

2018

TSRC CORPORATE SOCIAL RESPONSIBILITY REPORT

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Message from the Management

True to our mission statement, TSRC strives to become a trustworthy long-term partner to our customers and fulfill our philosophy of sustainable growth to become a corporation of innovation, growth and excellence. TSRC has grown to become one of the largest synthetic rubber and elastomer companies in the world. While dedicating its effort in pursue of strong financial performance, we are committed to fulfill our corporate social responsibility.

In 2018, the global synthetic rubber market was negatively affected by slower growth in China automotive and tire market, abundant supply of low-price natural rubber, intense pricing pressure driven by aggressive competition, and the trade dispute. However, TSRC's effort over the past years of dedicating and developing our specialty business increased TPE and ASM sales and profit contributions. In addition, we were successful in turning around and significantly

improving our joint venture investments in India and China and show its profitability.

Technology innovation is a key foundation for TSRC in driving long term profitable growth. Over the past few years, we have successfully developed new solutions to support customers in new technology and product development. This in turn contributes to the overall enhancement of the environment, resource utilization, and stakeholders' benefits.

Regarding corporate governance, TSRC has stipulated "Code of Professional Conduct" and "Code of Ethical Conduct" which provide ethical guidelines for all employees, managers, and Board Directors in accordance with "The Company Act" , "Securities Exchange Act" , and "Corporate Governance Best Practice Principles for TWSE/TPEX Listed Companies" . Besides disclosing major CSR items in our annual

report, TSRC also issues CSR report in support of increased transparency of our business operation.

TSRC is committed to corporate business sustainability. "Sustainability" or "corporate social responsibility" has never been a standalone issue but a core value internalized in actions taken by TSRC. Our regular disclosure in greenhouse gas data is well recognized by the stakeholders. In addition, we utilize management system to carry out all tasks in energy efficiency enhancement, facility efficiency improvement, pollution reduction, raw material substitution, and waste reutilization.

TSRC upholds its founding value of caring for the community. Besides playing a major role in the Dashe Industrial Zone Company Alliance's initiatives and activities such as giving back to the local community and sponsoring chemistry

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courses, our Social Caring Committee belong to TSRC CSR organization also conducts outreach programs including living and financial donations to thousands of underprivileged students and chemistry education activities in rural areas. The chemistry education program, entering its 8th year, involves hundreds of volunteers to promote basic knowledge in science. These undertaking demonstrate TSRC' s commitment to chemistry education and contribution to the society. We will maintain our commitment in social engagement through concrete actions.

Looking forward, TSRC will continue to strengthen our business competitiveness and through economic, environmental, and social engagements implement sustainable development and concrete actions and contribution to fulfill our social responsibility.

Joseph Chai, CEO



Company Profile

TSRC is a publicly traded company (Stock code 2103) in Taiwan with major shareholders comprising domestic and foreign corporations and individuals. Its main business consists of a variety of manufacturing and sales of synthetic rubber, with brand names of TAIPOL, T-BLEND, VECTOR and other related brands, and the main businesses are manufacturing and sales of a variety of synthetic rubber (E-SBR, S-SBR, BR, TPE) and non-synthetic rubber (Applied Materials). All are upstream raw materials for products that consumers generally use.

Our rubber product customers are mostly the automobile industries, used in tires, engine tubing, airbag covers, and window trims. In addition, some of our products are also used in daily lives and industrial products, such as shoe materials, toys, construction materials, daily necessities, industrial supplies, etc. (For more detailed product description, see TSRC website).

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TSRC was founded in 1973. Originally being the only synthetic rubber manufacturer in Taiwan, TSRC is currently an important rubber industry leader in the Asian market. Recently TSRC has been actively globalizing our business recently: R&D and technology focus on global planning, developed high value-added products, and worked with the development of customized products to expand the scope of product applications and increase sales of high value-added TPE products. The 2018 sales reached NT\$29,751,218,000.

Headquartered in Taiwan, TSRC is vigorously expanding its business to establish production bases and commercial teams in China (Nantong in Jiangsu and Song-Jiang in Shanghai), Thailand, India, the USA, and Luxembourg to service the growing demand of worldwide customers. TSRC has two production factories in Taiwan (Kaohsiung Factory/Gangshan Factory) and four subsidiaries and warehouses in China. It has es-

tablished Arlanxeo-TSRC as a joint venture with the German company Lanxess. Its India Factory is the result of cooperation with IndianOil, and it has established operation centers and sales channels in Europe. In order to further develop the market of high-quality shoe materials, the production capacity of the Gangshan and Nantong Factories have been expanded. In 2018, a new production line was established in Binh Duong, Vietnam. Its production is expected to start in 2020 and add momentum to future operations.

All TSRC production factories have received international certifications including ISO 9001 (quality management system) and ISO 14001 (environment)/ ISO 45001 (safety)/ QC 080000 (no hazardous substance)/ ISO 50001 (energy)/ ISO 10012 (MSA or measurement management system). In 2018, the Kaohsiung Factory received the certification of IATF 16949 (automotive quality management system), and the

Nantong Factory is expected to complete the development of an IATF 16949 management system. In a rapidly changing market, TSRC can only prevail in competition through continued innovation.





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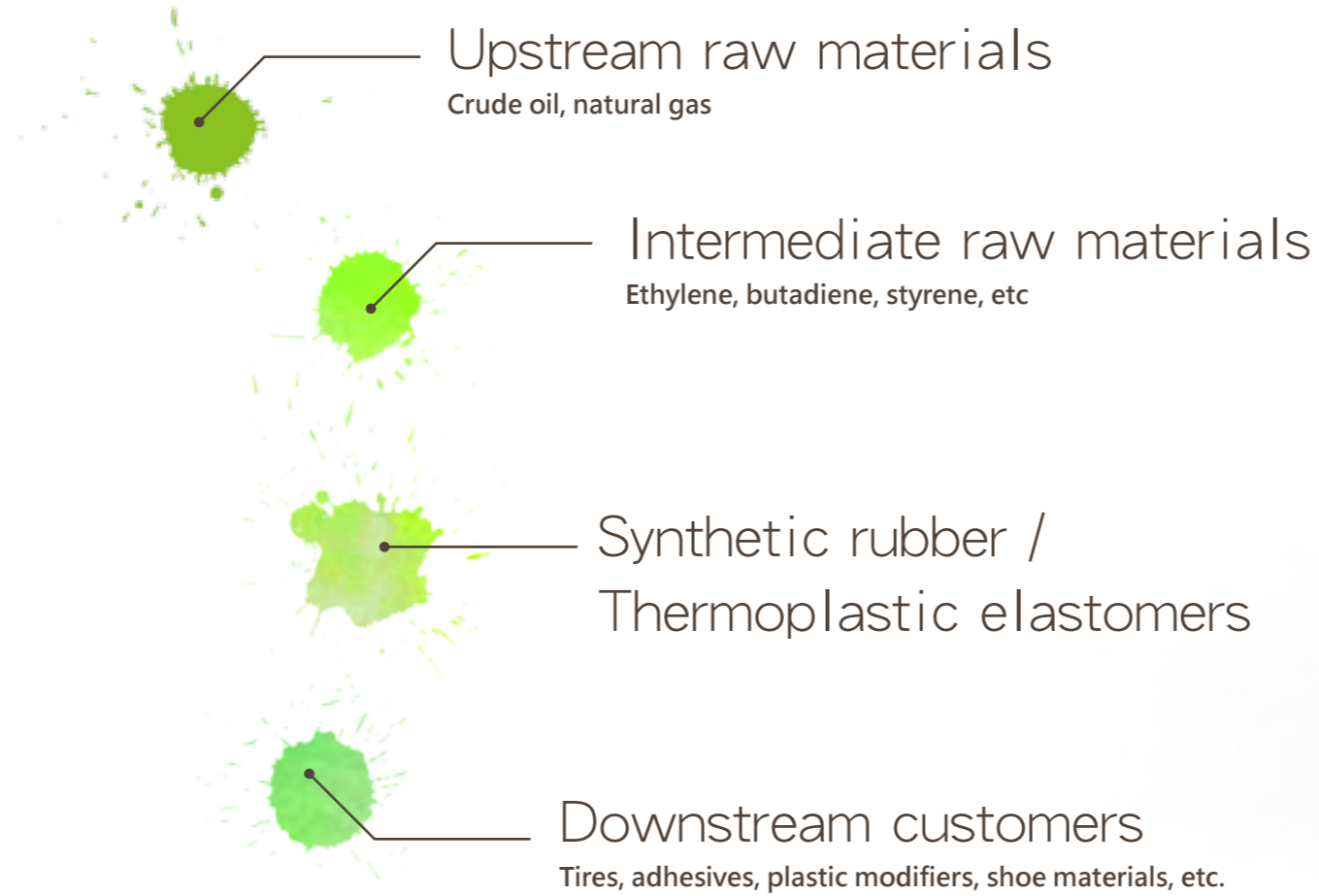
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Relevance of the industry's upstream, midstream and downstream:



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Our Mission & Vision

Our Mission

Be an essential partner to our customers, a social responsible member of our community, and an exemplary enterprise committed to innovation, growth and excellence.

Our Vision

A growth oriented, profitable global enterprise in specialty materials delivering best in class solutions, values, and returns to our shareholders, customers and employees.

Our Values

Integrity – Conduct all our dealings with honesty, commitment, and pro-activeness

Innovation – Create impactful values through innovative ideas and solutions

Teamwork – Embrace diversity and teamwork in driving performance

Excellence – Pursue excellence in quality, safety, and services

Accountability – Take ownership to deliver business performance and engage customers with competency and dedication



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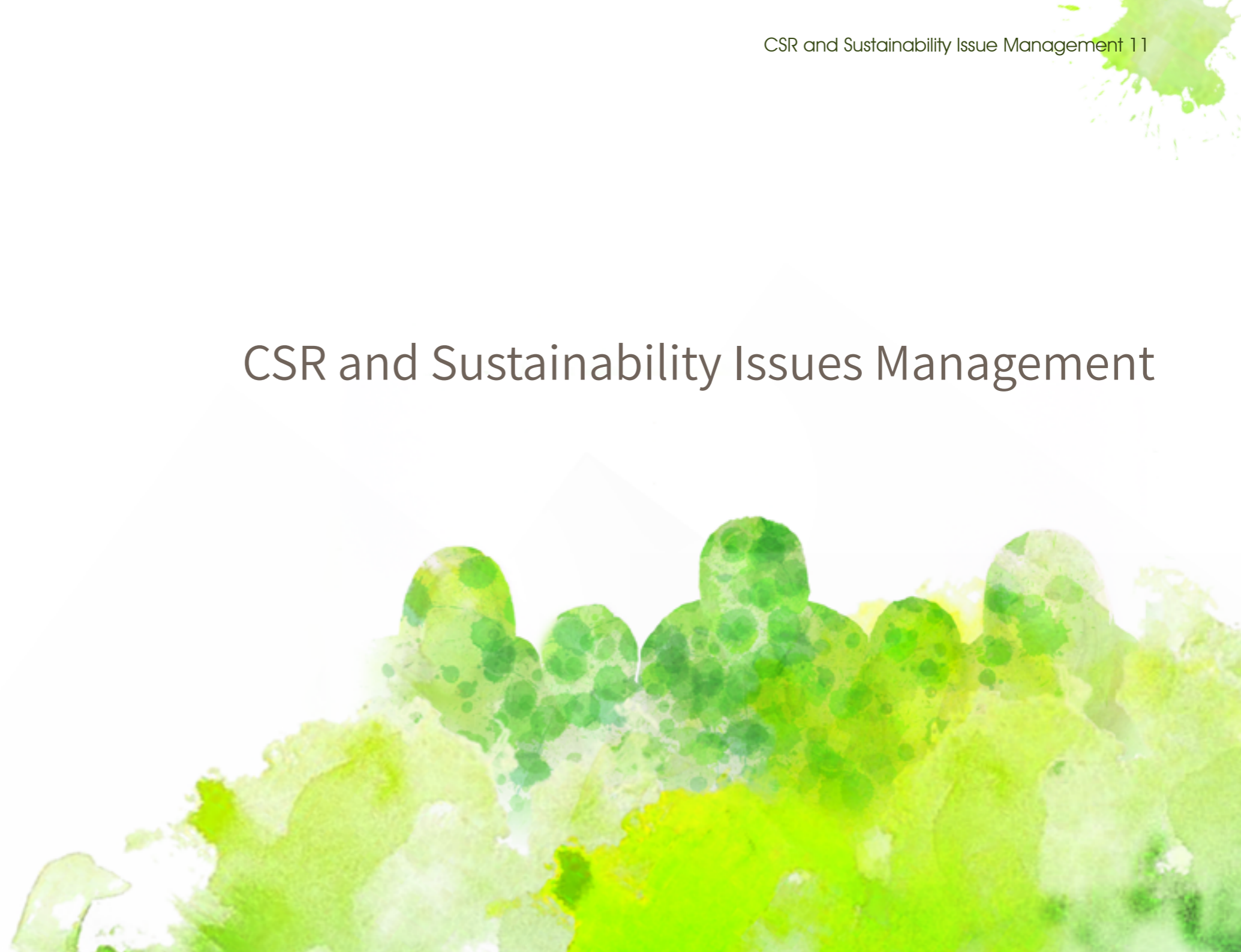
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CSR and Sustainability Issues Management





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Corporate Social Responsibility Initiation and Organization

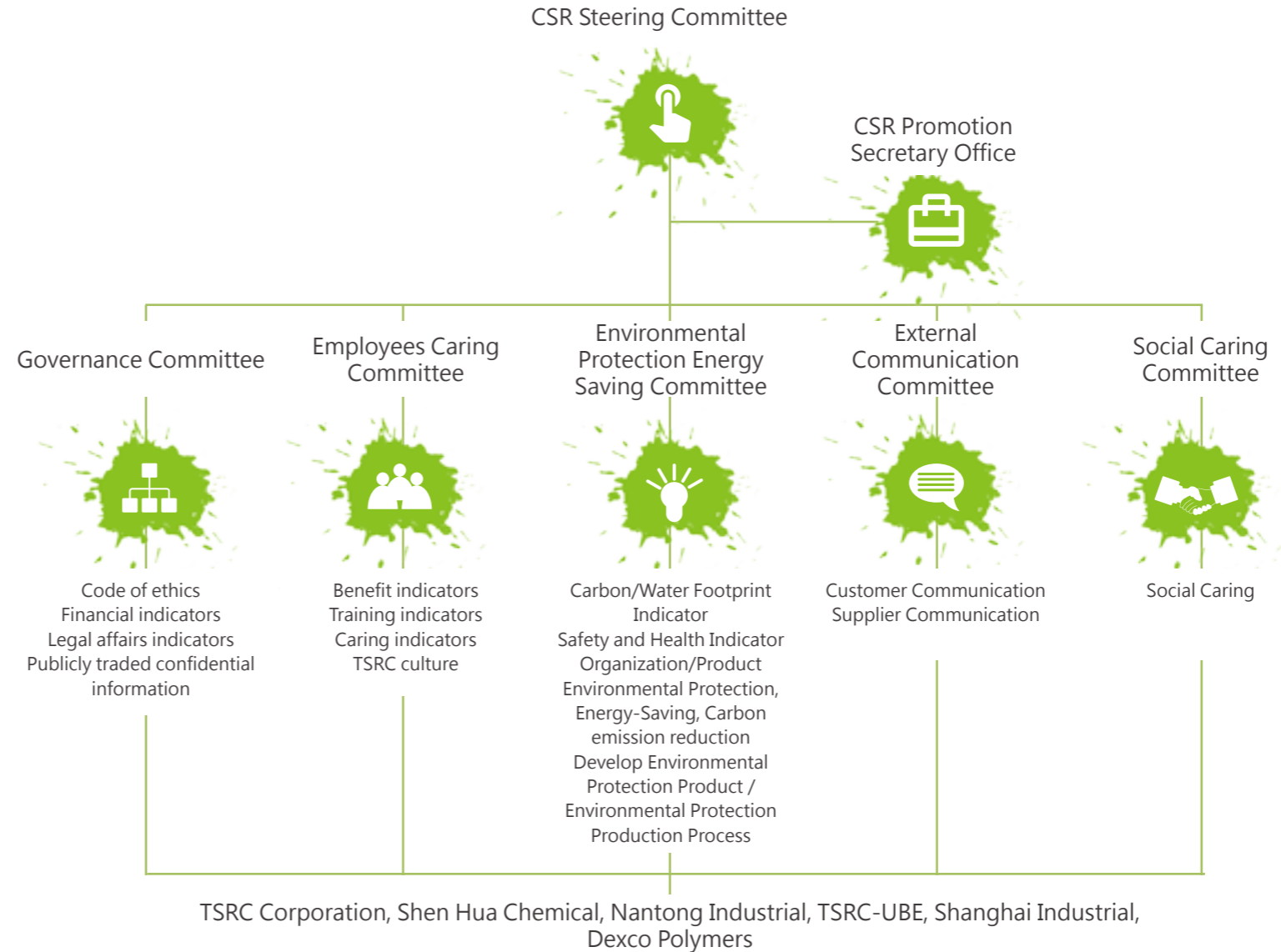
TSRC CSR Organization--CSR Steering Committee, led by the CEO, is the highest supervisory unit responsible for decision-making in economic, environmental and social issues. The Committee holds regular meetings to confirm and review the CSR promotion status and strategy. Under the Steering Committee, there is a "Promotion Secretary Office" and a total of five subcommittees: "Corporate Governance Committee", "Employees Caring Committee", "Environmental Protection Energy Saving Committee", "External Communication Committee", and "Social Caring Committee", to guide the three aspects of Corporate Social Responsibility management indicators: economic, environmental and social. With the

promotion by all committees, members of the Group are actively promoting CSR activities, to integrate the CSR concepts, economic, environmental and social performance management indicators with daily operations into routine work, and communicate these to the corresponding stakeholders.

The CSR Promotion Secretariat follows the "P-D-C-A" (Plan - Do - Check - Action) management model to perform regular identification of stakeholders, collect and inspect the concerned issues of stakeholders, and discuss them in the annual meeting held regularly, to make sure that all the major topics are covered and start an action plan after being confirmed

by the Committee. We also report the progress of all relevant Corporate Social Responsibility business to the Committee, and report the results to the Chairperson, and for the reference of the Board of Directors.

CSR Organization Structure



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Communication with Stakeholders and Material Issues Analysis

Communication and screening of stakeholders and material issues are the most important part of Corporate Social Responsibility; understand the relevant issues concerning the stakeholders through the disclosure of Corporate Social Responsibility Report revelations, to let the stakeholders understand the efforts and performance achieved on CSR by TSRC in 2018. Based on the daily operations and external business communications conducted by TSRC's

relevant departments and in accordance with the practical topic selection mechanism, the CSR Promotion Secretariat convenes each department's personnel to use the organizational operation exchanges and the stakeholder tolerance level to identify stakeholders. The Secretariat then selects the prioritized communication targets and their concerned issues to give replies in this regard.



Note:

◆ DJSI: Dow Jones Sustainability Index, CDP (Climate Change Program) carbon disclosure, SA8000 (Social Accountability Standard), COP: UN Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP), UN Sustainable Development Goals (SDGs).

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Stakeholders, material issues and communication channels are as follows:

Stakeholders	Customer	Employees/Labor Union	Investor	Media	Supplier	Society (including communities/NGOs/local residents affected by operation activities)	Government (competent authorities)
Material Issue	<ul style="list-style-type: none"> Customer privacy Customer Health and Safety Occupational health and safety 	<ul style="list-style-type: none"> Occupational health and safety Economic Performance Employment 	<ul style="list-style-type: none"> Economic Performance Environmental compliance Effluent and waste 	<ul style="list-style-type: none"> Occupational health and safety Environmental compliance Effluent and waste 	<ul style="list-style-type: none"> Procurement practices Economic Performance Customer privacy 	<ul style="list-style-type: none"> Local Community Environmental compliance Effluent and waste 	<ul style="list-style-type: none"> Environmental compliance Effluent and waste Disposal
Communication Channels	<ul style="list-style-type: none"> Annual Interactive Seminar Visit (Email, Telephone, Questionnaire, etc.) Disclosure of information in the product safety data sheet website Customer CSR Audit Web Site Information Disclosure of Corporate Social Responsibility Report 	<ul style="list-style-type: none"> Employees Welfare Committee Disclosure of Material Safety Data Sheet Responsible Care Committee Health Promotion Forum (if Required) Employee Complain Mailbox Industrial Safety Bulletin Labor Union Representatives Conference 	<ul style="list-style-type: none"> Web Site Information Disclosure of Corporate Social Responsibility Report Investor Service Mailbox in the Company's Web Site Public Information Observation Post Shareholder's Meeting 	<ul style="list-style-type: none"> Set up CSR Mailbox on the Company Web Site Unscheduled telephone communication/face-to-face meeting Disclosure of information in the product safety data sheet website Web Site Information Disclosure of Corporate Social Responsibility Report 	<ul style="list-style-type: none"> Supplier CSR Evaluation Set up CSR Mailbox on the Company Web Site Supplier CSR Publicity Supplier Environmental Protection Evaluation Web Site Information Disclosure of Corporate Social Responsibility Report Annual Supplier Evaluation 	<ul style="list-style-type: none"> Non-scheduled Visits Industrial Park Manufacturers Association Industrial Park Service Center Set up CSR Mailbox on the Company Web Site Web Site Information Disclosure of Corporate Social Responsibility Report 	<ul style="list-style-type: none"> Corporate Social Responsibility Report Government Laws and Regulations Publicity Government Official Documents Stock Annual Report
Communication frequency	<ul style="list-style-type: none"> Annual Irregular Regularly updated Irregular Annual 	<ul style="list-style-type: none"> Quarterly Regularly updated Quarterly Irregular Irregular Published daily Annual 	<ul style="list-style-type: none"> Annual Active on working days Published daily Annual 	<ul style="list-style-type: none"> Active on working days Irregular Each batch of products Updated annually 	<ul style="list-style-type: none"> Performed annually Active on working days Performed annually Performed annually Updated annually Performed annually 	<ul style="list-style-type: none"> Irregular Irregular Performed if necessary Active on working days Updated annually 	<ul style="list-style-type: none"> Updated annually Irregular Irregular Updated annually
Responding Chapters	<ul style="list-style-type: none"> CH1. Corporate Mission and Vision CH3. Corporate Social Responsibility - Economic CH5. Corporate Social Responsibility - Social 	<ul style="list-style-type: none"> CH4. Corporate Social Responsibility - Environmental CH5. Corporate Social Responsibility - Social 	<ul style="list-style-type: none"> CH2. Corporate Social Responsibility and Sustainability Issues Management CH3. Corporate Social Responsibility - Economic CH4. Corporate Social Responsibility - Environmental 	<ul style="list-style-type: none"> CH4. Corporate Social Responsibility - Environmental CH5. Corporate Social Responsibility - Social 	<ul style="list-style-type: none"> CH2. Corporate Social Responsibility and Sustainability Issues Management CH3. Corporate Social Responsibility - Economic 	<ul style="list-style-type: none"> CH 2. Corporate Social Responsibility and Sustainability Issues Management CH4. Corporate Social Responsibility - Environmental 	<ul style="list-style-type: none"> CH3. Corporate Social Responsibility - Economic CH4. Corporate Social Responsibility - Environmental

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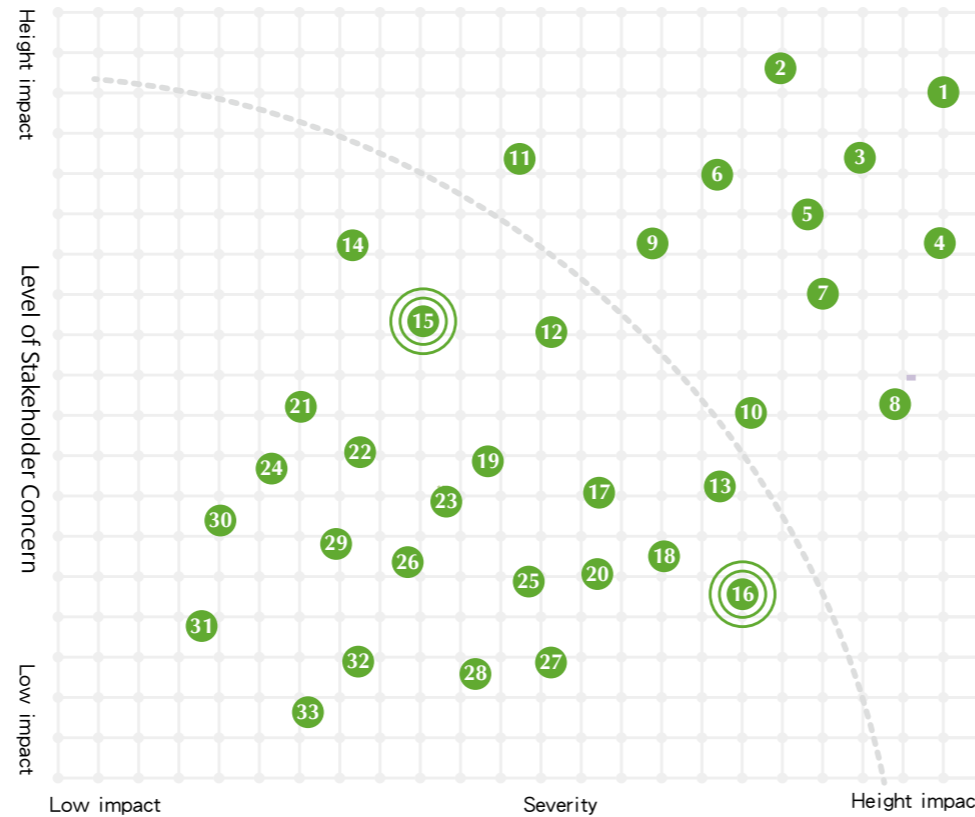
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In accordance with TSRC’s “Guidelines on Corporate Social Responsibility Report”, the CSR Promotion Secretariat investigates the aforementioned issues the stakeholders are concerned with on an annual basis. The CSR Promotion Secretariat reviewed the analysis result of questionnaires retrieved and defined the 2018 material issue matrix. It also classified the issues whose scores on the levels of concern and impact were ranked in the top one-third as material issues to be prioritized for establishing short-term, medium-term and long-term goals. There are 11 material issues in total.

Analysis Result of Material Issues

Concerned Aspects Prioritization



- 1 307 Environmental compliance
- 2 403 Occupational safety and health
- 3 306 Effluent and waste
- 4 305 Emissions
- 5 408 Child labor
- 6 409 Forced or compulsory labor
- 7 418 Customer privacy
- 8 416 Customer health and safety
- 9 304 Biodiversity
- 10 303 Water
- 11 401 Employment

※After assessment by the internal task force, we made self-disclosures regarding 15 Energy/16 Economic performance.

Boundaries of Material Issues

For every material issue identified, we assess its impact and determine whether the issue has influence inside or outside the organization.

Material issue (Focus)	Value chain	GRI issue	TSRC Value Chain			Primary stakeholders affected	TSRC and SDGs	
			Procurement phase (Supply chain)	TSRC production				
				Head-quarters	Subsidiaries			
Energy saving and carbon reduction	Energy (self-disclosure)	302	---	●	●	Government (competent authorities)		
	Disposal	305	●	●	●	Society (including communities)		
Green production	Water	303	--	●	●	NA		
	Effluent and waste	306	●	●	●	Investors, media, society (including communities)		
Sustainable environmental protection	Biodiversity	304	--	●	●	NA		
	Environmental compliance	307	●	●	●	Investors, media		
Ethical management	Economic performance (self-disclosure)	201	●	●	●	Investors, employees		
Labor equality	Employment	401	●	●	●	Employee		
	Child labor	408	●	●	●	Government (competent authorities), customers		
	Forced or Compulsory Labor	409	●	●	●	Employees, government (competent authorities)		
Safe production	Occupational health and safety	403	●	●	●	Employee		
Customer first	Customer Health and Safety	416	--	●	●	Customer		
	Customer privacy	418	●	●	●	Customer		

Icon	Reasons for omission
NA	Not applicable
●	Fully disclosed in this Report.
--	Information is unavailable.

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TSRC Material Issues Correspond to UN SDGs

In 2015, the UN released the SDGs which have since become a common language for sustainable development around the world. The SDGs are not just a global trend in development but also contain important business opportunities for companies in the future. TSRC uses the material issues assessed with the GRI Standards as basis to conduct evaluation regarding risks to humans and environment and the provision of effective products, services or investment and to identify the sustainable development goals related to the SDGs with the aim to make vital contribution to the SDGs.

TSRC enhances its sustainability strategy to advance economic growth, social equality/progress and environmental protection on a comprehensive basis in order to demonstrate the long-term value of TSRC. In 2018, TSRC defined priorities for the SDGs. We will disclose our performance in sustainable development with respect to the product life cycle and value chain stages in the transition from supporting the SDGs to real action plans. We will integrate these goals into our daily activities through various approaches and keep reviewing and modifying the SDGs priorities in the future to gain recognition from investors and stakeholders and create sustainable values. The issues and practices and goals from sustainable development will be disclosed in the relevant chapters.





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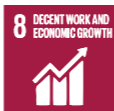
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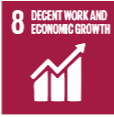
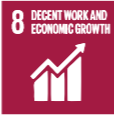

TSRC Issue	Related SDGs Item	UN SDGs Description and Indicator	TSRC sustainable development Practice and Goal
Energy saving and carbon reduction		Ensure that everyone has access to affordable, reliable, sustainable and modern energy. 7.3_By 2030, double the global rate of improvement in energy efficiency.	We continue to promote the ISO 50001 energy management system and use more energy-efficient means for production to lower energy concentration. Goal: The annual average power saving rate reaches 1% or higher.
		Take urgent action to combat climate change and its impact. 13.2_Integrate climate change measures into policies, strategies and planning.	We engage in greenhouse gas reduction and management in line with the goal set by the competent authorities: The greenhouse gas emissions in 2050 are 50% or less of those in 2005.
Green production		Ensure that everyone can enjoy water resources and health facilities under sustainable management. 6.3_Various approaches will be used to improve water quality and substantially increase the recycling volume of waste and its safe reclamation on a global basis in 2030.	Improvement in management and reduction of wastewater in the factory. Goal: Various approaches will be used to improve water quality and substantially increase the recycling volume of waste and its safe reclamation on a global basis.
Sustainable environmental protection		To ensure sustainable consumption and production patterns 12.5_We expect a substantial reduction of waste by 2030 through prevention, reduction of the total amount, recycling, and reclamation.	Implement reduction of waste, recycling and management pursuant to ISO 14001 Environment Management System to ensure sustainability of the environment. In 2018, the Kaohsiung Factory acquired the MFCA (Material Flow Cost Accounting) third-party assurance to enhance the recycling of rubber and improvement of the equipment functionality. The MFCA system will be further applied to other production lines in 2019.
Ethical management		To promote inclusive and sustainable economic growth, achieve full employment and create productive and decent jobs. 8.2_Achieve higher levels of economic productivity through diversification, technological upgrading and innovation.	We continue to increase our revenues and enhance economic productivity through patents, R&D and innovation. Goal: Substantially increase the total revenues and continue to boost the current profit rate.



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TSRC Issue	Related SDGs Item	UN SDGs Description and Indicator	TSRC sustainable development Practice and Goal
Labor equality		To promote inclusive and sustainable economic growth, achieve full employment and create productive and decent jobs. 8.7_Eradicate forced labor, modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labor, and by 2025 end child labor in all its forms.	We promote inclusive and sustainable economic growth and achieve full and productive employment, such as employee care and prohibition of child labor. Goal: All the factories continuously undertake not to use child workers.
Safe production		To promote inclusive and sustainable economic growth, achieve full employment and create productive and decent jobs. 8.8_Protect labor rights and promote safe and secure working environment for all workers.	Through the ISO 45001 occupational safety and health management system, we have established our "Safety and Health Policy" to disclose that our core value is human-focused. We will pursue the goal of zero accidents and zero injuries through the principles of "technology" , "safety and health culture" , "responsibility" and "communication" .
Customer first		Ensure sustainable consumption and production patterns. 12.6_Encourage companies, especially large and transnational companies, to adopt sustainable practices (release of sustainability reports).	Based on the concept of product life cycle, we ensure user safety through transparent product information, and we actively disclose sustainability indicators and reports to gain the trust of stakeholders. Goal: Release sustainability reports annually and reply to customers' sustainability questionnaires.

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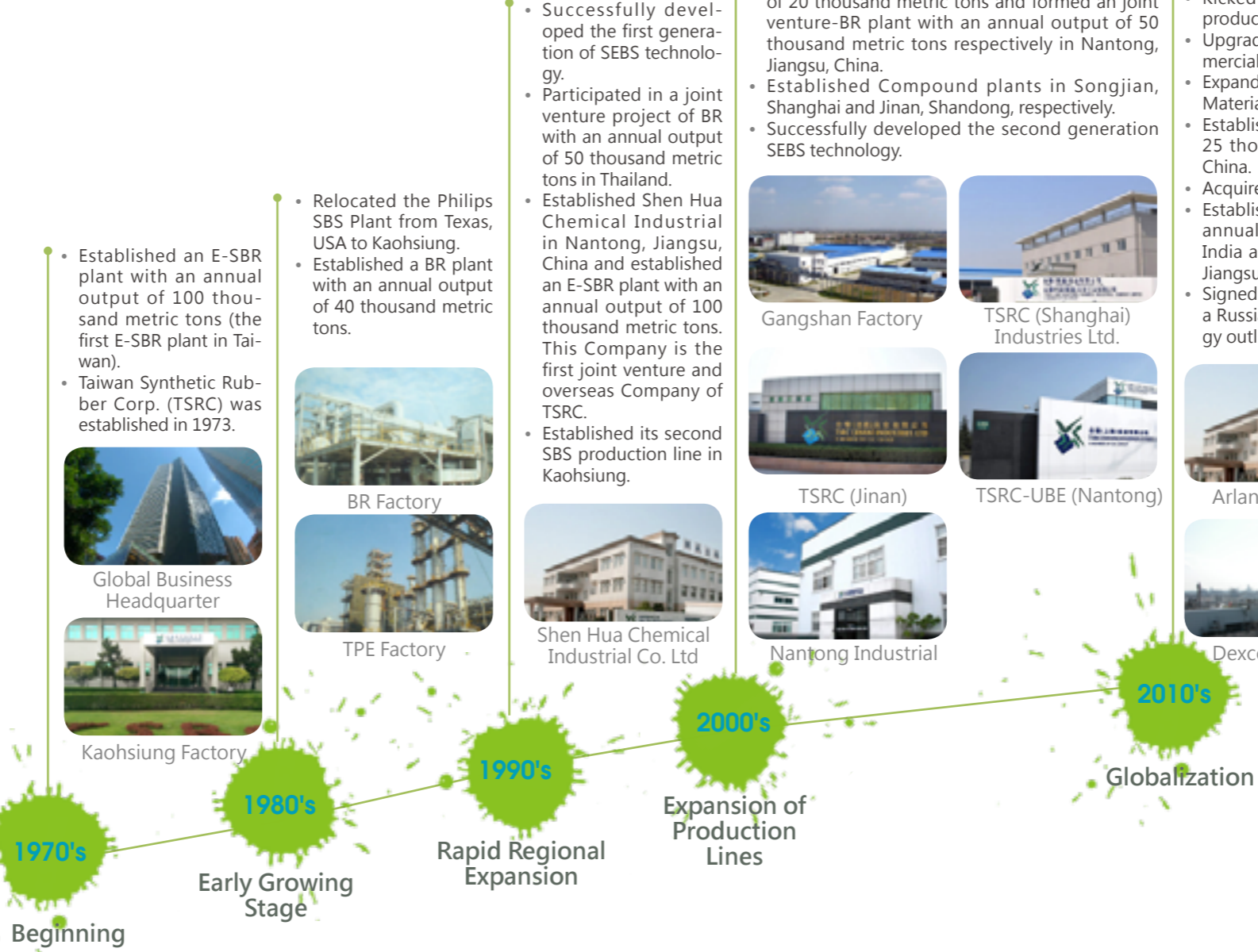
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CSR - Economic



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TSRC Milestones



Global Business Headquarter



Kaohsiung Factory



BR Factory



TPE Factory



Shen Hua Chemical Industrial Co. Ltd



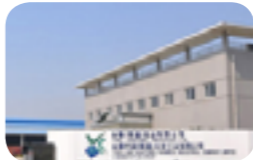
Gangshan Factory



TSRC (Jinan)



Nantong Industrial



TSRC (Shanghai) Industries Ltd.



TSRC-UBE (Nantong)



Arlanxeo-TSRC



Indian Synthetic Rubber



Dexco Polymers

TSRC Issue	Material Issue	Related SDGs Item	UN SDGs Description and Indicator	TSRC sustainable development Practice and Goal
Ethical management	Economic Performance		To promote inclusive and sustainable economic growth, achieve full employment and create productive and decent jobs. 8.2_Achieve higher levels of economic productivity through diversification, technological upgrading and innovation.	We continue to increase our revenues and enhance economic productivity through patents, R&D and innovation. Goal: Substantially increase the total revenues and continue to boost the current profit rate.

Financial Performance

Being a responsible corporation to the stakeholders, TSRC releases the monthly financial report every month and holds a Shareholders' Meeting every year. Appropriate financial information is disclosed on the Public Information Observation Post. Shareholders may submit proposals in writing in the annual shareholders' meeting in accordance with the companies act. Moreover, Investor Relations Pages are set up on the Company's website in traditional Chinese, English and simplified Chinese editions. Regularly updated financial information and corporation conference presentations are available for the investors' reference. Shareholders and investors can also use the Investor Relations Mailbox to express their questions and suggestions, and all relevant information can be queried in the TSRC Investor Relations Pages or Public Information Observation Post. We believe that all efforts will improve the transparencies of TSRC's operation and information, so that the investors may have access to more relevant information when making investment decisions.

Currently, TSRC's primary products are BR, SBR and bulk synthetic rubber products, followed by the widely used TPE. The Company's medium to long-term development strategy in the next five years, in addition to the primary business of bulk synthetic rubber products, is to achieve the five-year operational goals through three main strategies, namely organic growth, enhanced business portfolio and increased profit.

Financial Figures

Unit: NT\$ 1,000

Items		2016	2017	2018
Financial Ability	Sales	26,955,090	31,766,237	29,751,218
	Total Assets	29,769,927	28,999,341	30,230,169
Profitability	Net Profit after Tax	1,093,607	849,717	1,233,670
	Earnings Per Share after Tax (NTD)	1.2	1.06	1.44

* Information in this table is extracted from the consolidated financial statement of TSRC and subsidiaries.

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Technology and R&D Overview

Unit: NT\$ 1,000

Items	2016	2017	2018
Net Sales	26,955,090	31,766,237	29,751,218
R&D Expenditure	346,700	375,550	387,948
R&D Expenditure/Net Sales (%)	1.3	1.2	1.3

※For more detailed operational performance and financial information (capital), see the TSRC Annual Financial Report.

TSRC Annual Allocated Economic Value (% in Revenue)

Year	Operating Cost %	Employees' Salary and Benefits %	Payments to Shareholders %	Payments to Government %
2016	87.6%	7.2%	3.3%	1.9%
2017	91.5%	6.2%	2.6%	0.9%
2018	90.4%	7.0%	2.7%	1.3%

Note1 : Operating Cost: The cost and expense of doing business (but does not including the employees' salary and benefits).

Note2 : Employees' Salary and Benefits: including salary, labor and health insurance, retirement funds, and other expenses for benefits.

Note3 : Payments to the government: Taxes (for example: sales tax, income tax, and property tax, others).

Adjusting to the rising global awareness of CSR operation, the major R&D direction of TSRC still focused on applying advanced environmental protection production process to develop new high value-added products and technology to satisfy our customers with our products and services. Through solving customer' s rubber usage problems, we created a win-win situation.

Through the R&D centers in Kaohsiung and the USA and a complete global supply chain system, TSRC has built a platform for communication with the R&D teams of the main customers to jointly develop high-quality and innovative products, accelerate product differentiation and transformation of industrial application, and develop high-value-added markets. TSRC seeks a place in high-value markets including medical treatment, lubricating oil viscosity modifier, high-quality shoe materials and environmental protection tires. TSRC also gradually boosts the sales and profit of new products, including assessment on the application of materials in the operational integration plan for the Greater China region with the aim to increase economic benefits. The total amount of R&D expenditure in 2018 was approximately NT\$387,000,000.

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Planned new product development

- Continuously develop microstructure control technology platform for next generation of S-SBR products and build partner ship with customer to joint development in customized products.
- Develop differentiated application for the SBC products, such as high-end medical materials, customize shoe materials, thin printing and protective film, lubricant viscosity modifier, etc.
- Built new BR technology platform for the development of new products to satisfy the needs of the HIPs customers to improve the processing properties of tires and enhance rolling resistance performance.
- Contentiously build the optimal process technology and integrate into the new factory design with the highest quality products.

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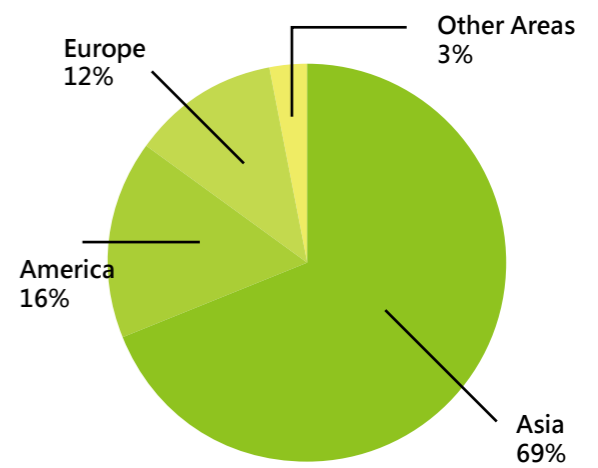
TSRC actively applies for patents to protect the results of Research and Development and advance production processes as differentiated tools against the competitors. In 2018, there were 6 patents awarded.

Successfully developed technologies or products

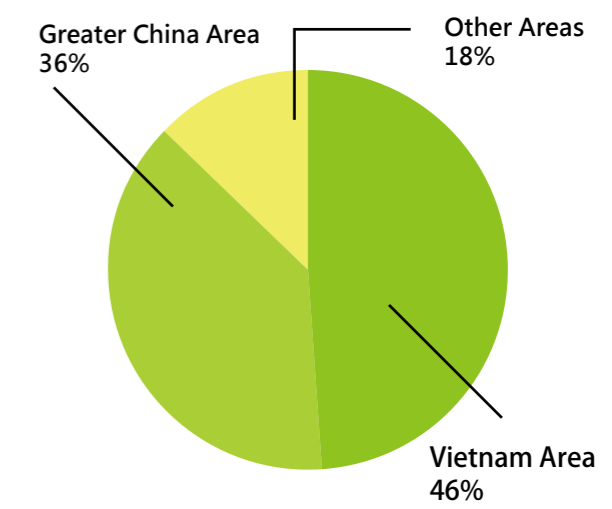
<p>Development of S-SBR products</p>	<p>Completed functionalization modification and successfully applied in the next generation products.</p>
<p>Development of green and ecofriendly rubber materials</p>	<p>Commercialized green and eco friendly BR and E-SBR products and received positive confirmation from leading companies in plastic modification, tire and shoe materials.</p>
<p>Development of new generation HSBC products</p>	<p>Completed the development of materials for next generation medical applications, graphic printing films, protective films, foaming and auto component.</p>
<p>Development of leading processing technology</p>	<p>Implemented new process technology in upgrading existing factories and new factory design.</p>

TSRC's consolidated revenue in 2018 was NT\$29,800,000,000 with an EPS of NT\$1.44. The sales percentage of synthetic rubber was 94.31% with the main markets in China, USA, Thailand, Germany, Turkey, Japan and Italy. The sales percentage of non-synthetic rubber was 5.69% with the main markets in China, Southeast Asia, Europe and USA.

2018 Sales Percentage of Synthetic Rubber



2018 Sales Percentage of Non-synthetic Rubber



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Memberships in Association and Organizations, Cooperation

To fulfill its CSR and meet the expectations of external stakeholders, TSRC has adequately assessed and actively participated in the plans of domestic and foreign industrial associations and organizations. TSRC is firmly committed to its CSR and gives concerns and work from all aspects in order to make substantial contribution regarding sustainability issues. Key industrial associations and organizations where TSRC has memberships:

Association name	Operation	Expected benefits
Petrochemical Industry Association of Taiwan	<ul style="list-style-type: none"> • The general meeting is held annually. • The Petrochemical Industry Journal is published every month/ • The Petrochemical Industry Annual Report is published every year. 	<ul style="list-style-type: none"> • Develop the whole petrochemical industry and collect information about the petrochemical industry. • Maintain good relationship with other petrochemical companies to solve common problems.
Taiwan Rubber & Elastomeric Industries Association	<ul style="list-style-type: none"> • The general meeting is held annually. • Information about rubber technologies is provided. 	<ul style="list-style-type: none"> • Maintain and develop good relationship with downstream manufacturers. • Collect information about rubber processing technologies.
Dashe Petrochemical Industrial Park Manufacturers Association	<ul style="list-style-type: none"> • Hold regular meetings to discuss and solve the common problems of the companies in the industrial park (including Good Neighbor Feedback activities). 	<ul style="list-style-type: none"> • Participate in the operation of the Association to protect the rights and interests of the Company in the industrial park, collect the information on other companies, and solve common problems.
The Institute of Internal Auditors - Chinese Taiwan	<ul style="list-style-type: none"> • Organize theoretical and practical researches, workshops, discussions and visits with respect to the internal audit and promote audit education. 	<ul style="list-style-type: none"> • Introduce the latest theories and practices of internal audit, improve the audit capability, and exchange experience in internal audit techniques with other companies.
Human Resource Managers Association of Petrochemical Companies	<ul style="list-style-type: none"> • Organize regular activities, exchange information, and communicate and coordinate human resource related policies. 	<ul style="list-style-type: none"> • Understand the status of the industry and keep close contact with other companies.
Industrial Safety and Health Association of the R.O.C.	<ul style="list-style-type: none"> • Hold one general meeting every year to review the operation of the Association. 	<ul style="list-style-type: none"> • Collect relevant information on occupational safety and health to facilitate inspection and coordinate of industrial safety.

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Association name	Operation	Expected benefits
Ren Da Industrial Park Association for Promoting Labor Safety and Health	<ul style="list-style-type: none"> • The administration center holds regular meetings. 	<ul style="list-style-type: none"> • Exchange safety and health information with other factories, provide supports with safety equipment, discuss safety and health issues and propose relevant suggestions.
Taiwan Responsible Care Association	<ul style="list-style-type: none"> • Hold the general meeting on a regular basis, reflect the opinions of the members to the government, and organize relevant training courses. 	<ul style="list-style-type: none"> • Understand the responsibility of the petrochemical industry to the society in Taiwan and improve the performance in the environment, health and safety on an ongoing basis.
International Institute of Synthetic Rubber Producers (IISRP)	<ul style="list-style-type: none"> • Hold the annual meeting every year. 	<ul style="list-style-type: none"> • Collect the information on the global synthetic rubber to form international horizons.
Chinese National Association of Industry and Commerce, Taiwan	<ul style="list-style-type: none"> • Provide members with relevant information and promote international economic and trading cooperation. • Organize trading and investment events as well as technology discussion and visiting activities for the industries. 	<ul style="list-style-type: none"> • Understand the status quo of the industry and facilitate communication with other companies.
Safety & Health Association of Taiwan	<ul style="list-style-type: none"> • Hold one regular meeting every year. 	<ul style="list-style-type: none"> • Prevent accidents with respect to safety, health and environment and perform relevant investigation, research, implementation and prevention.
Association of Bio-based Material Industry	<ul style="list-style-type: none"> • The members hold regular meetings by rotation. • Provide e-paper for the members to collect more information about the industry. 	<ul style="list-style-type: none"> • Explore the development trend of biomass technology, promote technical exchange in the industry, facilitate cooperation with other companies and participation in large-scale cooperative programs, and strive for external supports.
Taiwan Chemical Industry Association	<ul style="list-style-type: none"> • Hold the annual industrial forum and TSRC dispatches representatives for the forum. 	<ul style="list-style-type: none"> • This is the window for international communication and cooperation. It follows the international development trend and leads the chemical industry in Taiwan to bring innovation and transformation into practice.

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Association name	Operation	Expected benefits
Benjou Industrial Park Manufacturers' Association, Gangshan, Kaohsiung	<ul style="list-style-type: none"> • Hold regular meetings to discuss and solve the common problems of the companies in the industrial park. 	<ul style="list-style-type: none"> • Participate in the operation of the Association to protect the rights and interests of the Company in the industrial park, collect the information on other companies, and solve common problems.
China Rubber Industry Association	<ul style="list-style-type: none"> • Hold one industrial production technique exchange meeting every year. • Hold forums and seminars on an irregular basis. 	<ul style="list-style-type: none"> • Communicate the information of the industry and the latest development in the technique, production, safety and environment. Facilitate the healthy and long-term development of the industry.
Nantong Standards Association	<ul style="list-style-type: none"> • Hold one annual meeting every year. • Hold forums on an irregular basis. 	<ul style="list-style-type: none"> • Understand the development of the international standardization in a timely manner, give effective guidance in the evaluation of quality indicators, and improve the quality and development of the products.
Production Safety Management Network, Nantong Economic and Technology Development Area	<ul style="list-style-type: none"> • Hold one board meeting every quarter. 	<ul style="list-style-type: none"> • Maximize the capability of corporate safety production management and continue the improvement of the self-control, mutual control and joint control capability for the safety production in the area where the factory is located to effectively prevent occurrence of accidents.





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Corporate Governance

To efficiently implement corporate governance, the shareholders' meeting elects directors to form the board of directors, which is TSRC's business execution organization. The chairperson of the Board of Directors presides over the shareholders' and board of directors' meetings internally and represents TSRC externally. The Board of Directors of the Company participates irregularly in the relevant governance education training organized by the Taiwan Securities and Futures Institute (SFI) and Corporate Governance Association (CGA). We establish the "Board of Directors Authority Regulations" and "Level of Authority Table for TSRC and Subsidiaries", to specifically define the authority of the Board of Directors and authorization of the management, and clearly divide the responsibilities between the Board of Directors and the management.

All the directors and employees shall comply with the "Ethics Code of Conduct" and "Official Business Operation Code of Conduct" when performing their duties. We bring our decision on ethical management into practice in our corporate culture declaration of mission, vision and core competences. The above-mentioned regulations explicitly provide that violations of any regulations are subject to the punishment speci-

fied in our "Rewards and Disciplinary Operating Regulations"; no employee is allowed to make use of his/her duties for personal benefit or to obtain any gains for his/her relatives when dealing with business or carrying out any procedures; an internal procedure for reporting violations, punishment and appeal is available. We regularly review the Company's "Corporate Mission, Vision and Value" and the "Core Competencies" and "Management Competencies", request compliance from all relevant personnel, and implement these in the annual performance evaluation of employees. Any violation of the regulations shall be subject to the "Rewards and Disciplinary Operating Regulations".

The TSRC CSR Steering Committee established the "CSR Declaration" in 2012. It contains the compliance with respect to the trade, investment, contracting, supply, and operational development and all the rest business and employee relationships. Regulations on ethics, labor, environment, health and safety, management system, corporate governance, and social engagement are also available to ensure fulfillment of our corporate social responsibility.

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TSRC Corporate Governance Organization Chart



Board of Directors

TSRC Board of Directors is the highest governance unit of the Company. The directors are elected at the shareholders' meeting. The Company business shall be conducted based on the resolutions of the Board of Directors, except for the business to be resolved at the shareholders' meeting in accordance with the provisions specified in the laws and regulations or the "Articles of Incorporation". The main responsibilities are to establish the Company's internal control system and risk-related financial procedures, determine and approve the Company's development strategies, supervise the Company's operational objectives, appoint and supervise the Company's operation team, ensure effective operations of the governance systems, verify the internal financial, accounting and auditing systems, and assess the operation risks among others tasks. There are a total of 9 directors on Board of Directors (among them, three are independent directors), and there are three functional committees (Audit Committee, Compensation Committee and Strategy Committee) set up under the Board of Directors. They assist the Board of Directors in enhancing its management and supervision functions within their individual authorities.

The members of the TSRC Board of Directors shall have the wealth of knowledge, business experience and industrial judgment capable of executing their job duties^{Note}, including operating judgment, accounting and financial analysis capabilities, operation management capabilities, crisis

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management capabilities, industrial knowledge and international market perspectives, in order to achieve the ideal goals of the corporation governance.

The TSRC Board of Directors was reelected on June 21, 2018. The ex-chairperson, Shao-Yu, Wang, retired and the new chairperson is Nita Ing.

Note : Please refer to the TSRC Annual Report for the education background of the Directors and Supervisors. www.tsrc.com.tw

Anti-Corruption, Confidential Non-Disclosure Policies

TSRC has established and announced the ethical code of conduct on outside official website to reach the consensus on ethical standards with the Company' s directors and managers and prevent insider trading, avoid a conflict of interest between the Company and individuals,



The ex-chairperson, Shao-Yu, Wang, retired honorably

and eliminate the opportunity for illegal benefit. Any non-public information that may potentially influence the Company's stock price shall be kept strictly confidential.

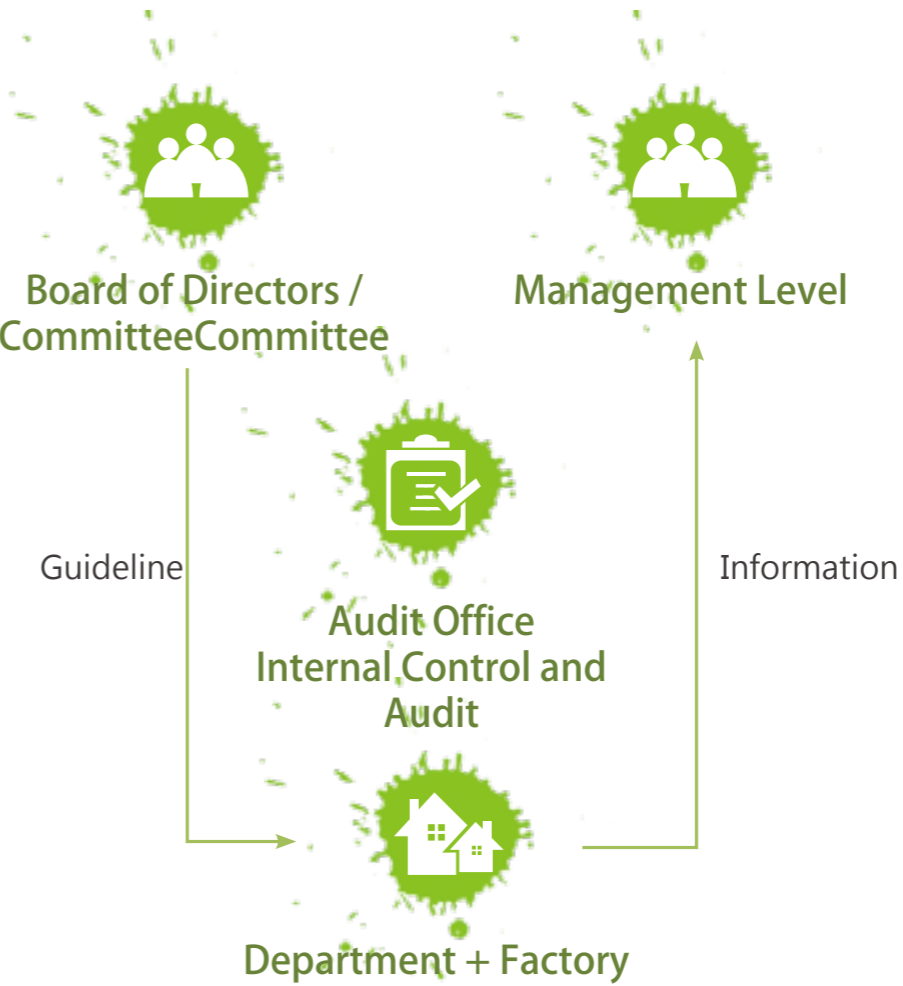
Since the promotion of CSR, TSRC has expected the voluntary actions that transcend law compliance and can meet the requirements for sustainable growth and integrate CSR into core operation process. For the compliance of all employees, we establish internal regulations such as "Confidential Information Management Regulations," "Personal Information Operation Management Regulations" and "Code of Professional Conduct" to protect the Company' s intellectual property rights, confidential information and the personal information of the customers and employees. Through the new employee training, electronic bulletin board and other publicity means, we clearly request the employees to use the resources and assets effectively, protect the business secrets, prevent insider trading and antitrust regulations, conduct fair trade, avoid conflict of interest between the Company and the individual, eliminate the opportunity to take private interests, prohibit bribery, follow the network access regulations, and comply with part-time job rules

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when executing relevant internal and external business within the scope of the work assigned by the Company. A corresponding punishment system is also available.

TSRC upholds the position on not to participate in public policy lobbying and does not make political contributions, but encourages employees to fulfill their civic responsibilities and participate in public election voting. We approve leave for these reasons according to relevant laws TSRC is concerned and pays attention to the public affairs that affect the industry, economy and the life of the employees.

TSRC Risk Management





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Internal Control, Establishment and Implementation of the Internal Audit System

The Audit Office is directly under the Board of Directors. It is responsible for auditing the internal control system and following up discovered defects and abnormal activities until they are improved. Audit reports and self-evaluation results are submitted to the Board of Directors and the management for review. The internal control system includes the internal audit system. In addition to the annually scheduled self-evaluation of the internal control system, we review, amend and establish or revise important control operations at any time in response to the internal and external environmental changes. Such review, amendment and establishment or revise must be reviewed and approved by the Board of Directors. With the internal audit and control system, TSRC promotes the soundness of the corporate operation.

The risk management of TSRC is conducted through existing departments or functional units in the organization. Our external related issues includes economic issues, social / cultural issues, political issues, regulation / law issues, technique / technology issues, competitor / market (industrial status) / customer and environmental issues. Internal related issues includes corporate value, corporate culture, corporate knowledge, corporate performance, production management capability, sales capability, human resources management capability, product development capability, financial capability, information capability and environmental management etc.

We identify possible risks / incidents that may have impact on business objectives, decide ap-

propriate response measures after assessment to mitigate, transfer or avoid risk. The functioning department of the TSRC reports to the management about the risk environment, risk management emphasis and risk assessment that the Company encounters and the adaption measures every year in compliance with the internal control system, assessment system, and management system review. The auditing unit reports to the Audit Committee on a regular basis. The Audit Committee made suggestions with respect to the risk assessment and its impact and reports to the Board of Directors.

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Scope of TSRC Risk Management

Strategy Aspects

- Compliance and adjustment to law changes
- Policy development
- Impact of the change in the corporate image on the crisis management of the Company
- Industrial market changes and market demand
- Impact of the change in the technology and industry on the financial cooperation of the Company

Operation Aspects

- Intellectual property rights
- Recruitment of talents
- Corporate image
- Expected benefits from expansion of the factory building
- Risk brought about by concentrated purchase or sale

Finance Aspects

- Interest rate and exchange rate
- Inflation
- Strategic investment

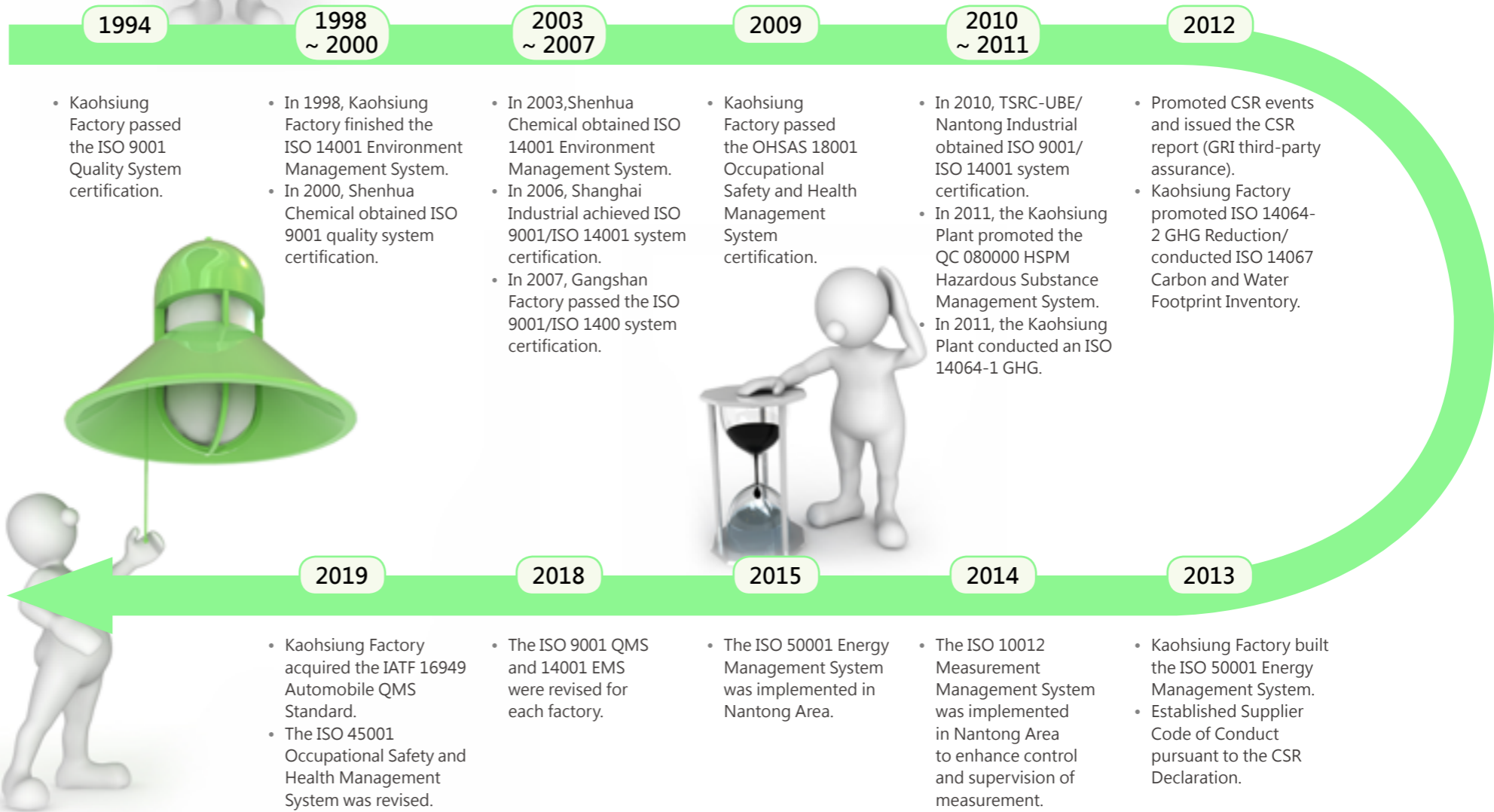
Hazard Aspects

- Earthquake and other natural disasters
- Fire or chemical spills
- Energy resources supply interruption
- Information safety risk

For the management of risk, there is an explicit division between the Company and each affiliate in the responsibility, authority, and management objective with respect to the staff members, assets and finance, and an information safety firewall system is established for these purposes. The auditing unit executes internal audit and control measures to ensure control of the risk and compliance with relevant laws and regulations. In add, </630 we establish corresponding standard operation procedures (e.g. crisis operation management regulations / emergency response operation management regulations) to ensure risk management of material emergencies such as fire, chemical leak, information service interruption, supply chain interruption, environmental events or external water and electricity supply interruption.

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External advocacies



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Supply Chain Management

TSRC is devoted to creating good partnership. Being a leading company in the synthetic rubber industry, we are committed to the sustainable development of the service value chain in cooperation with the suppliers and dealers. Our supply chain management system is established based on creation of value. Instead of the traditional mode in which the quality, cost, and trading procedure are the core, we select partners carefully and find potential opportunities by identifying and managing the risk the may occur to the supply chain in the governance, environment and society aspects in the hope to build a supply chain structure that can provide sustainable competitive advantages and create a new business model for sustainable development.

TSRC CSR Procurement Basic Policy

- TSRC is devoted to CSR and encourages our partners to promote open and fair competitive business activities based on fairness and ethics for the long-term profits and sustainable operations of us and our partners.
- TSRC believes that the members of the supply chain play a very important role in the execution and development of the CSR and expects that our partners will agree on and spare no efforts to fulfill their social and environmental responsibilities and take these as a guideline of their business.

- We expect that our partners will follow TSRC' s Partner Code of Conduct (PCC), including the categories of environment, occupational safety and health, human rights/ethics and labor policies, and ensure that the products and services provided comply with all national and other applicable laws and regulations.
- TSRC will first select the suppliers that are in compliance with the PCC.

Hazardous Substances Free Policy

Comply with HSF (Hazardous Substances Free) related laws and regulations. Meet customer product' s environmental requirements. Continuous improvement in environmental protection standards and production of HSF (Hazardous Substances Free) products.

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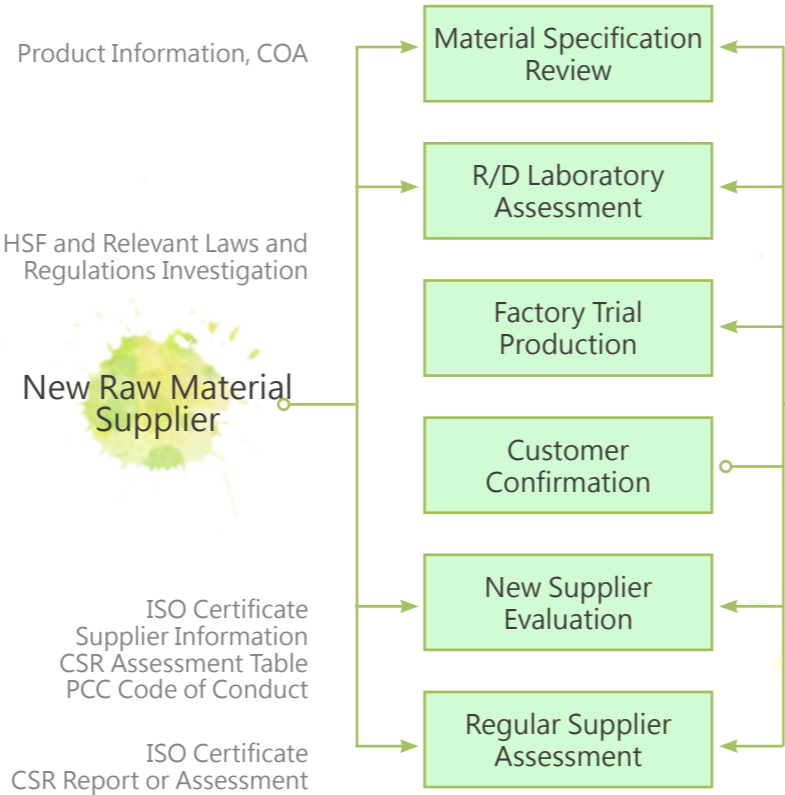
TSRC is devoted to creating good partnership. Being a leading company in the synthetic rubber industry, we are committed to the sustainable development of the service value chain in cooperation with the suppliers and dealers.

By implementing the supplier HSE management audit and CSR dissemination system in the development of the occupational safety and health/environment management systems, we identify and manage the risk that may occur to the supply chain in the governance, environment and society aspects in the hope to build a supply chain structure that can provide sustainable competitive advantages.

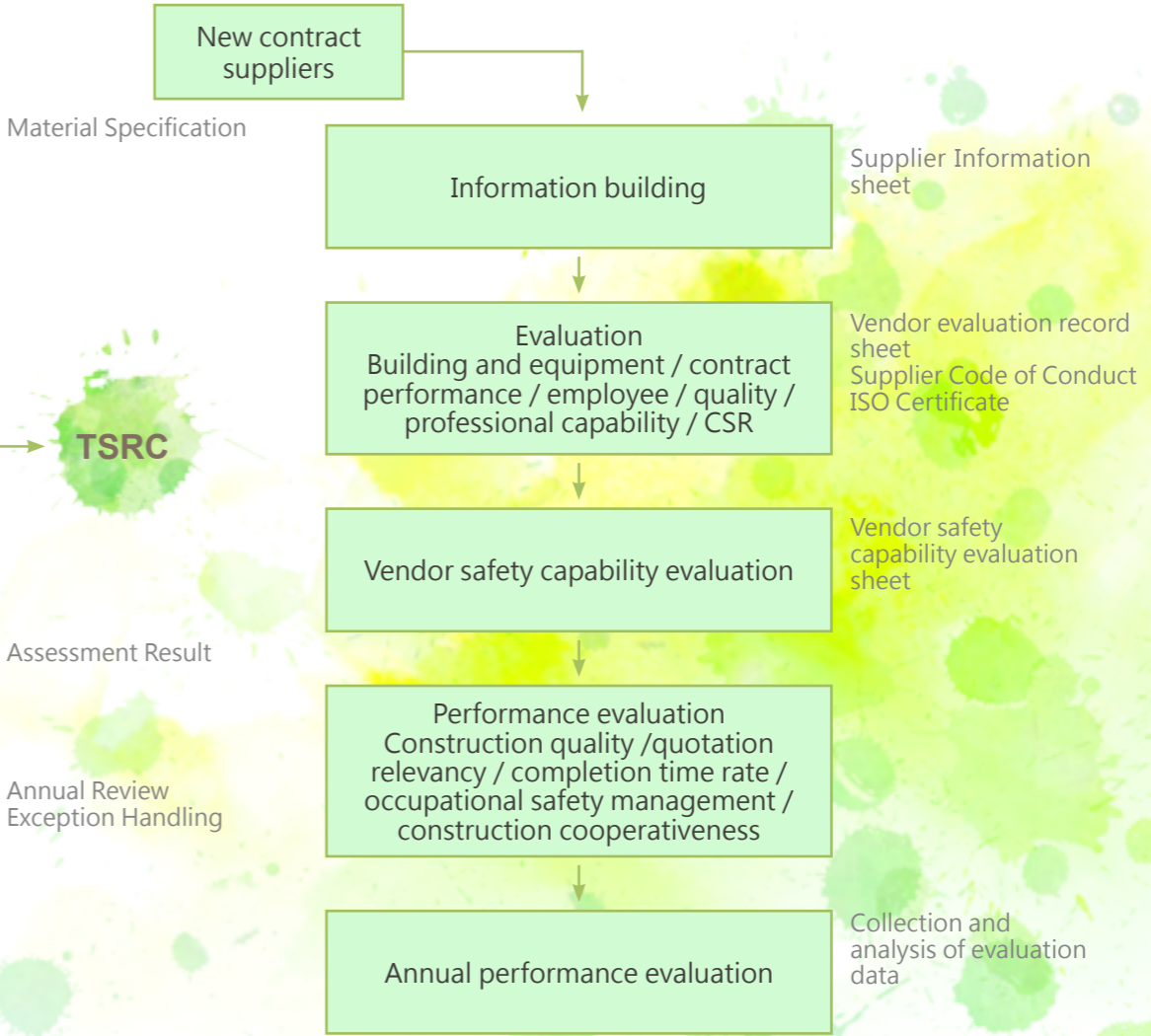


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Raw Materials Supplier Selection Procedure



Contract Supplier Selection Procedure



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In supplier selection, the procurement department implemented "Hazardous Substance Free (HSF)" graded management and control measures and request a Chemical Material Safety Data Sheet from the supplier, even for trial chemicals, to ensure the raw materials in the TSRC products are in compliance with the HSF specifications. All departments shall select the suppliers that have passed relevant system certification; all new suppliers are required to



Green Procurement Excellence Award

公告編號	公告主旨	截止日期
ANN1503001	化學品精選加快速度	2015-12-31
ANN1502001	蘇州二大工業區服務中心對通訊又安全要求	2015-12-31
ANN1411001	採購單據電子化說明	2015-12-31
ANN1312001	永隆供應商行為準則	2015-12-31

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

pass the TSRC's CSR evaluation process in all three aspects of environmental, economy and society (e.g. supplier CSR report or CSR evaluation sheet). We uphold the principle of fairness to select suppliers.

We evaluate and score the qualified suppliers every year with respect to the product quality (including the demand for Hazardous Substance Free), delivery punctuality, cooperativeness, and industrial safety management. In the communication between the suppliers and



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TSRC, in addition to the routine communication between TSRC purchasing personnel and suppliers, both parties can communicate via the established SAP, such as amendment of the supplier data, and purchase order inquiry and confirmation.

In addition, TSRC establishes the “Partner Code of Conduct” pursuant to the CSR Declaration, including the environment, occupational safety and health, human rights/ethics and labor policies. We encourage the suppliers to follow all national and other applicable laws and regulations of their respective countries to be-



Praise of Outstanding Contractors

come a sustainable leading company. We also encourage them to establish their own code of conduct and extend this action to the supply chain.

We request our partners to observe the local laws and regulations, ban forced / compulsory labor, and ensure legal work hours, wages, and welfare benefits. TSRC has included ISO 9001, RoHS (HSF), QC 080000, ISO 14001, ISO45001, CNS 15506, and CSR as important indicators in the evaluation and selection of all suppliers. We also request our suppliers to observe the regulations on the freedom of assembly and association, abolition of child labor, and elimination of forced / compulsory labor to maintain basic human rights. No violations were found in 2018 pursuant to the evaluation results in accordance raw materials supplier CSR evaluation sheet.

In addition to the strict prohibition of child labor, we conduct investigation of the suppliers via the CSR evaluation sheet and request the

partners to develop and engage in related overall welfare activities under local laws and regulations. If any supplier is found violating any of the aforementioned regulations, the “TSRC’s Vendor Management Procedure” shall apply. The CSR self-assessment investigation conducted to the targeted suppliers pursuant to the raw materials supplier re-assessment plan in 2018 did not show any violations.

We also expect that the partners participate in the relevant management mechanisms of labor, safety and health, environment, and ethics to ensure sustainable development of the company and achieve a win-win situation for both parties.



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TSRC Issue	Material Issue	Related SDGs Item	UN SDGs Description and Indicator	TSRC sustainable development Practice and Goal
Customer first	Customer health and safety Customer privacy		Ensure sustainable consumption and production patterns. 12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices (release of sustainability reports).	Based on the concept of product life cycle, we ensure user safety through transparent product information, and we actively disclose sustainability indicators and reports to gain the trust of stakeholders. Goal: Release sustainability reports annually and reply to customers' sustainability questionnaires.

Product Responsibility and Customer Relations

Quality Policy

We are committed to meet and exceed customer' s expectation in products' and services' quality through the principles of "Do It Right the First Time" and "Accountability" in continuous quality improvement.

From the development to waste, all products of the TSRC have passed the health and safety impact assessment and control. When marketing products in this trend, we assess the competitiveness of the products in the perspective of health and safety, and actively demonstrates the advantages of our products when contacting the customer in the product exhibition. In consideration of the global environmental protection and the energy-saving awareness that leading the development trend of green synthetic rubber, we have begun to develop environmental-friendly rubber material and promoted this concept to customers and communicated the efforts we made with them. We emphasize our operating philosophy of sustainable products on websites or during the visit to the customer or in any open occasions (such as conferences and product launch presentations).

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Considering that the impact of a product on the environment, human health and safety in the life circle is usually decided at the phase or R&D and trial mass production, we develop all of our products with the global environment, safety management of chemical substances and other related laws and regulations as the standards, and do not commence the mass production without confirming the conformity. The rubber products specification, performance and usage notes provided by TSRC will be listed in the Certificate of Analysis (COA) and Safety Data Sheet (SDS ^{Note}), to allow the customers to understand the safety usage method, and the Q/A hotline to make every effort in helping the customers receive the needed information. SDS must be attached with the first shipment to each customer, clearly marked with material information, waste treatment, and conditions of use. Besides being queried on the official website, SDS can also be provided to the customer at any time upon demand.

Note : SDS (Safety Data Sheet): We add supplement and revise our SDS and apply for preparation of the versions with different languages pursuant to the "Regulations for Product Safety Data Sheet Operation Management" .



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TSRC's products clearly state on their labels that sustainability is taken into account in all processes. We integrate internal responsible units to improve customer' s sanctification, provide more convenient services, protect privacy and secure transactions. we also conduct satisfaction surveys in terms of the quality (including HSF), delivery time, and cooperativeness on an irregular basis. If the customer needs an HSF investigation, it will be checked against the Chemical Substance (Product Safety Assessment) Database established by the TSRC. We will respond to the customer's needs in accordance with the "Hazard Substance Free Management Operation Procedure" .

We explicitly specify the commercial ethics terms in our "CSR Declaration" and require fair transaction, advertisement and competition; standards for the fair transaction, advertisement and competition shall be established and measures for protection of customer' s information shall be available. All of our products are

produced, labeled and sold in accordance with related national product regulations, including GHS regulations, fair trade laws, intellectual property and personal information protection laws. There were no lawsuits requiring penalties due to violation of the health and safety regulations, voluntary specifications and guidelines or product labels or marketing laws or any infringement in terms of product liability in 2018.

In 2018, TSRC did not receive any complaint about violating customer' s privacy, no violation of any financial or business-related domestic or international policies or laws. TSRC was



CIT Results Presentation

not punished with any monetary fines or involved in any events of corruption or anti-competitive behavior.

TSRC establishes the "QC 080000 Hazardous Substance Process Management System" in Kaohsiung Factory, Gangshan Factory, and the factory in the Nantong area for them to follow and continue to use the "Green Supply Chain Information Management Platform" to assess and manage the HS information on supplier' s raw materials and the chemical substance database for different products to ensure that all the raw materials are in compliance with international environmental protection directives/specifications such as the regulations on RoHS, the latest EU chemical policy (REACH), and requirements for Substance of Very High Concern (SVHC). In addition to establishing the "Hazardous Substances Free Management Procedure" to ensure providing the customer with HSF products, we continue to manage the supplier's sustainability issues and further achieves



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the goal of the “Hazardous Substance Free” or “Hazard Substance Reduction” to ensure that the composition of the chemical substance in the material, packaging material, semi-finished product and finished product complies with the laws, regulations, and the requirements of the customer's specifications in the hope to reduce the residue of toxic substances in the product, improve the quality of the product, fulfill the Corporate Social Responsibility, and realize the commitment to the customers. In recent years, while the fairness and reasonableness of the material sources become more and more important in the international community, such as the Conflict Minerals Rule established by the US Securities and Exchange Commission (SEC) and other relevant specifications. Therefore, after making the assessment in cooperation with the customer, we confirm that the raw materials of the supplier and TSRC’ s products are in compliance with the requirements of the Conflict Minerals Free (CMF).

Hazardous Substances Free Management Objectives for 2018

Complied with the REACH Regulations and the SVHC Information Delivery Requirements; the polymer product SVHC inventory achievement rate: 100%

Continued to update the supplier HSF supporting information

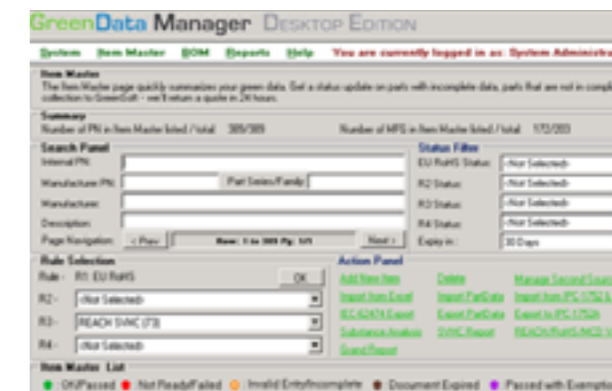
Performance in 2018

Polymer product SVHC inventory achievement rate: 100%; SVHC inventory of 191 items were completed.

Updated the supplier HSF supporting information: 100%; 328 suppliers were involved.

Hazardous Substances Free Management Objectives for 2019

Complied with the REACH Regulations and the SVHC Information Delivery Requirements; the polymer product SVHC inventory achievement rate: 100%



(GDM : Green Data Manager System)

In 2018, TSRC received the request from the customers for inspection of the substances. All of them were assessed pursuant to the management procedure and a corresponding statement was provided as a reply.

Customer Satisfaction

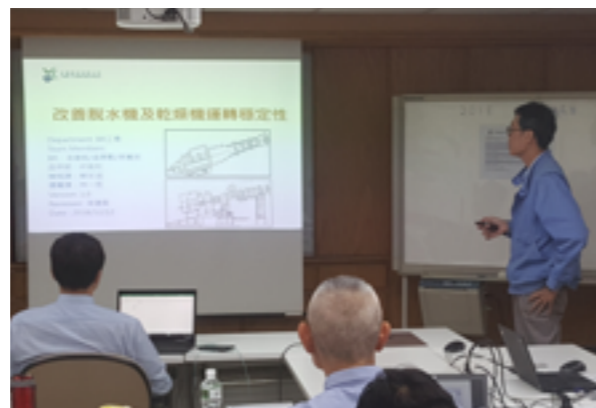
TSRC believes customer satisfaction affects customer loyalty. In order to understand whether the products and services meet the real needs of the customers and whether there is any area that needs improvement, TSRC per-

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forms annual customer satisfaction surveys toward major customers and collects information from mail / interview or daily business with customers to perform classification, make statistic and graphic data, and finally 5 grades are acquired for comparative analysis. We study and plan for improvement measures toward the customer's dissatisfactions and follow up the implementation of the improvement measures to further enhance the quality of our products and services.



CIT Presentation

TSRC values our customers. We always uphold the concept of "Customer First", establish a close working relationship with customers, and pursue better product quality continuously. For the comments and requests submitted by our customers who audit our Company in the field, we have acted accordingly through our teamwork execution to operate with a more precise/stringent quality management system. In 2018, we provided customers with improvement reports for all non-compliances and recommendations raised during the audit, and all the improvement measures had been implemented completely. In order to fully understand the customer's needs, TSRC conducts a satisfactory survey on a regular basis and executes reviews at our regular management review meetings in the hope to meet the customer's expectations.

Enhance Corporate Quality Culture

To enhance customer satisfaction with our product quality, we try our best to meet the customer's requirements. TSRC promotes its continuous improvement activities and creates 7 Continuous Improvement Teams (CITs) (across all subsidiaries) in 2018. With the methods of QC7 / 8D / KT / DOE experimental design and a series of tests and presumptions, regression analyses, professional education training with the help of the statistical software, TSRC uses problem analysis / logic and statistic approaches to make improvements with respect to the quality, production process capability, and related topics on an ongoing basis. The CIT with outstanding performance will be rewarded at the end of the year

We also encourage employees to propose Error Cause Removal (ECR) improvement proposals. In 2018, the departments put forward a total of 118 proposals and at least 59 were adopted

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and rewarded with a prize above the Proposal Award. In addition, the Total Productive Management (TPM) is thoroughly implemented in Kaohsiung and Nantong factories. For example, the 5S&TPM launched 53 circles in 2018 and 49 of them were recognized as high-level activities at the end of the year. Each department created a full-system production and repair activity in which all the employees participated to improve the overall efficiency of the equipment and the productivity of the laborers, reduce the market complaints and minimize the losses of all kinds.

Through the sustainability questionnaire survey (e.g. supplier code of conduct, HRP (Human Rights Protection Policy) or systematic collection of sustainability information (e.g. CDP Sup-



TPM Activity



5S Activity and Praise

ply Chain Questionnaire, CSR Assessment-EcoVadis), the factory properly responds to the requirements of the stakeholders. For this, Dexco-Polymers in the USA was recognized by winning a gold medal in the field in 2018.



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CSR – Environment





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Energy Management Policy

Comply with regulations and carry out energy consumption audit/review.
 Improve energy consumption through utilization of high-efficiency equipment.
 Continuous improvement in GHG (Green House Gas) emissions reduction.



Environmental Policy

Cherish the earth resources and fulfill our responsibilities for environmental protection.
 Commitment to continuous improvement and business sustainability.

TSRC Issue	Related SDGs Item	UN SDGs Description and Indicator	TSRC sustainable development practice and goal
Energy saving and carbon reduction		Ensure that everyone has access to affordable, reliable, sustainable and modern energy. 7.3_By 2030, double the global rate of improvement in energy efficiency.	We continue to promote the ISO 50001 energy management system and use more energy-efficient means for production to lower energy concentration. Goal: The annual average power saving rate reaches 1% or higher.
		Take urgent action to combat climate change and its impact. 13.2_Integrate climate change measures into policies, strategies and planning.	We engage in greenhouse gas reduction and management in line with the goal set by the competent authorities: The greenhouse gas emissions in 2050 are 50% or less of those in 2005.

Greenhouse Gas Management and Reduction

TSRC's 2018 greenhouse gas (GHG) emissions were 581,009 tons of CO₂ carbon dioxide equivalent, calculated with the internal CSR indicator management system. Scope 1 was 285,162 tons and Scope 2 was 295,847 tons. We completed the Scope 3 identification.

The global warming and the hazard of haze enhance the concern of the people about the air quality and GHG emission. We take proper corporate social responsibility with this respect and install air pollution control systems and monitoring equipment in all factories and continue the check of relevant facilities to prevent production of air pollutants. We also establish concrete energy management regulations and set reasonable goals, and take our responsibility for the environment by way of audit, training, and communication.

In addition to establishing the greenhouse gas verification standard procedure, the implementation of greenhouse gas inventory, our Kaohsiung Factory has completed the greenhouse gas inventory and external verification. The inventory results are registered in the "Environmental Protection Administration, Executive Yuan - National Greenhouse Gas (GHG) Registry". Among the subsidiaries in China, Shenhua Chemical, Nantong Industrial and TSRC-UBE finished the 2017 GHG inventory according to ISO 14064 and the provincial key enterprise GHG emission reporting system. In 2018, TSRC used the certified method and the TSRC CSR indicator system to finish the internal calculation of greenhouse gases. With a systematic environmental management model, we continue to increase the efficiency of the energy use (using clean fuel), reduce the operation cost and decrease the greenhouse gas emission to achieve the goal of continuous improvement of carbon reduction.

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Through the greenhouse gas inventory, TSRC understands the direct GHG emission with the black coal (China Area) and natural gas (Taiwan Area) as the largest sources, and indirect GHG emission mainly is the purchase of electricity. Therefore, the focus of carbon reduction is continually focused on replacing black coal and fuel oil with low-carbon fuel and saving electricity.

For the low-carbon specific action, the Kaohsiung Factory uses natural gas as fuel to replace dark oil. We also broaden the assessment and use more compatible devices with the clean fuel as a substitute for the fuel oil. With all the above measures, the emission intensity of unit product was 1.25 (ton carbon equivalent/ton) in 2018. We promote the clean production process, strengthen the internal autonomy to improve resource efficiency and equipment performance, reduce pollution sources, substitution of raw materials, reclamation of waste to minimize the environmental burden and track the change of the environment using different management systems.

In Taiwan Area, we comply with the boiler emissions standard in the "Emission Standard of Air Pollution from Combustion Equipment in Kaohsiung City". Also, we continue to monitor the air pollution emissions to make sure the emissions fit the related requirements of the air quality indicator (AQI). In China Area, we also act in line with "different energy-saving and emission-reduction requirements" and construct the LADR (Leak

Detection and Repair) to monitor the emissions to set energy saving and emission reduction as an important goal of optimizing the economic structure, promote the green loop low-carbon development, and accelerate the construction of an ecological civilization.

We make capital investment to strengthen the production process improvement and equipment efficiency enhancement, and promote actionable energy saving and carbon reduction measures every year. TSRC's greenhouse gas emission in 2018 was 16.5% lower than the emission in 2005 (Base year), and the first phase of the target (GHG emission back to 2005 in 2020) had been achieved. We are committed to reducing the greenhouse gas emission by 2050 to less than 50% of the emission in 2005 to show the Company's determination in the promotion of energy saving and carbon reduction.



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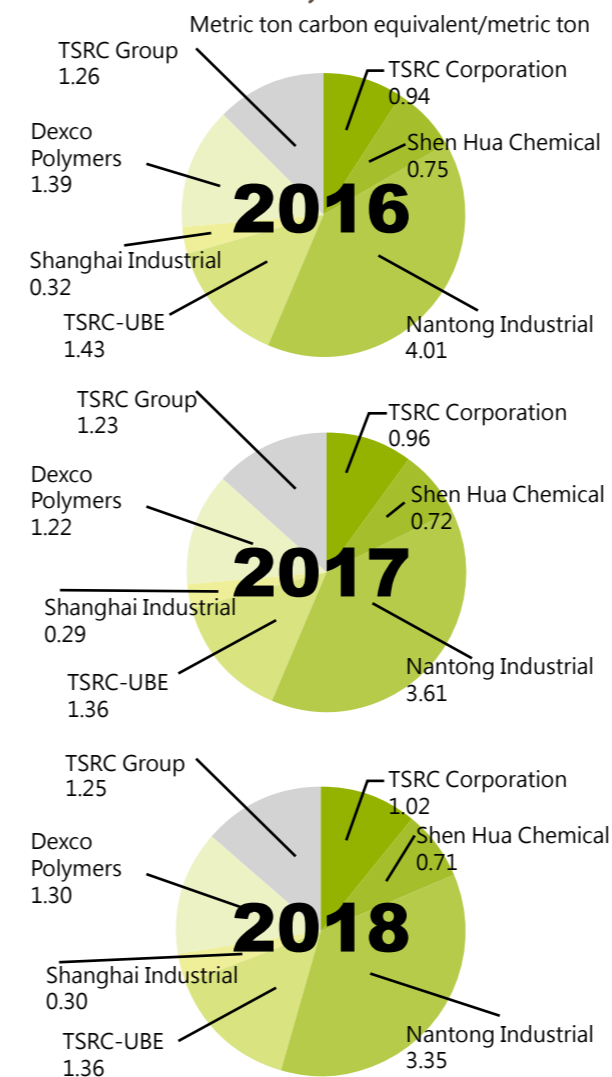
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Other Air Pollutants Discharge Management

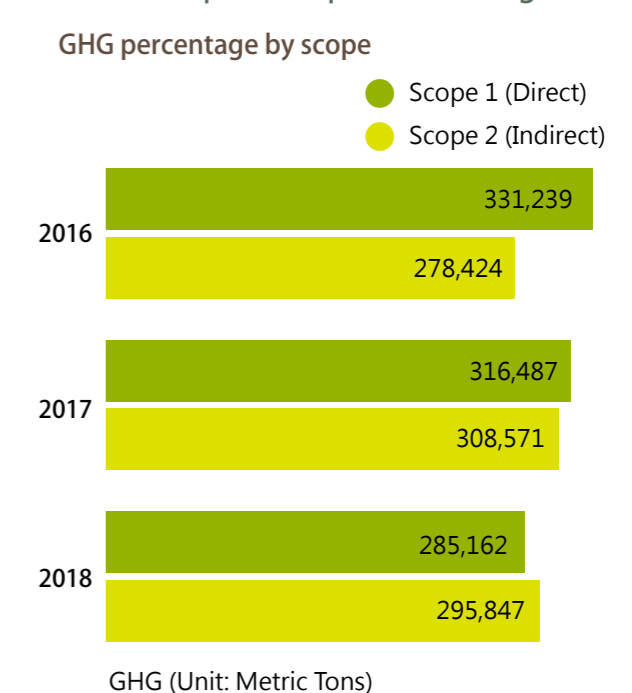
To avoid the impact on the ambient air quality, TSRC installs the air pollution prevention and control equipment and automatic boiler chimney exhaust monitoring system in accordance with the requirements of the laws and regulations. The equipment and system have received the permits for installation and operation and continued to monitor the air quality in the factory (e.g. Kaohsiung Factory executed the OP-FTIR detection in 2017 and finished the summarized monitoring report). We continue to monitor, analyze and track the inspection results to ensure that all the emissions in factory comply with the provisions of the laws and regulations. Currently, the air pollutants discharged in all major operation bases include VOCs, NOx, and SOx.

We have received legal permit for operation of the pollution prevention and control equipment and automatic boiler chimney exhaust monitoring system in the factory and conduct-

Trend of TSRC Group's Greenhouse Gas Intensity

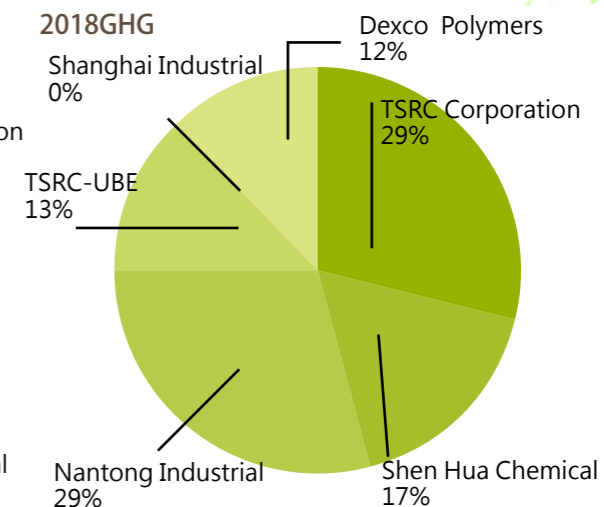
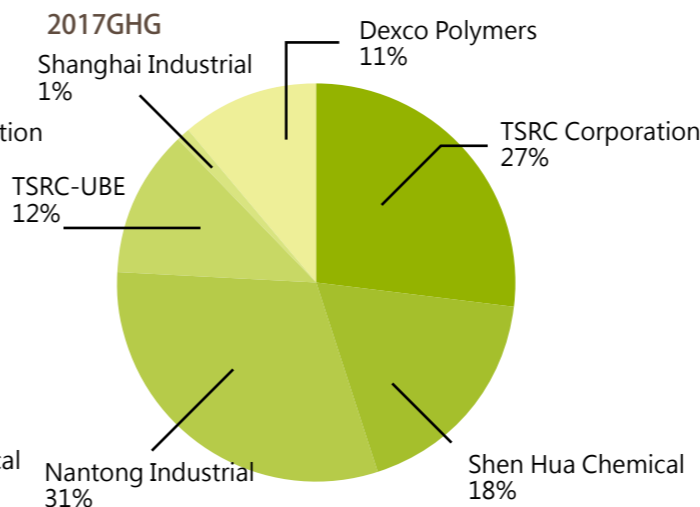
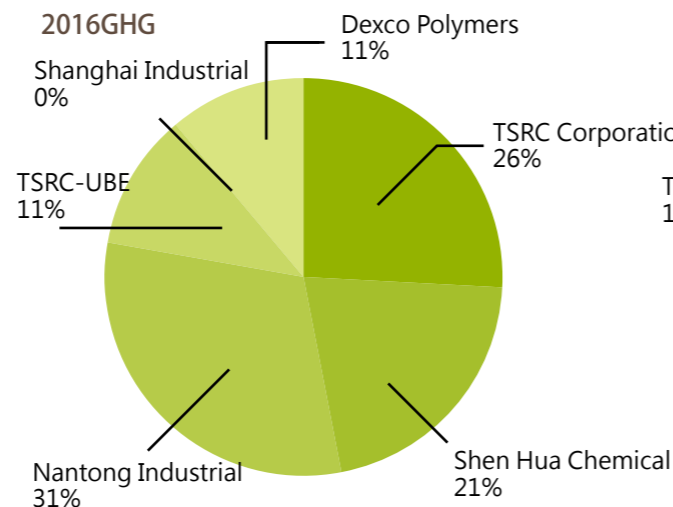


TSRC Group's GHG Emissions from 2016 to 2018 Scope 1/Scope 2 Percentage



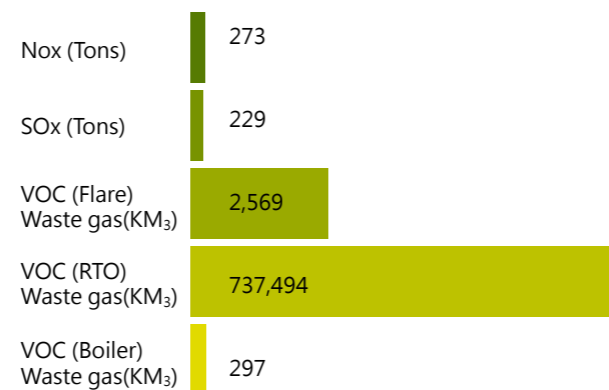
ed regular inspection of the emissions from the exhaust flues. We continue to monitor, analyze and track the inspection results to ensure that all the emissions in factory comply with the provisions of the laws and regulations.

Note : TSRC emission intensity increased in 2018: (1) purchased electricity increased by 4,339 Kdeg. (2) Purchased steam (10K) increased by 1,087 tons (coefficient less than 25K).



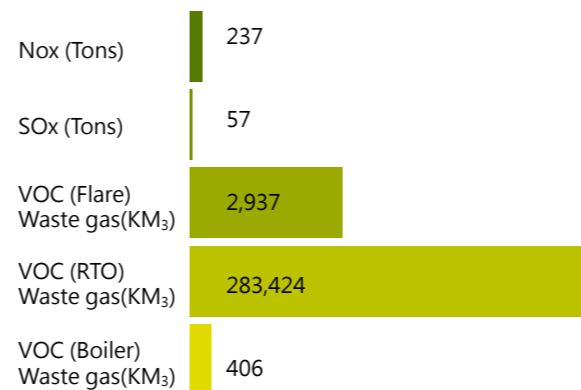
Note1 : Scope 1: Direct Greenhouse Gas Emission: Greenhouse gas emission from the Company owned or controlled greenhouse gas emission sources.
 Note2 : Scope 2: Energy Indirect Greenhouse Gas Emission: Greenhouse gas emission from the Company purchased electricity, heat and steam and other energy.
 Note3 : Greenhouse Gas of Scope 3 is all the other indirect Greenhouse Gas Emissions not directly controlled by TSRC, as a fixed qualitatively identified emission source when performing Greenhouse Gas inventory including: employee commutes, business travel, outsourced logistics/repair and outsourced waste disposal, landfill and incineration, and other activities.

2016Volume of Air Pollutant



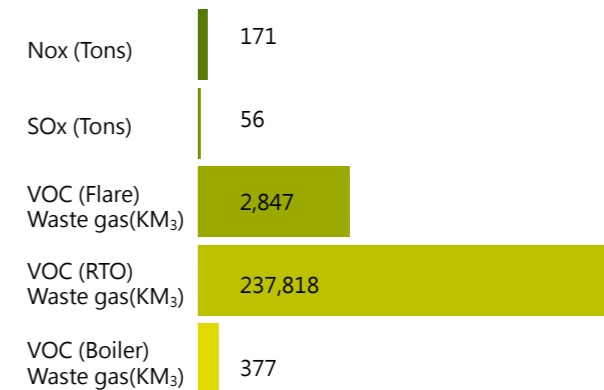
Note : The increase of the RTO waste gas was due to the newly setup of the RTO equipment to improve the waste gas treatment efficiency.

2017Volume of Air Pollutant



Note : There was no such air pollution emission in Shanghai. 2. In 2017, the great improvement in TSRC's production process has resulted in the increase of exhaust discharge in production process; the current production process is stabilized and relatively the RTO emission has decreased obviously.

2018Volume of Air Pollutant



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Energy Conservation

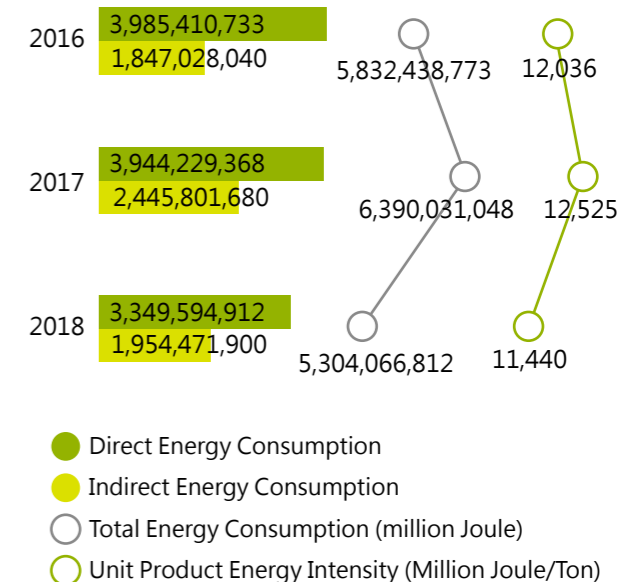
TSRC uses the energy management system to perform the audit operation, which helps analyze energy use and consumption status, and we can thus establish energy performance indicator based on major energy consumption areas. TSRC strives for enhanced energy utilization efficiency to reduce energy consumption, continue to improve production process, upgrade equipment, and recycle materials to achieve the objective of energy conservation and control every year.

Given the fact that electricity is critical for the production, the Kaohsiung Factory is equipped with heat and power station. TSRC is also committed to equipment transformation, site management, office equipment improvement and other aspects to implement energy-conservation measures. By performing the inventory pursuant to the ISO 50001 Energy Management System, we thoroughly check the equipment consuming more energy and create baseline

data to establish the energy conservation objectives. Only recognizing our own position and future direction in the global wave of carbon reduction after understanding our own GHG total emissions and energy intensity can we effectively save the energy and reduce emissions.

In terms of product development, we developed a thermoplastic rubber material in order to enhance energy conservation during the use stage. This product is between traditional rubber and plastic. It is recyclable and has the basic properties for reprocessing, and is more effective in reducing environmental pollution and energy consumption. AMD continues to be committed to a foaming ultra-lightweight material. Through the foaming technology, the use of raw materials accounts for only 30 to 50% of the original general plastic or rubber materials. It not only greatly reduces the consumption of raw materials, but also minimizes the burden on the social environment in terms of the finished

TSRC Group Energy Consumption



Note : Black coal is mainly used in the China Area while natural gas and fuel oil are the main energy in Taiwan Area.

products.

To ensure a sustainable environment on the earth, the “clean energy” has become the goal internationally and green energy is being

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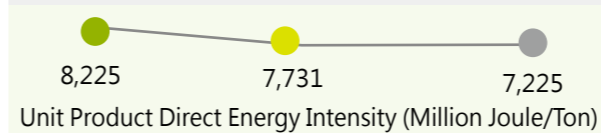
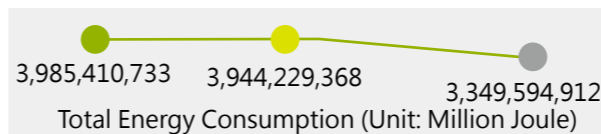
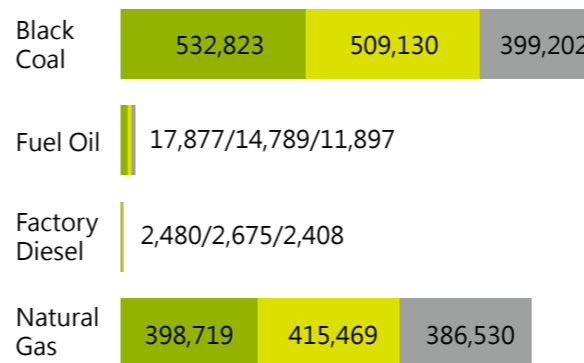
developed to facilitate the circular economy. These policies are in compliance with the TSRC's idea of clean production. We also participate in the GHG emission inventory and energy saving programs.

And, in addition to the GHG emission inventory, the department of the TSRC sets up the ISO 50001 Energy Management System one after another to check the process efficiency, system, and relevant regulations in order to ensure the energy efficiency of all the TSRC factories. TSRC will continue to consolidate the energy performance plans by conducting energy review aiming at the factories consuming more energy such as Kaohsiung and Nantong, and develop energy saving objectives on the existing energy baselines, put energy saving measures into practice by implementing the ISO 50001 Energy Management System, and regularly review the operational results.

Direct energy consumption (Black coal and Natural gas)

Direct Energy Calorific Value

(Unit: Gcal) ● 2016 ● 2017 ● 2018



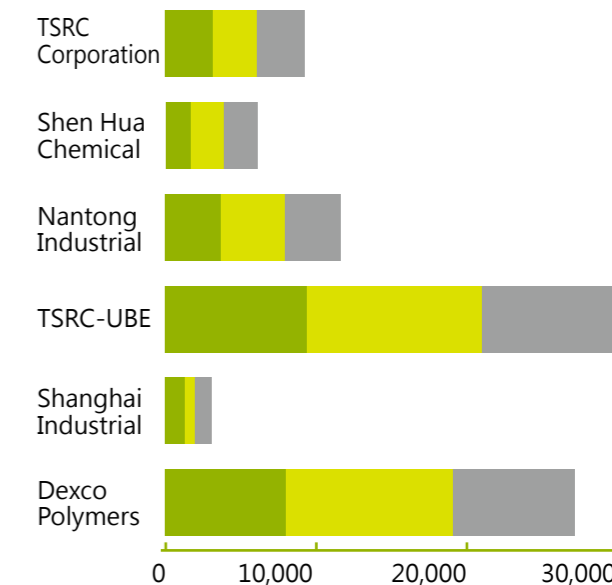
- Note1 : Each Metric Ton of Black Coal = 5.6 Gcal
- Note2 : Each Kiloliter of Diesel = 8.8 Gcal (1 Kiloliter = 0.8304 Ton)
- Note3 : Each Kiloliter of Fuel Oil = 9.6 Gcal
- Note4 : Each Cubic Meter of Natural Gas = 9.0 Gcal
- Note5 : 1 Gcal = 4,186.8 MJ
- Note6 : 1 mscf=28.317m3

Indirect energy consumption (Electricity and Steam)

Indirect Energy Intensity

(Unit: Million Joule/Ton)

● 2016 ● 2017 ● 2018



- Note1 : The heat absorption needed to vaporize a ton of water = 2260000J/kg (vaporization heat of water) x 1000 kg = 2,260,000,000 J = 2,260 MJ
- Note2 : 1 Degree = 1 Kilowatt-Hour (KW/H), 1W = 1 J/S, 1000 Degrees = 1000kW*3600S/H = 3,600,000 KJ = 3600 MJ



2018 factory energy saving measures and items:

Taiwan Area

- The fan motor of the cooling water tower PC-1206A was replaced.
- The ammonia condenser at the outlet of the ammonia freezer was changed to parallel connection to reduce the back pressure, increase the efficiency and save the electricity.
- The manufacturing process of SEBS was optimized to save steam.
- The ammonia compressor was replaced to save electricity
- The windmill blades of the cooling water tower in the public factory were replaced with new blades.
- The condensate of steam was used to replace the recycling heat source for the steam heating tube of the heavy oil storage tank to save the steam.
- The ammonia condenser at the outlet of the ammonia freezer was changed to parallel connection to reduce the back pressure, increase the efficiency and save the electricity.

China Area-Nantong Area

- The operation of the drying bed at the back end in Section 400 and the operation frequency of the PC-423 were optimized; the operation frequency of the induced draft fan at the RTO outlet was adjusted timely to save energy.
- The second flash boiling temperature was increased by 5 °C in the SIS process to reduce the solvent amount entering the stripper and decreasing the vapor consumption in the stripping process.
- The cooling fan was changed by replacing with energy-saving blades.
- An inverter and a reactor were added to the water recycling pump for TS improvement in the SIS process.

China Area-Shanghai Area

- The lighting systems (LEDs) were replaced partially.
- The production plan was optimized for reasonable stocking to reduce the electricity loss during change of categories and clean-up processes.


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TSRC Issue	Related SDGs Item	UN SDGs Description and Indicator	TSRC sustainable development practice and goal
Green production		Ensure that everyone can enjoy water resources and health facilities under sustainable management 6.3_Various approaches will be used to improve water quality and substantially increase the recycling volume of waste and its safe reclamation on a global basis in 2030.	Improvement in management and reduction of wastewater in the factory.

Water Resource

In 2018, total water consumption of TSRC Group was 4,260,000 tons. Water is the core of sustainable development and important to the climate system. It is a critical linkage between the human society and environment and decisive for adaptation to the climate change. It is expected that there will be about 3 billion people in the world facing water shortage and fresh water will become insufficient substantially in 40 countries and regions in 2025. About 2/3 of the people in the world will live in countries with the problem of water shortage in 2025. Due to a terrain that facilitates the formation of devastated streams, rainwater is hard to be conserved in Taiwan though heavy rainfall is common in this region.

By combining the experiences in production of synthetic rubber and water treatment, we review every water consuming node in the process and use the recycled water first. We also implement a systematic water saving and recycling plan. In the meantime, we use the data from the continuous motoring meters in the field and the data on the design of tanks to monitor the discharge of wastewater from each plant for the purpose to save water.

The main water source of the Kaohsiung Factory is from the Gaoping River, resulting in a water shortage crisis during water shortage periods or storm period, in order to effectively prevent the operational impact caused by

water shortages. TSRC actively promotes water conservation measures through increasing production process waste water recycle rate, production capacity adjustment and other methods, and discusses water conservation and waste water reduction objectives in the meeting regularly for improvement. Tap water is the only source of water used by the main TSRC business locations.

All TSRC production bases are striving for water recycling, mainly used for cooling systems. The Kaohsiung Factory's 2018 production process wastewater recycling rate reached 30%. All the affiliates of the Group continued to implement water-conservation measures, focus on



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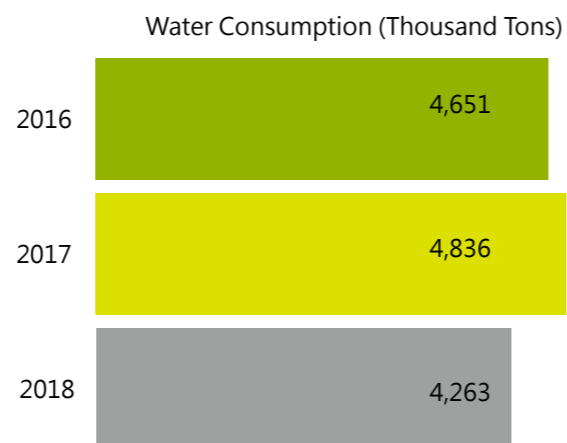
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production process wastewater recycling and reuse. In 2018, for example, TSRC-UBE reduced the intensity of water consumption from 7.29 to 6.49 by implementing relevant measures and Shanghai Industrial recycled wastewater by replacing water pipes and pumping vacuum on the production lines. The volume of TSRC' s recycled water was 940,000 tons and all factories were committed to improving the water treatment system and reducing the consumption of process water.

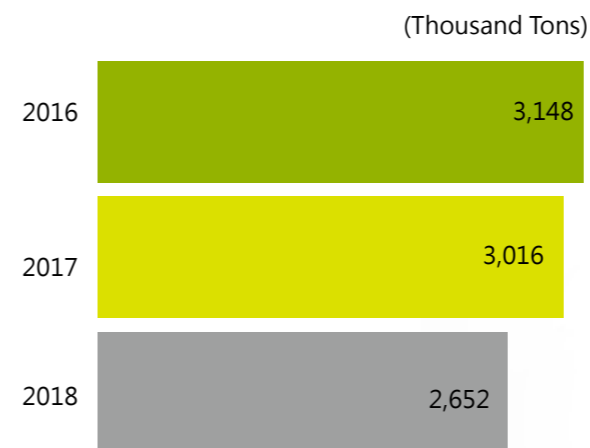
TSRC' s 2018 total water drainage was 2,650,000 tons. The main components of the wastewater were COD and SS. Wastewater from each factory was drained directly to the dedicated wastewater treatment plant in the industrial park and the quality of the drained water was also monitored by the industrial park. In addition to the flow of the wastewater and the real-time online monitoring of the water quality, we conducted regular wastewater testing to ensure compliance with the water standard of the

wastewater treatment plant (i.e. Ren Da/Benjou Wastewater Treatment Plant in Taiwan Area). Kaohsiung Factory installed new wastewater treatment equipment in 2017, showing an attentive action to use environmental investment for improving the quality of the wastewater.

Water Consumption Statistics-TSRC Group



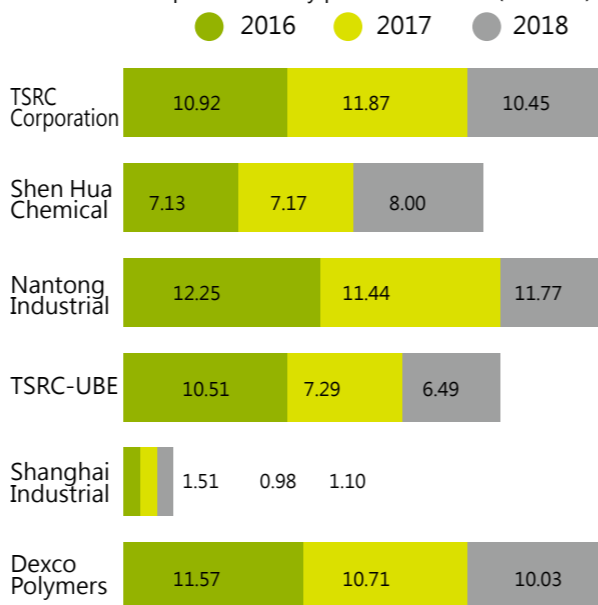
Total Water Drainage -TSRC Group



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Water Consumption Intensity of Each Affiliate in the Group

Water Consumption Intensity per Unit Product (Ton/Ton)



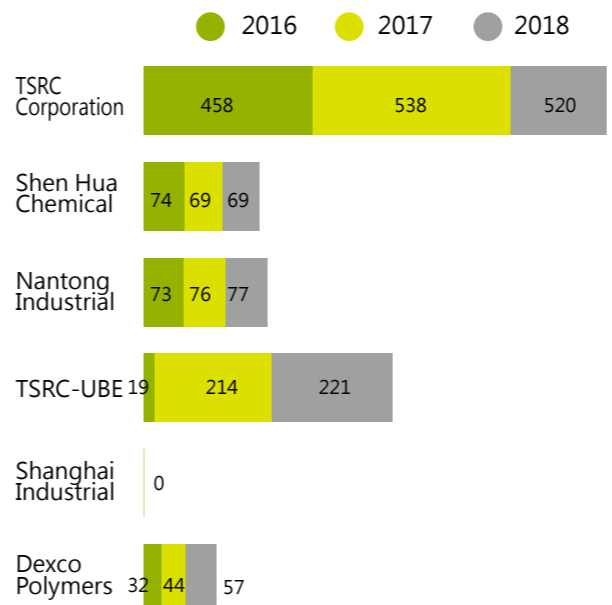
Note1 : The annual water consumption of Shen Hua Chemical in 2018 was less than that in 2017 and the production volume was less than the statistics in 2017 by more than 20,000 tons. This led to a higher unit water consumption.

Note2 : Due to increased recycling volume of wastewater, TSRC-UBE substantially reduced the replenishment of water to the loop water tower and, thus, the water consumption per product was reduced.

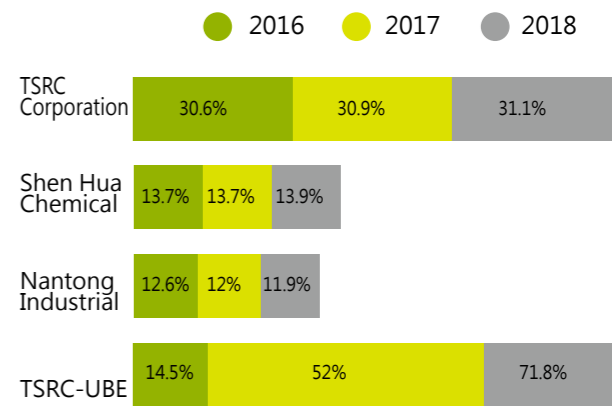
Note3 : The unit water consumption of TSRC declined due to increased recycling volume of wastewater and reduction of the externally purchased raw water.

Recycled Water

(Unit: Thousand Tons)




Water Recycled Rate %



Note : The recycled water of TSRC-UBE was originally collected into the loop water tower directly in 2018. However, after installation of the optimizer, wastewater was first treated through the sand filter before flowing into the loop water tower and used by the devices. The quality of the water in the loop water tank was obviously improved thanks to the optimization. This increased both the wastewater recycling ratio and the volume of the recycled water.

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TSRC Issue	Related SDGs Item	UN SDGs Description and Indicator	TSRC sustainable development practice and goal
Sustain-able envi-ronmental protection		Ensure to implement the sustainable consumption and production mode 12.5_We expect a substantial reduction of waste by 2030 through prevention, reduction of the total amount, recycling, and reclamation.	Implement reduction of waste, recycling and management pursuant to ISO 14001 Environment Management System to ensure sustainability of the environment. We acquired the MFCA (Material Flow Cost Accounting) third party assurance in 2018 to enhance the recycling of rubber and improvement of the equipment functionality. The MFCA system will be further applied to other production lines in 2019.

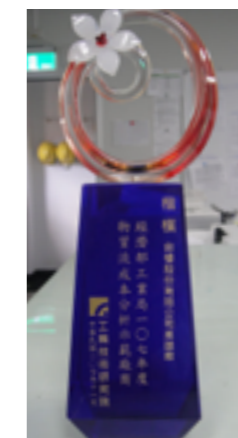
Waste and Other Pollution Discharge Management

To control the business waste effectively, we conducted removal, disposal or recycling properly in accordance with local environmental laws and regulations and confirmed the implementation status of this removal, disposal or recycling by submitting a report regularly to avoid punishment. Based on the spirit of pollution control manifested in ISO 14001, we applied the environmental strategies of integration and pollution control to the processes, products and services to reduce the waste and sludge (from wastewater) on an ongoing basis in the hope to increase the ecological benefit and minimize the harmfulness to the human and environment. All the departments carried out the clas-

sification, collection, storage, management, removal and disposal of the waste in accordance with the Guidelines for Arrangement, Reporting, and Tracking of Business Waste to control the waste effectively.

We devote ourselves to the energy saving and waste reduction activities and consider them an important goals of the Company. Kaohsiung Factory acquired the MFCA (Material Flow Cost Accounting) third party assurance in 2018 to enhance the recycling of rubber and improvement of the equipment functionality. The MFCA system will be further applied to other production lines in 2019.

We introduced the Hazard Substances Free management and verification in the research and development phase in order to reduce the



MFCA model



Industrial park greening and beautification prize



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environmental impact of the products, continued to invest in the development of green production process technology, and responded to the market trend of “non-toxic environments” . For example, the Application Research Center developed the environmentally friendly gas as a foaming agent to significantly reduce the damage to the human body and the environment and achieve the effect of recycling the exhaust gas. In addition, TSRC is also committed to the non-toxic non-ferrous materials development. The relevant products are in compliance with the RSL safety certification to ensure that the Company’ s products are hazard free to the environment.

TSRC disposes waste pursuant to relevant laws and receives the approval for its waste disposal plan. The management unit systematically controls general and hazardous business waste and store, manage, report, follow up, and transport it properly to prevent pollution of the environment; we announce the waste and containers to be recycled and establishes a strict classification system for recycling. In addition, various raw materials recycled and reused or applied to other usage can reduce the impact on the environment through improvement of the production process and integration of various technologies.

The waste of the TSRC is classified into the following categories: general business waste, hazardous business waste, and recyclable waste. They are disposed in a way complying with the requirements of the “Waste

Disposal Act” and the disposal is commissioned to qualified waste treatment companies under our authorization. All of our waste is treated by lawfully contracted waste treatment companies to securely clean up and submit reports to prevent pollution of the environment. Resource waste includes rubber waste, metal waste, plastic waste, waste pallets and paper/ cardboard, etc. after they are classified, collected and recycled by the local qualified recyclers. A classification and recycling system is implemented at each operation base to recycle and reuse the waste, reduce its quantity and protect the environment

Waste classified by type and disposal method

2018 Kaohsiung Factory as example	Hazardous Business Waste	General Business Waste (including general garbage)	Recyclable Resources
Total (Tons)	46	481	669
Incineration Treatment (Tons)	34	239	0
Solidification Treatment (Tons)	2	0	0
Physical Treatment (Tons)	0	31	0
Landfill Treatment (Tons)	0	145	0
Heat Treatment (Tons)	9	35	0
Reuse (Tons)	0	86	669
Washing Treatment (Tons)	0	32.14	0
Type of Waste Percentage%	3.21	47.96	48.83

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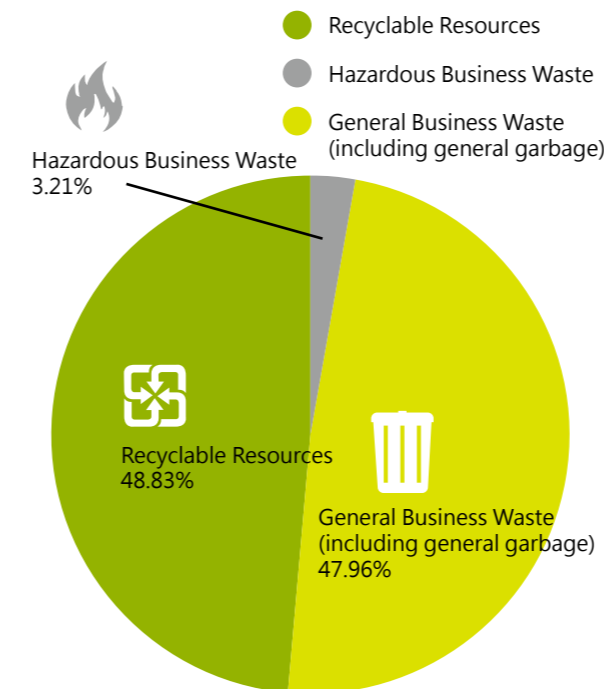
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Environmental Laws and Regulations Compliance and Ecological Conservation

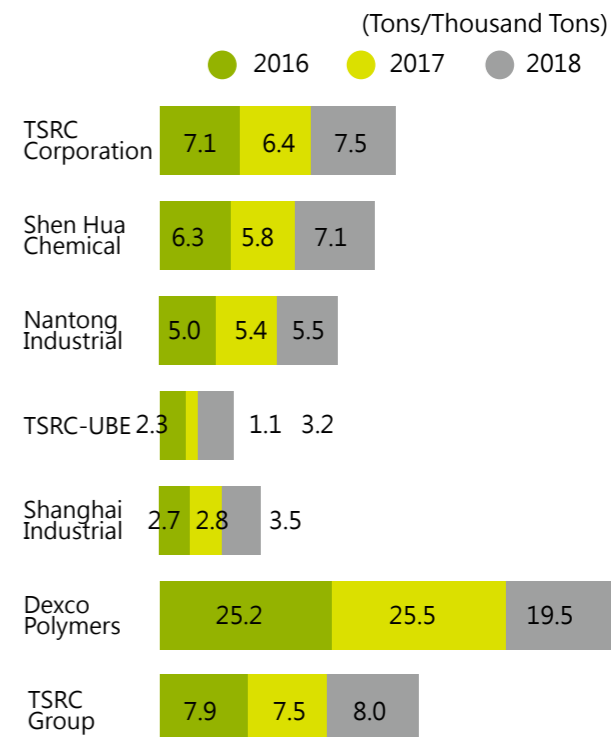
TSRC is committed to the environmental protection responsibility and emphasizes the compliance with related laws and regulations. All the global operational bases review the identification and assessment of the environmental laws and regulations in order to comply with local government' s environmental protection regulations with respect to air pollution prevention, water pollution prevention and waste and toxic substances control. We implement energy saving and waste reduction, prevention of air pollution, and reduction and recycling of wastewater pursuant to the ISO 14001 Environment Management System and environmental management program. Comprehensive reviews are performed on a regular basis. If the assessment reveals any potential risk of violation, such as Environmental Protection Agency' s "Control Target of Greenhouse Gas Reduction" , "Energy

Conservation and Emission Reduction in China Area" , and "The Management of Existing Industrial Pipelines" , we will immediate propose improvement plans.

Type of Waste Percentage% (Kaohsiung Factory)



Volume of Waste per Unit Product



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Underground Pipeline Maintenance

After the 731 Kaohsiung Gas Explosion, the Kaohsiung Factory executed the 2017 Operation and Maintenance Report and 2019 Operation and Maintenance Project with respect to the pipeline maintenance and Regional Joint Protection organization of Pipeline Bundles according to relevant laws and continued the execution of pipeline inspection, on-site survey and supervision of third-party excavation, emergency response drill and practical exercise, cathodic corrosion system testing and maintenance of equipment, training for operation and maintenance personnel, and pipeline drawing update to ensure the safe operation of the pipeline and



Community Relationship Management

protect the public safety of the citizens neighboring the underground industrial pipelines and the operation safety of the laborers.

The test of the Real-Time Online Leakage Detection System for the 4" butadiene pipeline was completed in 2018 and a pipeline integrity assessment system was built gradually by im-



plementing the in-line inspection and the close potential testing and pipeline pressuring testing that had been completed.

The Regional Joint Protection organization of Pipeline Bundle 6 and Pipeline Bundle 8 was rearranged to become a single Regional Joint Protection organization of Pipeline Bundle 6 since 2018, and the Kaohsiung Factory acted as the President (convener) of Pipeline Bundle 6 after the combination. The Regional Joint Protection organization of Pipeline Bundle 6 won the prize awarded by the Industrial Development Bureau for three consecutive years for its effective operation of the functions in prevention of third-party damage, pipeline maintenance and management, and emergency response.

TSRC did not have any chemical spill accidents this year. During the 2018 reporting period, the Kaohsiung Factory was punished with a fine of NTD 560,000 for the failed test pursuant to the "Kaohsiung City Government Equipment VOC Control and Emission Standard"

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and failed in-time update of the waste disposal plan. The factory held review and improvement meetings for the violations immediately and assisted workshops with establishment of the equipment component leak map on a regular basis. The factory will purchase an infrared VOC detector (FLIR) in 2019 to improve the component testing speed and enhance the monitoring of the component. Measures will be taken to enhance the knowledge of the personnel in charge on waste-related laws and regulations; the effectiveness of improvement is obvious up to now.

All factories and offices of TSRC are located in the legal industrial parks and commercial office areas approved by the authorities of each country, and the raw materials for the production are transported by the contractor through the routes approved for the industrial park. The delivered hazardous raw materials must be labeled and an application shall be filed for approval. Up until now, the assessment results have shown no major impact on the environ-

ment. Besides, through the industrial park management center, TSRC, as part of the chemical industry, has long been actively investing in the creation of neighborly relationship with local communities and peaceful living environment for the residents. Though Kaohsiung Factory is facing the issue on “downgrading of the industrial zone” , we, in addition to making assessment intensively and taking countermeasures circumspectly, devote ourselves to the improvement of community residents’ living and local culture preservation. We encourage employees to participate in local community relationship and care in order to create a more harmonious life with local communities through social participation.

There was no community complaint in 2018. If the local community has any complaint, it can be communicated through the environmental safety and administrative unit. We also actively participate in social activities to communicate with local community.



Communication with Local Community Guanyin Elementary School and TSRC

Ecological Conservation

TSRC’ s production factories and offices are neither located in the habitats that need protection or have been restored nor in any of the 6 protected areas or biologically diverse areas or genetically diverse areas specified by the IUCN (International Union for Conservation of Nature). None of the species in the industrial park is listed in the “Red List” or “National List of Protected Species in Taiwan” . TSRC Corporation planted trees and turfs in the Kaohsiung Factory area to green and beautify the environment to reduce the impact on local species. All of TSRC’ s factories are located in the industrial



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parks. Employee commutes have only a limited impact on the local area and the environment of the nearby residents.

Environmental Protection Investment

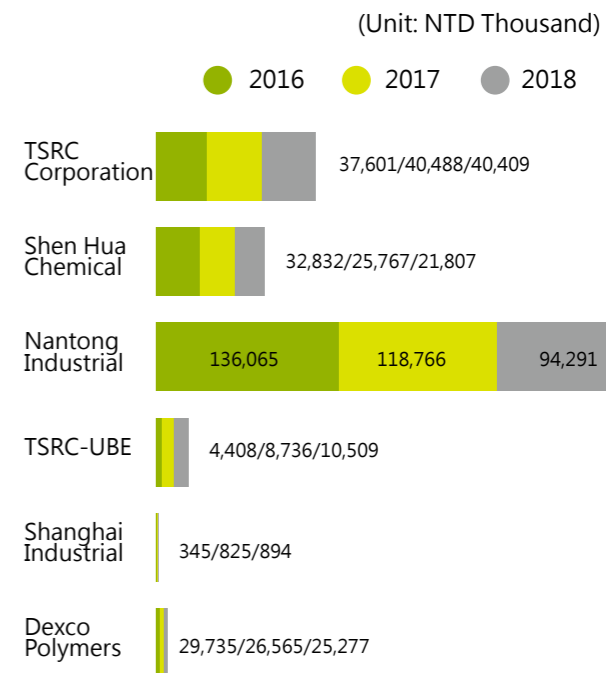
Currently, TSRC' s profits and competitiveness are not affected by the environmental pollution. TSRC is actively handling all environmental issues and complies with the laws and regulations to manage improvement work, dedicate our efforts in environmental protection to enhance the Company' s image and strengthen our product competitiveness. The Company also advocates using video conference systems or telephone calls and E-mail communication to manage business activities whenever possible to minimize gas-consuming physical travel between colleagues, customers and vendors. We also advocate implementing resource recycling, reducing paper consumption and fulfilling our responsibility for environmental protection.

Garbage, resource recycling, and kitchen waste are also subject to recycling and statistics monitoring handled by designated personnel. We introduced the new version ISO 14001 and the concept of environmental risk and prevention to evaluate and figure out material environmental risk and implement necessary environmental protection investment through the environmental management program.

In 2018, TSRC' s expenditures in overall Environmental Protection and Investments were NTD 193,187,000 with approximate items including: Environmental Operating Costs, Environmental Management Activities Costs, Environmental Social Activities Costs, Environmental Loss Compensation Costs, Environmental Fees, Taxes and other Expenses, and Environmental Research and Development Costs. TSRC continues to purchase products with energy-conservation certification and energy-conservation products such as inverters, energy-efficient lighting, energy-conservation certified air-con-

ditioners, computer peripherals and consumables, etc. TSRC also actively promotes and sets priority to use recycling and reuse products to lower the impact to environment.

Environmental Accounting



RMB is estimated with an average exchange rate of 4.4711 in 2018. USD is estimated with an annual average exchange rate of 30.1465

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CSR – Society



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TSRC Issue	Material Issue	Related SDGs Item	UN SDGs Description and Indicator	TSRC sustainable development practice and goal
Labor equality	Employment Child labor Forced or compulsory Labor		Facilitate an inclusive and sustainable economic growth, realize full employment, and create productive and premium occupations. 8.7_Eliminate compulsory labor, modern slavery and trafficking in persons; prohibit and eliminate the most abominable child labor and terminate child labor of all kinds in 2025.	Facilitate an inclusive and sustainable economic growth and realize full and productive employment, such as care of employees and prohibition of child labor. Objective: All the factories continuously undertake not to use child laborers.

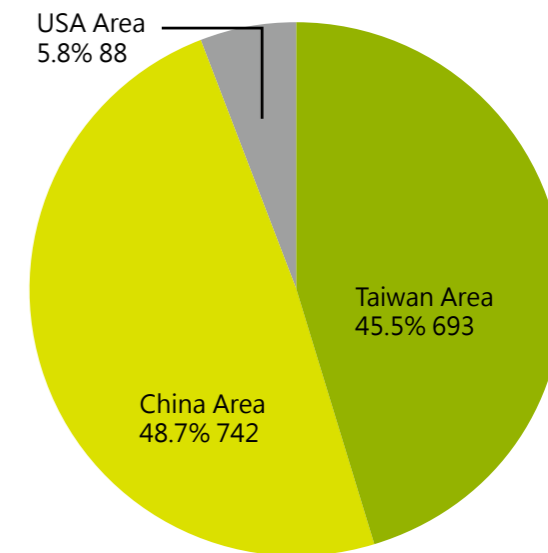
Labor Structure, Employment and Rights

The number of TSRC' s employees in Taiwan Area/China Area and the USA Area was up to a total of 1523 (at the end of 2018); in terms of the work locations, approximately 49% of employees were in China Area; in terms of gender, since TSRC was a manufacturing industry, male employees account for approximately 86%. Hiring at TSRC is based on the competency only and the employees' benefits and compensations will not be affected because of their ethnic origin.

The wages offered by TSRC are in compliance with the provisions specified by the local labor laws and regulations and with equal pay for equal work regardless of gender. All salary ad-

justments of hiring, evaluation, promotion and transfer, and pay raise are determined by the competency and annual performance evaluation result of the employee, and will not be affected by the factors of their age, gender, area, religion, marital status, and sex orientation. All employee performances shall be evaluated twice a year in accordance with the "Employee Performance Evaluation Regulations" . New employees are hired based on their professional competency and work experience required for their duties, and local residents will be hired with priority among all job applicants of identical qualifications.

2018 employees count by area



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2018 Age Category	Gender	TSRC Corporation		Shen Hua Chemical		Nantong Industrial		TSRC-UBE		Shanghai Industrial		Dexco Polymers	
		Employees	Senior Management(Local Employee)	Employees	Senior Management(Local Employee)	Employees	Senior Management(Local Employee)	Employees	Senior Management(Local Employee)	Employees	Senior Management(Local Employee)	Employees	Senior Management(Local Employee)
Age of 30 or younger (Persons)	Male	53	0	50	0	103	0	26	0	5	0	7	0
	Female	4	0	1	0	4	0	5	0	0	0	1	0
Age of 30~50	Male	370	5	170	1	143	1	61	1	49	0	33	0
	Female	81	1	26	0	21	0	12	0	19	0	8	0
Age of 50 and older	Male	165	13	26	0	8	0	1	0	5	0	28	1
	Female	20	3	3	0	2	0	2	0	0	0	11	0
Employees	Male	588	18	246	1	254	1	88	1	59	0	68	1
	Female	105	4	30	0	27	0	19	0	19	0	20	0
Total Employees		693	22	276	1	281	1	107	1	78	0	88	1
Senior Management Percentage of Local Employees		-----	3.2%	-----	0.36%	-----	0%	-----	0%	-----	0%	-----	1.1%

Note1 : Senior Management is a position with a job grade of 19 or higher. There are a total of 28 persons on the Senior Management position.
 Note2 : TSRC hires employees with disabilities in accordance with the law and regulations, and pays employment insurance in case of in adequate number of hired employees with disabilities.
 Note3 : The youngest employee of the Company is 20 years old.
 Note4 : No temporary staff members were hired till the end of 2018.

Number of outsourced employees by factory							
Companies	TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	Dexco Polymers	TSRC Group
Ratio (%)	20%	21%	23%	25%	12%	33%	21%
Male (Count)	155	67	75	34	11	40	382
Female (Count)	7	10	8	2	0	3	30
Work for Outsourced Employees	Routine service/administrative work (canteen/cleaning/security)/warehousing and logistics						

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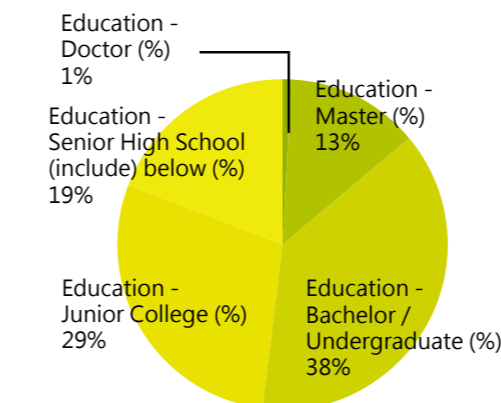
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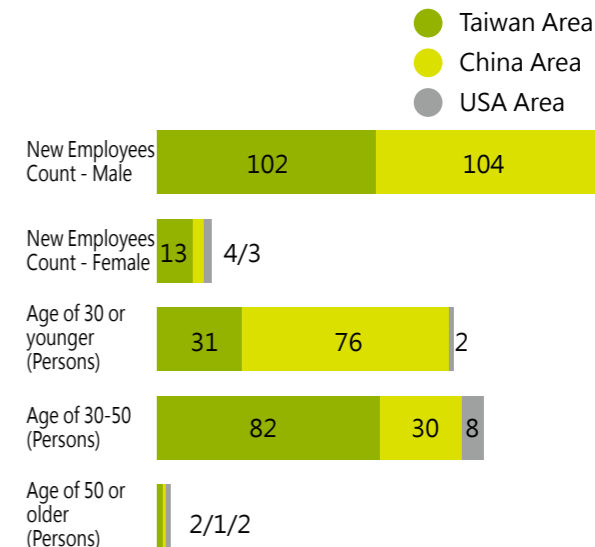
In addition, TSRC's turnover management is controlled according to the maximum limit of volunteer turnover rate established by each Company and employees leave and retirement analysis report to conducted exit interview with the leave of each individual employee to understand the reason for leaving. Focusing on the reason analysis with the correspondent measures (like new employees' guidance information, award presentation and employee recognition etc.), we maintain personnel stability. All TSRC operating bases are located in the industrial parks or business areas approved by the local competent authorities, and comprehensive assessment of operational and hiring conditions, number of employees and spending in local areas, etc. are made for this purpose. The operation of the TSRC bases has positive benefits to local communities. The local employment opportunities are created due to operation of the factory and when relevant suppliers deliver goods, the contractors perform maintenance and other engineering operations during annual repair period, for which the contractors may have higher requirements for manpower.

Employee's Composition Ratio - (Age and Education)

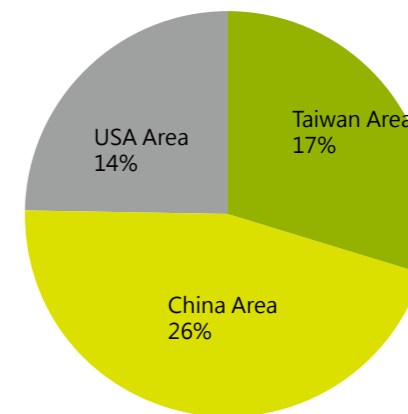
2018 employee composition (educational background)



2018 New Employees Count - Gender / Age



New Employees Count-Ratio(%)



New employment ratio: New employees total count / Total employees at the end of the year

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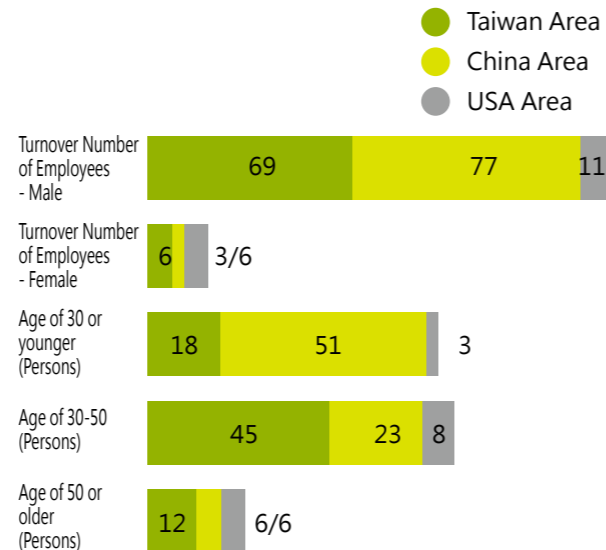
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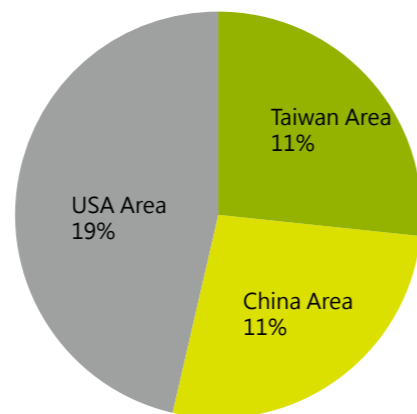
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Employees Turnover Rate (Gender - Age)



2018 Employees Turnover Rate(%)



Note1 : Turnover Rate: Turnover number of employees (including retirement) / (Total employees at the end of the year).
 Note2 : The turnover rate in the USA Area was relatively high-er due to a higher number of retired people in 2018.

Employee Rights

TSRC guarantees employees with equal work opportunities and a reasonable performance evaluation system, provides a better salary and rewarding system than that required by the Laws and Regulations, and pays attention to local employment responsibilities. We truthfully execute the insurance and pension system for employees according to the law and maintain open and smooth communication channels between employers and employees. They can bring up any unfair cases at any time. In addition to pursuing the safe working environment for the employees' physical health, TSRC pays attention to their mental health and provides

different recreational venues to help employees' physical and mental health as well as relieve their stress.

For significant decisions of the Company, the CEO sends an opened letter with the title of "Message to TSRC employees" to give an explanation to all the employees of the Company. In addition to the letter, he/she holds irregular communication meetings with the employees to communicate with them in person. We plan to conduct a questionnaire survey in 2019 to understand the involvement of the employees and listen to their opinions in the hope to make improvement and adjust the direction of devel-



TSRC Employee Health Examination



Rewards for Senior Employees

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opment through communication and understanding.

In addition to the announcement of “TSRC CSR Declaration” , TSRC provides Employees with Appeal Channels through the “Employees Grievance Appeal Management Regulations” and “Sexual Harassment Prevention Measures, Grievance Appeal and Punishment Regulations” to guarantee the human rights of TSRC employees. In the process of grievance appeal investigation, the case is confidential to safeguard the privacy and other rights of the parties and no names or relevant information



Annual Health Examination

which can identify the parties are disclosed. The meaning complies with SA8000 Behavior Guidelines to urge our suppliers to reach the same human rights standards as the Company does. Regarding human rights protection and related training, the TSRC Corporate Social Responsibility Declaration and all relevant internal regulations are executed in accordance with the relevant local laws and regulations. For example, protection of the personal freedom and prohibition of discrimination. When there is an update or publication of Human Rights-related laws and regulations (such as gender equality, sexual harassment prevention, and other Hu-



Employee's Birthday Celebration

man Rights Acts), the Company will take the initiative to publicize those updates to our employees.

We comply with the requirements of internationally recognized labor rights, such as protection legal rights and interests of the employee, prohibition of child labor, and elimination of compulsory labor in any forms. All TSRC subsidiaries are required to comply with local labor-related laws and regulations and implement the regulations of personal freedom protection and without discriminations, and TSRC has never hired child labor. Salary adjustment



Employee Recreation Room

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or hiring, evaluation, promotion and transfer are determined by the competency and annual performance evaluation result of the employee, and will not be affected by the factors of their age, gender, area, religion, marital status, and sex orientation.

No matter whether assuming office or transfer of the position, we clearly define the duties according to the position of the employee and allow to resign on his/her own free will. Hence, there has not been any case of forced or compulsory labor. There were no any violation of labor laws and regulations or offense of the rights of natives or minority groups (including aboriginal employees). There were no employee discrimination cases and no cases of infringement on human rights were filed through the Labor Union, Human Resources Department, Audit and other mechanisms this year.

TSRC complies with basic labor principles and rights, including the Freedom of Assembly and

Association, Collective Bargaining Agreements, Abolition of Child Labor, and elimination of Forced / Compulsory Labor and Discrimination in Employment.

TSRC supported and respected the spirit and principles of the International Labor Office Tripartite Declaration of Principles, The OECD Guidelines for Multinational Enterprises, UN Universal Declaration of Human Rights and The UN Global Compact, complied with local related regulations of labor and gender equality in employment and established related measures to human rights protection, labor policy and execution.

TSRC Corporation has a Labor Union and we hold labor/management meetings regularly and engage in discussions with employees through official meetings, including communication and coordination of freedom of speech and collective bargaining. All procedures and participation rates comply with the requirements of the

laws and regulations. We have also completed the discussion of overtime pay adjustment and other topics. All subsidiaries also have open labor/management communication channels. Through these activities, all employees can enjoy the right of collective bargaining with management and their rights are protected.

The management of labor employer relations on the employee' s transfer is also in compliance with the labor laws and regulations in Taiwan / Mainland China / USA, and supervised by the Labor Union of each factory.

Moreover, in consideration of the mental and physical health of our employees, when, in response to the needs of working overtime for business promotion, the Person in Charge of the department may assign employees overtime work for no more than the work hours specified in the provisions of applicable laws and regulations.

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Employee Benefits

Based on the status of operations, market competition, and the result of annual employee performance evaluations, TSRC designs encouraging compensation systems ^{Note} for employees under the premises of complying with the local laws and regulations. In accordance with the provisions specified in the “Labor Standards Act” , the “Labor Pension Act” and Enforcement Rules, the Pension Fund Accounting Guidelines, a monthly pension is set up to the personal accounts of the Taiwan Bank and the staff of the Labor Insurance Bureau and calls regular meeting to review the pension fund



Employee Tour

utilization status through the “Labor Pension Reserve Supervisory Board” , to protect employees’ retirement benefits.

For the Mainland China subsidiaries, in accordance with relevant provisions of the Mainland China “Social Security Act” , both the Company and employees are contributing to basic retirement insurance, basic medical insurance, work injury insurance, unemployment insurance, and maternity insurance, and the housing provident fund according to the set percentage. After retirement, the employee shall receive the



Strive as a Team for the Future

pension uniformly distributed by the National Labor and Social Security Departments in accordance with the laws and regulations. In addition, for Dexco Polymers in the USA, TSRC also provides insurance and pension funds in accordance with the local Social Security Act, and provides 401(k)^{Note} Retirement Savings Plan.

In addition, TSRC has arranged insurance better than those specified by the laws and regulations, such as group insurance/spouse group insurance, to protect the work and daily life safety of employees. There are other em-



A Group Photo

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employee benefits such as meal allowances, New Year' s Eve Banquets, annual health examinations, annual group travel, employee long service rewards as well as cash gifts for weddings, childbirth, injury, allowances for disease and funerals, and many benefits are provided. We also provide emergency assistance for employees with difficulties. For the China Area, TSRC has also arranged a cooling subsidy for employees.

Employees are the most important asset of TSRC, a recreation room is available in every factory area with table tennis, pool table, fitness equipment and other sports and exercise equipment. To provide complete recreation facilities to promote interpersonal interaction among employees, and to allow employees to expand their interpersonal relationships after work and to produce positive impacts.

Note1 : Employee reward programs are: Patent Application and Reward Regulations, Reward for Model Employees and Long Service Employees, and Total Production Management (TPM) Outstanding Team Performance Award.
 Note2 : 401(k): Retirement Savings Plan of the USA.



Right to Collective Bargaining of Employees

At TSRC, we respect the freedom of association and the right to organize labor unions for all employees and set up communication channels in accordance with the local applicable laws and regulations. The labor/management meetings are held regularly in Taiwan Area and the labor rights and interests are communicated and coordinated through formal meetings. 4 meetings were held in 2018. In accordance with the provisions specified in the "Labor Standards Act", the "Labor Pension Act" and Enforcement Rules, the Pension Fund Accounting Guidelines, a monthly pension is

set up to the personal accounts of the Taiwan Bank and the staff of the Labor Insurance Bureau and calls regular meeting to review the pension fund utilization status through the "Labor Pension Reserve Supervisory Board", to protect employees' retirement benefits. In addition, the annual Labor Union Representatives Conference invites the chairpersons of the labor unions of other local factories to attend the meeting every year to discuss specific topics on labor practices to reach a consensus. In the China Area, TSRC

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also organizes different kinds of communication meetings for employees to express their opinions or give suggestions for work and daily life to the Human Resources Unit, and relevant departments and the Person in Charge shall answer their questions and propose improvement solutions. The labor/management meetings are held regularly and the labor rights and interests are communicated and coordinated through formal meetings, in recent years, labor and management relations have been harmonious without any major labor disputes, the labor and management will uphold this win-win communication model in the future.




Challenge the Jade Mountain



TSRC Annual Party

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TSRC Issue	Related SDGs Item	UN SDGs Description and Indicator	TSRC sustainable development practice and goal
Safe production		To promote inclusive and sustainable economic growth, achieve full employment and create productive and decent jobs. 8.8_Protect labor rights and promote safe and secure working environment for all workers.	Through the ISO 45001 occupational safety and health management system, we have established our "Safety and Health Policy" to disclose that our core value is human-focused. We will pursue the goal of zero accidents and zero injuries through the principles of "technology", "safety and health culture", "responsibility" and "communication".

Occupational Health and Safety Management

To fulfill our responsibility of environmental protection, ensure the occupational safety and health of employees, and maintain the rights and benefits of stakeholders, each department of TSRC actively introduces or builds relevant systems (such as ISO-14001 Environmental Management System, ISO 45001 and CNS15506 Occupational Safety and Health Management System and Standardization of Safety Production, etc.). By inheriting the spirit of the Responsible Care Committee established by most companies in the chemical industry, TSRC participated in Taiwan Responsible Care Association (TRCA) and Ren Da Association for

Promoting Safety and Health to observe and learn from each other' s practices in industrial safety, health and environment, and promote the safety and health protection of operators. Fire prevention drill and industrial safety education training are regularly held every year to enhance employee' s emergency response and self-safety management capability. Kaohsiung Factory has established an emergency response operation procedure for adjusting to the emergency such as raw materials spill brought about by work activities as well as fire, explosion and earthquake.



Factory Tour Inspection



Site Tour Inspection



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We establish the control procedure and the “Safety and Health Guidelines” based on the spirit of occupation safety and health management to provide a regulation on the health and safety of all the employees. We explicitly specify the safety standard, educational training, health guidance, first aid and emergency rescue, reporting of accidents, and rights and obligations in relevant procedures and guidelines. TSRC continues to improve the safety, health, and fire prevention work of “approved operation control, safety observation and inspection tours, chemical management, self-inspection, emergency response, contractor management, work environment tests, and safety health education training” to pursue the goals of zero accidents and injuries.

Safety & Health Policies

People-centric is our core value. We strive to achieve the target of “zero hazard, zero injury” and operate based on the following principles:

1. Technology - Develop our management strategy and production technology on the basis of ensuring the health and safety of our employees.
2. Safety & Health Culture - Establish best in class safety, health, and continuous improvement culture through goal setting, incentivization, and total participation in safety and health activities.
3. Responsibility - It is our commitment to CSR and fundamental responsibility to comply with the laws and regulations to prevent disasters, injuries, and occupational hazards from happening.

4. Communication - Assist employees to understand and implement safety and health responsibilities through training and related meetings.

Organization and Management System of Occupational Risks

TSRC spares no effort to provide employees with a safe work environment. In addition to the Responsible Care (RC) Committee (with functions of managing and reviewing the ISO 45001 and CNS 15506 Occupational Safety and Health Management System) established with the industrial characteristics in the TSRC head office, the subsidiaries in different areas set up a dedicated committee or department responsible for labor safety and health matters in accordance with the Occupational Safety Laws and Regulations. The person in charge of the business operation or his/her designated representative also holds labor safety and health meetings on a regular basis. The percentage of labor representatives participation also complies with the provisions specified in the local laws and regulations (for example, TSRC Corporation complies with the provisions specified in Taiwan’ s laws, the percentage of labor representatives is more than one-third (Taiwan occupational safety and health management plan), to fulfill the requirements of communication and execution monitoring between the labor and management.

The TSRC Occupational Safety System is expanded from the raw material to the product in their life cycle, safety of life in the work environment during the operation, prevention and tracking of occupational diseases, consider-



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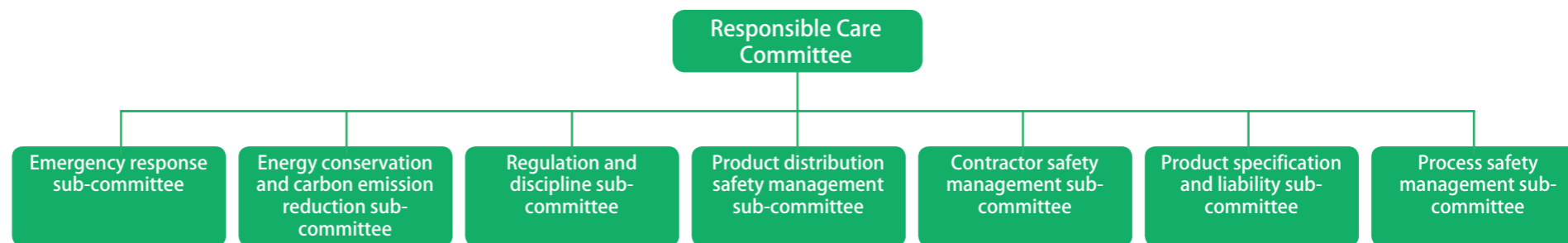
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ation of the health risks in local communities to the core of “safety, health, environmental protection, greening” to comply with the industry standards and community/social expectations. In 2018, we transformed the original OHSAS18001 to the new version of ISO 45001 Occupational Safety and Health Management System. Involvement of the employees was emphasized and the management of the safety and health on the side of the contractor was enhanced in this respect. We incorporate the safety and health as part of the decision making process and placed more importance on the leadership and engagement as well as management of changes and performances in order to protect the health of

the employees, contractors, visitors and nearby residents and eliminate residents’ suspicion.

We also hire qualified environmental testing organizations to test our work environments in accordance with the industrial safety testing items and regulations. We also implement the concept of “Prevention Beforehand is better than Handling Afterwards” , to focus on the safe environment education for the new employees and work-related employees, such as occupational hazards and first-aid training, training for using the emergency response equipment, health and health care publicity and other trainings.

All the departments implemented the required safety and health management system in 2018. In addition to performing Monthly Environmental Safety and Health Laws and Regulations compliance inventory, TSRC adjusts and evaluates the related regulations development and always pays attention to the domestic and international environmental safety and health accidents and disasters to understand the causes and conduct self-review, and learn from other’ s mistake and push the improvement of similar deficiencies within the factory in parallel.



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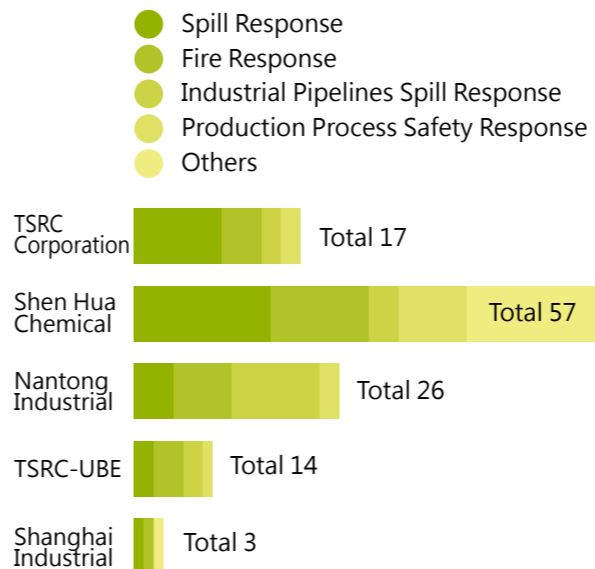
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Emergency Response Implementation Process

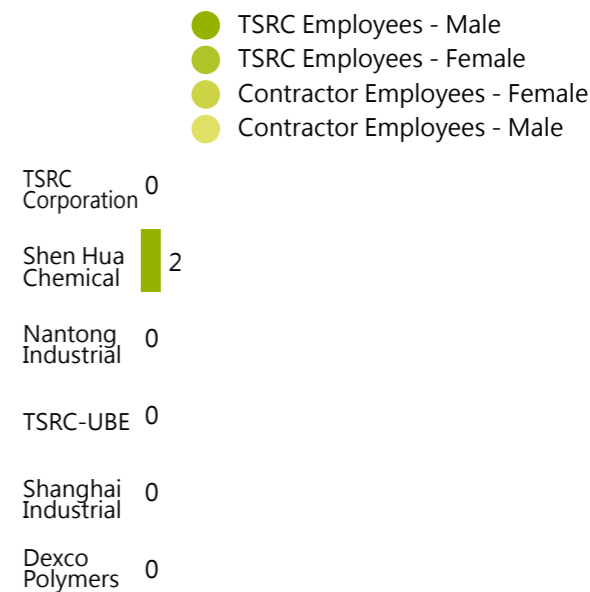


Emergency Response Drill

2018 Drill Number



2018 Occupational Hazard Injury Statistics



Note1 : Commuting traffic accidents are not included (to be indicated on the bottom).
 Note2 : TSRC' s statistics is in accordance with the Occupational Safety and Health Act.
 Note3 : China Area statistics is based on Injury Insurance Regulations of the State Council of People Republic of China.

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Lost Day Rate and Injury Rate⁴

2018	TSRC Corporation			Shen Hua Chemical			Nantong Industrial			TSRC-UBE			Shanghai Industrial			Dexco Polymers			
	Gender	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Injury Rate IR	0	0	0	0.43	0.43	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Occupational Disease Rate (ODR)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lost Day Rate LDR	0	0	0	8.46	8.46	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Absent Rate (AR)	0.26	0.14	0.12	0.01	0.01	0.0003	0.009	0.008	0.016	0.0145	0.0108	0.00735	0.008	0.005	0.003	0.017	0.012	0.005	
Line of Duty Deaths	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Emergency Response Drill

Note1 : Absent Rate (AR): (Injury leave + personal business leave + sick leave hours/total work hours); refers to the percentage of the actual number of absence days in the total number of workdays in the current year (not limited to work-related injuries and diseases but not including approved holidays such as festivals and training).

Note2 : Lost Day Rate (LDR): (Lost days/total work hours)*200,000. Lost days; the number of "days" of "lost" work hours of the workers who are unable to work due to an occupational accident or occupational disease.

Note3 : Injury Rate (IR) = (Total occupational injuries / Total Working Time)*200,000; (the coefficient 200,000 is defined as 40 hours per work week and 50 work weeks per 100 employees every year).

Note4 : Occupational Disease Rate (ODR): The frequency of occupational diseases within the total working time during the report period.

Note5 : LDR and IR statistics do not include traffic accidents and Contractors.

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Employee Education and Disease Prevention

TSRC pays significant attention to the physical and mental health of employees. We implement all employee health examinations once every year which is better than the provisions specified in the laws and regulations, and under the premises not affecting personal privacy regulations, conducts tracking management with the assistance of medical personnel for the employees with major abnormal physical conditions detected from the health examination (For instance, Kaohsiung Factory has equipped with one nurse and provided interrogation enquiry services at the infirmary).

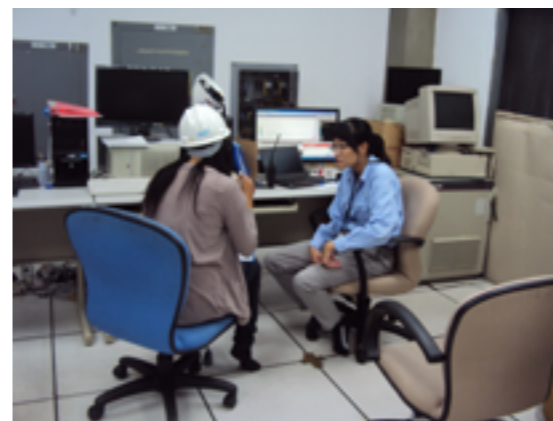
In reference to the top three abnormal physical conditions in the previous year's health examination as the reference basis for the series of health promotion activities in the following year, TSRC provides health seminars and medical information on the SAP EIP - Human Resource Bulletin from time to time. In 2018, Kaohsiung Factory organized a series of activities with a total of 679 participants.



Dissemination of exceptional workload



On-site inspection of the work environment



On-site interview with the employee



Dissemination of unlawful infringement

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- Organize the seminar of “Occupational Unlawful Infringement Prevention” .
- Provide health consultation (e.g. noise, dust, maternity health, and ergonomic hazards), health caring (e.g. shift staff, and high-risk personnel with exceptional workload) and follow-up actions.
- Organize the activity of “Free Flu Vaccination for Specific Group of People” .
- Organize the health seminar of “Prevention of Diseases Caused by Exceptional Workload” .

TSRC has been educating our employees on the correct safety and health concepts regarding the specific occupational diseases, effectively communicate occupational safety and health policies of the Company, managing the professional occupational health training for employees, and developing the employees’ good working habits, reducing human error, and arranging health examinations for employees working with special hazards in accordance with the laws and regulations. Over the years, in addition to the mandatory work environment site testing, air pollution control equipment, ambient odors and noise around the factories and other special environment items, we continued to monitor, analyze and track the test results, reduce the 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 analysis capability and effectively used as the basis of employee health management. In addition, we continuously launch and implement a series of safety and health prevention plans such as ergonomic hazard, workplace unlawful infringement prevention, exceptional workload and maternity health protection.

The Occupational Safety and Health Committee meeting is held once every quarter, with participation of each relevant Person in Charge and Labor Representatives through the entire meeting to discuss the Occupational Safety and Health Plan, including educational training, work environment improvement, hazard prevention and management, audits, contractor management, and health promotion. All tracking of special operating personnel special health examination results in 2018 for all factories were free from significant abnormal conditions.

With reference to the ISO 45001 management system and self-safety management, the job positions of all TSRC factories that need to conduct special physical examination are as follows:

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Companies	Occupational Disease Hazard Factors	Description
TSRC	Powder Dust, Noise, Chemical	TSRC arranges for relevant health examinations for employees working with occupational disease hazards every year. The results of health examinations for the special hazardous operation employees throughout the years showed no occupational diseases related to work with such special hazards.
Nantong Industrial	Powder Dust, Noise, Chemical	
TSRC-UBE	Noise, Chemical	
DEXCO polymer	Powder Dust, Noise, Chemical	
Shen Hua Chemical	Noise, Chemical	
Shanghai Industrial	Powder Dust, Noise	

In order to effectively manage the health of employees working in noisy work environments, other than requiring them to use noise insulation and personal protective gears and maintaining record keeping every month, the employees working in a noisy specialty operation will be transferred out of the noisy work environment when they are diagnosed with second level health management for two consecutive years and tracked with a special noise health examination for two consecutive years to confirm their hearing does not deteriorate.

2018	TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TS-RC-UBE	Shanghai Industrial	Dexco Polymers
Employees requiring special health examinations	372	209	192	77	42	47
Actual number of examined employees	372	209	192	77	42	47

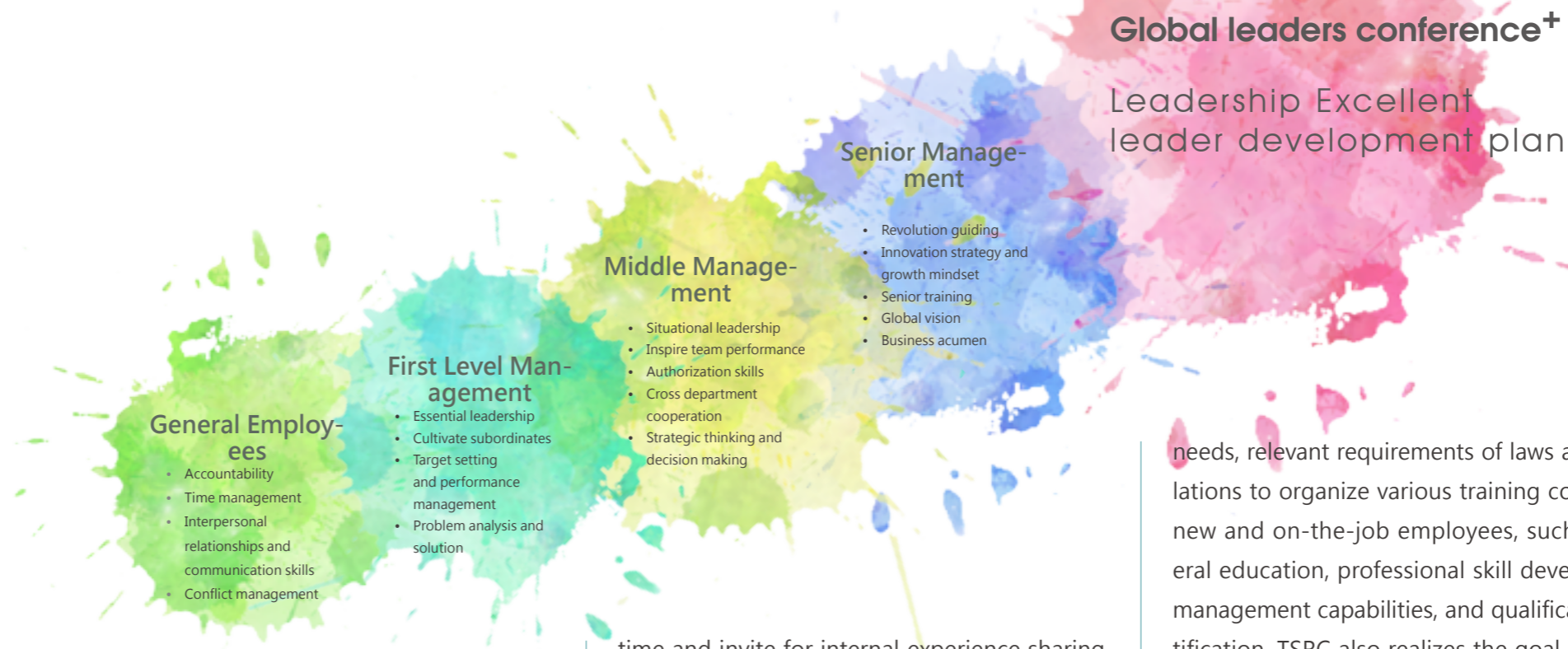
Professional and General Education

The “Improve Human Quality” has always been the core of our human resource development at TSRC. We cultivate talents and characters in all aspects. Talent means the professional skills and competencies and character is the ethical quality of a person to cultivate the employee’s ethics and social caring from the human heart, spirit and behavior, In response to continuous organizational internationalization, TSRC actively invests in employee training and multiple learning, expecting that employees can grow together with TSRC in the aggressive global competition. Policies and directions for education training aim to improve work skills of employees and the market competitiveness for coping with future market and environmental changes.

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Focusing on different level and work experience, we established correspondent education training. For example, supervisors make use of any available time and provide snacks to do micromanagement learning. Employees voluntarily participate in one management subject at a

time and invite for internal experience sharing. We promote management maturity through mutual learning of different management technique together.

Every year TSRC establishes the annual education training plan based on the internal employee training regulations through Company' s annual business direction, department

needs, relevant requirements of laws and regulations to organize various training courses for new and on-the-job employees, such as general education, professional skill development, management capabilities, and qualification certification. TSRC also realizes the goal of "Life-long Learning" through internal and external training. An irregular questionnaire survey is conducted for the training requirement (such as questionnaire of educational training requirements). After the consolidated analysis, the analysis results will be used as the important reference basis for the training development planning.

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Talents management

- Long bench plan
- Succession leadership cultivation
- Talents high-speed cultivation plan
- Talents development plan



Career development

- New employee training
- New employee guidance
- Self-development learning
- Employee on job training
- Career week

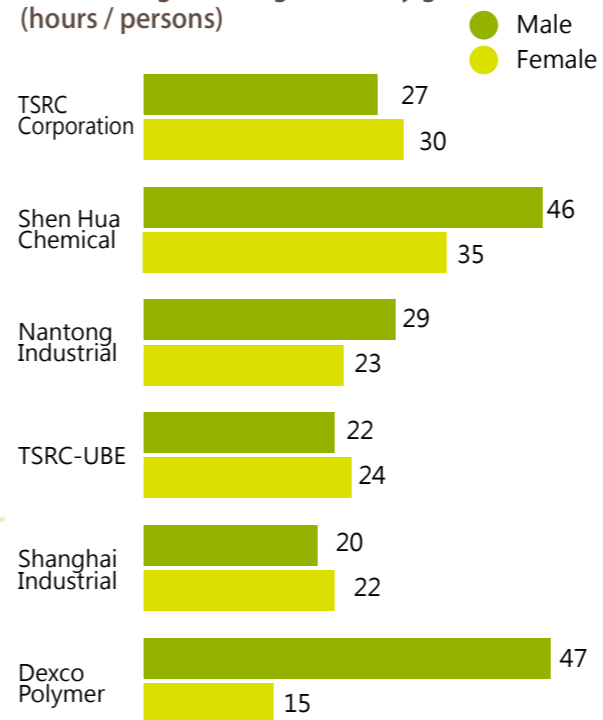


Professional knowledge

- Professional function training
- Measures and regulations
- Business group professional knowledge and technique
- Language training

In 2018, TSRC invested approximately NT\$ 14,139,000 in training with approximately NT\$ 9,200 and 30 hours for each employee in average. The average training hours are listed as following.

2018 Average training hours - by gender (hours / persons)



On-the-job education and training



Internal education and training

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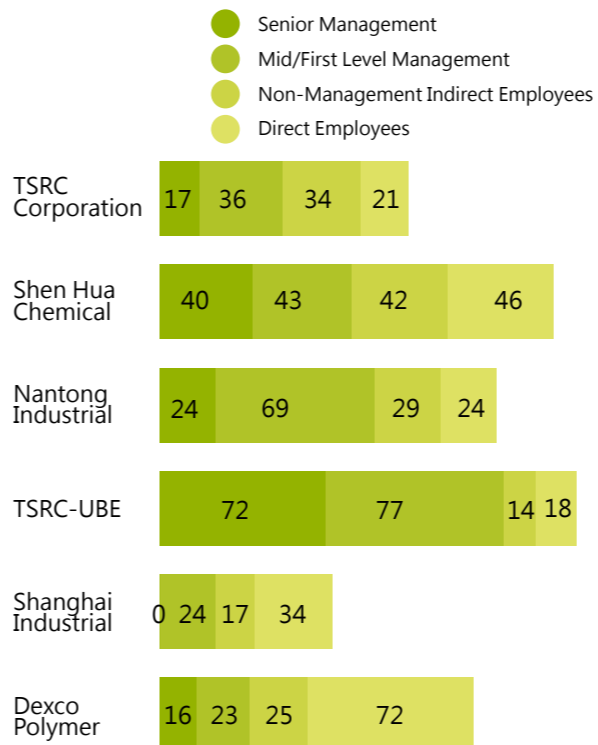


Aerial lift vehicle education and training



HSE education and training

2018 Average training hours - by rank (hours / persons)



Support for Society

We have promoted the Support for Society systematically since 2011, and through the Social Caring Committee and in accordance with social caring principles, operation direction and promotion methods, TSRC understands and responds to the community points of view through the daily contacts of relevant departments to symmetrically communicate in depth with local stakeholders. TSRC understands the need to maximize the effect of limited resources. Hence, we gradually promote social engagement based on our factory location and implement right activities continuously instead of repeated occasional donations, such as chemistry education in rural areas and contributions to disadvantaged students. 2018 was the eighth year of these activities. As a member of the chemistry industry, TSRC supports chemistry education and local communities, help disadvantaged institutions and protect disadvantaged minorities to enhance the invisible power of social stability.

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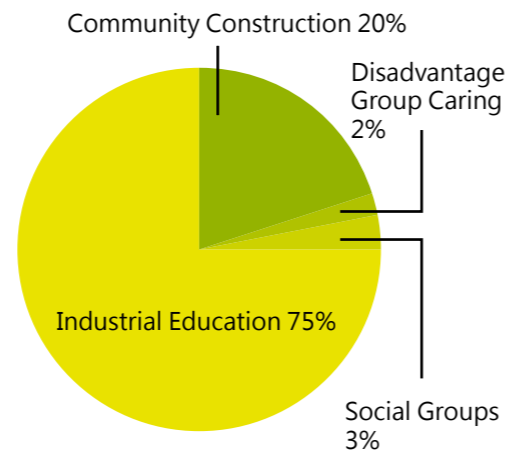
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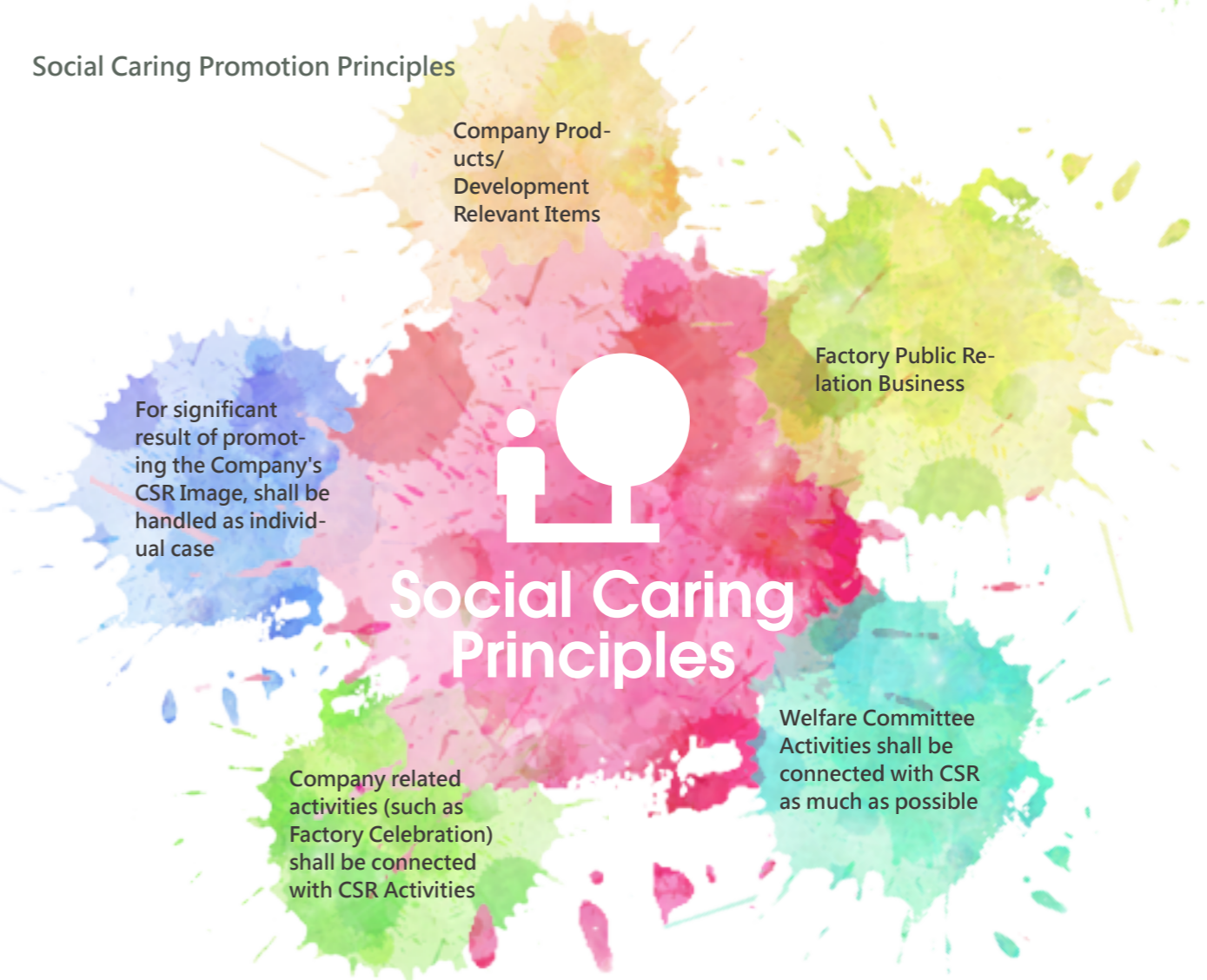
TSRC Social Caring Committee Operation



2018 Social engagement



Social Caring Promotion Principles



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Support for Chemistry Education

We invest resources on an ongoing basis to help for the promotion and rooting of the popular chemical science. By accepting that “identification of problems” and “hands-on to solve problems” are the critical capability of a talent, we organize the chemistry learning activities relevant to life to arouse the interest of the students in this subject and enhance the popularity and awareness of the science. We execute the industry-academia integration policy by supporting the Industry-Academia Coopera-

tion Program of Chemical Engineering through the Dashe Industrial Park Factory Association in the hope to find out and hire potential talents.

TSRC and “Chemistry On The Go”

The Tamkang University Team has organized the “Chemistry On The Go” , a popular science activity, since 2011 in line with the celebrations of the U.N. International Year of Chemistry. 2018 was the eighth year of the activity. The team used a “mobile chemistry truck” , remodeled

with a 3-ton truck, and a “running analysis vehicle” to form a “mobile chemistry fleet” and made more than 400 traveling demonstrations at different schools and most of them were at remote locations and nearby the industrial zones. TSRC deeply agrees with the purpose of chemistry education in rural areas. We have made donations and cooperated with the Tamkang Team since 2012. Our volunteers give assistance to the schools in our factory areas every year. Two activities were organized



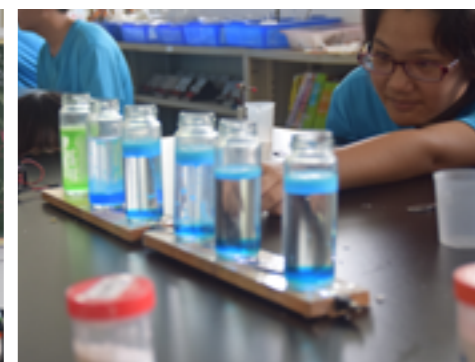
Dashe Junior High School Station



TSRC Volunteers



Surging Jellyfish Lamp



Jellyfish Lamp

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TRUCSE 化學下鄉活動計畫-化學遊樂趣 活動規劃書							
報名單位	1. 活動日期：2018/12/20 (四) 2. 活動學校：高雄市立國福國民中學 3. 學校地址：高雄市旗山區旗甲路二段609號 4. 聯繫窗口：教學設備組長 黃智豪 (07)609-1004分機11 / 0937-336628						
參與學生與場址安排	1. 參與活動學生(志願者)：真誠服務48人 2. 學生資訊：二年級 3. 小助手資訊：9人 4. 場址位置： <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>活動內容</th> <th>場址位置</th> </tr> </thead> <tbody> <tr> <td>化學實驗</td> <td>科學教室旁空地</td> </tr> <tr> <td>遊樂</td> <td>實驗室</td> </tr> </tbody> </table>	活動內容	場址位置	化學實驗	科學教室旁空地	遊樂	實驗室
活動內容	場址位置						
化學實驗	科學教室旁空地						
遊樂	實驗室						

2018 Chemistry On The Go Plan - Chemistry On The Go at Yuanfu Junior High School

at Dashe Junior High School and Yuanfu Junior High School, respectively, in 2018. We had contributed to more than 10 activities in these 8 years and invested a total of 150 volunteers and almost one thousand hours.

Local Community

China Area

Nantong area subsidiary Shenhua Chemical and Nantong Industrial, TSRC-UBE continued to donate through Taiwanese Investment Enterprises Association and Nantong City Old District Foundation for Poverty Alleviation, donations will be used in student aid, help for families in difficulty and special groups. In November, 2018, the foundation donated RMB 108,000 at the "Eleventh Poverty Alleviation and Student Aid Granting" and encouraged the students to study hard, become a useful person to society and make contribution to society after being a successful person, hoping to continue the spirit of "When disaster struck, help came from all sides."

The Shanghai Industry expressed sympathy to the senior citizens who lived alone on the Yongfeng Street and gave them consolatory gifts. It also offered employment opportunities to the poor people in Yunnan.





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USA Area

Dexco donated crayons to the children in Plaquemine through the Los Angeles iCare Program.

Taiwan Area

A. TSRC Social Caring Committee had set aside special funds to contribute to three elementary schools in Dashe District (Dashe Elementary School / Guanyin Elementary School / Jiacheng Elementary School) where the Kaohsiung Factory is located for eight consecutive years to sponsor meals, tuition, student clubs, and learning. This activity had helped thousands of needed school children. TSRC also has exchanges of opinions with the communities through this positive activity.

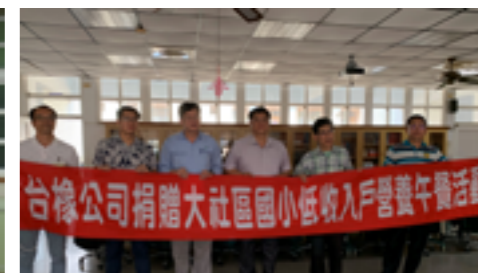
- B. TSRC donated Good Neighbor Feedback to the neighboring residents in the factory area through the Factory Association.
- C. The TSRC Employees Welfare Committee purchased various agricultural products to the employees.
- D. The donation for social caring was a total of about NTD 2,230,000 in 2018.



Supports local agriculture



Shanghai Factory's Support for the Poor Care of Local Communities and Children and the Disadvantaged



Donation to Campuses in the Area Where the Factory Is Located

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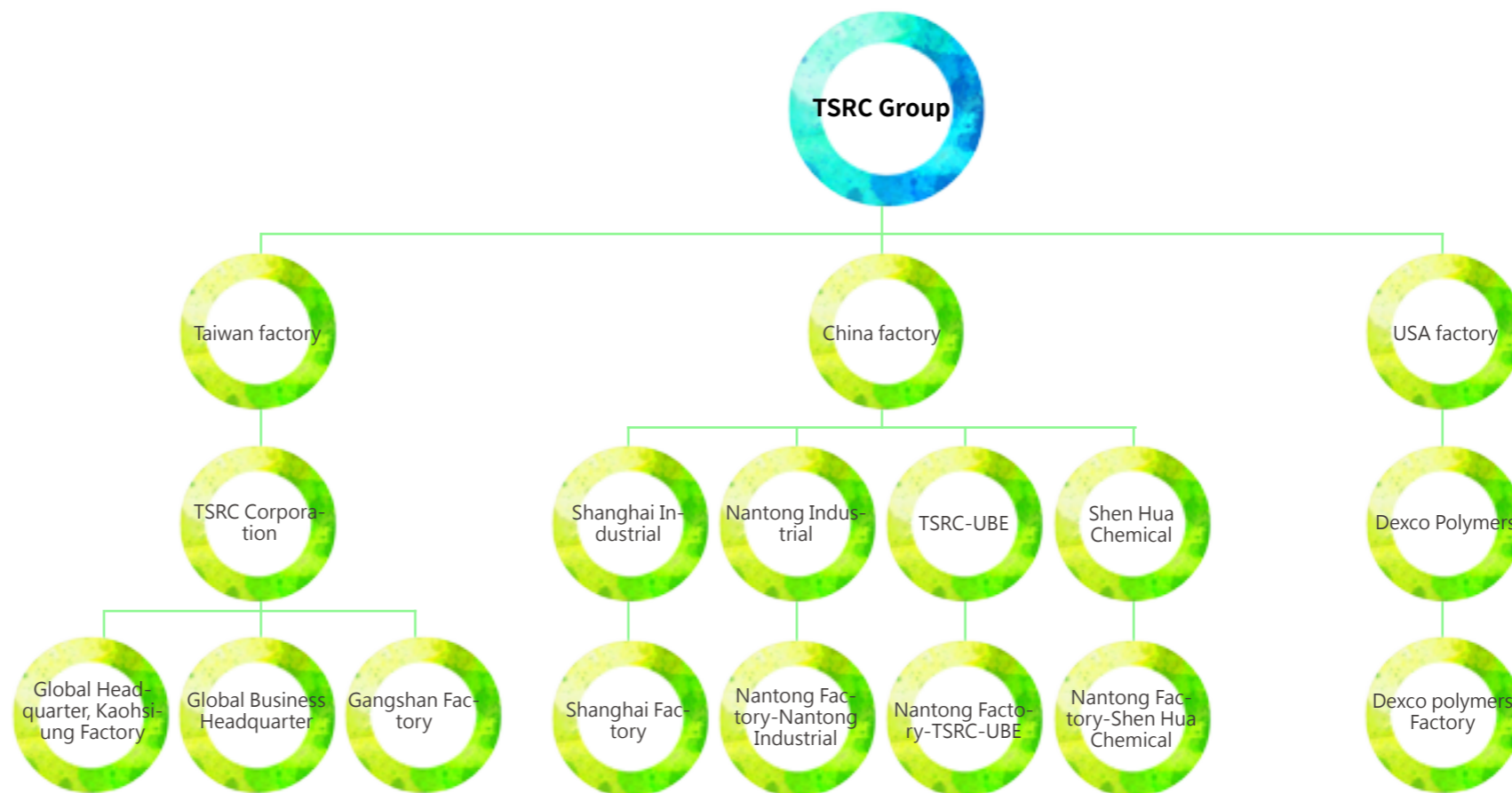
About the Report

Since 2012, TSRC had publicly published Corporate Social Responsibility Report (TSRC CSR Report) for seven consecutive years and compiled it aiming at the economic, environmental and social aspects in accordance with the GRI-Standards to expand the communication and

engagement with all stakeholders and disclose all key issues of the CSR management policies and the performance information on relevant actions and responses to them.

Scope and Boundaries of the Report

As described in the previous Report, the boundaries of the TSRC Group CSR Report this year disclosed the TSRC Corporation in Taiwan (including Taipei Global Business Headquarters, Kaohsiung Headquarters, Kaohsiung Factory



Note : Global Reporting Initiative (GRI) Report Standards

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and Gangshan Factory), four subsidiaries in China (including Shen Hua Chemical, Nantong Industrial, TSRC-UBE, and Shanghai Industrial) and the subsidiary, Dexco Polymers, in the USA as the subjects of the performance in the Report.

The Board of Directors' meeting adopted the establishment of the TSRC (Vietnam) Co., Ltd. in Vietnam in May 2018. The company was founded in October 2018 and the work for establishment of the factory was conducted intensively. We will disclose its CSR performance when relevant information is complete and available.

Report Period

Year 2018 (Monday, January 1, 2018 ~ Monday, December 31, 2018). And, facts that occurred before or after this Report period, and future policies, goals and plans are partially disclosed in this Report.

Report Guidelines

This Report is compiled in accordance with the Core Option of the Global Reporting Initia-

tive (GRI) Report Standards (GRI Standards) to disclose the strategy, concept, measures and performance in the corporate social responsibility aspect of TSRC.

Figures in the financial statement in this report are expressed in New Taiwan Dollar (NTD). Relevant performance of environmental protection, safety and health are expressed in international indicators. Estimates or assumptions will be noted in each relevant chapter. Compared to the last version of report, this report does not have descriptions from the corrections of the previous report that may mislead readers.

TUV NORD Verification Certificate



Report Assurance

In order to provide the readers with reliable open information, this Report has received external verification by the independent third party organization TUV NORD and complied with the AA1000AS Standard. The Statement is in the Attachment of this Report.

Report Cycle - Scheduled to be published annually.

Current Report: June 2019

Previous Report: June 2018

Next report: scheduled for June 2020

Report Publication

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

GRI Standards Comparison Table

General Standard Disclosures

GRI Standard	Disclosure	Page and/or URL	Remarks (or Reasons)	External Assurance
GRI 101: Base 2016				---
GRI 102: General Disclosure 2016 (in Accordance with Core Option)				---
1.Organizational profile	102-1 Name of the organization	Cover		93
	102-2 Activities, brands, products, and services	6		93
	102-3 Location of headquarters	Back cover		93
	102-4 Location of operations	Inside back cover		93
	102-5 Ownership and legal form	6		93
	102-6 Markets served	6, 23		93
	102-7 Scale of the organization	6,21,23,55		93
	102-8 Information on employees and other workers	68		93
	102-9 Supply chain	31		93
	102-10 Significant changes to the organization and its supply chain	23,31		93
	102-11 Precautionary Principle or approach	28		93
	102-12 External initiatives	30		93
	102-13 Membership of associations	24		93

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GRI Standard	Disclosure	Page and/or URL	Remarks (or Reasons)	External Assurance
2. Strategy	102-14 Statement from senior decision-maker	5		93
3. Ethics and integrity	102-16 Values, principles, standards, and norms of behavior	8,26		93
4. Governance	102-18 Governance structure	11,26		93
5. Stakeholder engagement	102-40 List of stakeholder groups	12		93
	102-41 Collective bargaining agreements	70		93
	102-42 Identifying and selecting stakeholders	12		93
	102-43 Approach to stakeholder engagement	12,13		93
	102-44 Key topics and concerns raised	15		93
6. Reporting practice	102-45 Entities included in the consolidated financial statements	75		93
	102-46 Defining report content and topic Boundaries	15,75		93
	102-47 List of material topics	15		93
	102-48 Restatements of information	93		93
	102-49 Changes in reporting	93		93
	102-50 Reporting period	93		93
	102-51 Date of most recent report	93		93



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GRI Standard	Disclosure	Page and/or URL	Remarks (or Reasons)	External Assurance
6. Reporting practice	102-52 Reporting cycle	93		93
	102-53 Contact point for questions regarding the report	Back cover		93
	102-54 Claims of reporting in accordance with the GRI Standards	93		93
	102-55 GRI content index	94		93
	102-56 External assurance	93		93

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Specific Standard Disclosures

GRI Standard	Disclosure Items	Page and/or URL	Remarks (or Reasons)	External Assurance
GRI 103: Management Policy 2016	103-1 Explanation of key topics and boundary 103-2 Management approach and its elements 103-3 Evaluation of management approach	21		⊖
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	21		⊖
	201-3 Defined benefit plan obligations and other retirement plans	73		⊖
GRI 103: Management Policy 2016	103-1 Explanation of key topics and boundary 103-2 Management approach and its elements 103-3 Evaluation of management approach	45		⊖
GRI 302: Energy 2016	302-1 Energy consumption within the organization	45		⊖
	302-3 Energy intensity	45		⊖
GRI 103: Management Policy 2016	103-1 Explanation of key topics and boundary 103-2 Management approach and its elements 103-3 Evaluation of management approach	48		⊖

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GRI Standard	Disclosure Items	Page and/or URL	Remarks (or Reasons)	External Assurance
GRI 303: Water 2016	303-1 Water withdrawal by source	48		⊙
	303-3 Water recycled and reused	49		⊙
GRI 103: Management Policy 2016	103-1 Explanation of key topics and boundary 103-2 Management approach and its elements 103-3 Evaluation of management approach	53		⊙
GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	53		⊙
Management Policy 2016	103-1 Explanation of key topics and boundary 103-2 Management approach and its elements 103-3 Evaluation of management approach	41		⊙
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	41		⊙
	305-2 Energy indirect (Scope 2) GHG emissions	41		⊙
	305-4 GHG emissions intensity	43		⊙
	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	44		⊙

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GRI 103: Management Policy 2016	103-1 Explanation of key topics and boundary 103-2 Management approach and its elements 103-3 Evaluation of management approach	48		⊙
GRI 306: Effluents and Waste 2016	306-1 Water discharge by quality and destination	48		⊙
	306-3 Significant spills	52		⊙
GRI 103: Management Policy 2016	103-1 Explanation of key topics and boundary 103-2 Management approach and its elements 103-3 Evaluation of management approach	51		⊙
GRI 307: Environmental Compliance 2016	307-1 Non-compliance with environmental laws and regulations	51		⊙
GRI 103: Management Policy 2016	103-1 Explanation of key topics and boundary 103-2 Management approach and its elements 103-3 Evaluation of management approach	55		⊙
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	69		⊙
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	73		⊙
GRI 103: Management Policy 2016	103-1 Explanation of key topics and boundary 103-2 Management approach and its elements 103-3 Evaluation of management approach	76		⊙

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GRI Standard	Disclosure Items	Page and/or URL	Remarks (or Reasons)	External Assurance
GRI 403: Occupational Health and Safety 2016	403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	80		⊖
	403-3 Workers with high incidence or high risk of diseases related to their occupation	83		⊖
GRI 103: Management Policy 2016	103-1 Explanation of key topics and boundary 103-2 Management approach and its elements 103-3 Evaluation of management approach	70		⊖
GRI 408: Child Labor 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	31,70		⊖
GRI 103: Management Policy 2016	103-1 Explanation of key topics and boundary 103-2 Management approach and its elements 103-3 Evaluation of management approach	70		⊖
GRI 409: Forced or Compulsory Labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	31,70		⊖
GRI 103: Management Policy 2016	103-1 Explanation of key topics and boundary 103-2 Management approach and its elements 103-3 Evaluation of management approach	35		⊖
GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	36		⊖
	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	36		⊖



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GRI 103: Management Policy 2016	103-1 Explanation of key topics and boundary 103-2 Management approach and its elements 103-3 Evaluation of management approach	36		⊖
GRI 418:Customer Privacy 2016	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	36		⊖

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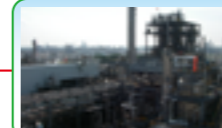
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Design concept:

Watercolor washes are used to merge the trees and the factory. Trees are the major oxygen making machine on the earth and the purification machine that makes the natural environment. The merging effect indicates that the factory, like the trees, can make an environmental suitable for humans to live. The blue pheasants and spotted deer in the painting the representative animals of Taiwan. We have never been slacking in the overall environmental protection and energy saving. We put the idea of environmental protection into practice and promote energy-saving products in recent years, and emphasize our corporate social responsibility as indicated in the painting by merging the factory and the trees.



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In order to fulfill environmental responsibility, this Report does not issue a printed version. In order to make it easier to obtain information, mobile devices can scan QR code for entry into the website.

TSRC Corporate Social Responsibility Report Over the Years



Contact mail



Company Website