation in the Ministry of Economic Affairs' "voluntary energy-saving and GHG reduction project" with base of ISO 14064-1 GHG inventory results for commitment to process improvement, equipment replacement, recycling of waste heat/waste water and other kinds of complementary technologies, TSRC also takes the initiative to start and co-ordinate the public sector's projects to maximize the benefits of reducing GHG emissions.

### Sum of GHG management and reduction measures

Commitment to process improvement, equipment replacement, recycling of waste heat/waste water

Participation in Ministry of Economic Affairs' "voluntary energy-saving and GHG reduction project"

Inventory and Management on GHG

Completion of the project for ISO 14064-2 & GHG offset and conducting follow-up verification<sup>10</sup>

Completion of the carbon and water footprint inventory projects and following improvement.

Development of new products environmentally friendly / green

Implementation of government's green projects

Assessment on energy management system

Expansion TPE market-- low toxicity, low pollution, and environmentally friendly

Use of environmentally friendly raw materials / oil

Green procurement on energy-saving label and green products

The scope 3 of GHG, other GHG emission not controlled by TSRC like community of employees, business travel, logistics, contracting activities of maintenance and waste management, etc., is described qualitatively in GHG inventory.

<sup>10</sup> The Project for GHG Reduction & Offset :

TSRC actively sought to be an example unit in the project held by the Industrial Development Bureau of the Ministry of Economic Affairs in 2012, showing the determination on GHG reduction. The main part that TSRC has done for the project is to reduce GHG emissions and the environmental load by updating and re-designing the fuel for No. 3 boiler, which accounts for the largest proportion of GHG emissions within TSRC, from heavy oil to natural gas, relatively a low-carbon fuel.

Through the efforts of our colleagues, TSRC received TAF certification on reduction / exchange project (ISO 14064-2) in 2012. After examination by the Environmental Protection Department in the future, TSRC can have 10 years of crediting period. The reduction values of the project can be converted to economic value for upcoming domestic emissions trading market transactions or credits for total amount control. This can be regarded as a big step forward for TSRC.

In addition, scope 3 in GHG emission means other indirect GHG emissions with sources that TSRC does not directly control. TSRC did qualitative identification on emission sources in inventory. The sources include employee commuting, business travel, logistics/maintenance outsourcing and waste landfill/incineration.

## ■ IT System for CFP and WFP Constructed to seek opportunities for carbon reduction

Highlight 1 shows that TSRC finished the CFP and WFP inventory and verification on 3 representative products. In addition, in order to understand the environmental impact of all products, TSRC has constructed Demeter, CFP and WFP calculation IT system, and built ability to inventory on our own. With Demeter, TSRC not only can monitor GHG emissions at every stage in the life cycle to seek opportunities for carbon reduction, but can also choose a low-carbon raw material in the production or development, and reduce the environmental loads.

**最近已完成專案列表**

產品碳足跡:

專案類型	產品編號	產品名稱	開始時間	結束時間	排放量	查證日期	證書有效期限
產品碳足跡	SEBS6151	<a href="#">SEBS6151</a>	2011/07/01	2012/06/30	3.8819714368 KG		

**最近進行中專案列表**

專案類型	產品編號	產品名稱	開始時間	盤查基本資訊 / BOM表管理	高階分析	盤查料件管理	排放量計算	盤查結果	查證日期	證書有效期限
水足跡	SEBS-6151 水足跡測試	<a href="#">SEBS-6151 水足跡測試</a>	2011/07/01	2012/09/10 09:03:40	2012/09/10 09:07:08	2012/09/10 09:07:50	2012/09/10 11:00:19	2012/09/10 11:46:18		
水足跡	SBR-1502 水足跡測試	<a href="#">SBR-1502 水足跡測試</a>	2011/07/01	2012/09/10 08:59:51	2012/09/10 09:00:56	2012/09/10 09:01:29	2012/09/10 10:58:54	2012/09/10 11:15:37		
水足跡	BR-0150 水足跡測試	<a href="#">BR-0150 水足跡測試</a>	2011/07/01	2012/09/10 08:52:44	2012/09/10 08:54:26	2012/09/10 08:54:50	2012/09/10 11:02:40	2012/09/10 11:08:26		

## • Water Management •

TSRC 's sole source of water is tap water. The total water consumption in 2012 was 1.519 million tons, and the total waste water<sup>11</sup> 1.04 million tons, all treated by the sewage treatment plant in the industrial district. TSRC has focused on wastewater recycling in process for years, and water recycling in 2012 was 509,000 tons—recycling rate is 33.5%.

Items (Unit: tons)	2010	2011	2012
water consumption	1,633,538	1,605,536	1,518,770
Recycle/Re-use volumes	431,116	489,322	509,031
Recycling rate	26.4%	30.5%	33.5%
waste water volumes	1,007,983	1,128,575	1,043,7051

Water statistics from 2010 to 2012

11 Details of 2012 total waste water volumes: Kaohsiung factory 1.041 million tons and Gangshan factory 0.2 million tons.

## • Energy-saving •

### ■ Energy-saving in production lines

For years, TSRC upholds the concept of "cherish the earth" and is committed to environmentally friendly process, energy-saving, re-use and recycling of resources. Large energy-saving programs in recent years are summarized in the following table.

Sum of environment protection and energy-saving programs	
Condensed water recycling in SBR process	Adsorption of waste gas in BR plant
Condensed water recycling in BR process	Incineration of dust in TPE plant
Condensed water recycling in TPE process	Recycle of condensed gas outside the solvent tanks
Waste heat recycle and hot water circulation in BR plant	Buffer tank set for rainstorm
Recycled water Re-used program (for cooling tower) in BR plant	Diversion of rain and sewage for rainstorm
Incineration of waste gas in SBR plant	Wells set for sampling and monitoring groundwater

In addition, since 2004 TSRC has participated in the Ministry of Economic Affairs' "voluntary energy-saving and GHG reduction" project for process improvement and equipment replacement. From 2004 to 2010, with verification by Taiwan Green Productivity Foundation commissioned by the Ministry of Economic Affairs, TSRC reduced approximately 37,000 tons of CO<sub>2</sub>e emissions. TSRC has once again participated in the second phase of the project (from 2011 to 2015<sup>12</sup>) to continue saving energy.

### List of Energy-saving efficiency

Items	Energy saved during 2004~2010
Electricity(MWH)	8,131
Steams(tons)	3,922
Fuel oil (Kiloliter)	10,332
LPG(tons)	195

12 In 2013, TSRC will ask The Taiwan Green Productivity Foundation to verify the saved volumes during 2011~2012.

### Sum of environment protection and energy-saving measures from 2004 to 2011

Year	Measures	Year	Measures
2004	Air-conditioning replacement of the motor control center	2008	Air cooler in TPE plant D-line milling system was updated to enhance the cooling efficiency
2005	Heating for the boiler water in BR plant to reducing fuel consumption	2009	Cooling water for boiler and air compressor of TG was transferred to be supplied by SBR plant for TG's line has been stopped for a long time.
2006	Use recycled Butadiene as fuel to reduce consumption of LPG in flare	2009	Operating pressure of the hydrogen compressor was lowered to reduce power consumption in TPE plant.
2006	Upgrade of the HRF-Soap ingredients to reduce steam consumption	2010	Ice water cooler was set to reduce power consumption in BR plant
2007	Use recycled Butadiene as fuel to reduce consumption of LPG in RTO	2010	Enhancement of efficiencies of mercury pump and recycle of out-of-spec products to reduce power consumption in TPE plant
2008	The combination of Flare Purge steam and flow volume meter makes outside exhaust smokeless combustion to reduce consumption of steam	2011	Indoor lighting change to T5 energy efficient lamps
2008	Absorption refrigeration machine was set to use waste heat and save electricity in BR plant	2011	Addition of inverters on activated carbon adsorption slot fan in BR plant

TSRC in 2012 continued to work on various dimensions and to make energy-saving a culture. The measures and efficiencies are as below.

Measures	Efficiencies
Set-up of power monitoring system for all factories	Real-time monitoring and analysis on electricity in plants
Fuel change of boiler No.3-- from heavy oil to natural gas	Complete combustion of natural gas and device efficiency makes total energy consumption relatively reduced
Analysis of cooling water in production	Validation on heat exchange equipment and optimization on pump performance
To construct the Regenerative Thermal Oxidizer (RTO) to process the exhaust which originally was imported to Flare	To reduce steam consumption of flare
Replacement of PP - 1211B pump	About 15% efficiency enhanced and electricity saved.
To use the RTO exhaust gas as a heat source in dryers in SSBR production lines	Reuse of heat source to the save the consumption of steam
To improve equipment capacity & reduce the failure rate, and to increase the amount of recycling wastewater in the BR plant	Waste water recycled throughout the year increased by about 68,696 tons.

To Modify the AS - 6401A / B CFW flow meter to adjustable type to reduce the purification of water consumption	Purified water throughout the year saved up to 8,004 tons
To recycle AS-304's wastewater to dilute defoamer and be as desuperheat water.	Waste water recycled throughout the year was up to 12,431 tons
To continuously replace diesel stackers with electric ones in Compound plant	To improve the fuel consumption and the failure rate. Expected to be executed in 2013.

In the future, TSRC will also optimize on aspects of energy-saving measures in the manufacturing process, improvement of equipment efficiency, waste heat & waste water recycling, improvement of operating conditions and other aspects to save all kinds of energy resources.

2013 projects are listed below.

Measures	Efficiency
To equip additional waste heat recycle equipment for dryer column re-boiler in 6300 Zone in BR plant.	To raise circulating hot water temperature, and therefore to save the consumption of steam
The air compressors PC - 1505 replacement	To strengthen supply performance and lower power consumption
Replacement of feed water heat exchanger of boiler ( TT - 6304 )	To replace with heat exchanger which is easier for cleaning and therefore to higher the incoming water temperature
To equip control valves on vapor lines of steam electric boiler 90K	In the case of internal leakage, isolating inspection becomes possible to reduce steam loss
Upgrade of cooling water circulation pump PP - 1221A / S and PP - 1213B in TPE plant	To recover PUMP efficiency and therefore reduce energy consumption
To recycle RTO waste heat into drying bed	To recycle waste heat to reduce consumption of steam
To equip inverter on brine pump ( PP - 3503B )	To stabilize the operation pressure of pumps and therefore save electricity

#### ■ Energy-saving in office

TSRC stresses the importance of energy-saving and disclosures that in daily life. Through advocacy and education, employees understands importance to follow the administrative measures about energy-saving such as turning off lights, 26 °C for air-conditioner in summer, carpool for business trips, etc.. TSRC also works hard for replacement for the energy-saving equipment-- from 2008 to 2011 a total of 1,311 lighting fixtures was replaced to T5 energy efficient lighting in Kaohsiung Factory and Gangshan Factory. The replacement was still going on in 2012 and 60 fixtures were replaced in Kaohsiung Factory.

#### ■ Energy-saving in product's usage stage

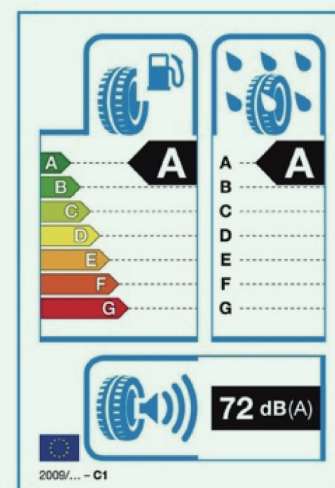
TSRC products' application is mainly tires. The demand for Cars and tires has grown substantially. The fuel consumed by cars accounts for about 40% of all fuel consumptions while friction resistance for tire rolling accounting for about 15% to 25 % of all fuel consumption in a car. Therefore, "To reduce tire rolling resistance and fuel consumption" is the major point for TSRC to think about improvement of energy efficiency and reduction of GHG emissions.



Rubber formulations of a tire affect its grip, driving noise and wearable mileage, etc., and the green tire means without sacrifices of basic safety performance (such as grip) it can also achieve reduced rolling resistance and abrasion for longer life.

EU legislated to require imported tires from 2011 November to label fuel efficiency, wet grip performance, rolling resistance and noise level for consumers to compare, choose and decide themselves, for 78% of the tire market is for maintenance use and end users. This is expected to lead to major changes in the global tire market and manufacturing technology.

In response to the international demand for energy conservation and environmental protection tire, TSRC has developed SSBR rubber material to meet the demand for high-performance tire characteristics like energy conservation and environmental protection.



Tire label implemented from 2012 in EU for energy-saving

TSRC has developed high performance SSBR to supply downstream tire customers to develop low rolling resistance, energy - saving and high wear tires. Tire rolling resistance can be reduced by at least 20% and therefore reduced 3% of fuel consumption. (The fuel consumption of about 30 liters saved when traveling 10,000 kilometers.)<sup>13</sup>

Wear resistance of tires can extend from 40,000 km to 80,000 km<sup>14</sup> and significantly reduce the environmental impact of waste tires.

The future direction for the continued development is new products applied to reduce tire rolling resistance, so that downstream customers can develop environmentally friendly and high-performance tires. TSRC's goal for low rolling resistance is 5%.



TSRC CEO Mr. Tu and 3 colleagues participated Green Campus<sup>15</sup> held in October 2012 by McKinsey in Jurong Island Industry District in Singapore, with the topic energy- saving, to show the emphases on environment and energy.

<sup>13</sup> The data, provided by a customer of TSRC, was derived by testing tire's rolling resistance coefficient (with test method ISO 28580) to convert. The other data is derived by real fuel consumption of the new cars' travelling.

<sup>14</sup> The data, provided by a customer of TSRC, was derived by testing tire's wear resistance (with test method FMVSS 575-104) and convert. (data > 300 Equal to 80,000 km of wear). The other data is derived by wearing comparison among travelling of taxis with different tires.

<sup>15</sup> Reference website of Green Campus <http://www.greencampus.mckinsey.com/news>

## • Environmental Impact Arising from Transportation •

TSRC's factories are all located in the industrial district instead of resident community. Therefore, employees' commuting has a quite limited impact on residents and the area nearby. In addition, the contract manufacturers are requested to transport raw materials in accordance with the industrial district route, and apply for the approval when bring into hazardous substances. Therefore no significant impact on the environment is found.

The contractor must be legal transport companies with capabilities and plans of emergency response, and with training and drills implemented every year. The transport tanks should be regularly inspected and should be with inspection certificate, and the tank truck drivers should receive the professional training "Transport about hazardous substances" and "high-pressure gas container operator" , and with the actual delivery experience and regularly participate in other On-site job training.

## ■ Local Procurement

Local procurement is prioritized. TSRC establishes long-term partnership with local suppliers to safeguard the development of the domestic economy and to reduce the energy consumption and costs incurred due to long-distance logistics (whether by air or sea transportation), and thus achieve the purpose of carbon reduction . In 2012, local procurement is approximately NTD 11.05 billion, 1.2 % decreased compared with that in 2011. It is mainly because the supply capacity of the major local suppliers declined. Overall, TSRC's domestic procurement ratio is about 70-80%.

**The amount and ratio of local procurement from 2010 to 2012**

	Amounts of local procurement (KNTD)	Total procurement amount (KNTD)	Ratio of local procurement
2010	9,871,014	13,290,594	74%
2011	13,879,746	18,732,926	74%
2012	11,053,396	15,161,919	73%

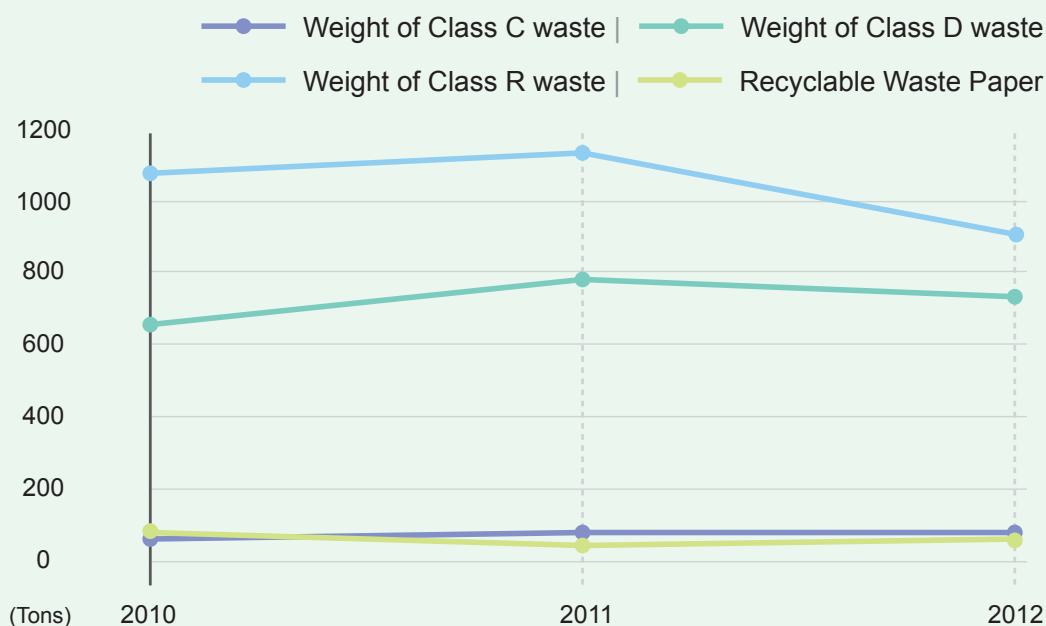
## • Waste, Other Emission Management and Recycling of Raw Materials •

### ■ Waste

All waste is dealt with in according to Waste Disposal Act to obtain the permission of waste disposal; general industrial waste and hazardous industrial waste are managed systematically. TSRC has commissioned legitimate waste disposal companies to do storage management and track reporting to prevent environmental pollution.

TSRC also announced lists of waste items and containers which need to be reused, and established a strict separation and recycle system. Also, by improving processes and integrating all kinds of technologies, TSRC manages to reuse/recycle to reduce the impact on the environment.





#### Notes

1. Class C waste : hazardous industrial waste
3. Class R waste : Recycle type waste

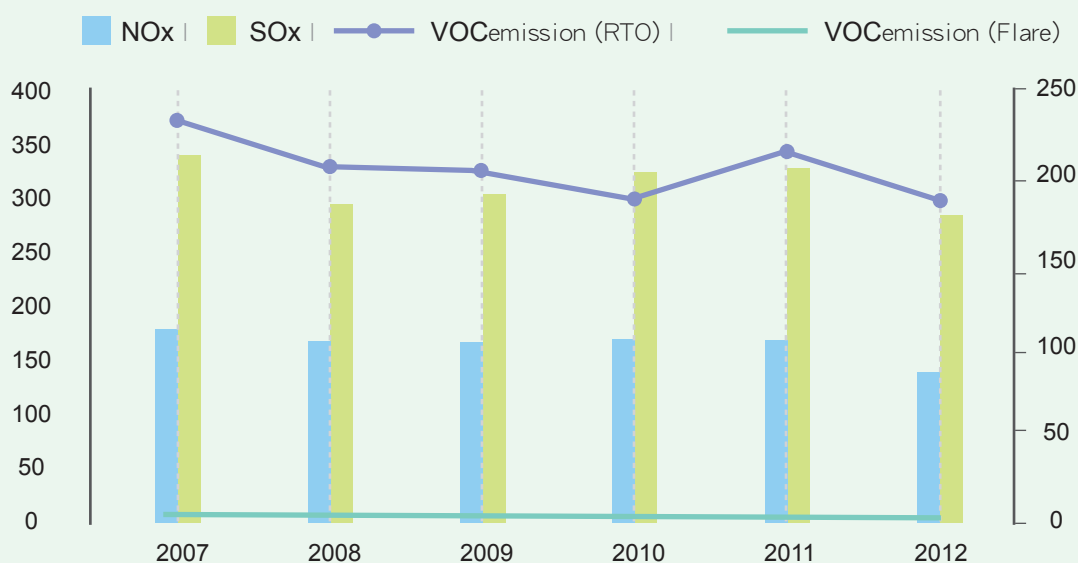
2. Class D waste : general industrial waste
4. There are mainly 3 ways for commissioned waste handler to handle waste and their ratios - incineration 29%; recycling 54% and landfill 17%.

#### Other polluting emissions

TSRC set up air pollution control equipment and the boiler chimney exhaust automatic monitoring system lawfully to control air pollutants.

With operating permits, and regular testing operations of flue exhaust, TSRC keeps an eye on test results and continues tracking, monitoring and analyzing to ensure that the factory exhaust emission is in line with regulations.

#### Trend of Other polluting emissions from 2007 to 2012



#### Notes

1. NOx : Nitrogen oxides
2. SOx : Sulfur oxides
3. VOC : Volatile organic compounds

## ■ Recycling of Raw Material

In terms of the entire life-cycle concept, energy efficiency on recycling of the raw material is very obvious. Over the years, TSRC continues process improvement to maximize the recycling of raw materials and also successfully achieved our goals. The specific performances in 2012 are summarized here.

Measures	Efficiencies
To reduce the cumulative amount of recovery butadiene and save the amount of the fresh butadiene by re-entering secondary recycled butadiene to charge reaction system	Butadiene saved throughout the year is 170 tons.
To reduce the amount of recycling styrene and save the cumulative amount of fresh styrene by blending 3rd & 1st recycled styrene into charge reaction system	Styrene saved throughout the year is 154 tons.

In the future, TSRC will make use of all kinds of complementary technologies and integrations to recycle or reuse all kinds of raw materials as more as possible.

## • Domestic and International Environmental Compliance •

During the Reporting period, TSRC had no serious spills, no violations of environmental regulations and no penalties. TSRC had not imported and exported waste in 2012.

TSRC's main production base, Kaohsiung factory in Dashe Industrial District, is a special industrial district established by the Industrial Development Bureau of the Ministry of Economic Affairs in 1971, is not in or close to any protected area or a biodiversity area declared by Taiwan's governmental agencies or IUCN (International Union for Conservation of Nature). In addition, TSRC confirmed Endemic Species Research Institute that no biological species in this industrial district are on the IUCN Red List or national conservation list. Therefore no evidence shows any significant impact on biodiversity due to activities in the factory. TSRC also make efforts to research and develop environmentally friendly products and use less polluting raw materials to protect the earth's resources and reduce the ecological impact of on the earth.

## ■ Total Environmental Protection Expenditures and Investments

TSRC Environmental Protection Expenditures and Investments in 2012 is NTD202 million. The categories cover personnel training costs on environmental education, environmental accounting set-up costs, application for an environmental license, research and development expenses on environmental management, the additional costs to be green (beyond standard techniques) and other environmental costs .



# Labor and Human Rights

## The Rights and Welfare of Workers

TSRC provides fair employment opportunities and competitive salary. Not just Taiwan's statutory labor Insurance and national health insurance, TSRC additionally provides free group insurance covering employees and their families. TSRC's Labor Pension Fund Supervisory Committee monitors appropriate functions of the statutory pension and retirement system following the Labor Standards Act and relative regulations. Labor union is responsible for protecting the rights of collective bargaining. TSRC provides subsidies to various sport clubs and activities, and puts emphases on the importance of local employment. For those applying for leave of absence without pay and the laid-off, TSRC also gives the re-appointment or follow-up assistance.

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## Occupational Health and Safety

TSRC firstly enables employees to understand the special occupational risks in the industry and then to work on the protection and manages statistical data. The sub-committees under the Responsible Care Committee is responsible for experience-sharing, training and prevention of occupational safety risks. Further prevention and post-processing on occupational disaster and disease is also provided. TSRC Continuously receives verification on OHSAS 18001<sup>1</sup> as a way to establish various health and safety systems and to be in line with international standards.

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## Training and Education

“TSRC Internal Staff Training Approach” specifies and ensures that annual training plans and execution for new employees on general knowledge, professional skills, management skills and verification aligned with company strategy, demand for job, laws and requirements.

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<sup>1</sup> OHSAS 18001 : International standard for occupational health and safety management system

## Core Value

"Human-oriented", TSRC's core values, is deeply rooted in attitudes and behaviors of each employee, developing out the corporate values.



### • The Rights and Welfare of Workers •

#### ■ Emphasis on Gender Equality and Local Employment

In 2012, male employees in TSRC are 548 while female ones 85. TSRC emphasizes on gender equality, offering men and women the same freshman salary, which equals to or is higher than the legal requirements, and adjustments of the pay and promotion are correspondent to individual ability and qualifications, regardless of age, gender, region, marital status and sexual orientation.

All employees, male and female, must be subject to an annual performance evaluation. When hiring new staff, TSRC follows the standard process considering the expertise and work experience for the job. With other conditions the same, the priority will be on local candidates to strengthen the relationship with the community. Domestic staff ratio is over 99.5%. In addition, TSRC has fulfilled the handicapped employment ratio in accordance with the law.

### Ratios of Employee's age and gender in Taiwan area

Age	Gender	Employees in Taiwan Area					
		Ratio (%)	The ratio of Executives <sup>3</sup> (%)			Numbers about The Handicapped <sup>4</sup>	
			Taipei	Kaohsiung	Gangshan	%	Headcounts
Under 29	Male	8	0	0	0	0	0
	Female	3	0	0	0	0	0
30~49	Male	47	0	0	0	43	3
	Female	9	0	0	0	0	0
Over 50	Male	32	52	24	12	57	4
	Female	1	12	0	0	0	0
Total <sup>2</sup>	Male	87	88			100	7
	Female	13	12			0	0

#### Collective Bargaining

TSRC has signed the collective agreement every three years since the establishment of trade union to promote the management-worker harmony and protect labor rights. In 2012, the collective agreement added declarations about employee's health and safety in order to protect the health of employees.

Management-worker meeting are regularly held for the communication and coordination of labor rights. In 2012 the meeting was held twice and completed the negotiation of operations adjustment issues of overtime payment. On the whole, management-worker relation in 2012 in TSRC is satisfactory and had no significant disputes.



Collective agreement is signed every 3 years.

(Representative of management, Mr. Chiu, left. Representative of TSRC trade union, Mr. Liu, right)

#### Human Right

In these recent years, following the release of gender equality and sexual harassment prevention bills in Taiwan, TSRC provided employees the education and training of the bills. In 2012 TSRC invited external professional CSR consultants to provide CSR counseling program to employees and released CSR information in TSRC internal website.

2 Number of employees in TSRC (Taiwan area) : 633.

3 Number of Executives in TSRC (Taiwan area) : 17. Definition of Executives is Grade 13 (equivalent to Assistant Vice President) or higher.

4 Number of Handicapped employees in TSRC (Taiwan area) : Equally 7. By law, TSRC should hire at least 6.

TSRC performs administrative operations about employees compliant to Labor Standards Act in Taiwan and internal requirements. TSRC's CSR declaration also specifies the protection of personal freedom, no discriminate, and forbiddance on child labor. Employees receive job description when on board or job transfer and can apply for resign application from free will by TSRC's human resource management regulation. No forced or compulsory labor occurred. In 2012, no breach of the labor regulations, discrimination or violations on the rights of employees occurred. Number of grievances related to human rights filed, addressed and resolved through formal grievance mechanisms such as trade union and internal Web site is 0.

In 2013, TSRC will develop Supplier Code of Conduct and establish approaches on management and assessment. We expect our partners to join and establish a management mechanism to have mutual sustainable development.

In addition, considering the well-being for the employees, when it comes to overtime, supervisors can assign employees to work overtime when necessary only not to exceed 12 hours a day and 46hours a month according to the law.

### ■ Benefits Provided to Full-time Employees

With the idea of sharing profits with the employees to attract, retain, nurture and give incentives for the talents, TSRC adjusts salaries and bonuses by annual operating conditions and performance assessment of the employee. In addition to the benefits compliant to the laws and regulations, TSRC provides the following welfare measures primarily through the operation of the Employees' Welfare Committee.

1. "Pension-monitoring committee" monitors appropriate functions of the statutory pension and retirement system followed the Labor Standards Law and relative regulations.
2. Bonus on 3 Chinese festivals, birthday and Labor Day.
3. Welfare coupons for employees. Welfare to choose includes tourism and leisure activities, children education allowance, staff canteen items, tickets of movie, accommodation, dining, and leisure/sports goods.
4. Not just Taiwan's statutory labor insurance and health insurance, TSRC additionally provides free group insurance covering employees and their families.
5. Yearly events like year-end dinner for employees
6. Financial subsidy on marriage , maternity , injury, funeral condolences.
7. Staff restaurant and dinning subsidy
8. Clinic room equipped with a nurse, physician examination and other health care consulting services, annual health examinations and health seminars following staff's needs.
9. The company tours, sports clubs and games such as softball, badminton and billiards. Employees can set up clubs freely.
10. Library, Recreation Room
11. Incentive programs such as patent applications, model employee and long serving awards





### ■ Benefits for Those Leave for a period of time and Laid-off

1. The employee can apply for unpaid leave for reasons like illness, study abroad or a private matter after the supervisor's approval. And TSRC accepts the employee's resumption application if he/she applied 1month before expiration of the leave.
2. TSRC presents a medal and gifts to long-served retirees whose retirement is approved lawfully. In addition, these retirees will be invited to join the year-end party and have gifts.
3. For the layoff, TSRC does beforehand notification to Labor Affairs Bureau and informs local job service agencies for his/her job-searching. According to the Employment Services Act, if the laid-off employee cannot have jobs in 6 months, he/she can apply for the dole.

## • Occupational Health and Safety •

### ■ Protection and Management

As the main raw materials - butadiene, cyclohexane and gas - are flammable, therefore for the smooth production operations and safety and health of staff, factories, and nearby communities, TSRC carries out risk assessment before operation. Since 2009 TSRC has been certificated with OHSAS 18001 / CNS15506 management System. TSRC involves every employee and has full communication to pursue the target of zero accidents and zero injuries.

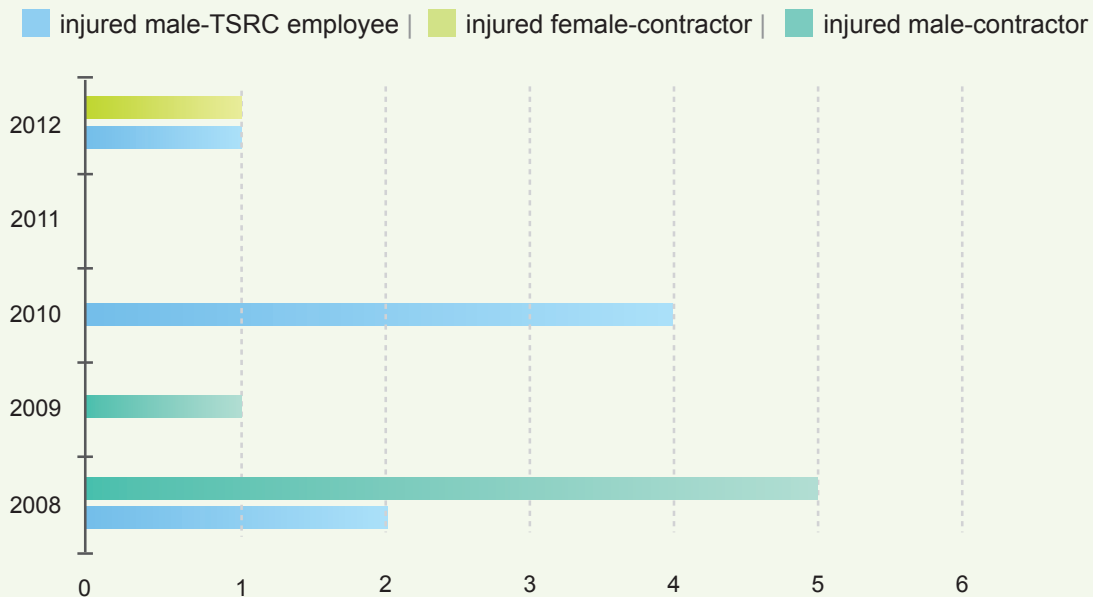
In addition, TSRC employs external counseling company to help improve the overall health and safety culture and awareness. To control the hazardous substances and dangerous workplaces, workers' exposure to the operating condition, and various types of chemicals used in the process compliant to regulations for petrochemical industry, TSRC commissions qualified external testing organizations for the implementation of the testing operating

### 2012 Occupational Health and Safety Improvement Issues

For TSRC	For TSRC's suppliers
Risk of falling from upright ladder	Personal protective equipment
Backup key management of power-lockout	Toolbox meeting before the construction
Improvement on dust in the operating environment	<ul style="list-style-type: none"><li>· Completion the basic information of those works in TSRC factory</li><li>· Education to contractors to take responsibility on occupational accidents and accurate concepts for their employees</li><li>· Safety meetings held to convey the right ideas to staff</li></ul>

As for the employee occupational accident statistics in 2012, there are no fatalities but 2 accidents, one on TSRC male employees and other on a female contractor. The former is a palm fracture accident for slippery in fast walking during equipment cleanup, while the latter a finger-pinchd one by machine for non-compliance with operational safety requirements and lack of safety awareness. Both accidents were taken care with the necessary emergency measures, and followed with the analysis to take effective corrective action and prevent the recurrence.

### The number of injured<sup>5</sup> people and gender in accidents in the TSRC operating area

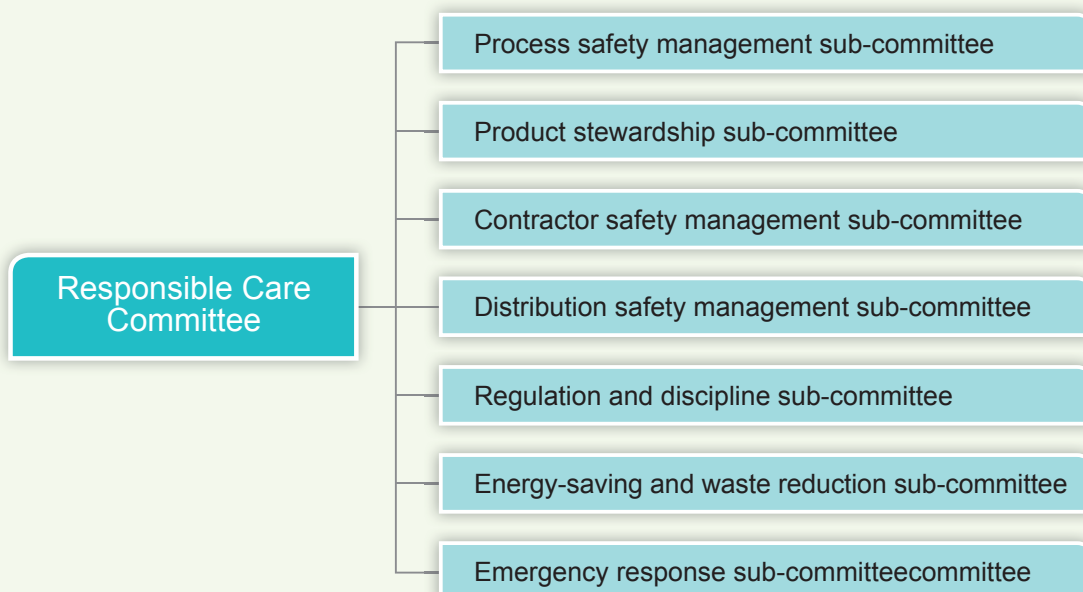


TSRC's occupational health and safety issues are managed by 2 committees, Responsible care Committee and Labor Safety and Health Committee.

#### ■ Responsible Care Committee

In order to enhance safety culture, TSRC commissioned DuPont to help setting up "Central Safety and Health Committee" and then reformed to Responsible Care (RC) Committee" in 2011, to hold management and review functions of both OHSAS 18001 and CNS15506. RC Committee's purpose is to implement and integrate of environmental, safety and health policy and management system, to deepen the core concept of "safety, health, environmental protection and green", to fulfill six management standards from Taiwan Responsible Care Association and to comply with industry standards and community / social expectations. TSRC's RC committee holds the attitude of "product / process safety and responsibility" to have cross-department collaboration to maintain business continuity and achieve sustainable development by the seven sub-committees tied with each other.

RC committee's organization chart is as follows.



5 Commuting traffic accidents not included

RC committee's organization chart is as follows :

Name of Sub-committees	Functions
Process safety management sub-committee	<ol style="list-style-type: none"> <li>1. To ensure process technology safe and reliable</li> <li>2. To ensure equipment safe and reliable</li> <li>3. To ensure that staff equipped with the necessary skills for safety</li> <li>4. Implementation of audits on safety</li> </ol>
Product stewardship sub-committee	<ol style="list-style-type: none"> <li>1. To ensure product quality and regulatory compliance</li> <li>2. Implementation of risk management</li> <li>3. Design and improvement on product and process like green materials, green products / processes</li> </ol>
Contractor safety management sub-committee	<ol style="list-style-type: none"> <li>1. Implementation of the contractor management system</li> <li>2. Implementation of the communication and training to contractors</li> <li>3. To review contractors' safety, health and environmental management plan</li> </ol>
Distribution safety management sub-committee	<ol style="list-style-type: none"> <li>1. Implementation of distributor's safety management</li> <li>2. Implementation of the transport risk management</li> <li>3. Emergency response on accidents</li> </ol>
Regulation and discipline sub-committee	<ol style="list-style-type: none"> <li>1. Confirmation on compliance</li> <li>2. Development of the safety management policies and standards</li> <li>3. Disciplinary Management</li> <li>4. Personnel training and certification qualification management</li> </ol>
Energy-saving and waste reduction sub-committee	<ol style="list-style-type: none"> <li>1. To enhance efficiency of the process and recycle</li> <li>2. Establishment of energy and resource conservation measures</li> <li>3. Assessment of green / recyclable material</li> <li>4. Implementation of waste reduction plans</li> </ol>
Emergency response	<ol style="list-style-type: none"> <li>1. To ensure the availability of emergency response and preparedness</li> <li>2. Development of mutual support on emergency</li> <li>3. To communicate and follow up after the accident to the community</li> </ol>

## ■ Labor Safety and Health Committee

Compliant to "勞工安全衛生組織管理及自動檢查辦法", TSRC's Labor Safety and Health Committee has 24 members in 2012, among them 10 (42 %, higher than regulated ratio of 33%) are on behalf of TSRC union.

In addition, Labor Safety and Health Committee holds a meeting at least every three months. Members advise and review regulated items, and discuss the topics that subordinate unit "unit safety meeting" present to be resolved to have management- worker communication and oversee the implementation.

The official term for members is two years; each member of the committee is required to receive three hours of labor health and safety education and training courses, even he/she received it or not.



On-site job training

## ■ Education and Prevention of the Disease for Employees

### 1. For General Health Exams and Health Education

TSRC attaches great importance to the health of employees, providing not only yearly health exams for all employees and follow-up medical tracking management, but also a series of health promotion activities such as methods to lower cholesterol or health talks targeting the first 3 illnesses of exam results including mental stress. Recreational facilities like lounge, basketball court billiards, table tennis, karaoke are set to relieve work pressure.



Health exam

### 2. For Specific Occupational Diseases

TSRC performs inspection and continuously monitors operating environment, air pollution control equipment, plant odor and noise lawfully to reduce the impacts on the environment and human health. After Fukushima nuclear accidents in Japan in 2011, along with increasing global attention over radiation safety, TSRC's ionizing radiation (cesium - 137) in level control was replaced even not dangerous. TSRC optimizes risk management for a safe plant.



CPR training

Education and training for special operation employees are compliant to “Education and Training of Labor Safety and Health” promulgated by the Council of Labor Affairs, and the health exams for them are held annually. The concept of health and safety is taught on safety observation to develop good work habits and reduce human negligence. No occupational diseases found by yearly health exams. Other than occupational health training, TSRC also actively promote health activities for every employee to achieve the goal of health promotion and protection.

Data of health exams and results of environment inspection becomes feedback to further strengthen and analyze for health management effectively.

### • Training and Education •

TSRC is convinced that the talent is one of company's assets and looks forward to the mutual growth, so the annual training plans on general knowledge, professional skills, management skills and verification aligned with company strategy, demand for job, laws and requirements are set every year to achieve the goal of "lifelong learning" through OJT<sup>6</sup>, Off-JT<sup>7</sup> and SD<sup>8</sup>.

In 2012, a total of 3,934 headcounts participated in internal and external training, total training hours 9,125 hours and 15 training hours per employee on average.

	2012	training hours per employee (hour/person) (OJT not included)
By Job-title Category	Executives	10
	Junior manager	17
	Non-manager Indirect employees	19
	Direct Employees	22
By Gender	Male	15
	Female	16

6 OJT : On-site job training

7 Off-JT : Off-site job training

8 SD : Self-development



# Support to the Community

## Philanthropy

Take active action to care for disadvantaged groups and charitable institutions

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## Support on Chemistry Education to Local Elementary schools and Local Agricultural Products

With human resource and financial aids, TSRC sponsored Chemistry On The Go, a project providing chemical education to students in elementary school in remote areas, and supports to local agricultural products.

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## Community Involvement

Supports the local community through Manufacturers Association every year.







The main function of the Social Care Committee in TSRC CSR organizations is the implementation of social care activities. Take one activity for example. The administrative secretary of the committee, Mr. Chang, learned from his wife, an elementary school teacher, that many children cannot accept government subsidy because their families own real estate even it is with lots of loans. In addition, children with single parents and foreign parents need help as well.

Therefore TSRC Social Care Committee provided special funds for 3 elementary schools—Da-she, Guan-In and Jai-Chen Elementary School in Da-she District where Kaohsiung Factory is located in to sponsor the fees for school meal, tuition or special urgent costs for needy students without the title of low-income households.

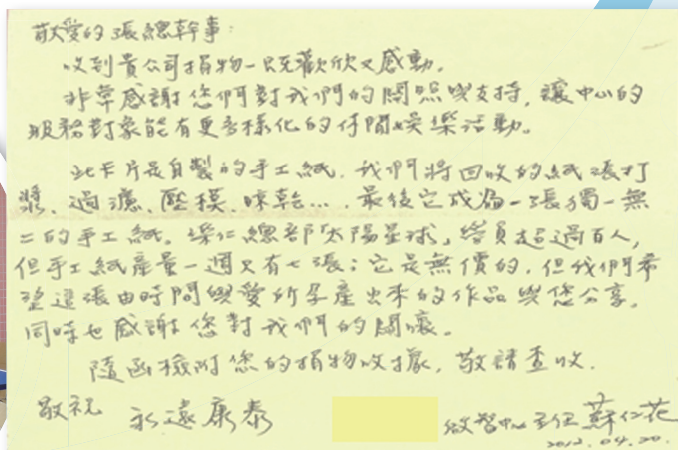
For the two semesters in 2012, 227 person-times received the sponsorship. TSRC declines anything in return except the Certificate of Appreciation. In addition, TSRC donated 85 copies of Children's Safety Manual to the three Elementary Schools.

Other social care activities for institutions below in 2012 are:

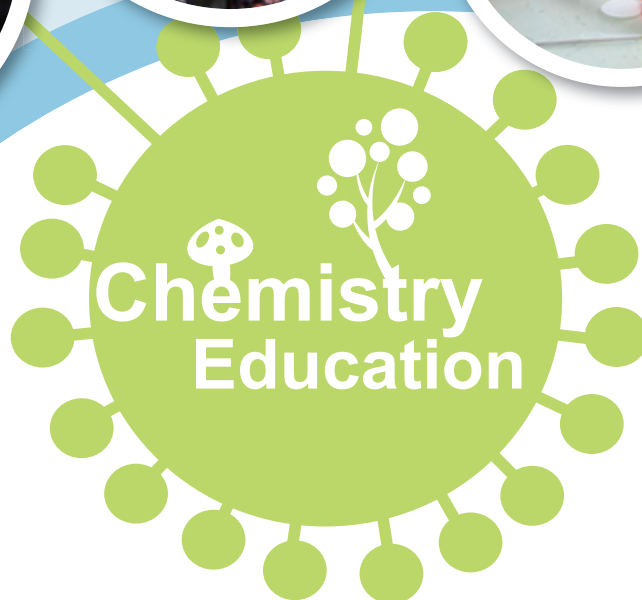


- 1 Leren Special Education Center in Kaohsiung; founded with cash, the second-hand books, sports equipment, balls and audio and video discs donated by TSRC employees/Employee Benefits Committee.
- 2 Taiwan Liver Research Foundation in Kaohsiung; founded with cash.
- 3 The Association of Zhejiang Province; granted scholarships.
- 4 Children Are Us Foundation; purchased moon-cake made by the children there and cash donation.

After the CSR activities, TSRC employees in uniform are treated and respected in local area.







# Chemistry Education

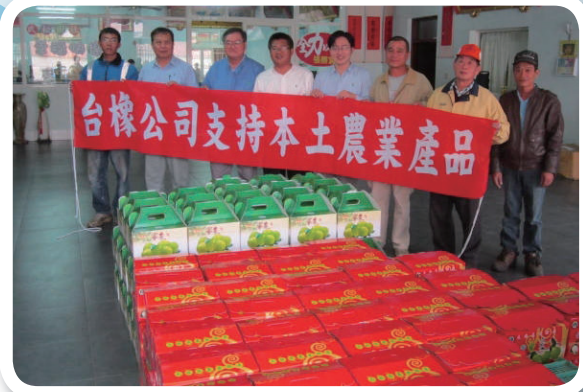
As one member in the chemical industry, TSRC sponsored Chinese Chemical Society and Tamkang University with Chemistry On The Go project, sending 16 employees from R&D, quality assurance and human resources departments to participate in the activities in Dashe junior high school.

In view of the growing gap between urban and rural areas, it becomes more difficult for the disadvantaged children to change the socio-economic status through education, which worsens Economic inequality in Taiwan and affects the future of Taiwan in the long run. Therefore, Professor Wang and Dr. Gao in Tamkang University designed "Chemistry On The Go" - to have a 3.5-ton truck modified to a Mobile Lab Mobile Chemistry Building, loading lab ware and stage to travel to about 50 schools in remote areas including Orchid Island and the outlying islands of Penghu, Siaoliouciou and Kinmen. Through performances, exhibitions, lectures and experiments, Chemistry On The Go attracts their interest in chemistry.

In the same time, information provided by the collaborative companies deepens and widens Chemical Technology in academic research and practical applications.

## Support on Local Agriculture

To Support local agriculture, a part of Employee Benefits Committee's seasonal gifts to employees have becomes local fruits.



Gifts Donation

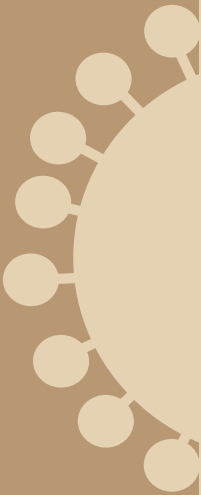
Support to the Community

## Community Involvement



TSRC supports the local community through Manufacturers Association to grant subsidy on utilities fees for nearby residents and scholarship and lunch for school, etc..

The training materials is funded by Manufacturers Association in Da-she District.



# Appendix

**Assurance Statement**

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**Product Name / bilingual and main applications**

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**GRI G3.1 Content Index**





# Assurance Statement

## Assurance Statement



TUV Asia Pacific Ltd, Taiwan Branch ("TUV NORD") has been commissioned by the management of TSRC Corporation ("TSRC") to carry out an independent assurance of TSRC Sustainability Report for the fiscal year 2012 ("CSR Report") against the AA1000 AS (2008), TUV Asia Pacific CSR Assurance Protocol for Assurance of Sustainability Reporting and the Global Reporting Initiative 2011 Sustainability Reporting Guidelines Version 3.1 ("GRI G3.1").

TSRC is responsible for the collection, analysis, aggregation and presentation of information within the Report. TUV NORD's responsibility in performing this work (assurance of the report) is in accordance with terms of reference agreed in the scope of engagement with TSRC. The management and stakeholders of TSRC are the intended users of this statement.

The assurance engagement is based on the assumption that the data and information provided to in TSRC sustainability report is complete and true.

### Nature and Scope the Assurance

The scope of the assurance, based on the AA1000 AS (2008) Assurance methodology, include the text, and data in accompanying tables, contained in this report.

TUV NORD has developed a set of protocols for the Assurance of Corporate Social Responsibility Report based on AA1000 AS (2008) and guidance provided in the Global Reporting Initiative Sustainability Reporting Guidelines (2011).

The assurance of TSRC Sustainability report for the fiscal year 2012 related to its businesses (Taipei Head Office, Kaohsiung Factory, and Gangshan Factory) includes the following:

- 1) Reporting of economic, environmental, and social indicators; the year of activities covered in the Sustainability Report is 01/2012 to 12/2012;
- 2) Information related to TSRC issues, responses, performance data, case studies and underlying systems to manage Sustainability related data and information;
- 3) Information related to TSRC adherence to inclusivity, materiality and responsiveness and stakeholder engagements;
- 4) Evaluation of the Accountability Principles (Type I) and specified performance information with a MODERATE level of Assurance, according to AA1000 AS (2008);
- 5) Verification of GRI G3.1 Application Level B+.

### Assurance Methodology

TUV NORD is a licensed global assurance provider of Sustainability services, with quality, environmental, social and sustainability assurance specialists working all over the world.

Our assurance engagement was planned and carried out in accordance with the AA1000 AS (2008) and the TUV Asia Pacific CSR Assurance Protocol for Assurance of Sustainability Reporting. Assessment of TSRC adherence to inclusivity, materiality and responsiveness and stakeholder engagements was based on AA1000 AS (2008).

The Report has been evaluated and assured against the following:

- Criteria of adherence to Inclusivity, Materiality and Responsiveness
- GRI G3.1 Application Level B+

Our assurance involved the following activities:

- \* Gather objective evidence on the performance indicators as mentioned in the report.
- \* Review any issues raised by external parties that could be relevant to TSRC policies.
- \* Review of expectations of local and national regulations, international standards and those of general concern both in the public eye and/or raised by expert opinion.
- \* Documentation, record review and evaluation of the report contents against the GRI's G3.1 application requirements.
- \* Discussion with managers and relevant staff on TSRC approach to stakeholder engagement.
- \* Interviews with relevant staffs involved in sustainability management, gathering information and report preparation.
- \* Review key organizational developments.
- \* Review of internal and external audits findings.
- \* Review of supporting evidence based on the information found in the report.
- \* Sampling method used to ensure the correctness of the data

Page 1 of 2

## Opinion Statement



The TSRC's Sustainability report provides an appropriate view of the TSRC's CSR programs and performances during fiscal year 2012.

The economic, social and environment performance indicators as mentioned in the Sustainability report are represented appropriately. The CSR performance indicators disclosed in the report demonstrate TSRC efforts recognized by its Top Management and stakeholders.

**Inclusivity:** TSRC demonstrates its commitment to its stakeholders in this report. This effort has been showcased in the Company's Sustainability report 2012 TSRC Corporate Sustainability Report. The Company conducted the participation of stakeholders for developing and achieving an accountable and strategic response to CSR. The reporting systems have been developed to gather the required information. However, the statement about supplier chain management could be described more extensively in the further report.

**Materiality:** TSRC has established related procedures at the corporate level, as the issues which were identified by all departments were prioritized according to the extent of impact and applicable criterion for sustainable development of the company. However, the process of systematically engagement for key stakeholders and their issues should be further enhanced. Please consider to collect and analyze the information from more diversified and wide-ranging channels to respond to key issues completely.

**Responsiveness:** TSRC has committed to implement the CSR practice and demonstrate related performance information to respond to the expectations and perceptions of its stakeholders as appropriate. However, (i) The implications and other risks and opportunities in Environmental and Economic for TSRC's activities due to climate change could be described more extensively. (ii) The more systematic planning and long-term target-planning for responsiveness to all the key topics raised by the stakeholders could be enhanced.

### Reliability and accuracy of performance information:

In accordance to Type I, Moderate level of assurance requirements, it can be concluded that the contents mentioned in the sustainability report is reliable. TSRC has a robust management system for obtaining objective evidences and data for the reporting in TSRC Sustainability Report.

### Statement of Independence and Competence

TUV NORD Group is the world's leader in inspection, testing and verification, operating in more than 70 countries throughout the world and providing services which includes management systems and product certification, quality, environmental, social and ethical auditing and training, environmental, social responsibility and sustainability report assurance.

TUV Asia Pacific Ltd, Taiwan Branch, affirms its independence from TSRC and confirms that there are no conflicts of interest with the organization or any of its subsidiaries and stakeholders when performing the assurance of the Sustainability Report. TUV Asia Pacific Ltd, Taiwan Branch was not involved in any manner with the said TSRC, when the latter was preparing the Sustainability report.

The assurance team consists of well experienced, qualified and registered Quality - ISO 9001, EMS - ISO 14001, GHG - ISO 14064-1, OHSAS 18001, SA 8000 Lead Auditors and AA1000 AS (2008) Accountability trained CSAP - Certified Sustainability Assurance Practitioner. The team based on their qualifications, extensive knowledge and experience of the industry provided the much required expertise for this assignment.

Jack Yeh  
General Manager  
TUV Asia Pacific Ltd., Taiwan Branch



Issue Date : 2013.04.02  
TUV Asia Pacific Ltd., Taiwan Branch  
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## Abbreviation, Full Name and Application of TSRC's product

Abbreviation of TSRC's product	Full Name in English	Application
<b>SRD Product</b>		
1.ESBR	Emulsion Styrene-Butadiene Rubber	Automotive tires, shoe soles, conveyor belts, rubber belts, military caterpillar and tow trucks tracks, sports equipment, toys, etc.
2.SSBR	Solution Styrene-Butadiene Rubber	Energy-conserving(low rolling resistance), high performance, and all-season tires, etc.
3.BR	PolyButadiene Rubber	In the production of plastic modification for HIPS and high-speed radial tires, etc.
4.NBR	Nitrile-Butadiene Rubber	Oil hoses, oil seals, rollers, industrial gaskets, belts, shoe soles, rubber plastic foam sheet, conveyor belts, etc.
<b>AMD Product</b>		
5.TPE	Thermoplastic Elastomer	The Taipol® TPE, with the inclusion of SBS, SIS and SEBS
5.1 SBS	Styrene-Butadiene-Styrene Copolymer	<p>With the mixed properties of plastics and rubber, thermoplastic TPE is widely used in high-grade shoe soles, asphalt modification, plastic modification, and adhesive, etc.</p> <p>The Taipol® TPE, with the inclusion of SBS, SIS and SEBS can meet the needs of different clients in different fields</p>
5.2 SIS	Styrene-Isoprene-Styrene Copolymer	
5.3 SEBS	Styrene-Ethylene-Butylene-Styrene Copolymer	
6. Compounds	Thermoplastic TPR ( Thermo-plastic Rubber )	<p>TSRC launched T-BLEND® product, which is blended material with SBS or SEBS as major ingredients It boasts a number of advantages including good tactile texture, customizable hardness, excellent weather resistance, low temperature endurance, and thermal-plasticity.</p> <p>Mainly used in daily applicant parts, super-soft gels, low-voltage, flame retardant halogen-free cable products, SEBS foaming agents, window, doors, and refrigerator seals, flexible films, etc.</p>

Sources : <http://www.tsrc.com.tw>



## GRI G3.1 Content Index

Profile Disclosure			<b>Disclosure</b> ● Full Disclosure ○ Partial disclosure ○ Non-disclosure	Page/ Direct answer
Description				
Strategy and Analysis	1.1	Statement from the most senior decision maker of the organization.	●	6
	1.2	Description of key impacts, risks, and opportunities.	●	6
Organizational Profile	2.1	Name of the organization.	●	1
	2.2	Primary brands, products, and/or services	●	18
	2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries and joint ventures.	●	1, 17
	2.4	Location of organization's headquarters	●	1
	2.5	Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report.	●	1,18
	2.6	Nature of ownership and legal form	●	17
	2.7	Markets served (including geographic breakdown sectors served, and types of customers/ beneficiaries).	●	18
	2.8	Scale of the reporting organization	●	18, 42
	2.9	Significant changes during the reporting period regarding size, structure, or ownership	●	No significant changes
	2.10	Awards received in the reporting period	●	20
Report parameters	3.1	Reporting period (e.g., fiscal/calendar year) for information provided.	●	2
	3.2	Date of most recent previous report	●	None. This copy is the first public CSR Report.
	3.3	Reporting cycle	●	2
	3.4	Contact point for questions regarding the report or its contents.	●	1
	3.5	Process for defining report content	●	13
	3.6	Boundary of the report. See GRI Boundary Protocol for further guidance	●	1
	3.7	State any specific limitations on the scope or boundary of the report	●	1
	3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations.	●	1

Report parameters	3.9	Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the Indicators and other information in the report.	●	2
	3.10	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement	●	None. This copy is the first public CSR Report.
	3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report.	●	None. This copy is the first public CSR Report.
	3.12	Table identifying the location of the Standard Disclosures in the report.	●	57
	3.13	Policy and current practice with regard to seeking external assurance for the report.	●	2
Governance, Commitments, and Engagement	4.1	Governance structure of the organization, including committees under the highest governance body responsible for specific tasks, such as setting strategy or organizational oversight.	●	20
	4.2	Indicate whether the Chair of the highest governance body is also an executive officer	●	20
	4.3	For organizations that have a unitary board structure, state the number and gender of members of the highest governance body that are independent and/or non-executive members.	●	21
	4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body.	●	13
	4.5	Linkage between compensation for members of the highest governance body, senior managers, and executives (including departure arrangements), and the organization's performance (including social and environmental performance).	●	21
	4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided.	●	21
	4.7	Process for determining the composition, qualifications, and expertise of the members of the highest governance body and its committees, including any consideration of gender and other indicators of diversity.	●	Annual Report, <a href="http://www.tsrc.com.tw">http://www.tsrc.com.tw</a>
	4.8	Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation.	●	3, 12, 21, 23, 41

Governance, Commitments, and Engagement	4.9	Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles.	●	7, 12
	4.10	Processes for evaluating the highest governance body's own performance, particularly with respect to economic, environmental, and social performance.	●	20
	4.11	Explanation of whether and how the precautionary approach or principle is addressed by the organization.	●	6, 20
	4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses.	●	20, 21
	4.13	Memberships in associations (such as industry associations) and/or national/international advocacy organizations in which the organization: * Has positions in governance bodies; * Participates in projects or committees; * Provides substantive funding beyond routine membership dues; or * Views membership as strategic.	●	19
	4.14	List of stakeholder groups engaged by the organization.	●	13
	4.15	Basis for identification and selection of stakeholders with whom to engage.	●	13
	4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group.	●	13
	4.17	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.	●	13
<b>Economic Performance Indicators</b>		<b>Management Approach</b>	●	17, 20
Economic performance	EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.	●	18, 41, 50
	EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change.	○	
	EC3	Coverage of the organization's defined benefit plan obligations.	●	43
	EC4	Significant financial assistance received from government.	●	None.
Market presence	EC5	Range of ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation.	●	41

Market presence	EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.	●	36
	EC7	Procedures for local hiring and proportion of senior management hired from the local community at significant locations of operation.	●	42
Indirect economic impacts	EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.	○	
	EC9	Understanding and describing significant indirect economic impacts, including the extent of impacts.	●	41
<b>Environmental Performance Indicators</b>		<b>Management Approach</b>	●	23
Materials	EN1	Materials used by weight or volume.	○	
	EN2	Percentage of materials used that are recycled input materials.	○	
Energy	EN3	Direct energy consumption by primary energy source.	●	28
	EN4	Indirect energy consumption by primary source.	●	28
	EN5	Energy saved due to conservation and efficiency improvements.	●	33
	EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.	●	34
	EN7	Initiatives to reduce indirect energy consumption and reductions achieved.	●	35
Water	EN8	Total water withdrawal by source.	○	
	EN9	Water sources significantly affected by withdrawal of water.	●	32
	EN10	Percentage and total volume of water recycled and reused.	●	32
Biodiversity	EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.	○	
	EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	○	
	EN13	Habitats protected or restored.	●	39
	EN14	Strategies, current actions, and future plans for managing impacts on biodiversity.	●	39
	EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.	●	39
Emissions, effluents and waste	EN16	Total direct and indirect greenhouse gas emissions by weight.	●	29

Emissions, effluents and waste	EN17	Other relevant indirect greenhouse gas emissions by weight.	●	31
	EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.	●	31
	EN19	Emissions of ozone-depleting substances by weight.	●	No ozone-depleting substances emitted in TSRC production lines.
	EN20	NOx, SOx, and other significant air emissions by type and weight.	●	38
	EN21	Total water discharge by quality and destination.	●	32
	EN22	Total weight of waste by type and disposal method.	●	37
	EN23	Total number and volume of significant spills.	●	39
	EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.	●	39
	EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.	●	39
Products and services	EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.	○	
	EN27	Percentage of products sold and their packaging materials that are reclaimed by category.	○	
Compliance	EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations. °	●	39
Transport	EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.	●	36
Overall	EN30	Total environmental protection expenditures and investments by type	●	39
<b>Labor</b>		<b>Management Approach</b>	●	43
Employment	LA1	Total workforce by employment type, employment contract, and region, broken down by gender.	○	
	LA2	Total number and rate of new employee hires and employee turnover by age group, gender, and region.	○	
	LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations.	●	43
	LA15	Return to work and retention rates after parental leave, by gender.	○	

Labor/ management relations	LA4	Percentage of employees covered by collective bargaining agreements.	○	
	LA5	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements.	○	
Occupational health and safety	LA6	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.	●	47
Occupational health and safety	LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region and by gender.	●	45
	LA8	Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.	●	45
	LA9	Health and safety topics covered in formal agreements with trade unions.	●	46, 47
Training and education	LA10	Average hours of training per year per employee by gender, and by employee category.	●	48
Training and education	LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	●	48
	LA12	Percentage of employees receiving regular performance and career development reviews, by gender.	●	41
Diversity and equal opportunity	LA13	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity	○	
Equal remuneration for women and men	LA14	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation.	○	
<b>Human Rights</b>		<b>Management Approach</b>	●	41
Investment and procurement practices	HR1	Percentage and total number of significant investment agreements and contracts that include clauses incorporating human rights concerns, or that have undergone human rights screening.	○	
	HR2	Percentage of significant suppliers, contractors and other business partners that have undergone human rights screening, and actions taken.	○	
	HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.	○○	43
Non-discrimination	HR4	Total number of incidents of discrimination and actions taken.	●	43 No discrimination found



Freedom of association and collective bargaining	HR5	Operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and actions taken to support these rights.	○○	42 · Advocacy for suppliers will begin from 2013.
Child labor	HR6	Operations and significant suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor.	●	43
Forced and compulsory labor	HR7	Operations and significant suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor.	○○	45 · Advocacy for suppliers will begin from 2013
Security practices	HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations.	○	
Indigenous rights	HR9	Total number of incidents of violations involving rights of indigenous people and actions taken	●	No violations to the rights of indigenous peoples found.
Assessment	HR10	Percentage and total number of operations that have been subject to human rights reviews and/or impact assessments.	○	
Remediation	HR11	Number of grievances related to human rights filed, addressed and resolved through formal	●	No such a case found.
<b>Society</b>		<b>Management Approach</b>	●	41
Local communities	SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs.	●	50
	SO9	Operations with significant potential or actual negative impacts on local communities.	●	Kaohsiung Factory and Gangshan Factory are located in the industrial district, and no negative impacts after the assessment. Taipei office is in business area and no other negative impacts found as well.
	SO10	Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities.	●	No significant potential or actual negative impacts found.
Corruption	SO2	Percentage and total number of business units analyzed for risks related to corruption.	○	
	SO3	Percentage of employees trained in organization's anti-corruption policies and procedures.	●	20
	SO4	Actions taken in response to incidents of corruption.	○	

Public policy	SO5	Public policy positions and participation in public policy development and lobbying.	○	
	SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country.	●	Due to foreign ownership in the stock structure, no political donations allowed according to the law.
Anti-competitive behavior	SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes.	○	
Compliance	SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.	○	
<b>Product Responsibility</b>		<b>Management Approach</b>	●	23
Customer health and safety	PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures.	●	23
	PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes.	●	Zero
Product and service labelling	PR3	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements.	●	23
	PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes.	●	Zero
	PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.	●	26
Marketing communications	PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship.	○	
	PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes.	●	zero
Customer privacy	PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.	●	zero
Compliance	PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.	○	



## TSRC Corporation

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