

CORPORATE  
SOCIAL RESPONSIBILITY  
REPORT

## Editorial Principles

This report comprehensively discloses to stakeholders the information regarding the key topics of our CSR management approaches, actions, and response performance. In addition, we have expanded the scope to environmental considerations and social concern.

This is the third CSR report published by the TSRC. To comply with the requirements of GRI G4<sup>1</sup> Sustainability Reporting Guidelines is the focus of this report, so as to expand the scope of communication and engagement with stakeholders.

GRI G4: Global Reporting Initiative (GRI) for companies and organizations to disclose their performance in social responsibility.

## Boundary and Scope of the report

As indicated in the 2013 CSR Report, the boundary of this report includes TSRC Corporation in Taiwan (including Taipei Head office, Kaohsiung Factory and Gangshan Factory) and five subsidiaries in China (including Shen Hua Chemical, TSRC (Nantong), TSRC-UBE, TSRC (Shanghai) and TSRC (Jinan)). In the future, the relevant performances and achievements of subsidiaries in the USA will be included in the report. The scope of disclosure in this report covers the performance of economic, environmental and social aspects.

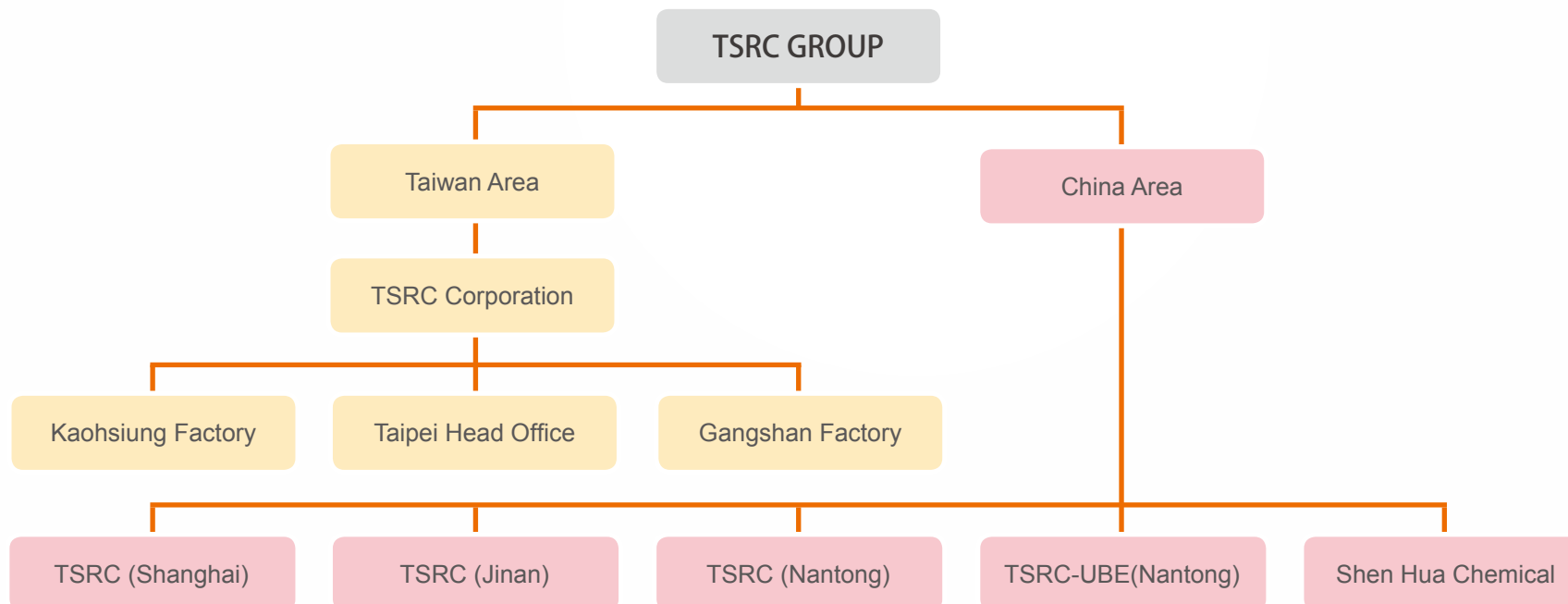
## Reporting period

This report provides a summary of the activities in fiscal year 2014 (1 January 2014 to 31 December 2014). Relevant facts occurred before the reporting period and relevant policies, goals and plans occurred after the reporting period are partially disclosed in this report.

## Reference guidelines and basis of calculations

This report discloses the CSR strategy, principles, measures, and performances of TSRC with reference to the “core” items specified in the Global Reporting Initiative (GRI)-G4 Sustainability Reporting Guidelines.

Figures in financial statements disclosed in this report are expressed in New Taiwan Dollar (NT\$) and relevant performances of environmental protection, safety and health (ESH) are expressed in internationally accepted indicators. Estimations or assumptions, if any, will be specified in relevant sections. Compared to the 2013 CSR Report, this report does not contain descriptions from the corrections of the previous report to mislead readers.



## **Assurance for the report**

To provide readers with trustworthy open information, TUV NORD, a third-party certification authority to comply with the AA1000 Assurance Standard<sup>1</sup> (2008) Type 1, has verified this report. The Statement of Compliance is appended to this report.

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## **Report distribution**

1.On-line version: <http://www.tsrc.com.tw>

2.Paper version: TSRC 2014 CSR Report, print.

<sup>1</sup>AA1000:Assurance Standard is published by Accountability of the UK for the reference to CSR report verification.

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**Vision and Mission**



**Vision and Mission**



## TSRC Milestones

NOW

- Commercial run of ESRB began at JV Indian Synthetic Rubber Ltd. (ISRL) in India.
- Commercial run of LANXESS-TSRC (Nantong).
- Expansion of SEBS capacity expansion was completed at TSRC (Nantong).
- Acquired 100% shares of US Dexco Polymers.
- Established JV Taiwan Advanced Materials Corporation with Taiwan CPC Corporation and Fubon Financial Holding Venture Capital Corporation.



LANXESS



ISRL



Dexco Polymers L.P

2000

- Commercial run began at the Gangshan Factory of Applied Polymers Business Unit.
- Commercial run began at TSRC (Shanghai), TSRC (Jinan), TSRC (Nantong), and TSRC UBE (Nantong).



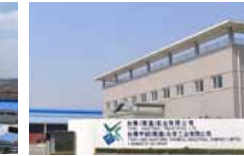
TSRC (Shanghai)



TSRC (Jinan)



TSRC UBE (Nantong)



TSRC (Nantong)



Gangshan Factory

1990

- Commercial run began at Shen Hua Chemical.
- Passed ISO-14001 & ISO-9001 certification
- Developed new TPE products and capacity expansion.



Shen Hua Chemical

1980

- Completed TPE plant construction, material input, and commissioning.
- Completed BR plant construction and started mass production.



BR plant



TPE plant

1970

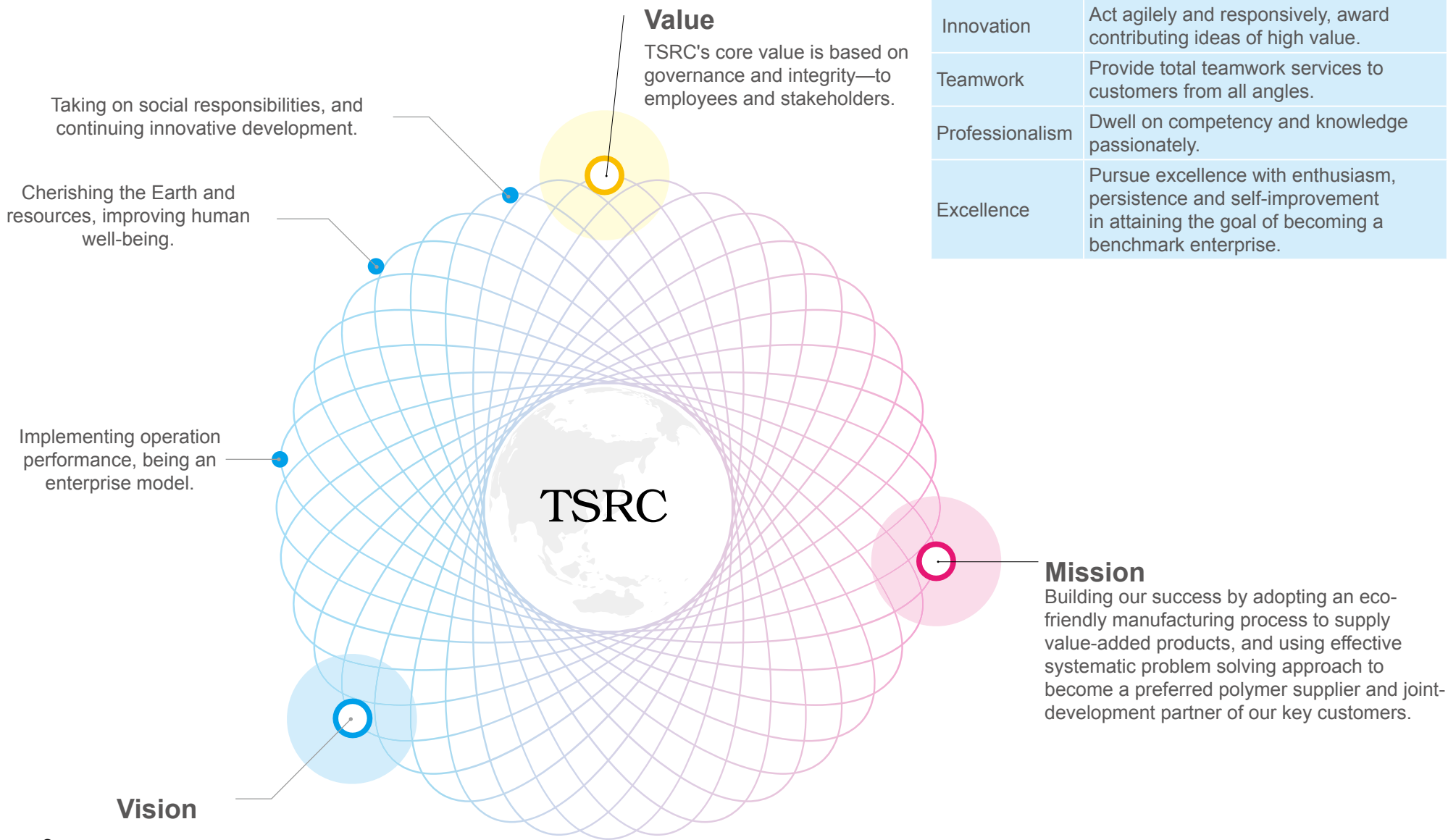
- Established in Taiwan
- Completed SBR plant construction and started mass production.



Head Office



Kaohsiung Factory





## To All Stakeholders

To pursue sustained operations, we ceaselessly fulfill CSR in all aspects. It is our pleasure to share with the public and all stakeholders our achievements to pursue sustainable development in the 2014 CSR Report.

After commercial operation of SIS at TSRC Nantong and ESBR at ISRL began in 2014, we have passed the quality certification of many customers and sales have been rising since this year. In addition, after the completion of TPE line re-engineering at Kaohsiung Factory in 2015, SEBS outputs will increase to 25,000MT each year to benefit both annual revenue and profit, ensure steady corporate growth against keen competitions in the industry, and enable us to achieve sustained operations.

In 2014, low operating rate continued, as there was no significant change in the oversupply of synthetic rubber due to the continuing increase of synthetic rubber capacity in Asia Pacific and the US anti-dumping and anti-subsidization sanctions on China's tire industry. The price of synthetic rubber fell substantially to strip down rubber product profitability due to the low-price competition launched by China and South Korea with the advantage from the top-down integration of their petrochemical industry. To overcome such adversities, we adopted various marketing strategies, including securing price and stabilizing quantity, flexible dispatch of production lines, and steady pricing for key accounts, so as to strictly cut cost and control expenses. As a result, we could maintain higher profits than competitors. In research and development, we applied for 22 patents in 2014. To support the trend of value enhancement in industry, we unremittingly improve TPE product quality and process technology, accelerate the development of new specifications and high-performance products, and build a global technical service network, so as to become a trustworthy global supplier.

In 2015, we expect that new synthetic rubber capacity will continue to join the market, growth of auto-related industries will slow down, newly grown natural rubber will enter the harvesting period, and the oversupply of synthetic rubber will not be relieved. To cope with factors causing short-term unfavorable market effects, we have established the "operating efficiency power up plan" and we will activate the plan in 2015. Apart from strengthening production-marketing integration, stabilizing key accounts, and boosting sales of new products and differential products in potential markets, we hope that this plan can enhance capacity utilization and lower cost to achieve the profit target.

Given the global awareness of corporate social responsibility (CSR) has been rising, our R&D will still focus toward new products and new technologies of high added value with advanced eco-friendly processes. We will also devote ourselves to providing customers with rubber use solutions, so as to enhance customer satisfaction and thereby create win-win for both parties. In 2014 the development of high-quality products, SBS and SIS, and process technology improvement were completed to stabilize product quality and enhance product performance.

In environmental protection, by implementing the concept: maximization of energy and resource efficiency, we minimized energy and resource consumption required for production through process design, efficiency enhancement, and resource recycling. In addition, we continuously developed and manufactured raw materials for producing green products and provided customer with technical service and application solutions, so as to fulfill customer demand and our environmental responsibility.

Referring to the social impacts of the Kaohsiung Gas Explosions on August 1, apart from strengthening current management measures, we have established the "Underground Pipeline Maintenance and Management Plan" and relevant standard operating procedures (SOPs) to take precautionary action. In concern for society, we understand how to maximize the effect with limited resources. Basically, we express concern about disadvantaged groups and support disadvantaged organizations with contractors in the neighborhood of our plants to enhance social security.

For future development, we will continue to cherish resources from earth, fulfill our CSR, and make continual improvement to pursue sustained operations. By publishing this CSR report, we hope that all stakeholders can understand our efforts and dedications, so as to win the support of more stakeholders.



Shao-yu Wang, Chairman



Wei-hua Tu, President & CEO

## CSR Organization and Management of Sustainability Topics

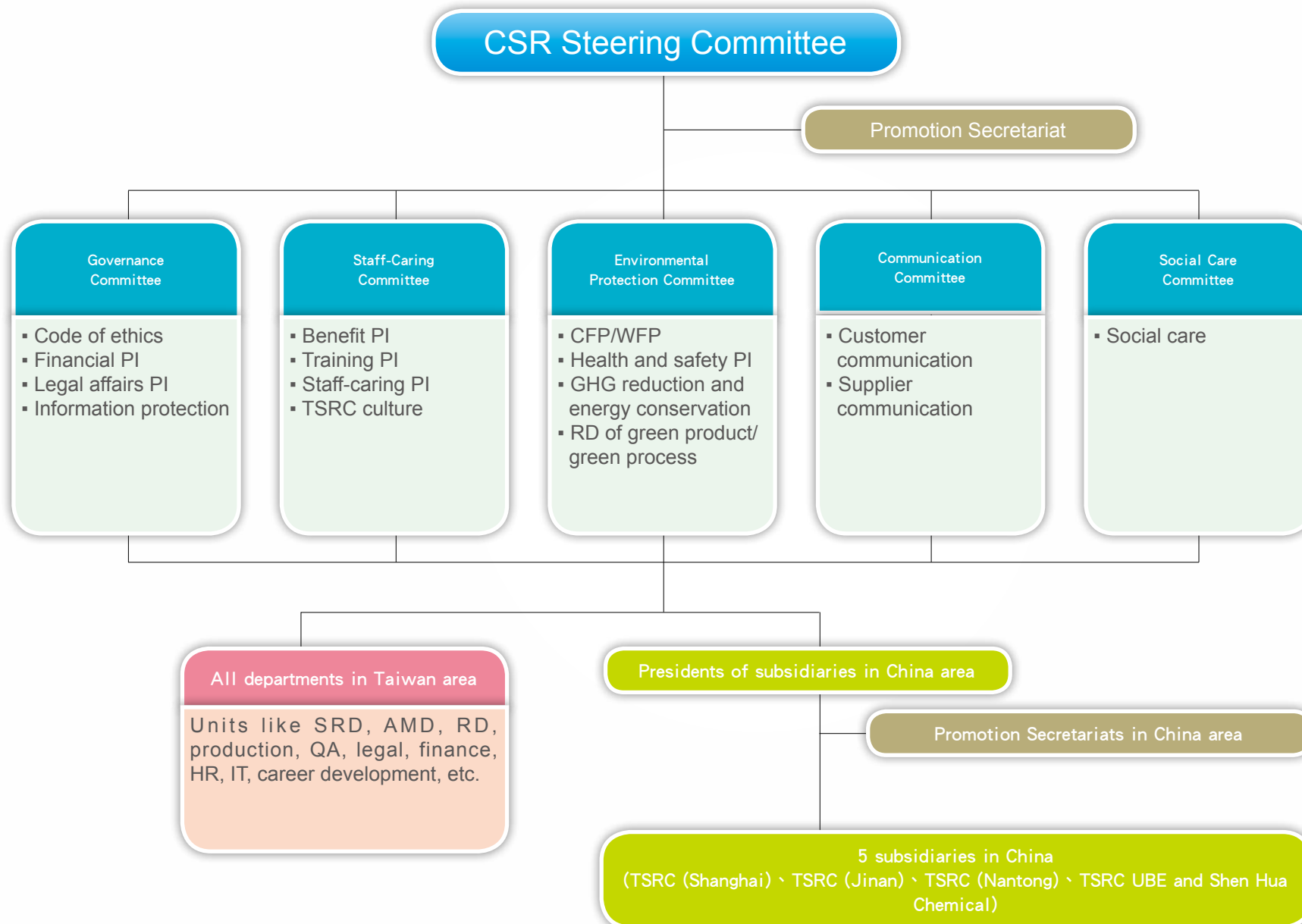
### CSR Initiation and Organization

We began publishing the CSR report in 2013 and have progressively promoted the CSR statement, CSR concepts and their linkage to our internal system, and the methods of result verification from Taiwan headquarters to five subsidiaries in China, so as to communicate them to respective stakeholders.

The CSR Steering Committee, our CSR project organization, is led by the president & CEO of TSRC and holds meetings regularly to verify and review the status and strategy of CSR promotion. Under the committee, there are five sub-committees: Governance Committee, Staff-Caring Committee, Environmental Protection Committee, Communication Committee, and Social Care Committee measuring and monitoring the performance indicators of economic, environmental, and social management. In 2013, the CSR Steering Committee included the five subsidiaries in China in the report boundary. Through aggressive cooperation with various CSR activities of presidents and CSR committee staffs of these subsidiaries, we smoothly completed the project to link the performance indicators (PIs) of economic, environmental, and social management to routine business operations, blend them with routine work, and notice issues that were unaware of in the past.

Based on the plan-do-check-act (PDCA) management cycle, the CSR Promotion Secretariat identifies stakeholders, gathers information regarding the topics concerned by stakeholders on a regular basis, and reports them at the annual meeting held in Q1 to ensure all material aspects have been considered. The CSR Promotion Secretariat also takes actions after the committee verifies topics. Then, the CSR Promotion Secretariat will report to the committee the progress and effectiveness of relevant CSR business and the effectiveness of implementation to the CEO who will report the outcomes and future strategies to the board of directors.

## CSR Organization Chart



## Stakeholders and Material Topics

### Identification of stakeholders

Stakeholder communication and material topic screening are the most important in CSR. By understanding the topics they are concerned about and disclosing relevant information in the CSR report, we enable stakeholders to understand our efforts and performances in fulfilling CSR in 2014.

From the routine operations and external business communication of relevant departments, the CSR Promotion Committee assigns the Promotion Secretariat to convene personnel of each department to search for stakeholders in terms of organizational operations and exchange and stakeholder inclusiveness based on the evaluation mechanism of substantive topics. After identifying stakeholders and prioritizing communication targets, the Promotion Secretariat responds to the topics they concern about, so as to determine major stakeholders and the topics they concern about. The seven types of stakeholders included: customers, employees/labor union, investors, the media, suppliers, communities, and government and non-governmental organizations (NGOs).

### Stakeholder Engagement

Stakeholder engagement forms part of our management of sustainability topics. Apart from maintaining different forms of interaction with stakeholders through routine operations, we have gathered topics they concern about through different channels, including phone calls, meetings, satisfaction surveys, on-site visits, and participation in trade unions. Then, among the topics stakeholders are concerned about, we respond to topics identified as material aspects. In response to the activation of organizational sustainability management, we have established the “CSR mailbox” (csr.admin@tsrc.com) for different types of stakeholders to communicate with and send feedback to us. We have also assigned special personnel to communicate with and respond to stakeholders. In 2014, the result of annual questionnaire survey was still the main reference for our level of topic concern analysis. In terms of stakeholders’ level of concern of individual topics and the level of economic, environmental, and social impacts on TSRC of these topics, we identified material topics stakeholders concerned about and disclosed in relevant sections of this report the information of topics highly concerned by stakeholders and with higher level of impacts.

**Stakeholders, concerned topics, and communication channels are tabulated below:**

Stakeholder	Concerned Topic	Communication Channel	Relevant Section
Customer	<ul style="list-style-type: none"> <li>Product quality and technology R&amp;D</li> <li>Customer privacy management</li> <li>Non-disclosure and non-competition obligations.</li> <li>Environmental compliance</li> <li>Ban of child labor.</li> </ul>	<ul style="list-style-type: none"> <li>Annual customer satisfaction survey</li> <li>Annual interaction seminar</li> <li>Interview (email, phone, questionnaires)</li> <li>Irregular technology and industry seminars.</li> <li>Domestic and overseas exhibitions</li> <li>Customer CSR audit</li> <li>CSR reports disclosed on the corporate website.</li> </ul>	<ul style="list-style-type: none"> <li>CH 1. Vision and Mission and To all Stakeholders</li> <li>CH5. Customer Satisfaction in Producer Green Activities</li> <li>CH6. Labor Practices and Human Rights</li> </ul>
Employees and Labor Unions	<ul style="list-style-type: none"> <li>Occupational health and safety</li> <li>Environmental compliance</li> <li>Effluents and waste</li> <li>GHG and pollutant emissions</li> <li>Environmental protection investments (environmental accounting)</li> </ul>	<ul style="list-style-type: none"> <li>Employee Welfare Committee meeting (quarterly)</li> <li>Responsible Care Committee (six times a year)</li> <li>Health Promotion Talk (on demand)</li> <li>Employee grievance box on the intranet</li> <li>Industrial Safety Bulletin Board</li> <li>Labor Union Congress</li> </ul>	<ul style="list-style-type: none"> <li>CH5. Producer Green Activities</li> <li>CH6. Labor Practices and Human Rights</li> </ul>

Stakeholder	Concerned Topic	Communication Channel	Relevant Section
Investors	<ul style="list-style-type: none"> <li>▪ Product compliance</li> <li>▪ Product quality and technology R&amp;D</li> <li>▪ Stakeholder communication</li> <li>▪ Market presence</li> </ul>	<ul style="list-style-type: none"> <li>▪ CSR reports disclosed on the corporate website.</li> <li>▪ Investor box on the corporate website</li> <li>▪ Market Observation Post System</li> <li>▪ Shareholders' meetings</li> </ul>	<ul style="list-style-type: none"> <li>▪ CH2.CSR Organization and Management of Sustainability Topics</li> <li>▪ CH3.Business Operations Overview</li> <li>▪ CH5.Producer Green Activities</li> </ul>
The Media	<ul style="list-style-type: none"> <li>▪ GHG management</li> <li>▪ Environmental protection investments</li> <li>▪ Occupational health and safety</li> <li>▪ Effluents and waste emissions</li> <li>▪ Establishment of environmental grievance mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>▪ CSR report</li> <li>▪ CSR box on the corporate website</li> <li>▪ Irregular telephone communication</li> <li>▪ Irregular interviews and gatherings</li> <li>▪ CSR reports disclosed on the corporate website.</li> </ul>	<ul style="list-style-type: none"> <li>▪ CH5. Producer Green Activities</li> <li>▪ CH6. Labor Practices and Human Rights</li> </ul>
Suppliers	<ul style="list-style-type: none"> <li>▪ Procurement practices (TSRC should prioritize procurements from local suppliers)</li> <li>▪ Anti-corruption and anti-competitive behavior</li> <li>▪ Indirect economic impacts (TSRC's ability to create more job opportunities or reduce environmental impacts).</li> </ul>	<ul style="list-style-type: none"> <li>▪ Supplier CSR evaluation.</li> <li>▪ CSR box on the corporate website</li> <li>▪ Supplier CSR promotion</li> <li>▪ CSR environmental evaluation.</li> <li>▪ CSR reports disclosed on the corporate website.</li> <li>▪ Annual supplier evaluation.</li> </ul>	<ul style="list-style-type: none"> <li>▪ CH 2. CSR Organization and Management of Sustainability Topics</li> <li>▪ CH3.Business Operations Overview</li> </ul>
Communities	<ul style="list-style-type: none"> <li>▪ Environmental compliance</li> <li>▪ Environmental protection investments</li> <li>▪ Procurement practices</li> <li>▪ Effluents and waste emissions</li> <li>▪ Establishment of environmental grievance mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>▪ Irregular visits</li> <li>▪ Social gatherings of industrial park enterprises</li> <li>▪ Industrial park service center</li> <li>▪ CSR box on the corporate website</li> <li>▪ CSR reports disclosed on the corporate website.</li> </ul>	<ul style="list-style-type: none"> <li>▪ CH 2. CSR Organization and Management of Sustainability Topics</li> <li>▪ CH5. Producer Green Activities</li> </ul>
Government/ NGOs	<ul style="list-style-type: none"> <li>▪ Environmental compliance</li> <li>▪ Environmental protection investments</li> <li>▪ Effluents and waste emissions</li> <li>▪ Prevention of pollution from transportation</li> <li>▪ Indirect economic impacts (TSRC's ability to create more job opportunities or reduce environmental impacts).</li> </ul>	<ul style="list-style-type: none"> <li>▪ CSR report</li> <li>▪ Government policy promotion</li> <li>▪ Official documents</li> </ul>	<ul style="list-style-type: none"> <li>▪ CH3.Business Operations Overview</li> <li>▪ CH5. Producer Green Activities</li> </ul>



## Identification of Material Aspects and Boundaries

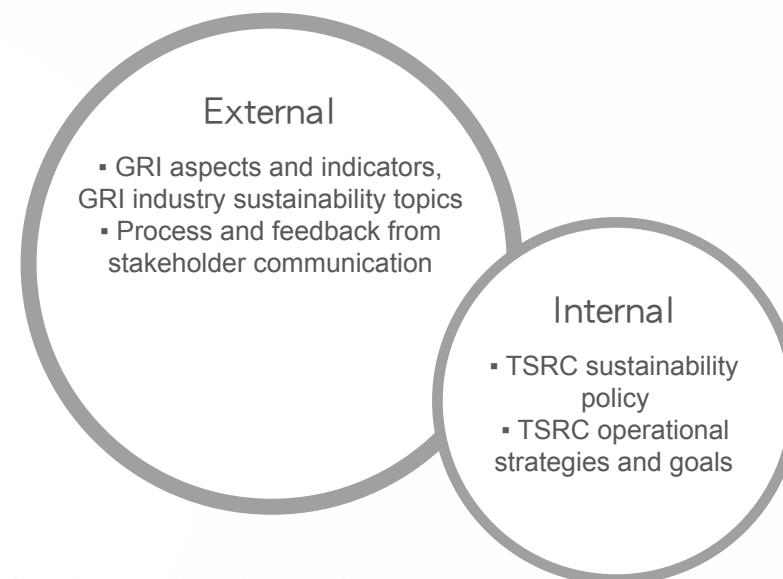
### Process for Analyzing Material Aspects

In this report, material aspects are analyzed to identify the sustainability topics stakeholders concern about for the reference of information disclosure, so as to achieve effective stakeholder communication and provide a reference for future direction of CSR.



## Sources of Sustainability Topics

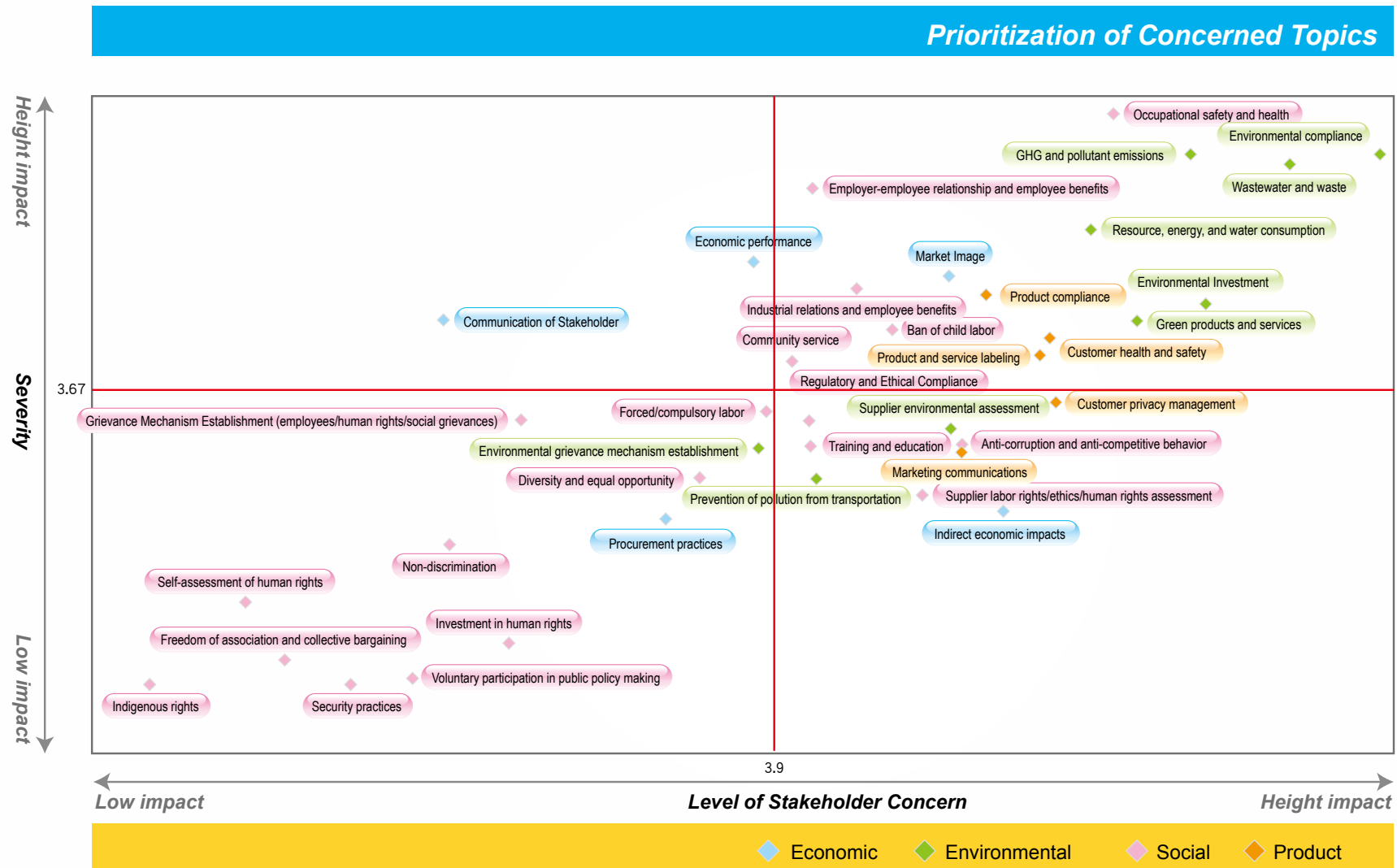
The process for identifying material aspects is established with reference to the report principles and guidelines for defining report contents specified in the GRIG4 CSR report framework. As sustainability topics are comprehensive, we have gathered and restated relevant topics from the following sources



## Prioritizing Material Topics

A substantive topic selection mechanism was applied in this survey. AA1000 principles were applied to measure the relevance between stakeholders and TSRC with the 184 valid responses. The weighted mean of both the score of level of concern and relevance of each topic was calculated to confirm the level of stakeholder concern. The CSR Steering Committee scored the influence of the economic, environmental, and social impacts on TSRC of each topic from the viewpoint of business administrators. Then, material topics relating to the sustainable development of TSRC were prioritized based on all scores. In addition, materiality thresholds were set at 3.9 or higher in stakeholder concern and impact (severity) on TSRC at 3.67 or higher based on the coverage of information disclosed in the first issue. These topics thus became the material aspects to be responded in the CSR report.

## Outcomes of Material Aspect Analysis







# Material Aspects

## Material aspects responded in this report

Environmental Aspect	<ul style="list-style-type: none"><li>▪ Environmental compliance</li><li>▪ Effluent and waste management</li><li>▪ GHG management</li><li>▪ Resource and energy consumption</li><li>▪ Environmental protection investment</li><li>▪ Green products and services</li><li>▪ Supply chain management※</li></ul>
Economic Aspect	<ul style="list-style-type: none"><li>▪ Economic performance</li><li>▪ Market presence</li></ul>
Social Aspect	<ul style="list-style-type: none"><li>▪ Occupational safety and health</li><li>▪ Compliant with product regulations</li><li>▪ Industrial relations and employee benefits</li><li>▪ Customer health and safety</li><li>▪ Ban of child labor</li><li>▪ Industrial relations</li><li>▪ Product and service labeling</li><li>▪ Customer privacy management※</li><li>▪ Community service</li><li>▪ Supply chain management※</li></ul>

※Information is disclosed in the report although part of it is non-material.

## Aspect boundaries

We have assessed the impacts and determined the influence of aspects within or outside of the organization for all identified material topics.



Boundary  Aspect		Within Organization						Outside of Organization		
		TSRC	Shen Hua Chemical	TSRC (Nantong)	TSRC UBE	TSRC (Shanghai)	TSRC (Jinan)	Supplier*	Contractor	Customer
Environmental	Environmental compliance	●	●	●	●	●	●	◐	◐	-
	Effluents and waste	●	●	●	●	●	●	◐	-	-
	GHG management	●	●	●	●	●	●	○	-	-
	Energy and resource consumption	●	●	●	●	●	●	-	-	-
	Environmental protection investments (environmental accounting)	●	●	●	●	●	●	-	-	-
	Green products and services	●	●	●	●	●	●	●	-	-
Economic	Financial performance	●	●	●	●	●	●	○	-	○
	Market presence	●	●	●	●	●	●	-	-	-
Social	Occupational safety and health	●	●	●	●	●	●	◐	◐	-
	Product compliance	●	●	●	●	●	●	◐	-	-
	Industrial relations and employee benefits	●	●	●	●	●	●	-	◐	-
	Customer health and safety	●	●	●	●	●	●	-	-	-
	Ban of child labor	●	●	●	●	●	●	◐	●	-
	Industrial relations	●	●	●	●	●	●	-	-	-
	Product and service labeling	●	●	●	●	●	●	●	-	-
	Customer privacy management	●	●	●	●	●	●	○	-	-
	Customer privacy management	●	◐	◐	◐	◐	○	-	-	-
Legend		-		●		◐		○		
Description	Material	Non-material		Full disclosures in this report		Partial disclosures in this report		Unable to disclose, as information is unavailable.		

Note: The boundary of this report does not include subsidiaries in the USA, and aspect boundaries are thus not included.

## Business Operations Overview

### Business Operations Overview

#### Market

In rubber product sales, after commercial operation of SIS at TSRC Nantong and ESBR at ISRL began in 2014, we have passed the quality certification of many customers and sales have been rising since this year. In addition, after the completion of TPE line re-engineering at Kaohsiung Factory in 2015, SEBS outputs will increase to 25,000MT each year to benefit both annual revenue and profit, ensure steady corporate growth against keen competitions in the industry, and enable us to achieve sustained operations.

#### Strategy

Given the global awareness of corporate social responsibility (CSR) has been rising, we will stern our R&D focus toward new products and new technologies of high added value with advanced eco-friendly processes to provide customers with satisfactory products and services. We will also devote to providing customers with rubber use solutions to create win-win for both parties.

#### Performance in 2014

In 2014, the sales turnover was NT\$31.869 billion and EPS was NT\$1.38. Products were mainly sold to Japan, Thailand, China, Malaysia, Vietnam, the USA, and Germany.

#### Prospects in 2015

To support the trend of value enhancement in industry, we will unremittingly improve TPE product quality and process technology, accelerate the development of new specifications and high-performance products, and build a global technical service network, so as to become a trustworthy global supplier. In addition, to cope with the rapid growth of green tires across the world, we will devote to the development of high-performance rubber and provide customers with the required technical service and solutions, so as to fulfill the demand of global tire manufacturers.

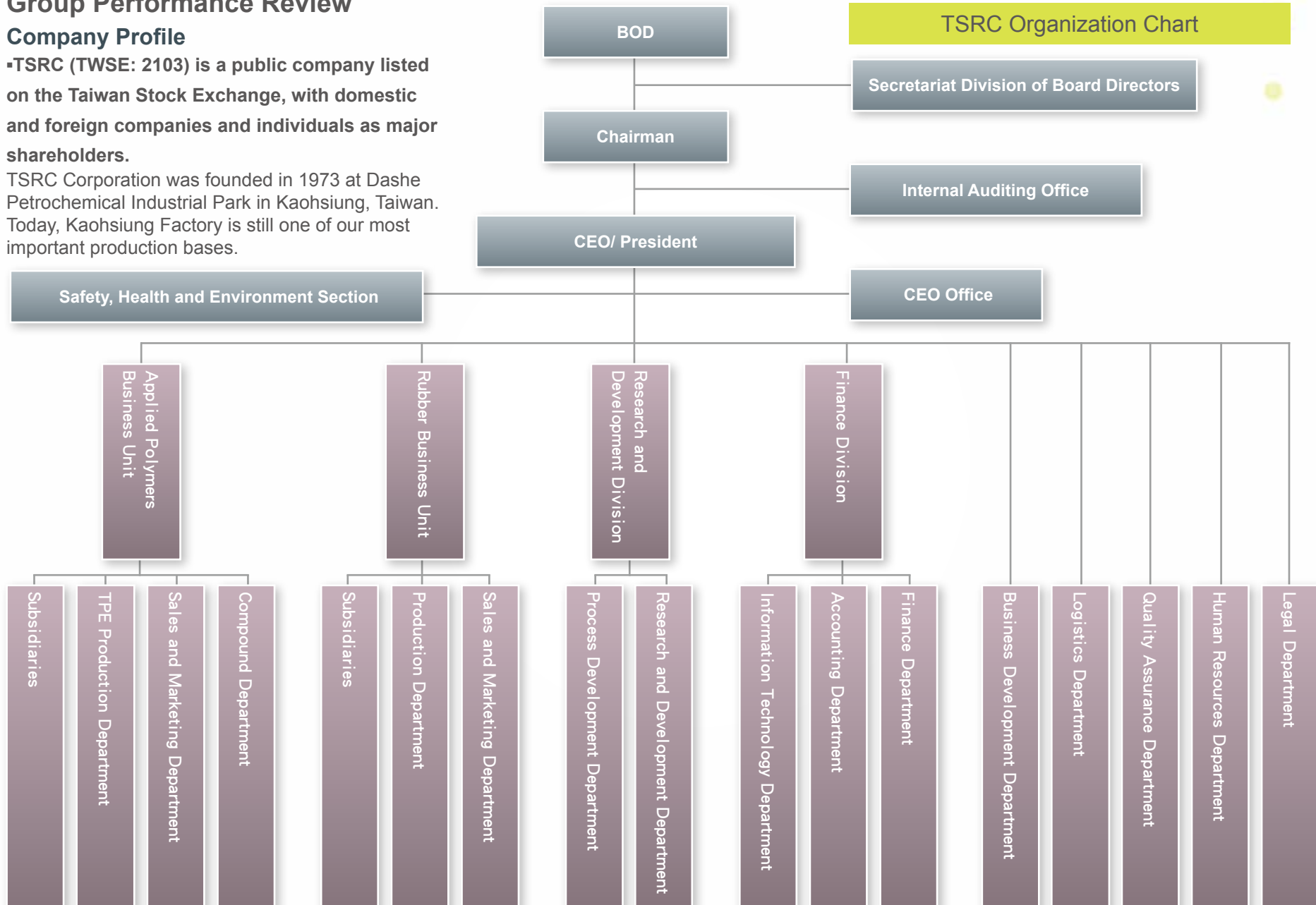
## Group Performance Review

### Company Profile

•TSRC (TWSE: 2103) is a public company listed on the Taiwan Stock Exchange, with domestic and foreign companies and individuals as major shareholders.

TSRC Corporation was founded in 1973 at Dashe Petrochemical Industrial Park in Kaohsiung, Taiwan. Today, Kaohsiung Factory is still one of our most important production bases.

### TSRC Organization Chart



We are specialized in the production and sales of various synthetic rubbers marketed under own brands including TAIPOL, T-BLEND, and VECTOR. Our main product lines include E-SBR, S-SBR, BR, TPE, and TPR. All of them are raw materials for producing consumer products. Our rubber products are mostly used by automobile-related industries, such as tires, engine tubing, airbag covers, and window trims. Our products are also used in dialy and industrial products, such as soles, toys, construction materials, daily necessities, and industrial supplies for other industries. Our major markets include Japan, Thailand, China, Malaysia, Vietnam, the USA, and Germany.

From the sole manufacturer of synthetic rubber in Taiwan 40 years ago, to the rubber industry leader in Asia today, TSRC is actively engaged in internationalization in these years: On R & D and technology, we focus on global planning—merged Dexco in the United States to utilize advanced process technology for high value-added products, and developed customized products to expand applications and enhance the high value-added TPE sales. We established operation center and sales channels in Europe, produced in Asia and have five subsidiaries and warehouses in China, including a joint venture in Nantong with the German company Lanxess. Indian Synthetic Rubber Ltd., a joint venture with Lanxess of Germany. In addition, to fulfill the rubber demand in India, we have established a joint venture, Indian Synthetic Rubber Ltd. (ISRL), with Indian Oil Corporation. Commissioning of ISRL has been completed and Commercial run has begun.

Apart from publishing revenue reports each month, we organize the general shareholders' meeting every year where shareholders can make proposals in writing with reference to the Company Act. In addition, we have established an investor relations site on the corporate website in Traditional Chinese, English, and Simplified Chinese and we update the financial information and conference call reports regularly for the reference of worldwide shareholders. Both shareholders and investors can make enquiries and suggestions to us through the investor box. All relevant information can be enquired from the investor relations site or the Market Observation Post System. We believe that our efforts can increase revenues and enhance information transparency, so as to provide more relevant information for investors to make investment decisions.

### Products in development

- 1 Continuous development of high-performance SSBR products for producing green tires
- 2 Development of high-quality NBR products
- 3 Development of differential NSBR products.
- 4 Improvement of SBS and SIS quality and process to cultivate the international market.
- 5 Development of HSBC with high added value to meet the demand of international customers.

Note: HSBC: Hydrogenated Styrenic Block Copolymers.

### Financial Status Overview

Unit: NT\$1,000

Item		2012	2013	2014
Revenue	Sales income	45,364,375	34,422,999	31,868,574
	Total assets	35,575,078	33,372,364	33,156,653
Profitability	Net profit after tax	3,139,901	1,715,482	1,243,746
	EPS after tax (NT\$)	3.22	1.9	1.38

\*Information contain in this table is extracted from the 2014 consolidated financial statement of TSRC and subsidiaries (including subsidiaries outside of the report boundaries).

### Research & Development Expenditure

Unit: NT\$1,000

	2012	2013	2014
Net sales income	45,364,375	34,422,999	31,868,574
R&D expenditure	351,239	389,147	363,035
Net R&D fund/sales income (%)	0.8	1.1	1.1

\*Information contain in this table is extracted from the 2014 consolidated financial statement of TSRC and subsidiaries (including subsidiaries outside of the report boundaries).

**Direct Economic Value Allocated in 2014(% in revenue)**

Operating Cost	94.5%
Employee Wages and Benefits	4.8%
Shareholder Benefits	4.6%
Government <sup>1</sup>	1.0%

The surpass competitors to strive for higher profits, the R&D Department actively develops the most advanced formulas in line with the trend to meet customer needs, so as to provide customers with total solutions. In 2014 the total R&D expenditure amounted to about NT\$360 million, accounting for 1.1% of total sales turnover.

Every year, we apply for patents aggressively to protect our R&D outcomes, optimize processes, and differentiate ourselves from competitors. In 2014, we applied for 6 patents and were awarded 16 patents.

**Memberships of Associations and Organizations**

- Petrochemical Industry Association of Taiwan
- Taiwan Rubber & Elastomer Industries Association
- Dashe Petrochemical Industrial Park 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 of Rende Industry Park
- Taiwan Responsible Care Association
- International Institute of Synthetic Rubber Producers (IISRP)
- IPR Association of Chinese National Federation of Industries
- Chinese National Association of Industry and Commerce, Taiwan
- Safety & Health Association of Taiwan
- Benjiou Industrial Park Manufacturers' Association, Gangshan, Kaohsiung
- China Rubber Industry Association
- China National Adhesives Industry Association
- Standards Association of Nantong City
- 2nd Board, Production Safety Management Network, Nantong Economic and Technology Development Area

<sup>1</sup>Pyaments made to the government: Taxes (e.g. sales tax, income tax, and property tax).

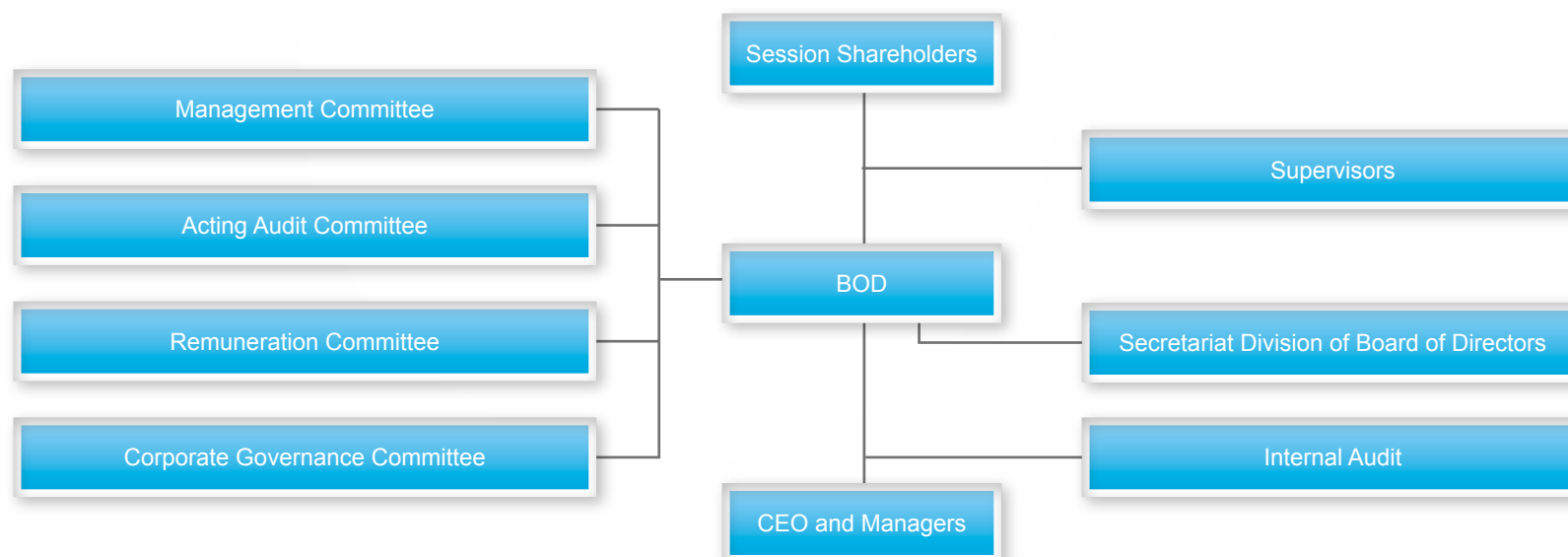


## Corporate Governance

To implement a quality corporate culture and maintain corporate image and corporate ethics, we have established the TSRC Standards of Business Conduct and TSRC Code of Ethics with reference to the Company Act, Securities and Exchange Act, and Corporate Governance Best-Practice Principles for TWSE/GTSM Listed Companies to provide dependable standards for the conduct of employees, directors, supervisor, and managers; prevent them from seeking improper advantage for themselves and their relatives with the advantage of own position or duty and to ensure absolute confidence of customer privacy. We have also established procedures for whistleblowing, disciplinary action, and grievances. We regularly review our mission, vision, value, core competencies, and management competencies and request relevant employees to comply with them. We also include them in the annual performance evaluation of employees. Employees violating relevant regulations will be punished with reference to the Rewards and Punishments Regulations.

The session shareholders attended by all shareholders is the top mean authority of TSRC. The board of directors (BOD) formed by directors elected by the shareholders' meeting is the executive authority of TSRC. The shareholders' meeting also elects supervisors to supervise business operations of TSRC. The chairman chairing the BOD is the top representative of TSRC and represents TSRC externally without taking any executive position concurrently. From time to time directors and supervisors of TSRC participate in corporate governance training organized by Taiwan Securities and Futures Institute (SFI) and the Corporate Governance Association (CGA).

### TSRC Corporate Governance Framework



### Board of Directors<sup>1</sup>

Elected by shareholders, the Board of Directors (BOD) is the top corporate governance authority with missions to establish and supervise operational goals; appoint and supervise the management team; approve and decide on corporate development strategies; ensure the effective operation of the governance system; verify internal financial, accounting, and audit systems; and assess operational risks. Currently eleven members, including nine directors (with two independent directors) and two supervisors, with one female director, form the BOD. All board



members are over 50 years old. In 2014, the board held seven board meetings. Under the BOD, there are four functional committees: Corporate Governance Committee, Acting Audit Committee, Remuneration Committee, and Management Committee. All board members are equipped with necessary knowledge, skills, and experiences to perform their duties and abilities to make judgements of the industry<sup>1</sup>. These abilities include leadership ability, the ability to make judgments about operations, accounting and financial analysis ability, business administration ability, crisis management ability, knowledge of the industry, and international market perspectives, so as to achieve the ideal goal of corporate governance.

### Supervisors

At TSRC, two supervisors exercise their power of supervision independently by the law. Supervisors audit major accounting titles in financial statements with CPAs to ensure the reasonability and adequacy of financial statements. Supervisors also verify the independence of CPAs and transaction of major related parties and ensure the internal control system is effectively designed and implemented. In 2014, supervisors held seven meetings. In addition to attending board meetings to present their views, supervisors attended the meetings of various functional committees.

### Remuneration Committee

The staffing, duty, and operation of the Remuneration Committee are as follows:

- The term of the Remuneration Committee was 13 June 2012 to 9 June 2015. From 19 March 2014, two independent directors form the committee.
  - Committee members should exercise the due care of administrators and carry out the following duties. They should answer to the BOD and make recommendations for BOD discussions.
    - Establish and regularly review the performance evaluation and remuneration policies, systems, standards, and structures of directors, supervisors, and managers.
    - Regularly review and establish the remuneration for directors, supervisors, and managers.
    - Other affairs authorized by the BOD.
- Referring to Article 29 of the TSRC Articles of Incorporation, the remuneration of the directors and supervisors is linked to profits after taxed and the surplus available for distribution each

year. Every year the BOD should submit a plan to the session shareholders for resolution. Please refer to the Remuneration for Directors and Supervisors in the Dividend Policy of our annual report.

### Anti-corruption and Non-disclosure Policies

To provide dependable standards for employees to follow, we have established the “Confidential Information Management Regulations”, “Personal Information Management Regulations”, and “Standards of Business Conduct” so as to protect the intellectual property and confidential information of TSRC and the personal information of customers and employees. To prevent insider trading and opportunities for transferring financial interests to others through the conflict of interest between TSRC and individuals, we openly request employees in new employee training and through electronic bulletins not to demand, take or promise to take bribes or other unlawful profits for performing or violating their duties; provide or accept inappropriate (such as cash and marketable securities such as gift vouchers/gift certificates) gifts or treats or gifts or treats of obvious in equivalent value; or disclose any internal information that may affect TSRC stock prices.

So far, no customer complaint regarding privacy infringement, any violation of domestic or foreign financial or business policies, or any administrative fine regarding violation of such policies is reported.

### Establishment and Enforcement of Internal Control and Internal Audit System

The internal audit is directly under the BOD to inspect the internal control system and follow up defects and anomalies founding audit until improvement is completed. Internal audit reports and departmental self-inspection reports will be submitted to the BOD and management for review. The internal control system includes the internal audit system. Apart from the annual self-inspection of the international control system, we will review and revise the internal control system with reference to changes of the internal and external environments. The establishment and revision of major internal controls must be reviewed and approved by the BOD. At TSRC, the internal audit and internal control systems are applied to control defects and risks in corporate governance .

<sup>1</sup>Please refer to the TSRC annual report for the education background of directors and supervisors: [www.tsrc.com.tw](http://www.tsrc.com.tw).

## Supply Chain Management

### Supply Chain Management

#### Purchasing Policy

- Corporate Social Responsibility: preferences to promote corporate social responsibility of suppliers.
- Environmental Management: Booting suppliers to establish environmental policy and environmental management system, preferential purchasing ring environmental Protection mark recognition, recycled materials, recyclable, less polluting, energy-efficient products.
- local procurement: subject to the overall cost-effectiveness considerations priority to domestic manufacturers purchase.



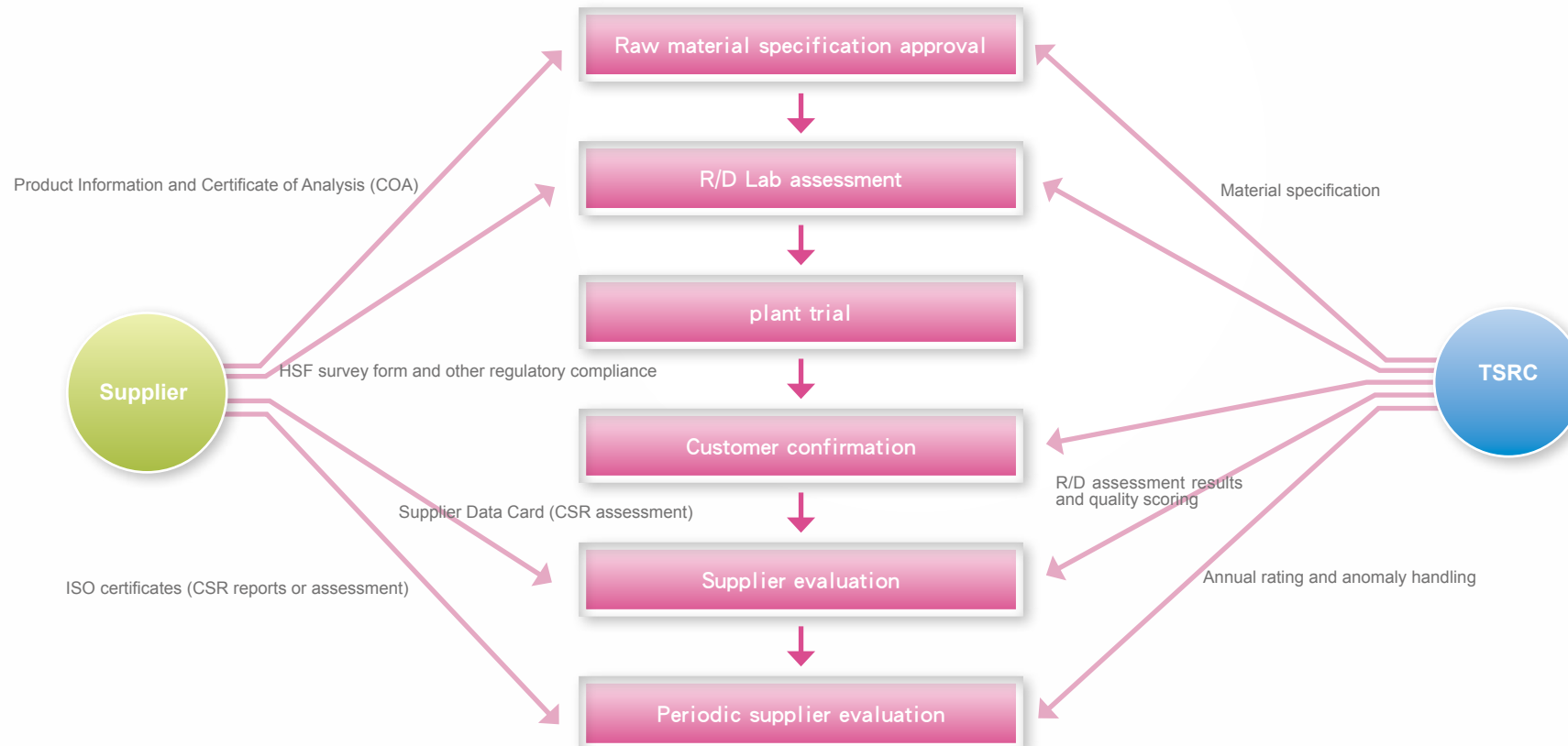
## Green Supply Chain Management

### Hazardous Substance Free (HSF) Policy

- HSF-compliance to meet customer's environmental requirements.
- Continual improvement of product environmental standards by producing HSF products

Based on our management motto: expertise, quality, safety, and eco-friendliness, we aim to pursue win-win with suppliers and customers and ensure the supply chain and production complies with ethical and environmental standards. In practice, apart from regularly assessing the product quality, delivery punctuality, cooperativeness, industrial safety management, and CSR management of suppliers, we communicate with them at any time. The procurement unit also adjusts the procurement quota of suppliers with outstanding performance, so as to ensure win-win for all parties.

### Supplier Evaluation and Selection Process



As a leading brand of the rubber industry, apart from complying with REACH and RoHS regulations and the HSF standards of customer, we have established the “HSF Management SOP” for Kaohsiung Factory, Gangshan Factory, and factories in Nantong to select qualified raw materials suppliers, so as to ensure all raw materials comply with international environmental directives and regulations, such as RoHS, REACH, and SVHC. Besides establishing the “Hazardous Substance Management SOP” to ensure the provision of HSF products for customers, we will implement supplier sustainability management and strictly screen raw material suppliers in terms of the following four aspects in procurement management.

- Supplier selection: The procurement unit implements graded HSF control on suppliers and requests suppliers to submit the safety data sheet (SDS) even for trial chemicals, so as to ensure all materials used in TSRC are free of hazardous substances.
- Local procurement: To reduce transportation for emission reduction, we actively purchase materials from local suppliers and encourage suppliers to set up factories in Taiwan, so as to reduce shipping fees (air and sea) and energy consumption and shorten delivery time.
- Ensuring fair and unbiased procurement: When purchasing materials, we assess suppliers based on the product quality, delivery punctuality, cooperativeness, industrial safety management, and CSR management of suppliers to ensure fair and unbiased procurement.
- Product responsibility: Apart from the routine communication between TSRC purchasing personnel and suppliers, we have established the SAP communication platform to update supplier data and check and confirm purchase orders. In addition, while the fairness and reasonability of material sources are gaining importance across the world, such as the Conflict Minerals<sup>1</sup> Rule of the US, we assess the material sources of suppliers in collaboration with customers to ensure all raw materials and TSRC products comply with the conflict minerals free (CMF) specifications.

In addition, we have established the “Supplier Code of Conduct” with reference to our CSR spirit to request partners to observe local laws and regulations, ban forced/compulsory labor in any form (including extortion), and ensure legal work time, wage, and benefits. Currently, we have included comprehensive standards and indicators in supplier evaluation and selection, including RoHS(HSF), QC080000, ISO14001, OHSAS18001, CNS15506, and important CSR indicators. We strongly request suppliers to ensure the freedom of association, ban of child labor, and elimination of forced/compulsory labor, so as to maintain basic human rights. These indicators are also included in the “Supplier CSR Assessment Sheet” as key items for new supplier audits.

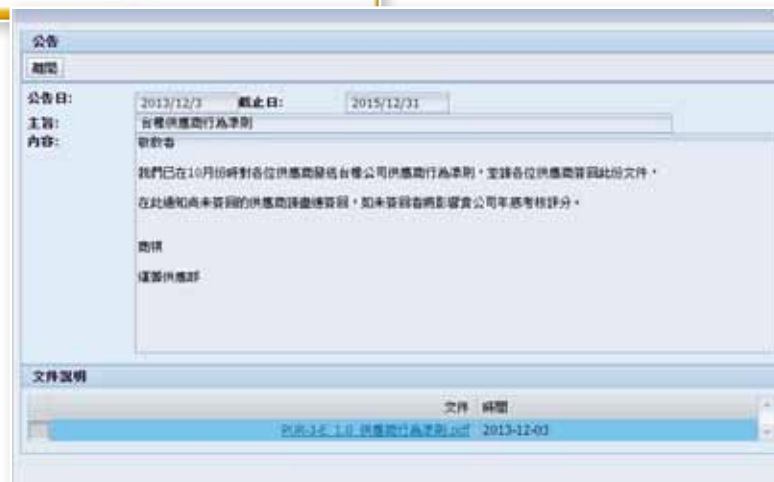
Apart from strictly banning suppliers to use child labor, we refuse to work with suppliers using child labor. We even request partners to respect and encourage employees to develop and engage in organizations regarding overall employee benefits where local laws allow.

Besides scoring qualified suppliers by product quality, delivery punctuality, cooperativeness, and industrial safety management every year, we score the CSR implementation of suppliers. In 2014, all raw material suppliers complied with our evaluation requirements.

<sup>1</sup> Conflict Minerals: Part of the metal minerals have become the major financial source for the Democratic Republic of Congo and various armed rebel groups in neighboring countries to trade armaments and fund bloodshed conflicts with their governments. At many sites, armed groups extort and coerce civilians, including children, to work. As this has initiated worldwide controversies, US President Obama signed the bill H.R. 4173 in July 2010. This bill became the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act).



Supplier Platform  
http://srm.tsrc-global.com



TSRC Partner Code of Conduct Announcement

CSR  
Innovation sustainable development

**Producer Green Activities**

**Producer Green Activities**

## Product Responsibility, Green Supply Chain Management, and Customer Satisfaction

In addition to producing products that meet users' demand, it is the responsibility of producers to eliminate safety and health risks on users. At important stages of production and distribution, we consider their impacts on employee health and safety to achieve sustainable operations. We also follow up customer satisfaction regularly based on our "quality policy" to provide customers with satisfactory products and services.

TSRC considers the impact of health & safety in important stages in production, communicating sustainability considerations in marketing process and tracks customer satisfaction annually following quality policy spirits

## Emission Reduction

In 2014 our greenhouse gas (GHG) emissions were 485,480 tCO<sub>2</sub>-e (tonnes of carbon dioxide equivalent), where Scope 2 emissions accounted for 41%. Through GHG inventory, we found that black coal and fuel oil are the major sources of direct GHG emissions, while purchased electricity is the main source of indirect GHG emissions. Therefore, replacing black coal and fuel oil with low-carbon fuel and energy conservation are the foci of emission reduction. In response, we have gradually replaced fuel oil with natural gas at Kaohsiung Factory. In practice, we implemented the "GHG Reduction& Offset Project" in collaboration with the Foundation of Taiwan Industry Service in 2012. In the same year, we obtained the "GHG verification statement" issued by a third-party verification authority. Further, in 2013, the Environmental Protection Administration of Taiwan (Taiwan EPA) approved our "Switching Fossil Fuel to Natural Gas for Facility Plant Boiler No. 3 Offset Project". This offset project enables us to convert the reduced emissions into reduction credit with economic value for use as offset credit in the domestic emission trading market or cap control in the future. In energy conservation, we have been reducing energy consumption through different dimensions, including process improvement and integration, equipment replacement and efficiency enhancement, and optimization of operating conditions and production line layout. With all these measures, we aim to effectively reduce GHG emissions and thereby minimize environmental load.

## Water Resources and Effluence Management

In 2014, our total water consumption was about 3.67 million tonnes, and all production bases have recycled effluents as much as possible.

## Energy Conservation

In energy conservation and emission reduction, we are committed to efficiency enhancement and conservation at the same time. Through continuous process improvement, equipment upgrade, and raw material recycling, we achieve energy conservation targets and annual control. In product development, we have developed high-performance SSB for green tires to boost the energy saving performance of tires.

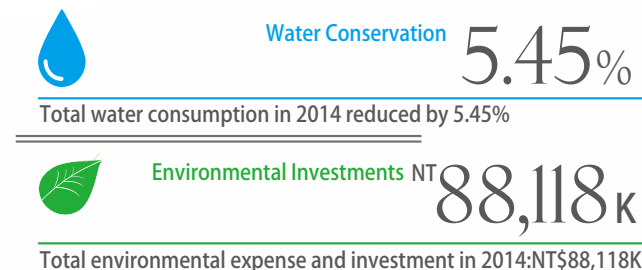
## Waste Management and Raw Material Recycling

Before disposing of waste, we must apply for permission for our waste disposal plan according to the law. General industrial waste and hazardous industrial waste are under systematic control of the administration unit to ensure waste is properly stored, managed, reported, and followed up throughout the disposal process, so as to prevent waste from contaminating the environment. We also announce recyclable waste and containers and implement strict waste classification before recycling. In addition, through process improvement and technology integration, we maximize the recyclability or renewability of raw materials to minimize environmental impacts.

## Environmental compliance

While environmental protection is our responsibility, we gather and identify safety, health, environmental, fire, and energy management laws and regulations and other requirements relating to our business activities and communicate them to relevant employees or contractor personal to follow these regulations and requirements, so as to create substantive environmental performance .

## Producer Green Activities





## Environmental Policy

Cherish Earth's resources and fulfill environmental responsibility;  
Continuous improvement and sustainable operations



### Principles:

- Reduce environmental impact through reasonable use of energy and resources and safety, health and environmental assessments of product and process development and improvement.
- Set energy conservation and waste reduction targets and objectives and implement continual improvement through production and environmental management systems.

### Implementation

- Ensure employees understand and implement ESH-related laws, regulations, and requirements through continual training and education.
- Maintain a balance among product quality, environmental improvement, and overall benefits by implementing environmental assessment in all feasibility surveys.

### Product Responsibility and Customer Satisfaction

In recent years, product life cycle has become the basis for assessing producer responsibility management across the world. From product conceptualization, therefore, we notice that we must not impose safety and health risk of any kind on users and the need to report substances of very high concern (SVHC) in products according to the ECHA or check product contents with reference to FDA 177.1810 for downstream users to use our TPE products in materials intended for contact with food without worries. Apart from considering the health and safety impacts of products during development, Commercial run, marketing/sales, warehousing, and transportation, even consumers (end-users) are not our clients, we understand our responsibility to explain to our downstream customers the sustainability considerations during production and marketing.

All TSRC products must be assessed and controlled with reference to the following items:

	Control Point	Not Applicable
Product conceptualization	✓	
R&D	✓	
Product certification <sup>1</sup>		✓
Manufacture and Commercial run	✓	
Marketing/sales	✓	
Warehousing/transportation	✓	
Disposal, reuse, recycling <sup>2,3</sup>		✓

Based on the above stages of product life cycle, we assess the health and safety impacts of products according to the following processes:

### 1.R&D

When we design products, compliant with safety regulations is a must and we also take into account impact on human health of the additives and raw material.

For example, as for compound products, traditionally shoe makers use glue for binding, while many solvent and peroxides in some glue are harmful to the environment and human body. Therefore, TSRC developed low pollution materials to achieve the bonding to reduce the hazardous substances and reduce process costs in the same time.

TSRC selects hazardous free and reusable raw materials in the beginning of R&D, and all the compounding in the formulation process is physical mixing to make the products and waste safe. That is so called preventive treatment instead of end-of-pipe treatment.

In supplier selection, we have established the “HSF Management SOP” for Kaohsiung Factory, Gangshan Factory, and factories in Nantong to select qualified raw materials suppliers, so as to ensure all raw materials comply with international environmental directives and regulations, such as RoHS, REACH, and SVHC.

Note: <sup>1</sup>Product certification stage: Although we did not apply for product certification, we always comply with legal (regulatory) requirements and customer requirements for health and safety considerations.

<sup>2</sup>Disposal, reuse, recycling stage: TSRC is a raw material maker and is not applicable to the disposal, reuse, and recycling of final articles.

<sup>3</sup>Precautionary treatment: Take production processes in a factory for example, we select eco-friendly materials and processes right at the beginning to ensure no hazardous waste from the process and thereby save labor and cost to dispose of and remove the toxin and odor in hazardous waste and the resultant legal disputes.

## 2.Commercial run: HSF compliance and systemic management

Upholding absolute legal compliance and assurance of customer and consumer benefits, apart from restricting the use the six substances specified in RoHS, we implement restricted substances control with reference to international environmental regulations and the control items of worldwide customers. During the manufacturing process, we strictly control hazardous substances in raw materials to ensure compliance with international and domestic environmental regulations. HSPM<sup>1</sup> has been implemented at Kaohsiung Factory, Gangshan Factory, and factories in Nantong, and Kaohsiung Factory has passed IECQ QC 080000 certification, and IECQ QC 080000 processes have been established at Shen Hua Chemicals, TSRC (Nantong), TSRC UBE, and TSRC Shanghai.

## 3.Marketing/Sales

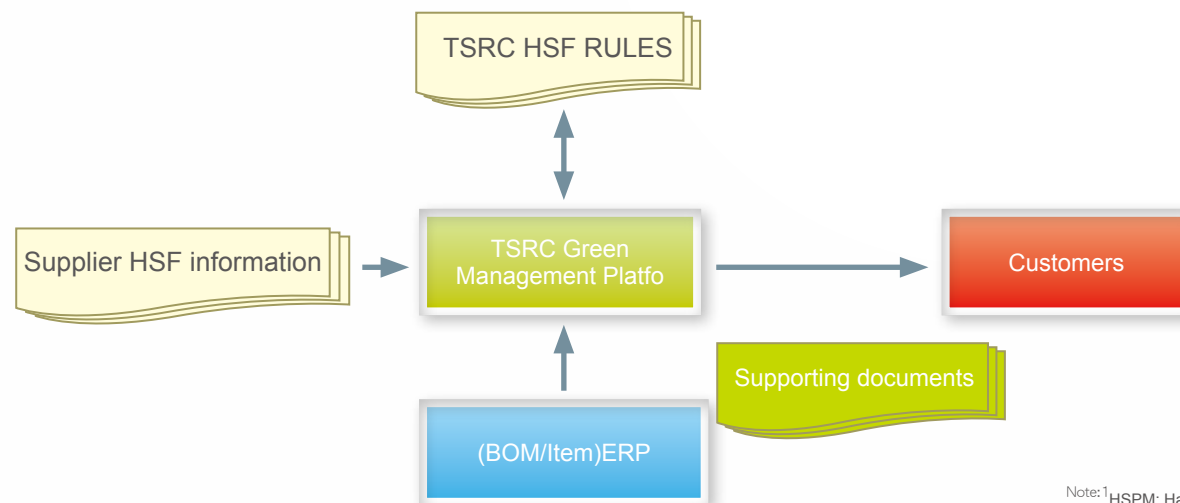
When marketing products, we also assess product competitiveness in health and safety terms according to the industrial trend and actively highlight their advantages at exhibitions or business visits. As the rise of environmental protection and energy conservation awareness has pushed green development in synthetic rubber, we have started the R&D of eco-friendly rubber materials and aggressively promote and

communicate to customers. The specifications, performance, and points for attention of our products are manifested in the certificate of analysis (COA) and safety data sheet (SDS<sup>2</sup>) for customers to understand the safety use of products. We also set an enquiry hotline to provide information required by customers

In product labeling, we explain how we consider sustainability through the following processes.

	Yes	No
Procurement method	✓	
Product content	✓	
Product safety use	✓	
Product disposal	✓	

## Green Supply Chain Management Information System



IECQ QC 080000 Certificate

Note:<sup>1</sup>HSPM: Hazardous Substance Process Management

<sup>2</sup>SDS: Safety Data Sheet

1. In the first delivery, we must provide the SDS with information including restricted substances, disposal methods, and conditions of use. SDS is also available on customer demand.
2. We conduct the HSF quality satisfaction survey on customers and communicate to customers our green product concepts on the corporate website, during customer visits, or in open occasions (such as seminars and product presentations).
3. Where customers request an HSF survey, we will check the concerned substances in TSRC database and reply to customer based on HSF management SOP.
4. So far we have communicated the sustainability information of eight categories of products<sup>3</sup> to customers with the above methods. In 2014 no litigation for punishment of violation of product specifications, voluntary information disclosure standard, and product labeling was reported.

#### **Market expansion for green rubber materials and products**

Most of our products are used in tire making. As green tires have become a new trend in the global tire industry, to help tire makers to fulfill the global demand for green tires and promote tire industry upgrade, we have developed the new-generation high-performance SSBR based on the characteristics and needs of green tires. Main features of the new-generation SSBR include lower rolling resistance (RR), lower fuel consumption, enhanced fortifier carbon black, and enhanced white smoke dispersion. The material is developed for downstream tire-makers to develop low RR and low fuel-consumption tires. This new SSBR can reduce RR by about 20% and fuel consumption by about 3%. That is to say, abrasion resistance is raised from 40,000 km to 80,000 km and fuel consumption is reduced by 30L every 10,000 km to significantly extend tire life and reduce the environmental impact of emissions. To cope with the European Tyre Labelling Regulation (EC/1222/2009), we will continue to develop and promote SSBR products with low RR to the market and promote SSBR product applications together with strategic partners to increase market share.

For its non-toxic, low-pollution, and recyclable advantages, TPR has been replacing in recent years PVC whose import has been restricted by European countries. With the rise of environmental awareness worldwide, world-leading brands have also gradually replaced PVC and traditional plastics with TPE to produce products. Coping with the developmental and environmental needs of downstream industries with

the TPE technology development platform, we continuously develop new products and new technologies with higher added values and gradually enter the PVC and traditional plastics market to accelerate TPE application in different industries.

#### **4. Warehousing and Transportation**

Risks of traffic accidents, collapse, and warehouse fire are under strict control.

Take TSRC UBE, TSRC (Nantong), and TSRC (Shanghai) for example, contractors must follow the planned routes when shipping raw material to and from the factory site. After shipping to the warehouse, raw materials are identified appropriately by product/inspection labels (pending/pass/fail) and stored in a cool and dry place with good ventilation. Contractors must be qualified suppliers in our supplier evaluation and are requested to participate in the emergency response exercise (spill/fire/scenario) organized by us. In 2014, no occupational accidents or material loss was reported.

Through the above green supply chain management and product responsibility management, we have ensured compliance in the provision of products and services, and no punishment for violation was reported in 2014.

<sup>3</sup>ESBR, BR, NBR, SIS, SBS, SEBS, SSBR, and compounds, totally eight categories.



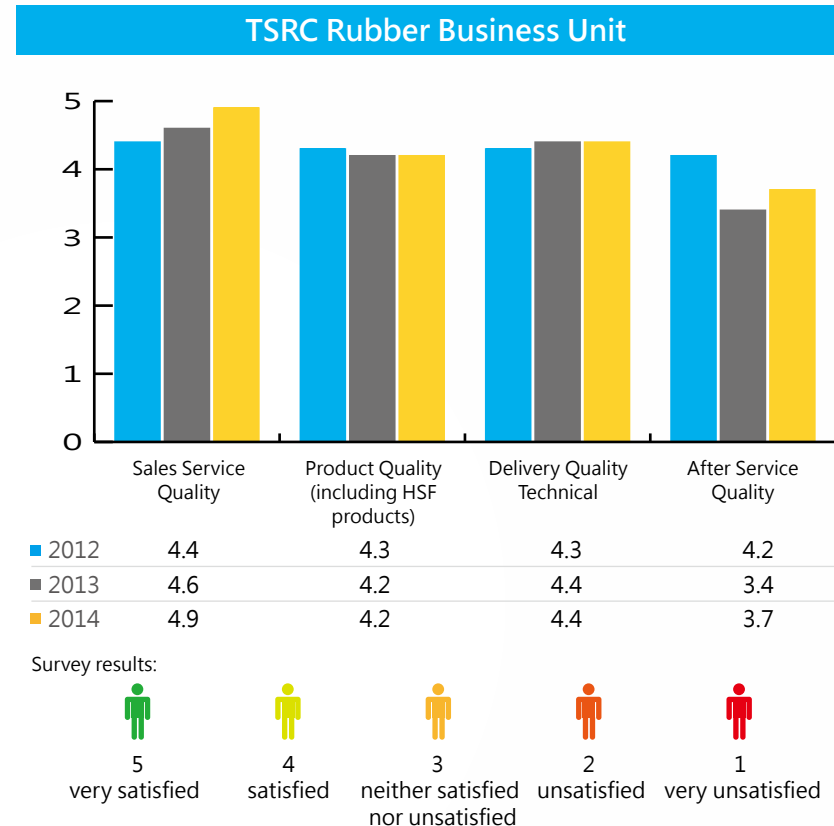
## Customer Satisfaction

We are convinced that customer satisfaction is an important indicator of dialogues with customers. To handle problems reflected by customers, we have established in our quality management system relevant procedures and mechanisms, including the “Customer Satisfaction Measurement Regulations”, “Correction and Prevention Management Regulations”, and subsequent improvement mechanisms. In addition, we ensure the health and safety of customers using our products through interviews (e-mail, telephone, and questionnaire). After receiving a product complaint from customers, the QA unit will convene relevant units to investigate the problem, analyze the cause, review the response, and propose solutions. Then, the QA unit will prepare a report to explain the cause and propose a solution and resolve the case with reference to the customer complaint handling procedure, so as to solve quality and HSF product development problems as quickly as possible.

We discuss customer complaints and customer satisfaction survey results at the management review meeting so as to make improvement. We also share all information over the intranet to prevent the recurrence of the same mistake and provide a reference for product quality improvement, so as to fulfill customer-focus service spirit.

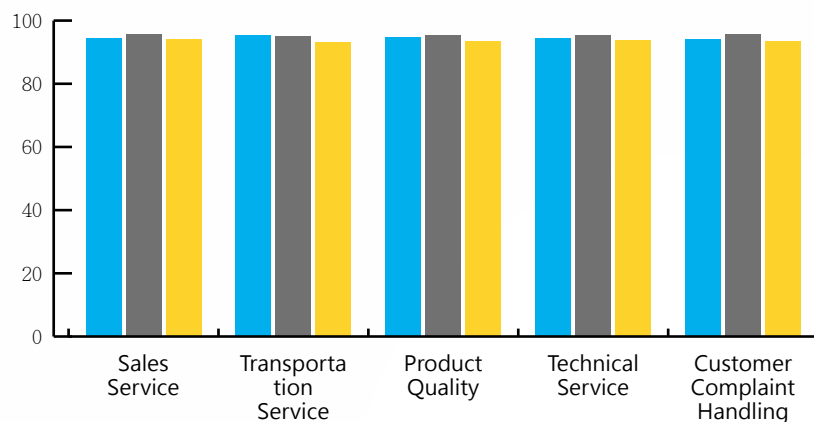
As each subsidiary has its own customers and each product is characteristically different, customer satisfaction is surveyed with different constructs. Customer satisfaction of subsidiaries within the group is shown below.

In 2014, all nonconformities detected by in customer audits have been resolved and replied to respective customers.



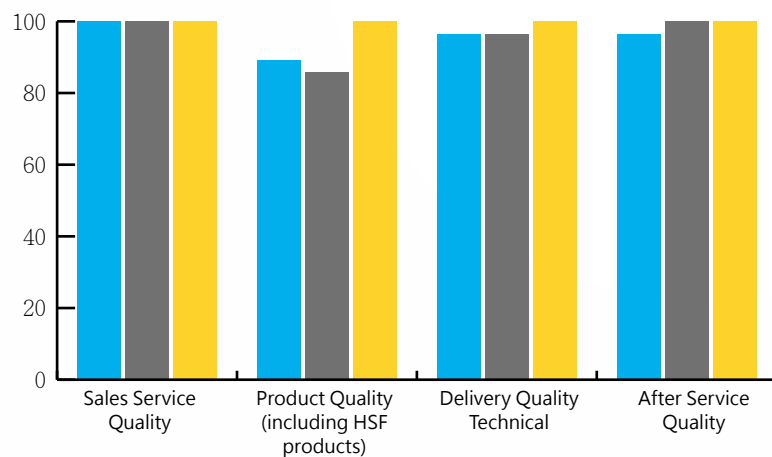
**Quality policy**  
**To provide customers with satisfactory products and services through “doing things right at the first time”, “matching deeds with words”, and continual quality improvement.**

## Shen Hua Chemicals



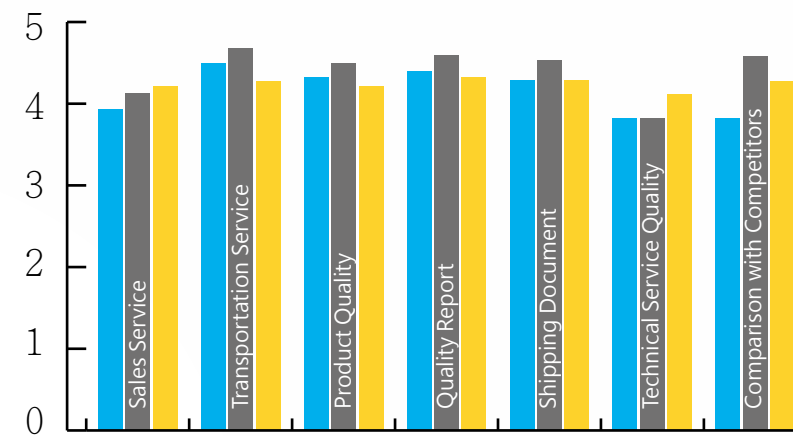
■ 2012	94.5	95.5	94.8	94.6	94.2
■ 2013	95.9	95.2	95.3	95.3	95.6
■ 2014	94.17	93.3	93.54	93.92	93.57

## Compound Department, TSRC Applied Polymers Business Unit



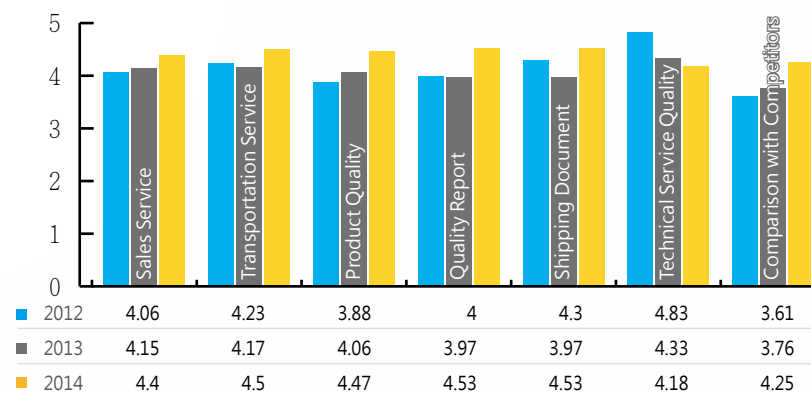
■ 2012	100%	89.29%	96.43%	96.43%
■ 2013	100%	85.71%	96.43%	100%
■ 2014	100%	100%	100%	100%

## TSRC-UBE

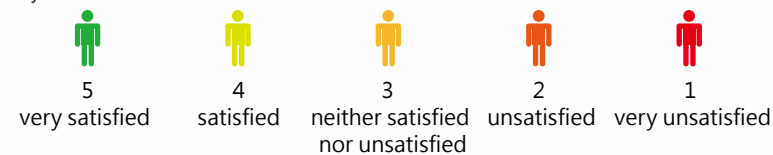


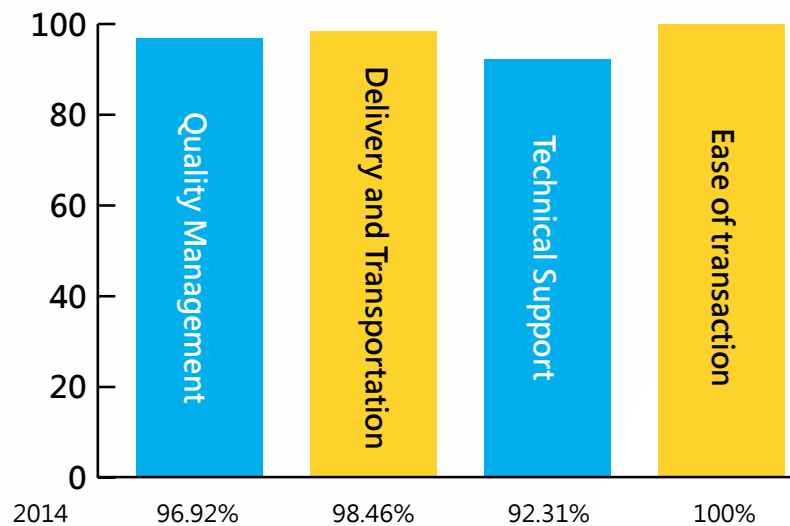
■ 2012	3.94	4.5	4.33	4.4	4.29	3.83	3.83
■ 2013	4.13	4.68	4.5	4.59	4.54	3.83	4.58
■ 2014	4.22	4.28	4.21	4.33	4.29	4.12	4.28

## TSRC (Nantong)

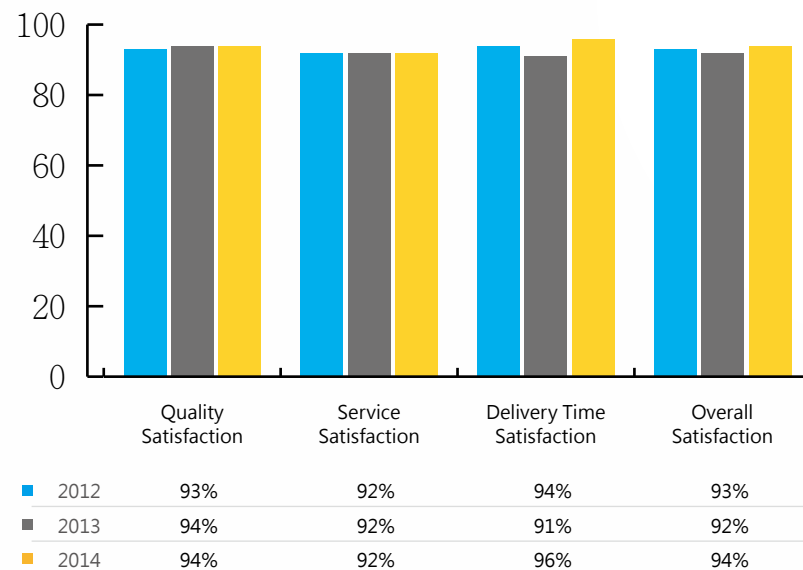


Survey results:



TSRC Applied Polymers Business Unit<sup>1</sup>

## TSRC (Shanghai)



<sup>1</sup>In 2014 AMD changed some survey items, and historical data comparison was thus unavailable. In addition, the overall customer satisfaction of TSRC (Jinan) in 2014 was 88%.



5S and TPM at Shen Hua Chemical.

To raise customer satisfaction with product quality, we launched the continual improvement activity in 2014 to implement quality improvement through a cross-functional team called the continual improvement team (CIT).

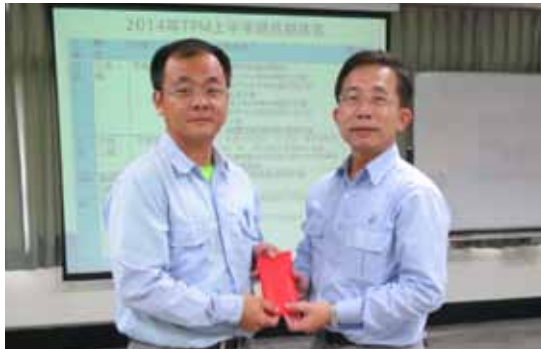
CITs were established one after another in Kaohsiung Factory, Shen Hua Chemical, and TSRC factories in Nantong one after another, detected quality problems with problem analysis, logics, and statistical techniques, and made improvement in various topics. In addition, total productive management (TPM) was implemented at factories in Kaohsiung and Nantong to enhance equipment synergy and labor productivity, reduce customer complaints, and minimize different forms of dissipation.



TPM evaluation panel.



TPM at Shen Hua Chemical.



TPM Activity award



CIT activity presentation.



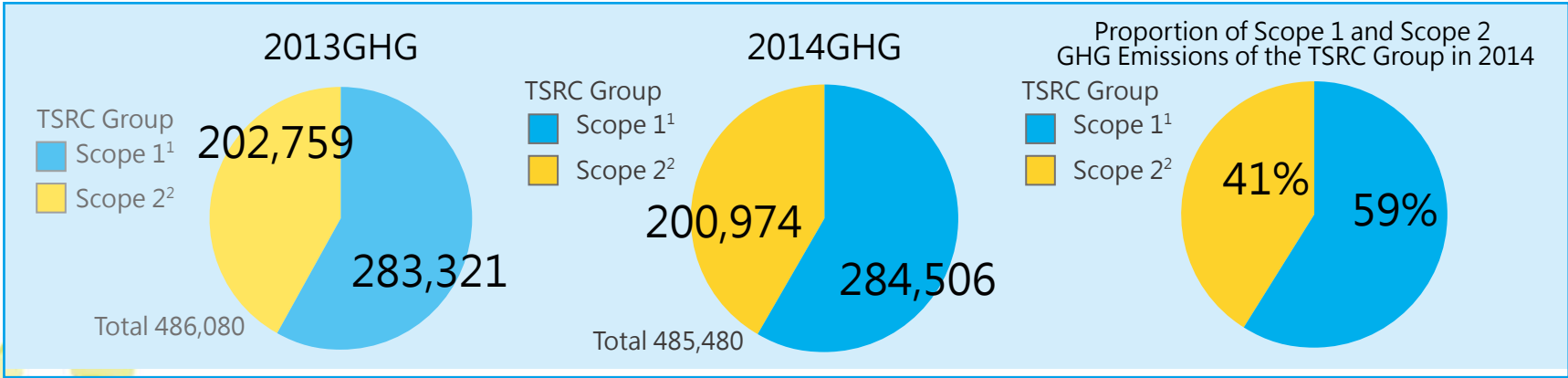
Skill competition of Shen Hua Chemical



TPM activity presentation.

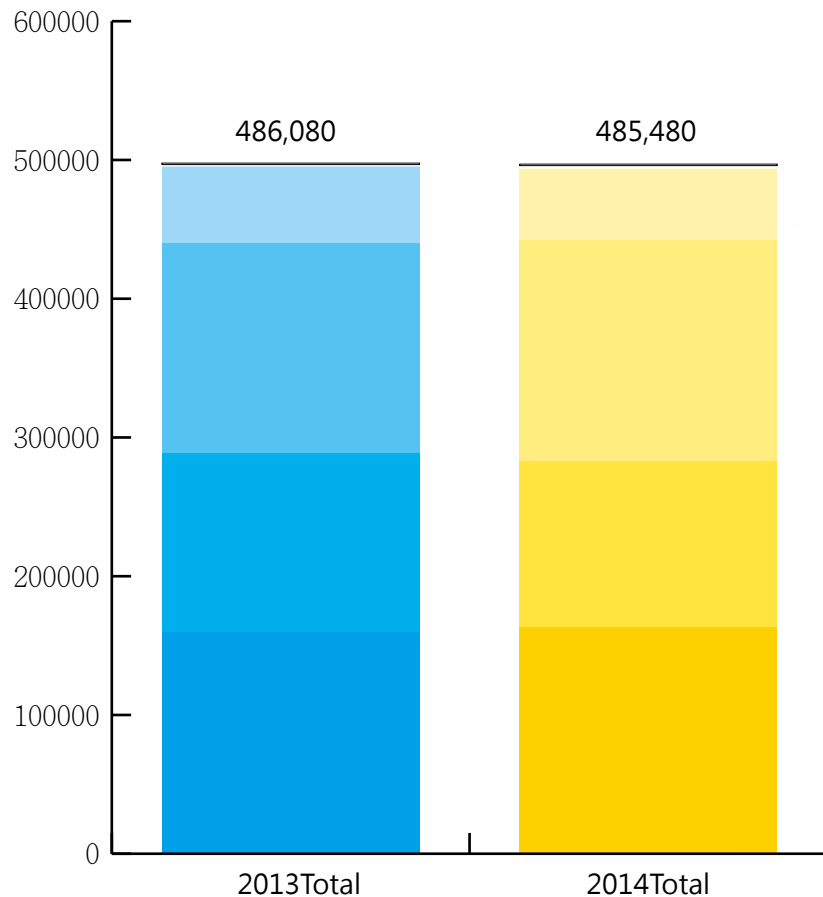


CIT Activity award





## 2013~2014 GHG Intensity Trend



TSRC (Jinan) 549	TSRC (Jinan) 399
TSRC (Shanghai) 1,821	TSRC (Shanghai) 1,784
TSRC UBE 55,026	TSRC UBE 51,363
TSRC (Nantong) 153,159	TSRC (Nantong) 161,401
Shen Hua Chemical 130,165	Shen Hua Chemical 120,151
TSRC 145,360	TSRC 150,382

## GHG Management

## Reduction target

To reduce GHG emissions to 2005 levels by 2020 at Kaohsiung Factory

## Reduction performance in 2014

Reduced by 4.9% from 2013 at Kaohsiung Factory.

## Promotion of GHG Management and Reduction

GHG verification for 2005-2012 of Kaohsiung Factory and Gangshan Factory was completed, and the inventory result of Kaohsiung Factory has been registered to the Taiwan National Greenhouse Gas Registry of the Taiwan EPA. As shown in the inventory result, major sources of GHGs emitted by the group include direct GHGs from black coal and fuel oils and indirect GHGs from consumption of purchased electricity. In 2014, total GHG emissions calculated based on internal CSR indicators were 485,480 tCO<sub>2</sub>-e, including 284,506 tCO<sub>2</sub>-e in Scope 1 and 200,974 tCO<sub>2</sub>-e in Scope 2, and Scope 3 identification was completed.

## Black coal and fuel oil the main sources of direct GHG emissions of the TSRC Group.

Calorific Value	2013	2014
Fuel Oil (Gcal)	90,560	64,976
Factory Diesel (Gcal)	2,710	2,719
Black Coal (Gcal)	476,851	467,331
Natural Gas (Gcal)	252,188	302,738

1 Scope 1: Direct greenhouse gas emissions from sources that are owned or controlled by the company.

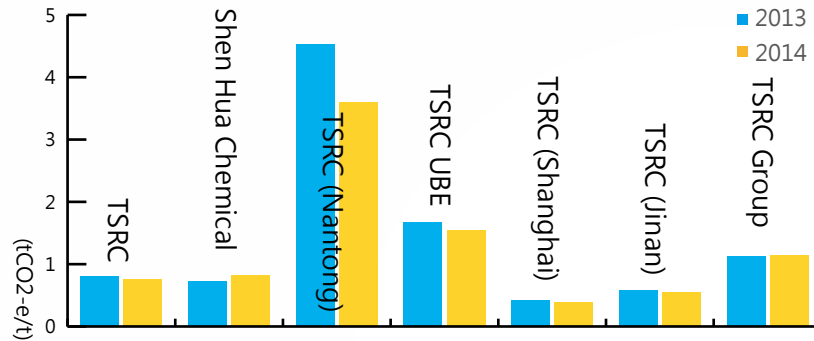
2 Scope 2: Indirect greenhouse gas emissions from consumption of purchased electricity, heat, or steam.

3 Scope 3: Other indirect emissions beyond the direct TSRC control from qualitatively identified sources, including employee commutation, business travels, outsourced activities (such as logistics and repair), waste disposal (such as outsourced landfill and incineration), etc.

Emissions headcount intensity and emission intensity by sales turnover are shown below:

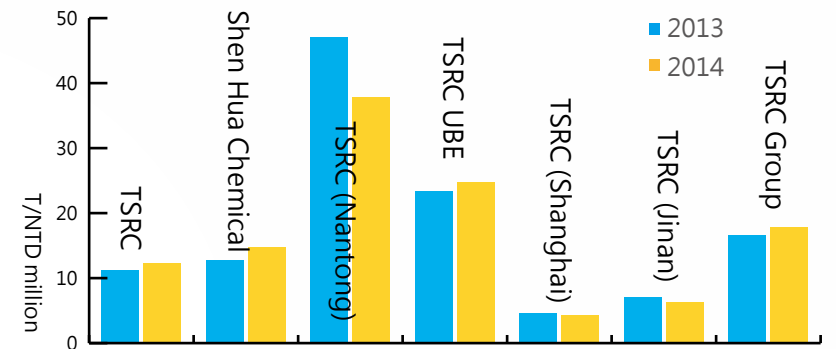
## GHG Intensity Trend

Emission intensity per unit of output(tCO<sub>2</sub>-e/t)



planning, and energy conservation objectives and targets; identify and focus on new opportunities for improving energy performance; and ultimately achieve continual improvement of energy conservation and emission reduction through systemic energy management.

Emission intensity (by sales turnover)



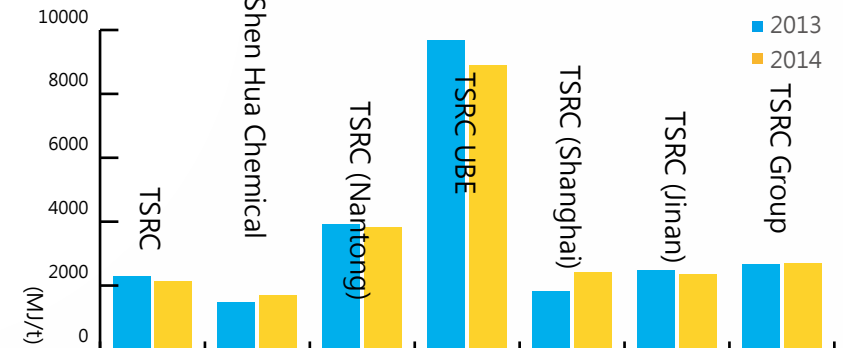
## GHG Reduction Program and Performance

At TSRC, we are committed to implementing energy conservation and emission reduction. In practice, we began with energy conservation and waste reduction in R&D and manufacture in early years; then we continued with green process and technology development; and in 2004 we signed up to the voluntary reduction program of the Ministry of Economic Affairs (MOEA). By investing in process improvement and equipment efficiency enhancement, we implemented feasible measures for energy conservation and emission reduction every year. We have also made a commitment to reducing GHG emissions to 2005 levels by 2020 to demonstrate our determination to aggressive energy conservation and emission reduction.

Both Kaohsiung and Gangshan factories signed up to MOEA's "Energy and GHG Voluntary Reduction Program" in 2004. Through process improvement, equipment replacement, and efficiency enhancement, we have successfully enhanced the effectiveness of GHG reduction.

GHG-related topics have become exceptionally important than any time before. Apart from establishing GHG verification SOPs to implement GHG inventories, we implemented the ISO 50001 energy management system (EnMS) at Kaohsiung Factory in 2013 and will continue with other TSRC factories later on, so as to develop and establish energy review, energy baseline, energy performance indicators, energy project

Indirect energy intensity per unit of output



<sup>1</sup>One joule (J)=0.239kcal., 1 MJ=239Kcal

<sup>2</sup>Each tonne of black coal=5.6 Gcal

<sup>3</sup>Each kL of diesel=8.8Gcal

<sup>4</sup>Each kL of fuel oil=9.6Gcal

<sup>5</sup>Each m3 of natural gas=9.0Gcal

## Independent CFP and WFP Inventories and Seeking Opportunities for Emission Reduction

To develop the system and ability for independent CFP and WFP inventories, we implemented in 2012 the Demeter, software for calculating carbon footprint (CFP) and water footprint (WFP), and completed the CFP and WFP inventory and verification of three representative products. Apart from capturing the GHG emission proportion of different stages of product life-cycle to seek opportunities for emission reduction, this system enables us to select low-carbon raw materials and parts during production and product development, so as to minimize environmental load.

### Energy Conservation

We tackle energy conservation through equipment improvement, on-site management, and office equipment improvement. By inventorying energy consumption with the ISO 50001 EnMS, we located equipment with higher energy consumption and established energy baseline data to establish energy targets. To achieve quick energy conservation and emission reduction, it is necessary for us to understand own total GHG emissions and energy intensity and recognize our role and future

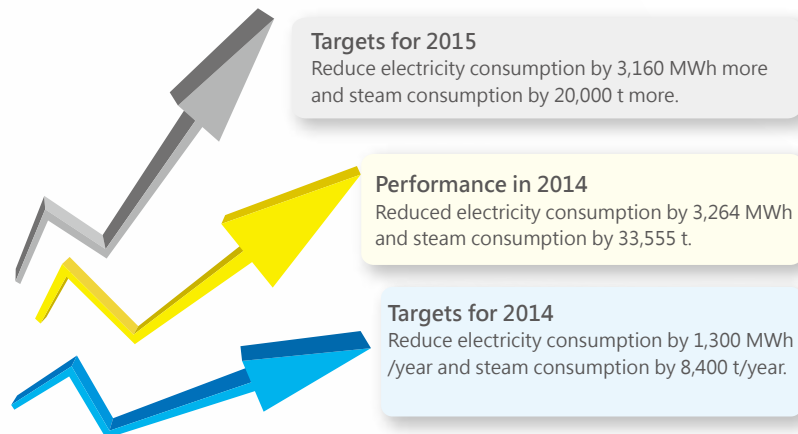
directions in the global emission reduction trend.

Through reviewing the energy management SOPs and energy performances of factories with higher energy consumption, such as Kaohsiung Factory and factories in Nantong, we will continue to implement our energy conservation objectives upon the energy baseline and review the effectiveness of EnMS operation. While climate change and energy efficiency improvement have been our concern over time, by identifying and managing environmental aspects specified in ISO 50001 and ISO 14001, energy conservation and industrial waste reduction have become a TSRC culture and related measures are practiced on a routine basis.

Kaohsiung Factory has completed the 2005-2012 GHG inventory and external verification and finished in 2013 the GHG internal inventory and calculation using the verification methodology and own CSR PI system. In addition, our Chinese subsidiaries, including Shen Hua Chemical, TSRC (Nantong), and TSRC UBE, have completed their organizational GHG inventory for 2012-2013. In 2014, we completed the GHG internal calculation of all TSRC subsidiaries.

### Energy management policy

**Comply with regulatory requirements, enforce energy inventory, select high-efficiency equipment, continually improve energy performance and reduce GHG emissions.**



ISO50001 Certificate of Kaohsiung Factory



Certificate of Water Footprint Inventory

## Energy Conservation Foci in 2014

Factory	Activity	Effectiveness
TSRC	Replacing the crushing motor for the SBR plant.	Saved electricity by 167 MWh.
	Replacing BR rotating equipment with higher energy consumption to reduce electricity consumption.	Saved electricity by 2,611 MWh.
	Upgrading the air compressor at the utilities plant to reduce output pressure.	Saved electricity by 486 MWh.
	Connecting flare exhaust to RTO treatment at the SBR plant to reduce flare auxiliary steam consumption at 660 t.	Saved steam by 2,324 t.
	Preheating the dry column re-boiler of the BR plant with recycled hot water.	Saved steam by 19,890 t.
	Optimizing the production condition of the TPE plant.	Saved steam by 9,633 t.
	Recycling SBR RTO waste heat to #3 boiler.	Saved steam by 1,708 t.
Sheh Hua Chemical	Installation and operation of the high-efficiency pump and high-efficiency motor for cooling water circulation.	Saved electricity by 382.1 MWh, equivalent to 126.09 tce <sup>1</sup> .
	Full replacement of steam pipeline insulation from the tank area to the factory area.	Saved steam by approx. 1029 t/year (target: 990 t); actual performance: approx. 412.5 t, equivalent to 53.05 tce.
	Replacing coal spraying pipelines with desulfurization effluent pipelines.	Saved tap water by approx. 1,000 t/month or 6,000 t/year, equivalent to 0.51 tce.
TSRC (Nantong)	Reducing steam consumption by taking heat from the recycling solvent tower.	Saved steam by 2,300 t.
	Heating BR boiler with hot water at 70°C from the stopped BR at SEBS plant.	Saved steam by 540 t.
	Replacing the decanter backwater heater of SEBS plant.	Saved steam by 430 t.
	Recycling steam from MS-8401 for use in SIS stripper tank.	Saved steam by 2,600 t.
	Adding inverters to the SIS reactor chilling water pump.	Saved electricity by 30 MWh.
	Optimizing the cleaning process for material change at the SIS plant and shutting down rotating equipment to reduce energy consumption.	Saved electricity by 75.6 MWh.
	Adding inverters to SIS rotating equipment with high energy consumption (PC-8429A and PP-8202A) to reduce electricity consumption.	Saved electricity by 48 MWh.
	Adding sonic soot blowers to utilities blowers.	Saved coal by 100 t.
	Replacing LED lamps for all streetlamps and indoor lamps on the factory site.	Saved electricity by 28 MWh.
TSRC UBE	Replacing the PP-1221A motor from 280 kW to 160 kW.	Saved electricity by 135,302 kWh
	Replacing PC-6406 with PC-6426A/B.	Saved electricity by 112,752 kWh
TSRC (Shanghai)	Monitoring water consumption at every shift, reviewing at the morning meeting, and timely resolving anomalies.	Saved water by 1889 t

<sup>1</sup>tce=ton of standard coal equivalent.



## Energy Conservation Planning for 2015

Factory	Activity	Expected Effectiveness
TSRC	Continuously upgrading FRP fans for the cooling tower and other projects for the utilities plant.	Save electricity up to 1,000 MWh.
	Adjusting the operating model of the finished product zone of the SBR plant at low production rate period to avoid production at peak sessions of electricity consumption to reduce electricity bills.	Save electricity up to 660 MWh.
	Optimizing the absorbing cooler and reactor temperature control of the BR plant to reduce electricity consumption.	Save electricity up to 1,500 MWh.
	Replacing medium-pressure steam with high-pressure steam of the vacuum system at the BR plant to reduce consumption.	Save steam up to 20,000 t.
Shen Hua Chemical	1.Replacing cooling tower fans with energy-saving fans (trial on one tower first).	Save electricity up to 24 MWh, equivalent to 8.0 tce.
	2.Replacing streetlamps to LED lamps.	Save electricity up to 178 MWh/year, equivalent to 58.7 tce.
	3.Economical operation of equipment 3.1. Shutting down water pump GZ-1205 and replacing it with mini water guns. 3.2. Implementing lot mixing for B-SM and B-BD at low outputs. 3.3. Shutting down ventilation fans in Zone 100 when there is no SOAP mixing. 3.4. Turning on only the small circulation pump of the water circulation system when temperature is low. 3.5. Change dual-stripper operation to single stripper operation at low production rate.	3.1. Save electricity up to 658.6 MWh, equivalent to 217.3 tce. 3.2. Save electricity up to 22.7 MWh, equivalent to 7.5 tce. 3.3. Save electricity up to 180 MWh, equivalent to 5.9 tce.
	4.Replacing steam traps with high steam consumption based on the drying bed flow meter data.	Save steam up to 720 t, equivalent to 92.6 tce
TSRC (Nantong)	Replacing steam with hot water for trace heating in winter at SEBS plant to reduce steam consumption.	Save steam up to 1,500 t.
	Heating BD tower with hot water for the BD system at SEBS plant to reduce steam consumption.	Save steam up to 3,800 t.
	Integrating the factory-wide refrigerating system from SEBS plant to increase ammonia refrigerant load in summer and thereby to reduce the operation of one small refrigerator.	Save electricity up to 250 MWh.
	Replacing lower power motors on steam cooling pumps (PP-8346A and PP-8147A).	Save electricity up to 108 MWh.
	Replacing lower power motors on the chilling water circulation pump (PP-3902A).	Save electricity up to 210 MWh.
	Adding inverters to the hot water circulation pump (PP-3901A).	Save electricity up to 29 MWh.
TSRC UBE	Replacing circulation cooling water pumps.	Save electricity up to 198.144 MWh
	Changing dual-pump to single-pump operation for ice water supply to two reactor tanks in zone 6200.	Save electricity up to 45.408 MWh
TSRC (Shanghai)	Gradually replacing site lighting to LED lamps by adjusting bolt configurations.	Save electricity up to 80 MWh.

### Water Resources and Waste Management

We have been promoting and implementing clean production processes by strengthening internal voluntary enhancement of energy and resource efficiency, equipment efficiency enhancement, pollution source reduction, alternative material use, and waste-to-resource. Tap water is the only source of water used by worldwide TSRC business locations.

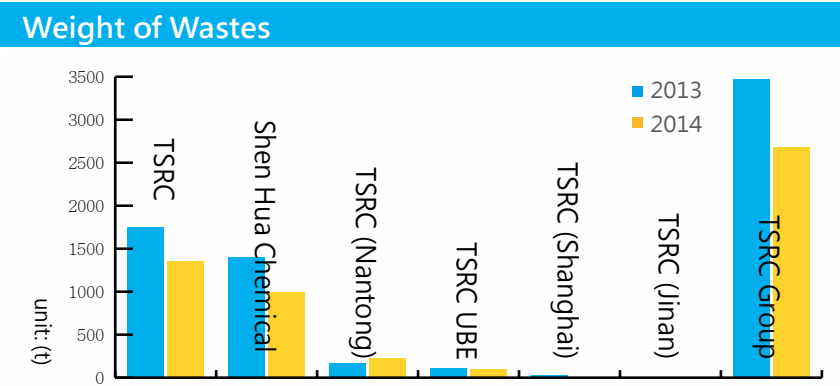
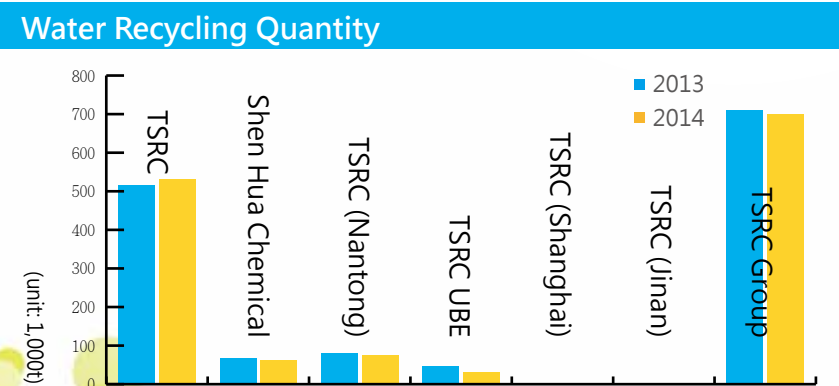
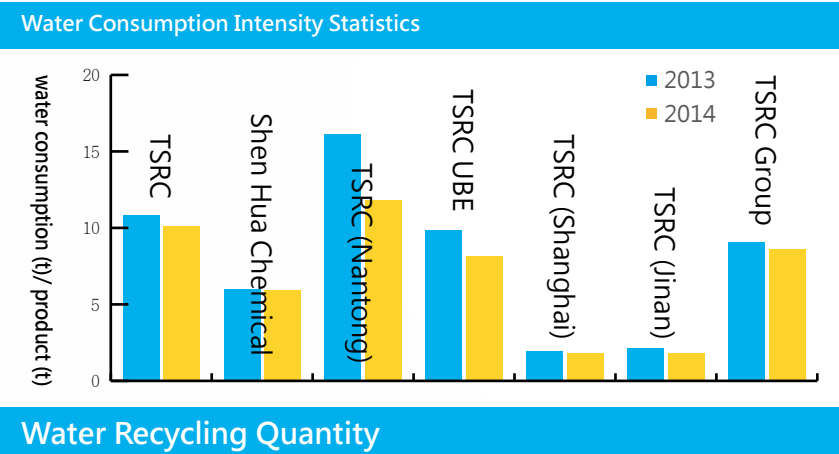
In 2014 total water consumption was 3.67 million tonnes, 5.45% less than last year. All TSRC subsidiaries continuously implement various water-saving measures, emphasize process effluent recycling and reuse, improve own wastewater treatment systems, and reduce process water consumption. Right at the beginning of operation, TSRC (Jinan) has been requested by the industrial zone to ensure zero effluent discharge. All process wastewater is thus purified before

reuse as domestic sewage. Even so, TSRC Jinan has spared no effort to reduce process water consumption with every means to minimize impacts on water resources. In 2014, total effluent discharge was 2.277 million tonnes. COD and SS were the major contents in effluents. All TSRC subsidiaries discharge effluents directly to the wastewater treatment plant of respective industrial zones. Effluent quality is monitored by respective industrial zones to ensure compliance with laws and regulation currently in practice. We also implement effluent quality tests regularly.

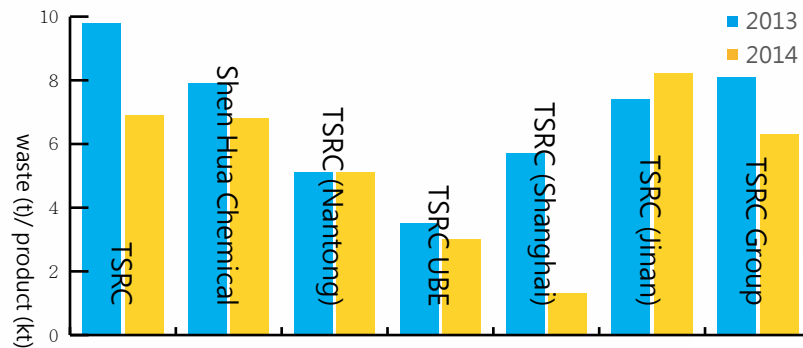
### Waste and Pollutant Emission Management

#### Waste

Currently at TSRC, waste is generally divided into three classes: general industrial waste, hazardous industrial waste, and recyclable waste. All waste is systemically disposed of with reference to applicable legal requirements by the administration unit. General and hazardous industrial waste is disposed of through legal waste disposal service providers who dispose of and report waste exactly by the law to prevent polluting the environment. Recyclable waste including waste rubbers, metal waste, waste plastics, waste pallets and papers/ cartons is classified before recycling by local qualified waste recycling companies. Internally, we have announced the regulated recyclable waste and containers and established a strict recycling system. In addition, we minimize the quantity of industrial waste through process improvement to reduce environmental impact.



### Waste Statistic



### Environmental Impact

All TSRC factories are located inside industrial parks (zones) away from residential communities, and the environmental impact on local communities and local citizens of employee commutation is limited. After the Kaohsiung Gas Explosions of August 1 in 2014, however, we have established the “Underground Pipeline Management Regulations” to manage the off-site transmission pipelines of raw materials through periodic inspection.

Raw materials are shipped in and out of our factories by contractors (transporters) with reference to the routes planned by the administration of industrial parks (zones). Dangerous materials must be labeled appropriately and approved prior to shipping. So far, no significant environmental impact is found according to our assessments. In addition, all contractors must be legally government-registered transporters and equipped with well-established emergency response abilities and plans. We also request contractors to implement emergency response training and exercises every year. The transport tanks should be regularly inspected and should be qualified with inspection certificate, and the tank truck drivers should receive the professional training and regularly participate in other on-site job training. Local communities may communicate their complaints, if any, to our safety, health and environmental unit or administration unit. In 2014, no community complaint was reported.

Synthetic rubbers including SBR, BR, and TPE produced by us are made primarily two petrochemical products: butadiene and styrene.

In local procurement, as we have adopted the low-carbon procurement principle, when all other conditions are similar, we prioritize

procurement from local suppliers and establish long-term partnership with them to reduce the waste of time, cost, and energy from long-distance distribution (by air or by sea) and thereby reduce carbon emissions. The amount of domestic procurement 70-80%, and our Chinese subsidiaries also purchase primarily from local suppliers.

### Management of Air Pollutants

To reduce impact on ambient air quality, we have installed air pollution control equipment and boiler chimney exhaust automatic monitoring systems by the law and obtained the installation and operation permit for them. Apart from continuously monitoring the air quality of factory sites, we incessantly monitor, analyze, and follow up the testing results to ensure factory exhaust complies with applicable legal requirements. Currently, major air pollutants include VOCs, NOx, and SOx.

Volume of Air Pollutants	2013	2014
NOx(t)	350	300
SOx(t)	176	142
VOC(flare) volume (km <sup>3</sup> )	4,629	3,742
VOC(RTO)volume (km <sup>3</sup> )	216,644	223,022
VOC (boiler) volume (km <sup>3</sup> )	692	269

### Environmental Compliance and Major International Events Related to Environmental Protection

During the report period, to cope with the Kaohsiung Gas Explosions of August 1, apart from strengthening existing control measures, we established the “Underground Pipeline Maintenance and Management Plan” and relevant standard operating procedures (SOPs) to take precautionary action against nonconforming, potential spills.

When the Kaohsiung Environmental Protection Bureau conducted an unscheduled inspection on the air pollution control equipment of our Kaohsiung Factory during the report period, we were punished with an administrative fine for nonconformance to the standard. TSRC (Shanghai) also received a written request for improvement of excessive SS in effluents, though no administrative or economic punishment was received. In response, we have corrected relevant pipelines, equipment, and warning signs and provided training/

education for relevant employees. In 2014, no severe spill was reported and no import or export of hazardous industrial waste was implemented. All our factories and offices are situated in legal industrial zones and office areas approved by the government. Each subsidiary also investigate its location to reconfirm the site does lie in an area with protected or restored habitats, or IUCN (International Union for Conservation of Nature) protected area management categories, or biodiversity area; or genetic diversity area. None of the species in the industrial zone is red-listed by IUCN or on the "List of Protected Species in Taiwan". Environmental protection is implemented with reference to local laws and regulations. At the Kaohsiung Factory, we grow trees and lawns to actively green and beautify the factory site and reduce impact on local species.

## Overall Environmental Protection Expenditures and Investments

At present, pollution does not affect organizational profits or competitiveness. We aggressively resolve all environmental problems and make continual improvement by the law to fulfill our corporate environmental responsibility, so as to improve corporate image and enhance product competitiveness. In 2014 overall environmental expenditures and investments accounted for NT\$88.118 million, generally covering environmental operating cost, the cost for environmental management activities, the cost for environmental social activities, the cost for environmental loss and compensation, environmental fees and taxes, and environmental R&D cost. Take TSRC for example, we prioritized procurement of eco-labeled and energy-saving products, such as inverters, energy-saving lamps, eco-labeled air-conditioners, and eco-labeled computer peripherals. The total expenditure on green appliance procurement in 2014 was NT\$16.1 million. In the future, we will continue to promote and prioritize the procurement of energy-saving, eco-labeled, and recyclable products.

Environmental Accounting Fees (Unit: NTD thousand)	2013	2014
Environmental operating cost (prevention cost)	29,837	22,539
Cost for environmental loss and compensation(aftermath management)	22,945	7,083
Environmental fees and taxes	2,148	18,600
Environmental R&D cost	160	0
Cost for environmental social activities	26,204	87
Cost for environmental management activities (other environmental costs)	0	35,879
Cost for upstream and downstream connection	2,083	1,916
Total	83,377	88,118

Environmental Accounting Fees (Unit: NTD thousand)	TSRC	Shen Hua Chemical	TSRC (Nantong)	TSRC UBE	TSRC (Shanghai)	TSRC (Jinan)	TSRC Group
2013	31,157	31,475	15,706	4,660	303	76	83,377
2014	30,142	26,816	23,574	5,038	318	216	88,118





CSR

Innovation sustainable development



Labor Practices and Human Rights

Labor Practices and Human Rights

## Labor Practices and Human Rights

### Employee Rights and Benefits

At TSRC, we ensure equal opportunities and fair evaluation for employees, compensate employees with wages and rewards better than the legal requirements, and value local employment. We also provide employees with appropriate insurance and pensions according to the law and unhindered communication channels for employees to make grievances on unfair treatment at any time. Apart from aggressively pursuing a safe work environment for employees, we care about their health and provide various recreational venues for employees to improve health and relieve stress.

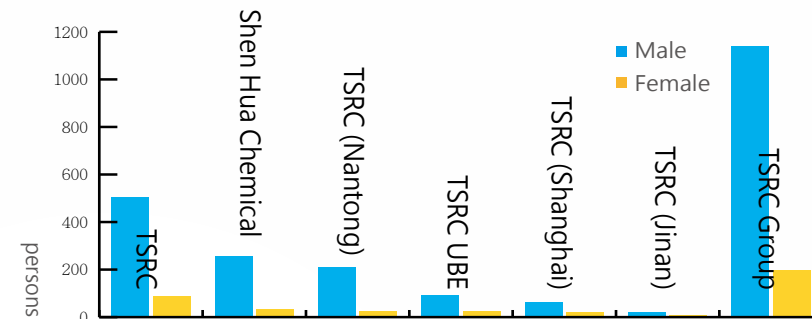
### Labor Practices and Human Rights

In 2012, we announced the “TSRC CSR Declaration” and completed employee grievance mechanisms with reference to the “Employee Grievance Management Regulations” and “Sexual Harassment Prevention Policy and Grievance and Punishment Regulations”. All TSRC subsidiaries comply with local labor laws and regulations, implement policies to protect personal freedom and non-discrimination act, and provide grievance mechanisms to ensure harmonious labor-management relations. They also uphold the ban of child labor by the law.



Grievance mail

### Number of employees



“Workforce quality improvement” has always been an objective of human resource development at TSRC. As talent means the professional skills and competencies and character the ethical quality of a person, we cultivate the talent and character of employees from different aspects, so as to cultivate the ethics and social concern of employees. In employee benefits, we are one of the constituent stocks of the “Taiwan RAFT Taiwan High Compensation 100 Index (Taiwan HC 100 Index).

By the end of 2014, we had about 1,333 employees in Taiwan and China altogether. In terms of work locations, 55% in China. In terms of gender, 14% were females. At TSRC, we hire employees based on their competency and remuneration is irrespective of their ethnic origin. The minimum wage we offer complies with local labor regulations. The employment, evaluation, promotion, transfer, and raise of employees are determined by the competency and annual performance evaluation result of employees, irrespective to their age, gender, area, religion, marital status, and sex orientation. All employees must accept the performance evaluation conducted twice a year with reference to the Employee Performance Evaluation Regulations. In addition, new employees are hired based on the professional competency and work experience required by duty, and local citizens will be hired at higher priority among candidates of the same qualifications. All business locations are situated in industrial parks (zones) or business areas approved by local competent authorities. After careful assessment of operational and employee conditions and the impact of access safety, none of our business locations has adverse impact on local communities.

Age, Gender and Area Structures of Employees														
Age Group	Gender	TSRC			Shen Hua Chemical		TSRC (Nantong)		TSRC UBE		TSRC (Shanghai)		TSRC (Jinan)	
		Total (%)	Executives <sup>1</sup> (%)	Employee with Disabilities <sup>2</sup> (%)	Total (%)	Executives <sup>1</sup> (%)	Total (%)	Executives <sup>1</sup> (%)	Total (%)	Executives <sup>1</sup> (%)	Total (%)	Executives <sup>1</sup> (%)	Total (%)	Executives <sup>1</sup> (%)
29 and under	Male	3	0	0	24		47		39		10		15	
	Female	1	0	0	2		3		9		2		8	
30-49	Male	48	11	50	59	100	41		39		63	100	46	
	Female	11	6	0	10		8		11		21		15	
50 and over	Male	34	71	50	5		1	100	1	100	4		12	100
	Female	3	12	0	0		0		1		0		4	
Total	Male	85	82	100 <sup>2</sup>	89	100	89	100	79	100	76	100	73	100
	Female	15	18	0	11		11		21		24	0	27	

Turnover Rate and New Employee Rate in 2014							
	TSRC	Shen Hua Chemical	TSRC (Nantong)	TSRC UBE	TSRC (Shanghai)	TSRC (Jinan)	TSRC Group
Male	7%	11%	12%	31%	9%	4%	11%
Female	2%	2%	0%	5%	3%	8%	2%
29 and under	1%	8%	7%	22%	4%	0%	5%
30~49	6%	3%	5%	14%	8%	12%	5%
50 and over	3%	1%	0%	0%	0%	0%	2%

TSRC UBE had a higher attrition rate in 2014 due to internal structure change.

<sup>1</sup>Executives are officers at grade 13 (equivalent to an assistant VP) or above, totally 18 people.

<sup>2</sup>All employees with disabilities in Taiwan are male.

<sup>3</sup>Proportion of local citizens as officers: Taiwan 94% and China 20%.

<sup>4</sup>The minimum age of employees at all factories is 20.

In unpaid parental leave in 2014, only one female employee from TSRC applied for the leave without reinstatement after the leave, and no employee applied for unpaid parental leave in other subsidiaries.

In human rights maintenance and relevant training, we implemented with reference to our CSR declaration, relevant internal regulations, and local applicable laws and regulations. For example, we protect personal freedom and non-discrimination act and do not hire child labor. After employees are hired or transferred, we define their duty with reference to their position and allow them to resign according to free own will, so as to eliminate forced or compulsory labor. In 2014, no violation of any labor regulations or offence of the rights of indigenous peoples or minority groups (including indigenous employees) was reported. In addition, no case involving discrimination and grievance made through the labor union,

Colleague classification			
Type	Function	Male	Female
Age	29 and under	1	35
	30-49	6	25
	50 and over	0	1
Working location	Taiwan site	5	21
	China site	2	40



R&amp;D Patent Approval Award



Long Service Employee Award



Outstanding ESH Performance Award 2014

human resources department, and audit was reported.

Also, after the update or promulgation of human rights related laws (such as gender equality, sexual harassment prevention, etc.), we will voluntarily implement and publicize them to employees.

Apart from organizing a labor union, we hold labor/management meetings periodically and make collective bargaining with employees officially to communicate freedom of association and collective bargaining. All procedures and participation rate comply with the legal requirements. We have also established unhindered communication channels at all subsidiaries in China. Through these activities, employees can enjoy the right of collective bargaining with management and their rights are protected.

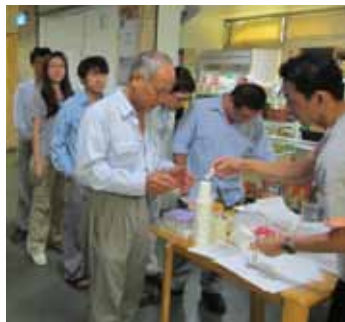
In consideration of the mental and physical health of employees, when there are needs to work overtime for business promotion, the department had may assign employees to work overtime for not more

than the length specified in applicable laws and regulations, except for special or emergency situations with the authorization of management. However, employees working overtime should be given adequate time for rest afterwards.

#### Benefits for Full-time Employees

Based on the status of operations, market competitions, and the result of annual performance evaluation, we design encouraging remuneration and reward systems<sup>1</sup> for employees with reference to local regulations. In addition to insurance and pensions provided with reference to local legal requirements, we have arranged other types of insurance for employees, such as group insurance to protect the work and daily life safety of employees. There other employees benefits, including meal allowance, year-end reunion, health examination for occupational diseases, annual travel, employee insurance, long service reward, and subsidies for weddings, childbirth, injury and disease,

and funerals. We also provide emergency assistance for employees with difficulty in daily life. In China, we have also arranged the cooling subsidy for employees.



Health examination for employees.



Outstanding TPM Performance Team Award



Labor union meeting.

<sup>1</sup>Employee reward policies include Patent Application and Reward Regulations, Reward for Model Employees and Long Service Employees, and Outstanding TPM Performance Team Award.



## Interpersonal Interaction of Employees

Employees are the most important assets of TSRC. At every factory site, therefore, we have established a recreation room equipped with various recreational facilities to promote interpersonal interaction among employees, so as to help employees expand their interpersonal relationship after work and to develop positive effect. For example, we have established the employee welfare committee to plan and organize various activities for employees and employee clubs to increase productivity and boost morale of employees, improve team spirit, and encourage employees to participate in extra-work activities. So far, there are different kinds of employee clubs, such as the cycling club, bridge club, etc.

## Right to Collective Bargaining of Employees

At TSRC, we respect the freedom of association and the right to labor union organization of all employees. We have also established communication channels with reference to local applicable laws and regulations. Take TSRC for example, we signed a collective bargaining agreement with the labor union with reference to Taiwan's Collective Agreement Act to protect the rights and benefits of both labor and management. In addition, the annual labor union congress invites the chairperson of the labor union of other factories in Renwu and Dashe



Model Employee Award of TSRC (Shanghai)



TSRC (Shanghai) participated in the Yongfeng Street Sports Meet.



Long Service Employee Award of Shan Hua Chemical.



The company tour of TSRC (Nantong) in 2014



Year-end reunion of TSRC UBE and TSRC (Nantong).



The birthday party of TSRC (TSRC Shanghai)



Model Employee Award



Volleyball activity



districts to attend the congress every year to discuss specific topics on labor practices to reach a consensus. In China, we also organize different kinds of exchange activities for employees to express their opinion or give suggestions for work and daily life to the human resources department, and relevant departments and officers will answer their questions and propose solutions.

## Occupational Health and Safety (OHS)

Inherited the spirit of the responsible care committee established by most companies in the chemical industry, we have strengthened and implemented the occupational safety system on every factory site to ensure workplace safety. Internally, apart from thoroughly discussing the prevention and aftermath management of occupational accidents and diseases, and we have expanded our occupational safety system from the characteristics of raw material ignition point, human safety in the work environment, and health risk concern for local communities to “safety, health, environmental protection, and greening”, so as to comply with industry standards and community/social expectations.

In addition, we have participated in educational and academic forums on occupational safety and health held in Taiwan and the Taiwan Responsible Care Association.

To effectively communicate occupational safety and health policies within the group, one labor representative is assigned by organizational function to participate in the OHS Committee meeting held on a quarterly basis. Relevant officers and labor representatives are requested to participate in entire meeting to discuss OHS planning, including training and education, work environment improvement, hazard prevention and management, audit, contractor management, and health promotion.

### Policy of Safety & Health

"Human-oriented ", TSRC's core values, is functioned by the following principles to pursuit the goal of zero disaster and zero injuries.

1. Technology: With the foundation of health and safety, we develop management strategies and production techniques.
2. Safety & Health Culture: By setting goals and incentives and full participation in activities of safety and health, we continue to improve management performance and develop an excellent health and safety culture.
3. Responsibility: Compliance with applicable health and safety regulations and other requirements to prevent accidents and injuries. Preventing occupational diseases is not just corporate social responsibility, but everyone's responsibility.
4. Communication: Through training and meetings of health and safety, all personnel working under TSRC's management can understand and implement work on safety and health.



TSRC Badminton Competition



TSRC Bowling Match



The recreation room at TSRC (Nantong).



Recreational activity at TSRC UBE.



TSRC Basketball Match

## Organization and Management System of Occupational Risks

We spare no effort to provide employees with a safe work environment. Apart from establishing the Responsible Care Committee (RC, covers OHSAS 18001 and CNS15506) based on the tradition of chemical industry, subsidiaries in different parts of the world follow local occupational health regulations and establish own committee or department to take charge of OHS affairs and hold labor safety and health meetings chaired top management or its representatives at planned intervals. The proportion of employee representatives in such organizations also comply with local legal requirements (take TSRC for example, over a third of RC members are employee representatives according to the legal requirements of Taiwan) to fulfill the need for labor/management communication and supervision. From the characteristics of raw material ignition point, human safety in the work environment, prevention and follow-up of occupational disease, and health risk concern for local communities, we have expanded our occupational safety system to “safety, health, environmental protection, and greening”, so as to comply with industry standards and community/social expectations.



TSRC UBE and Manager Hao Chen won the Nantong City Safety Production Advancement Award for groups and individuals.



AED training/education



Elementary first-aid training for Shen Hua Chemical.



Safety training at TSRC (Shanghai)



Posttest of safety training during the Safety Month at Shen Hua Chemical



Industrial safety signboard at Kaohsiung Factory.



5S and TPM education.



AED: Automated external defibrillator.

TSRC Kaohsiung Factory, TSRC (Nantong), TSRC UBE, and Shen Hua Chemical have passed OHSAS 18001 certification, and TSRC Kaohsiung Factory has also passed CNS15506 certification. To pursue zero occupational accident and occupational injury, based on the comprehensive chemicals and their quantity used in the petrochemical processes, we hire professional consulting companies to provide guidance for employees with reference to their exposure to these chemicals and the actual condition of work environment. We also hire qualified environmental testing services to test our work environments with reference to the industrial safety testing items and regulations. Upholding the “prevention is better than cure” concept, we reinforce work-related safety and environmental education for new employees, such as occupational hazards and first-aid training, use of emergency response apparatus, health education, etc.



Explanation of fire extinguisher operation.

These are all specified in our formal agreements related to occupational health and safety. In addition, OHS-related topics for improvement in 2014 are as follows:

TSRC	Suppliers
<ul style="list-style-type: none"> <li>◎ Health examination and promotion, tumor risk management</li> <li>◎ Process and operation risk assessment.</li> <li>◎ Standardization and management of safe production and planning for the pursuit of zero accident and zero injury, and process safety.</li> <li>◎ Implementation of countermeasures for anomaly and accident improvement.</li> </ul>	<ul style="list-style-type: none"> <li>◎ Establishment of safety management regulations for contractors.</li> <li>◎ Including “OHS management” in the annual supplier evaluation.</li> </ul>

## Lost-day Rate and Injury Rate

Company	TSRC			Shen Hua Chemical			TSRC (Nantong)			TSRC UBE			TSRC (Shanghai)		
Gender	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Injury Rate (IR)	0.17	0.17	0	0.35	0.35	0	0.42	0.42	0	0.87	0.87	0	1.16	0	1.16
Occupational Disease Rate(ODR)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lost-day Rate (LDR)	11.77	11.77	0	4.49	4.49	0	8.75	8.75	0	53.25	53.25	0	17.24	0	17.24
Absence Rate (AR)	0.22	0.18	0.04	3.74	1.66	2.08	0.04	0.04	0	0.21	0.21	0	6.90	0	6.90
Line-of-duty deaths (LODD)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

1.Absence Rate (AR): The percentage of the actual number of absence days in the total number of workdays in 2014.

Absence: Employees are absent due to the loss of working ability, including but not limited to work-related injuries and diseases; but not including approved leave, such as festivals, holidays, training, maternity leave/paternity leave, and bereavement leave.

2.Lost-day Rate(LDR): ((Lost days/Total working hours)\*200000

Lost days: The time (days) “lost” of workers who are unable to work due to an occupational injury or occupational disease. The number of days of workers in the same organization engaging in limited duty or alternative work is not included.

3.Injury Rate(IR): (Total Occupational Injuries/Total Working Time)\*200000

4.Occupational Disease Rate: The frequency of occupational diseases within the total working time during the report period.


5.Factor “200,000” is defined as 50 workweeks in a year of every 100 employees working 40 hours a week.

6.LDR and IR do not include traffic accidents and contractors.



To fulfill our responsibility for environment protection, ensure the occupational safety and health of employees, and maintain the rights and benefits of stakeholders, we implemented the ISO-14001 environmental management system and the OHSAS 18001/CNS15506 occupational safety and health management system in 1998 and 2009 respectively. Upholding the spirit of these management systems, we make continual improvement in environmental management, including “air pollution control, wastewater treatment and recycling, waste management and recycling, toxic chemical substance management, noise pollution control, energy conservation, and emission reduction”, and occupational safety and health management and fire prevention, including “approved operation control, safety observation and process control, chemical management, automatic-inspection, emergency response, contractor management, work environment test, and safety training/education”, so as to pursue zero accident and zero injury.

Positions requiring special physical examination at TSRC with reference to the OHSAS18001 management system and self-safety management are as follows:



**TSRC (Shanghai),TSRC (Jinan)**  
Although work with noise may induce the rise of absolute threshold of hearing (ATH), no related occupational disease is found in employees.

**TSRC ,TSRC (Nantong),Shen Hua Chemical**  
Every year we arrange health examinations for employees dealing with special hazards (benzene, dust, and noise). The result of health examinations over the years show no diseases relating to work with such special hazards.



Fire competition at Shen Hua Chemical.



Fire exercise at TSRC (Shanghai)



Fire exercise due to rubber solution tank spill at TSRC (Nantong).



First aid for the injured in the fire exercise at TSRC (Shanghai).



Butadiene transmission line leak and environmental incident exercise at TSRC UBE



Fire and environmental incident exercise due to rubber solution tank leak at TSRC UBE.



Personnel evacuation from the spill source in the fire exercise at TSRC.



First aid for the injured in the fire exercise at TSRC.

Apart from implementing ESH compliance inventory each month, we pay attention ESH accidents and disasters at home and abroad to analyze their causes and review our situations, so as to learn from other's mistakes and make improvement for similar defects in our factories.



Butadiene transmission line leak exercise at TSRC (Nantong)



Emergency response exercise of an environmental incident at TSRC UBE and TSRC (Nantong).



Fire extinguisher use training at TSRC.



Mission assignment by the commander in the fire exercise at TSRC.

In response to the Kaohsiung Gas Explosions occurred on 1 August 2014, apart from implementing joint inspections in coordination with the Industrial Development Bureau, we held review meetings immediately to assess the impacts of our factories at home and abroad. At the end of 2014 we implemented an exercise on underground pipeline leak and established the "Underground Pipeline Maintenance and Management Plan" and related SOPs to implement the following control measures. After continual monitoring and investigations, enhancing equipment safety and reliability, and personnel training, no adverse impact was detected in all business locations

#### Maintenance and Management Plan

- ④ Strengthen the repair and maintenance of flow regulation stations.
- ④ Implement exercises on underground pipeline emergency response.
- ④ Implement pressure-sustaining tests on underground pipelines.
- ④ Pressure monitoring at output and input and real-time sharing of monitoring data.
- ④ Implement close interval potential survey (CIPS) on underground pipelines.

#### Establishing SOPs

- ④ When there is a 3% flow difference between output and input, stop pumping and shut down valves at both ends immediately.
- ④ When there is a 3% flow difference between output and input, activate and walk-around inspection mechanism and amass the emergency response team and apparatus to stand by.
- ④ After a M4 earthquake, stop transmission immediately, hold pipeline pressure for 30 minutes, and reinforce walk-around inspection to ensure pipeline safety before restarting transmission.



Amass and inventory emergency response apparatus.



The detection group inspects the pipeline according to the cadastral data.



The environment detection group defines the hot, warm, and cold zones.



Amass the emergency response team to report to the commander.



## Education and Prevention of Occupational Diseases for Employees

We care about the mental and physical health of employees and provide them with health examination better than the legal requirements. We also help employees with serious health problems shown in the examination to manage and follow up their health problems and arrange health talks for them. In each factory we have establish recreational venues or sports grounds for employees to relieve work stress.

Photos: Exercise time, emotional management talk, health talk for employees dealing with special hazards, and neck and upper back pain prevention talk.

In 2014, we organized the following health management activities for employees:

1. Oral mucosal screening activity: Co-organized with local health centers, with 90 participants.
2. Quit betel nut activity: Co-organized with local health centers, with 6 participants.
3. Weight Loss with Great Benefits activity: In 2014 Kaohsiung Factory signed up to the “Love Oneself and Health: Weight Loss with Great Benefits” activity organized by Kaohsiung Public Health Bureau to encourage employees aged 18-64 with BMI greater than 20 to participate in the activity (occupational health and safety, added to the CSR Report 2014). A total of 36 employees participated in the activity to lose a total of 87.8 kg and 120.8 cm of waist.
4. Health Promotion Exercise: We invited associate professors of the Graduate Institute of Sports Science, National Chung Cheng University to teach employees simple office exercise.
5. Health information: We provided information on Ebola and dengue fever on the HR bulletin board for employees to read.

Regarding specific occupational diseases, apart from educating employees on the correct concept of safety and health, we organize professional training on occupational health for employees to develop good habits, reduce human error, and arrange health examinations for employees dealing with special hazards by the law. Over the years, in addition to the mandatory environment testing items, including work environments, air pollution control equipment, ambient odor, ambient noise, etc., we have voluntarily reinforced the test of ionizing radiation and continually monitored, analyzed, followed up the test results to reduce environmental load and impact on human health. The result of employee health examinations and work environment tests are fed back for further improvement of health management statistics and analysis for the reference of employee health management.



Commendation of employees with outstanding achievements in weight loss.



Weight loss activity



Oral mucosal screening activity.



Health promotion: simple exercise



TSRC UBE and TSRC (Nantong): Ebola epidemic education.

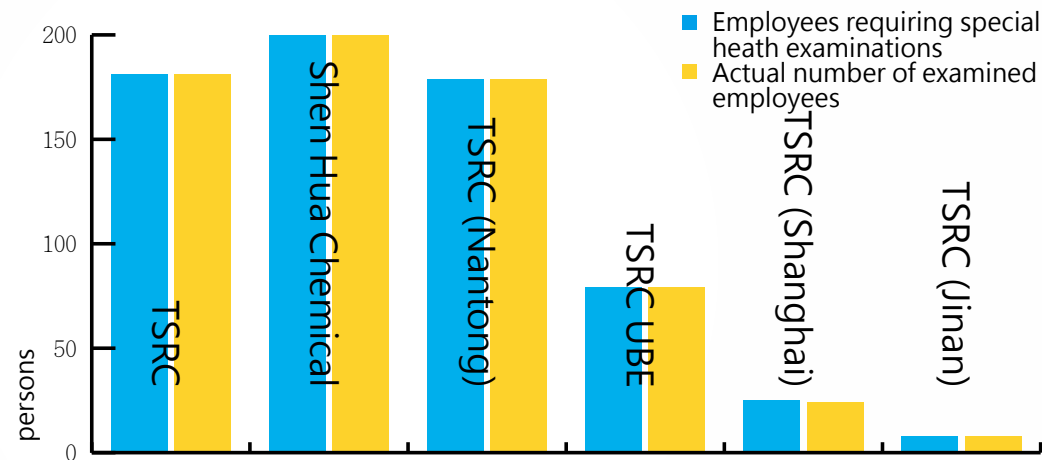


Health promotion: Quit betel nut activity.

Based on the work environment testing results, we found that special health examinations should be arranged for three items: benzene, dust, and noise. Results of special health examinations indicate that level 2 management is required, particularly for employees with a higher absolute threshold of hearing (ATH).

To ensure effective health management for employees working in noisy environments, apart from requiring them to use noise insulation and personal protective equipment exactly and maintaining a record every month, they will be transferred out of noisy work environments if they need level 2 health management for two consecutive years. In addition, they need to receive ATH examination for the next two years to ensure their ATH does not deteriorate.

## Health Check



## Professional and General Education for Employees

In response to continuous organizational internationalization, we actively invest in employee training and multiple learning, hoping employees can grow together with TSRC in keen global competitions. Policies and directions for training and education aim to improve work skills and competitiveness of employees for coping with future market and environmental changes. Every year we establish the annual training/education plan based on internal employee training/education regulations with reference to the company's annual business policy and department needs and organize various training courses for new and in-service employees, such as general education, professional skill development, management ability cultivation, and skill certification. We also realize the goal of "lifelong learning" through internal and external training. In 2014 we invested a sum of NT\$6.22 million on training for 7,900 person-times, with NT\$4,000 and about 31 hours for each employee on average.



Health knowledge promotion at TSRC UBE and TSRC (Nantong).



ATH examination.



Health promotion at TSRC.

**台橡 (南通) 实业有限公司** **健康知识宣传**  
**台橡字部 (南通) 化学工业有限公司**

**劳动者健康**

素时，比一般职业人群更容易遭受职业病危害和罹患过程中诱发可能导致对他人的生命健康构成危险的疾病者还可以罹患白血病，因此，血象检查结果低于正常容易导致原有肺部疾病加重，吸入的粉尘也难以排出。

(4) 伴肺功能损害的疾病

例如大多数物理有害因素日久接触都能产生不良影响。在无法估计度。因环境中存在的量相同，长时间的与短时间的接触后果不同。职业病诊断具有重要价值。

3. 人体的健康状况人体对有害因素的防御能力是多方面的。某些恢复。但对进入人体内的毒物，则需通过解毒和排毒过程，以消除解、氧化、还原和结合等方式，大多成为低毒或无毒物而排出。而排出，主要在肝脏内进行。如果接触工人先天性缺乏某些代谢酶的易感性。如果肝功能受损，这行解毒过程就要受到疾病加剧，还可能发生职业病。对工人进行职业前和定期的体格禁忌证，以便更合理地安置工种，保护健康。

从诱发职业病的三个主要条件来看，职业病具有下列五个特点：

(1) 病因有特异性，在控制接触后可以控制或消除发病；

(2) 病因大多可以检测。一般与接触水平(剂量、反时)关系；

(3) 在不同的接触人群中，常有不同的发病率(dose-response)；

(4) 如能早期诊断，及时处理，预后较好，但仅靠治疗手段，无助

(5) 大多数职业病，目前尚缺乏特效治疗，应着重于保护人体健康，因此只能用预防为主，依法实施卫生监督管理，加强个人职业病的三个发病条件和五个特点，进一步说明三级预防的重要性。

Health promotion at TSRC UBE and TSRC (Nantong).



Health promotion at TSRC (Shanghai).



A health promotion activity at Shen Hua Chemical.

Average training time in 2014 (hours/persons)	Rank	TSRC	Shen Hua Chemical	TSRC (Nantong)	TSRC UBE	TSRC (Shanghai)	TSRC (Jinan)
By rank	Higher level officers	15	81	27	18	0	0
	Medium/base level officers	3	44	45	34	35	0
	Non-officer indirect employees	26	38	37	16	1	5
	Direct employees	26	37	37	73	0	0
By gender	Male	27	50	38	36	1	3
	Female	16	43	31	27	1	7



CSR

Innovation sustainable development

## Support for Society

### Support for Society

#### **Gradual construction of the TSRC social care map**

After publishing the first CSR report in 2012, we have gradually realized the importance of “communities”. Through further communication with local stakeholders, we finally understand their view on TSRC. By producing suitable products with our products—rubber materials in collaboration with customers, we aid organizations for the disadvantaged to provide protection and education for disadvantaged groups, so as to enhance social security.

We understand the need to maximize the effect of limited resources, so we gradually construct our social care map based on our factory location. Instead of donating money alone, we aim to integrate business operations with philanthropy



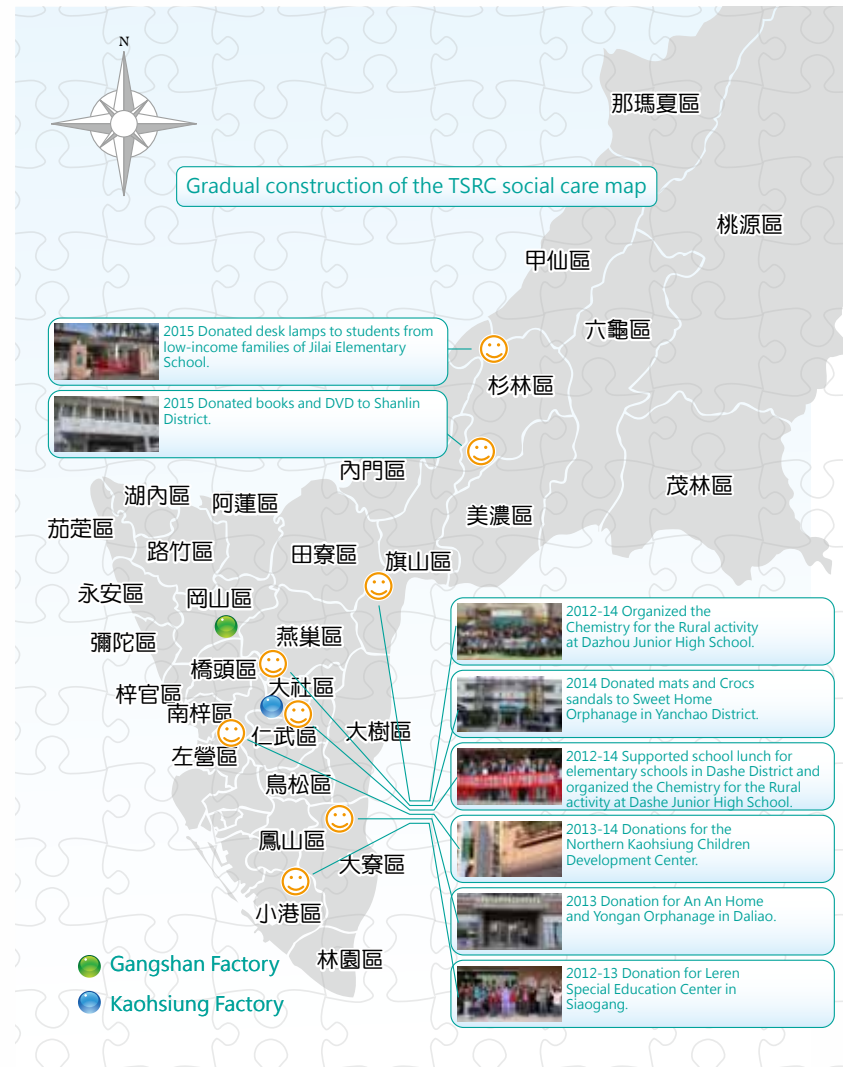
## Product Application in Social Care

### Mats and Crocs Sandals

Ever since we donated shock-absorbent mats to Leren Special Education Center in 2012, we have realized the risk of fall of students with disabilities. Therefore, we began making anti-slippery and shock-

absorbent mats systematically in collaboration with our customer Long Future Co., Ltd. in recent years to donate to disadvantaged groups nearly our factory location. We also launched cooperation with another customer New Buffalo to donate Crocs sandals to students, so as the express social care with our products and thereby integrate business operations with philanthropy.

Following the donation for Leren Special Education Center in 2012 and An An Home and Yongan Orphanage in 2013, members of our Charity Club donated mats to Sweet Home Orphanage in 2014 after learning their needs for student training. When relevant departments completed the mats, the Charity Club donated both mats and Crocs sandals to the orphanage in November 2014.



Crocs sandal donation.



Director presented a certificate of appreciation to the club member.



Director Su exchanged opinion with TSRC personnel.



TSRC donated mats to Sweet Home Orphanage.

## Philanthropy

With the support of Employee Welfare Committee (EWC), employees voluntarily formed and participated in the Charity Club. Since the club was established in 2012, it has donated supplies to various beneficiaries, including Northern Kaohsiung Children Development Center, An An Home in Daliao, Leren Special Education Center in Siaogang, schools in Lanyu and Lishan, Eden Social Welfare Foundation, Huashan Social Welfare Foundation, and Yongan Orphanage.

When the EWC library renewed its collection in 2014, apart from opening for employee subscription, EWC handed over the income from charitable sale at NT\$15,000 to the Charity Club for members to spread love to different charitable activities.

The EWC library even donated part of its collection and DVDs to Shanlin District. According to Dr. Pan, headmaster of Jilai Elementary School in the district, the donation meant a lot to the school located in

the remote mountainside (Central Cross Section) with severe resource shortage. The Charity Club also donated desk lamps to students in the district where night falls earlier.



Book donation to Shanlin District.



Words of appreciation from students



Book and DVD donation.



Donation for Yongan Orphanage.



Desk-lamp donation to Jilai Elementary School.



Donation for Northern Kaohsiung Children Development Center



EWC donated the income from book sale to the Charity Club.



Sponsored Huashan Social Welfare Foundation with presents for Dragon Boat Festival.



## Aid for School Lunch and Registration Fee of Students from Low-Income Families

### China

The Association of Taiwan Enterprises in Nantong City founded Taiwan's Foundation for Poverty Alleviation in Nantong in 2009 to provide financial support for students, families and special groups with financial difficulty. Shen Hua Chemical, TSRC (Nantong), and TSRC-UBE made monetary donations to the foundation together. In August 2014 the Administration Department, behalf of TSRC (Nantong), officials of Nantong City, and major members of the Association of Taiwan Enterprises donated grants and loans to 93 students with financial difficulty.



On behalf of TSRC (Nantong), the Administration Department and Association of Taiwan Enterprises donated grants to students with financial difficulty.



Donation for Guanying Elementary School.



Opinion sharing with Guanying Elementary School.



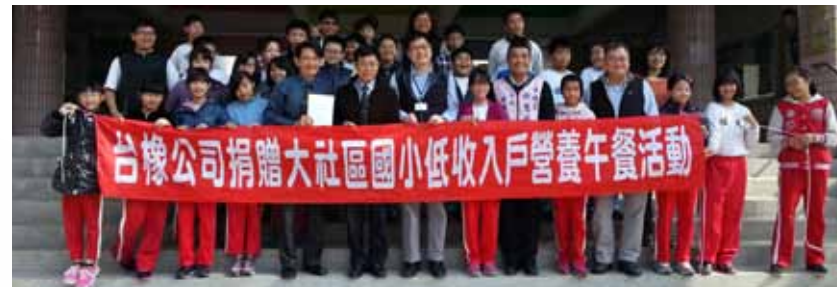
Donation for Dashe Elementary School.



Afternoon tea with Jiacheng Elementary School.

### Taiwan

1. Supporting the school lunch of three elementary schools in Dashe District of Kaohsiung City.
2. Purchasing the moon cake made by Children Are Us Foundation and making donations for the foundation.
3. Making donations for the Association of Zhejiang Province to provide winter use in winter appeals, student scholarships, and student grants and loans.
4. In 2014, we donated over NT\$4.25 million for philanthropy.



Participation of the executive of Dashe District and assistant to Councilperson Chang.

Nowadays, many students without the title of low-income family are unqualified to apply for government subsidies for low-income families even they need financial support. The Social Care Committee, therefore, began contributing in 2012 a special fund for three elementary schools in Dashe District.

In 2014, we donated a total of NT\$440,000 to Dashe, Guanying, and Jiacheng elementary schools to support the school lunch and registration fee of students from low-income families. Over the past three academic years, we have helped 708 student-times with financial difficulty. Except for the certificate of appreciation, we decline repayment of any kind.

## Support for Chemistry Education

Originating from the “Chemistry for the Rural”, an activity of the International Year of Chemistry 2011, the activity did not stop after the International Year of Chemistry but continues to tour across Taiwan to provide chemistry education for students in rural areas. Instead of organizing large-scaled activities with over 100 participants to train elite students, such as a chemistry education fair, the team of Dr. Gao of Tamkang University prefers to travel to remote areas with various apparatus and props in their 3.5t “Mobile Chemistry Lab” to spread chemistry to students in the rural area. As an industry leader, we are touched and deeply concur with their aim.

Apart from continuing our assistance for the “Chemistry for the Rural” in 2013, we sponsored the activity in 2014. In May, they toured to Dashe Junior High School, the 132ed schools visited by the team and the third-time visit over the past three years. The activity content was designed to support the course content of Chemistry. Besides guiding



“I got a present, hurray!”



Wonderful chemical magic.



Chemistry for the Rural at Dazhou Elementary School.



Mixing chemical solution carefully.



About my liquid soap



Dr. Gao and TSRC volunteers.



Chemistry for the Rural at Shenkeng Elementary School: 166<sup>th</sup> stop.



Chemistry for the Rural at Dashe Elementary School.

students to do experiments and introducing the current status of the chemical industry, the activity stimulated chemistry learning motivation and interest in students and encouraged students to understand the chemistry industries around them and TSRC products. The activity also enabled local communities to better understand our efforts in fulfilling corporate social responsibility.

In 2014, a total of 24 member-times of our R&D and application teams and relevant departments supported the activity team for 432 hours to implement chemistry education activities at Dashe and Dazhou junior high schools in Kaohsiung City and Shenkeng Junior High School in New Taipei City.

## Support for Local Agricultural Products

To support local agricultural products, the EWC purchased fruit from local farmers as presents for employees.

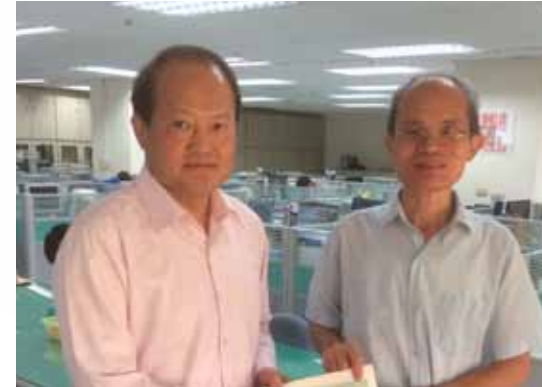




The activity originated from the remembrance of Madame Curie.



Students were too excited and ran out of control.



On behalf of TSRC, VP Qing-yuan Chen donated NT\$3 million to the Kaohsiung City Government for the relief of the Kaohsiung Gas Explosions.

## Community Involvement

Every year we and other enterprises in Dashe Industrial Park requite citizens living in the neighborhood through the Manufacturers' Association (through the operation of the Dashe District Good Neighbor Feedback Fund Review Team, apart from subsidizing the utility bills of locals, providing grants and loans for students, and offering free lunch for elderly people living alone and from low-income families the feedback fund<sup>1</sup> is also used to subsidize the books, insurance, tuition and fees, and after school club fee of elementary and junior high schools in the district, with emphasis on the English teaching of these schools).

In 2014, we established the "Kaohsiung Petrochemical Industry Distinguished Teaching Program for Renda District" under the Memorandum on Industry-Academia Cooperation for Distinguished Teaching of Petrochemical Industry signed between the Dashe Industrial Park Manufacturers' Association and Kaohsiung Municipal Renwu Senior High School. Apart from the general curriculum of senior high schools, we offered courses relating to the petrochemical industry, industrial safety, and professional ethics for a limited number of students from Renwu, Dashe, Dashu, Niaosong, and Nanzi districts. In addition to scholarships, we offer propriety acceptance opportunities for students with outstanding performance after their graduation.



Establishment of the "Kaohsiung Petrochemical Industry Distinguished Teaching Program for Renda District".



Litchi gift set.

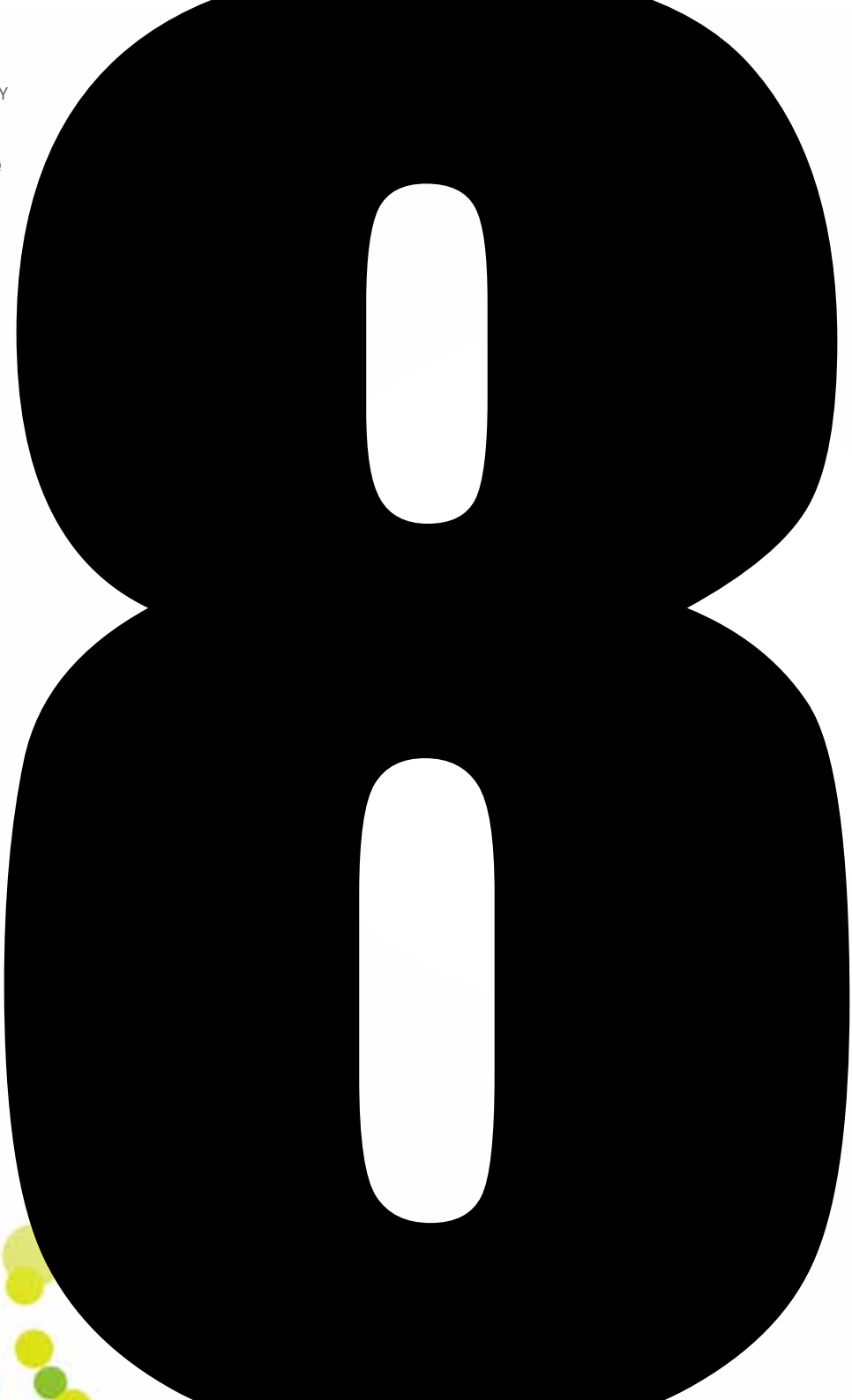


Purchasing fruit from local farmers.

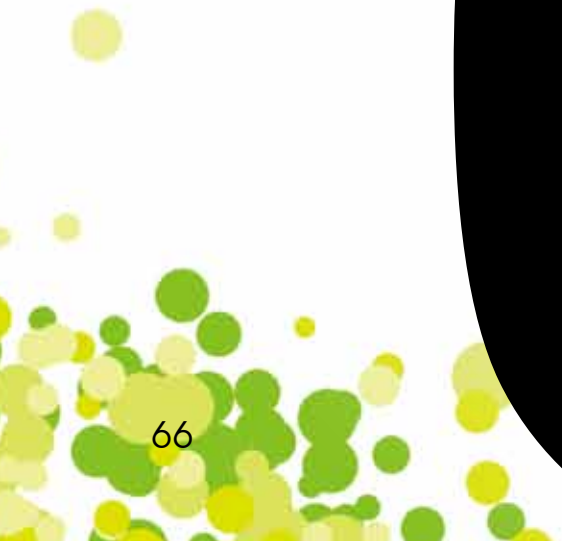
<sup>1</sup>Feedback fund website of Dashe District Office, Kaohsiung City:  
[http://www.dsrtg.gov.tw/p06\\_07.aspx?type=5](http://www.dsrtg.gov.tw/p06_07.aspx?type=5).



GRI G4 Cross Reference



GRI G4 Cross Reference



GENERAL STANDARD DISCLOSURES		Page/Note	External Assurance (page)
Strategy and Analysis			
G4-1	Statement from the most senior decision-maker about the organization's strategy for addressing sustainability	9	70
Organizational Profile			
G4-3	Report the name of the organization.	1	70
G4-4	Report the primary brands, products, and services.	20	70
G4-5	Report the location of the organization's headquarters.	Appendix on the back cover	70
G4-6	Report the number and the name of countries where the organization operates.	20	70
G4-7	Report the nature of ownership and legal form.	20	70
G4-8	Report the markets served.	20	70
G4-9	Report the scale of the organization.	20	70
G4-10	Report the pattern of employment and total number of employees.	45	70
G4-11	Report the percentage of total employees covered by collective bargaining agreements.	47	70
G4-12	Describe the organization's supply chain.	25,41	70
G4-13	Report any significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain.	No significant change during 2014.	70
G4-14	Report whether and how the precautionary approach or principle is addressed by the organization.	23	70
G4-15	List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses.	No relevant initiative has been signed so far.	70
G4-16	List memberships of associations (such as industry associations) and national or international advocacy organizations.	21	70

GENERAL STANDARD DISCLOSURES		Page/Note	External Assurance (page)
Identified Material Aspects and Boundaries			
G4-17	List all entities included in the organization's consolidated financial statements or equivalent documents.	20	70
G4-18	Explain the process for defining the report content and the aspect boundaries.	14	70
G4-19	List all the material aspects identified in the process for defining report content.	16	70
G4-20	Report the aspect boundary within the organization of each material aspect.	17	70
G4-21	Report the aspect boundary outside the organization of each material aspect.	17	70
G4-22	Report the effect of any restatements of information provided in previous reports, and the reasons for such restatements.	No change.	70
G4-23	Report significant changes from previous reporting periods in the scope and aspect boundaries	No change.	70
Stakeholder Engagement			
G4-24	Provide a list of stakeholder groups engaged by the organization.	12	70
G4-25	Report the basis for identification and selection of stakeholders with whom to engage.	12	70
G4-26	Report the organization's approach to stakeholder engagement.	12	70
G4-27	Report key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns.	12,13	70
Report Profile			
G4-28	Reporting period for information provided.	3	70
G4-29	Date of most recent previous report.	3	70
G4-30	Reporting cycle.	3	70
G4-31	Provide the contact point for questions regarding the report or its contents.	Appendix on the back cover.	70

GENERAL STANDARD DISCLOSURES		Page/Note	External Assurance (page)
Report Profile			
G4-32	Report the 'in accordance' option the organization has chosen; the GRI Content Index for the chosen option; and external assurance report.	70	70
G4-33	Report the organization's policy and current practice with regard to seeking external assurance for the report.	3	70
Governance			
G4-34	Report the governance structure of the organization.	22	70
Ethics and Integrity			
G4-56	Describe the organization's values, principles, standards and norms of behavior.	22	70

Substantive Aspect	Management Policy and Indicator		Page/Note	External Assurance (page)
CATEGORY: ECONOMIC				
Economic Performance	DMA		20	70
	G4-EC1	DIRECT ECONOMIC VALUE GENERATED AND DISTRIBUTED	20	70
	G4-EC3	COVERAGE OF THE ORGANIZATION'S DEFINED BENEFIT PLAN OBLIGATIONS	47	70
Market Presence	DMA		45	70
	G4-EC5	RATIOS OF STANDARD ENTRY LEVEL WAGE BY GENDER COMPARED TO LOCAL MINIMUM WAGE AT SIGNIFICANT LOCATIONS OF OPERATION	45	70
	G4-EC6	PROPORTION OF SENIOR MANAGEMENT HIRED FROM THE LOCAL COMMUNITY AT SIGNIFICANT LOCATIONS OF OPERATION	46	70
Indirect Economic Impacts	DMA		57	NA
		DEVELOPMENT AND IMPACT OF INFRASTRUCTURE INVESTMENTS AND SERVICES SUPPORTED	57-61	NA
CATEGORY: ENVIRONMENTAL				
Energy	DMA		37	70
	G4-EN3	ENERGY CONSUMPTION WITHIN THE ORGANIZATION	36	70
	G4-EN5	ENERGY INTENSITY	36	70
	G4-EN6	REDUCTION OF ENERGY CONSUMPTION	38,39	70



Substantive Aspect	Management Policy and Indicator		Page/Note	External Assurance (page)
CATEGORY: ENVIRONMENTAL				
(GHG) Emissions	DMA		36	70
	G4-EN15	DIRECT GREENHOUSE GAS (GHG) EMISSIONS (SCOPE 1)	35	70
	G4-EN16	ENERGY INDIRECT GREENHOUSE GAS (GHG) EMISSIONS (SCOPE 2)	35	70
	G4-EN17	OTHER INDIRECT GREENHOUSE GAS (GHG) EMISSIONS (SCOPE 3)	Currently, we are exploring other indirect GHG emission sources (Scope 3) in a qualitative basis without inventorying the emission volume.	70
		GREENHOUSE GAS (GHG) EMISSIONS INTENSITY	36	70
Effluents and Waste	DMA		40	70
	G4-EN22	TOTAL WATER DISCHARGE BY QUALITY AND DESTINATION	40	70
	G4-EN23	TOTAL WEIGHT OF WASTE BY TYPE AND DISPOSAL METHOD	40	70
	G4-EN24	TOTAL NUMBER AND VOLUME OF SIGNIFICANT SPILLS	No severe spill was reported in 2014.	70
	G4-EN25	WEIGHT OF TRANSPORTED, IMPORTED, EXPORTED, OR TREATED WASTE DEEMED HAZARDOUS UNDER THE TERMS OF THE BASEL CONVENTION	41	70
	G4-EN26	WATER BODIES AND RELATED HABITATS SIGNIFICANTLY AFFECTED BY THE ORGANIZATION'S DISCHARGES OF WATER AND RUNOFF	41	70
Products and Services	DMA		25	70
	G4-EN27	EXTENT OF IMPACT MITIGATION OF ENVIRONMENTAL IMPACTS OF PRODUCTS AND SERVICES	31	70

Substantive Aspect	Management Policy and Indicator		Page/Note	External Assurance (page)
CATEGORY: ENVIRONMENTAL				
Compliance	DMA		25	70
		MONETARY VALUE OF SIGNIFICANT FINES AND TOTAL NUMBER OF NON-MONETARY SANCTIONS FOR NON-COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS	41	70
Overall (environmental investments)	DMA		42	70
	G4-EN31	TOTAL ENVIRONMENTAL PROTECTION EXPENDITURES AND INVESTMENTS BY TYPE	42	70
CATEGORY: SOCIAL				
SUB-CATEGORY: LABOR PRACTICES AND DECENT WORK				
Employment and Industrial Relations	DMA		45	70
	G4-LA1	TOTAL NUMBER AND RATES OF NEW EMPLOYEE HIRES AND EMPLOYEE TURNOVER BY AGE GROUP, GENDER AND REGION	46	70
	G4-LA2	BENEFITS PROVIDED TO FULL-TIME EMPLOYEES THAT ARE NOT PROVIDED TO TEMPORARY OR PART-TIME EMPLOYEES, BY SIGNIFICANT LOCATIONS OF OPERATION	47	70
	G4-LA3	RETURN TO WORK AND RETENTION RATES AFTER PARENTAL LEAVE, BY GENDER	47	70
Labor/ Management Relations	DMA		47	70
	G4-LA4	MINIMUM NOTICE PERIODS REGARDING OPERATIONAL CHANGES, INCLUDING WHETHER THESE ARE SPECIFIED IN COLLECTIVE AGREEMENTS	No significant operational change in 2014	70

Substantive Aspect	Management Policy and Indicator		Page/Note	External Assurance (page)
CATEGORY: SOCIAL				
SUB-CATEGORY: LABOR PRACTICES AND DECENT WORK				
Occupational Health and Safety	DMA		49	70
	G4-LA5	PERCENTAGE OF TOTAL WORKFORCE REPRESENTED IN FORMAL JOINT MANAGEMENT-WORKER HEALTH AND SAFETY COMMITTEES THAT HELP MONITOR AND ADVISE ON OCCUPATIONAL HEALTH AND SAFETY PROGRAMS	49	v70
	G4-LA6	TYPE OF INJURY AND RATES OF INJURY, OCCUPATIONAL DISEASES, LOST DAYS, AND ABSENTEEISM, AND TOTAL NUMBER OF WORK-RELATED FATALITIES, BY REGION AND BY GENDER	51	70
	G4-LA7	WORKERS WITH HIGH INCIDENCE OR HIGH RISK OF DISEASES RELATED TO THEIR OCCUPATION	52	70
	G4-LA8	HEALTH AND SAFETY TOPICS COVERED IN FORMAL AGREEMENTS WITH TRADE UNIONS	51	70
SUB-CATEGORY: HUMAN RIGHTS				
Child Labor	DMA		45	70
	G4-HR5	OPERATIONS AND SUPPLIERS IDENTIFIED AS HAVING SIGNIFICANT RISK FOR INCIDENTS OF CHILD LABOR, AND MEASURES TAKEN TO CONTRIBUTE TO THE EFFECTIVE ABOLITION OF CHILD LABOR	45	70
SUB-CATEGORY: SOCIETY				
Local Communities	DMA		41	70
	G4-SO1	PERCENTAGE OF OPERATIONS WITH IMPLEMENTED LOCAL COMMUNITY ENGAGEMENT, IMPACT ASSESSMENTS, AND DEVELOPMENT PROGRAMS	External windows and mechanisms of subsidiaries.	70
	G4-SO2	OPERATIONS WITH SIGNIFICANT ACTUAL AND POTENTIAL NEGATIVE IMPACTS ON LOCAL COMMUNITIES	53	70

Substantive Aspect	Management Policy and Indicator		Page/Note	External Assurance (page)
CATEGORY: SOCIAL				
SUB-CATEGORY: PRODUCT RESPONSIBILITY				
Customer Health and Safety	DMA		30	70
	G4-PR1	PERCENTAGE OF SIGNIFICANT PRODUCT AND SERVICE CATEGORIES FOR WHICH HEALTH AND SAFETY IMPACTS ARE ASSESSED FOR IMPROVEMENT	30	70
	G4-PR2	TOTAL NUMBER OF INCIDENTS OF NON-COMPLIANCE WITH REGULATIONS AND VOLUNTARY CODES CONCERNING THE HEALTH AND SAFETY IMPACTS OF PRODUCTS AND SERVICES DURING THEIR LIFE CYCLE, BY TYPE OF OUTCOMES	All products and services provided comply with applicant laws and regulations and no violation of any law or the voluntary principles.	70
Labeling	DMA		31	70
	G4-PR3	TYPE OF PRODUCT AND SERVICE INFORMATION REQUIRED BY THE ORGANIZATION'S PROCEDURES FOR PRODUCT AND SERVICE INFORMATION AND LABELING, AND PERCENTAGE OF SIGNIFICANT PRODUCT AND SERVICE CATEGORIES SUBJECT TO SUCH INFORMATION REQUIREMENTS	31	70
	G4-PR4	TOTAL NUMBER OF INCIDENTS OF NON-COMPLIANCE WITH REGULATIONS AND VOLUNTARY CODES CONCERNING PRODUCT AND SERVICE INFORMATION AND LABELING, BY TYPE OF OUTCOMES	31	70
	G4-PR5	RESULTS OF SURVEYS MEASURING CUSTOMER SATISFACTION.	33	70
Customer Privacy	DMA		22	NA
	G4-PR8	TOTAL NUMBER OF SUBSTANTIATED COMPLAINTS REGARDING BREACHES OF CUSTOMER PRIVACY AND LOSSES OF CUSTOMER DATA	No breach of customer privacy or loss of customer data was reported in 2014.	NA



Substantive Aspect	Management Policy and Indicator		Page/Note	External Assurance (page)
CATEGORY: SOCIAL				
SUB-CATEGORY: PRODUCT RESPONSIBILITY				
Compliance	DMA		25	70
	G4-PR9	MONETARY VALUE OF SIGNIFICANT FINES FOR NON-COMPLIANCE WITH LAWS AND REGULATIONS CONCERNING THE PROVISION AND USE OF PRODUCTS AND SERVICES	23	70
Supply Chain Management	DMA		25	NA
	G4-LA14	PERCENTAGE OF NEW SUPPLIERS THAT WERE SCREENED USING LABOR PRACTICES CRITERIA	26	NA
	G4-HR10	PERCENTAGE OF NEW SUPPLIERS THAT WERE SCREENED USING HUMAN RIGHTS CRITERIA	26	NA
	G4-SO9	PERCENTAGE OF NEW SUPPLIERS THAT WERE SCREENED USING CRITERIA FOR IMPACTS ON SOCIETY	26	NA
	G4-EN33	SIGNIFICANT ACTUAL AND POTENTIAL NEGATIVE ENVIRONMENTAL IMPACTS IN THE SUPPLY CHAIN AND ACTIONS TAKEN	25	NA

## TUV NOR Verification Certificate

## Assurance Statement

TUV NORD

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 2014 ("CSR Report") against the AA1000-AS (2008), TUV Asia Pacific CSR Assurance Protocol for Assurance of Sustainability Reporting and the Global Reporting Initiative 2013 Sustainability Reporting Guidelines Version 4 ("GRI G4").

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 us 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 (2013).

The assurance of TSRC Sustainability report for the fiscal year 2013 related to its businesses ( Taipei Head Office, Kaohsiung Factory, Gangshan Factory, and 5 Subsidiaries in China (TSRC (Shanghai) - TSRC (Jinan) - TSRC-UBE (Nantong) - TSRC (Nantong) - Shen Hua Chemical) ) includes the following:

- 1) Reporting of economic, environmental, and social indicators; the year of activities covered in the Sustainability Report is Jan.2014 to Dec.2014;
- 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) The report is "in accordance" with the G4 Sustainability Reporting Guidelines - CORE option.

**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)

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 G4 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 made in the report.
- \* Sampling method used to ensure the correctness of the data

## Opinion Statement

TUV NORD

The TSRC's Sustainability report provides an appropriate view of the TSRC's CSR programs and performances during fiscal year 2014.

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 conducted the participation of all stakeholders for developing and achieving an accountable and strategic response. TSRC demonstrates its 2014 report commitment to its stakeholders in this report. This effort has been showcased in. The reporting systems have been developed to gather the required information. However, the survey data collected is still limited. For further report, it is expected the questionnaire can be adjusted closer the indicators of GRI G4 in order to link the material aspect more accurately.

**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. In order to response each aspect (including potential material aspects), it is recommended to collect more material aspects outside of the organization and report the identified material aspects and the disclosure on management approach (DMA) accordingly.

**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. For further reports, regarding the respond to the stakeholders could more focus on: (i) How TSRC endeavors and what strategy TSRC adopt could be elaborate more extensively. (ii) Providing more mid-term and long-term objectives to show the overall vision and strategy for TSRC sustainability outcome.

**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

AA1000  
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## Appendix



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All paper and printing material of this report have used recycled paper and environmental ink.

Design Notes:

In order to keep a natural texture and simple, with a dot color to the leaves of the body, with simple lines sketched out tree trunk, in addition to application life products without adding any other complex graphics, it stands for the protection of large TSRC Natural mind a stick, but from the tree of life grow all kinds supplies begin to convey the concept of environmental protection based TSRC to create sound urban environmental quality, TSRC contribution made on behalf of the environment.



Should you have any comments, please feel free to contact us at:

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