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CORPORATE SOCIAL RESPONSIBILITY REPORT



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#### Mission and Vision

#### 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.



- 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.



Vision

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

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# Message from the Management

To make a comprehensive survey of TSRC's rubber industry operating environment compared to the previous years, the sly and changeable economic conditions has challenged TSRC's operation in 2017, including the tremendous price fluctuation of the butadiene, lack of growth momentum in synthetic rubber demand, the pressure caused by the intensification of market competition and the strict environmental and labor laws and regulations each plant has encountered. Thanks to the

efforts made by the corporate team to maintain stable development fundamentals of TSRC in 2017.

Through the implementation of the 5-year development plan, the operation team has achieved many important progresses, including the increase sales of SEBS, high quality shoe materials received certification from international brand partners and began supply, reformed and upgraded Kaohsiung' s technology center and R&D facilities, completed conversion of E-SBR and BR distributed control system in Kaohsiung plant and great breakthrough of S-SBR technical development. All these critical action plans were the important cornerstone of establishing the Company's

future increase of profits.

Besides optimizing present products and production and developing international brand customers, we promotes the production process, strengthens the internal autonomy to achieve resource efficiency, equipment performance improvement, pollution source reduction, raw materials replacement, waste resourcing, and other work projects. With all the above measures, we had increase in total amount of production in 2017, but the emission intensity of green gas unit products had decreased from 1.26 to 1.23 (tons of carbon equivalent/tons). To decrease green gas emission and reduce environmental burden, TSRC production centers has cherished water resources, executed each water-saving measures and emphasized the process wastewater reclamation. In 2017, we even increased 30% of recycled water, presenting the performance of every positive action.

Since the promotion of CSR, TSRC expected the voluntary actions to transcend law compliance, fulfill sustainable growth and integrate CSR into core operation process. For the compliance of all employees, we had formulated regulations like "Ethics Code of Conduct", "Confidential Information Management Regulations", "Personal Information Operation Management Regulations" and "Official Business Operation Code of Conduct", to protect

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the Company's intellectual property rights, confidential information and the personal information of the customers and employees. 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.



Joseph Chai, President (CEO)

Shao-Yu, Wang, Chairperson

TSRC also attaches great importance to support for society. Especially, contributions to disadvantaged students in local communities have continued to help thousands of students in need. We also participated in every social activity to help disadvantaged organizations in order to protect and

educate disadvantaged groups and enhance the stability of our society. And, for 7 years we have cooperated with the chemistry education team and planned more than 100 member-trips to volunteer in schools in every factory area by TSRC employees to help with interactive chemistry education activities, to demonstrate TSRC's attention to chemical education and corporate feedback. All of these were just the beginning of TSRC to promote every commitment we made to sustainable development through every practices and results.

2018 is also an important milestone in the passing of TSRC' s 45th anniversary. The successful transformation of TSRC came from two traditional core values: one is the spirit of continuous improvement, since our founder upheld the attitude of "human effort is the decisive factor" and has passed it onlater generations, the other is the company's outstanding talents. Employees are the most important asset of the Company. Form past to present, TSRC's employees took a diligent, dedicated and faithful attitude toward their works and overcame many challenges to found today's TSRC. For these, we expressed our greatest gratitude to our employees. We also continue to uphold the sustainable operating philosophy of cherishing the earth's resources, implementing corporate social responsibility and a sustainable business philosophy and also expect to march steadily forward on the road of business sustainability, continue to create value for the stakeholders and all of society.

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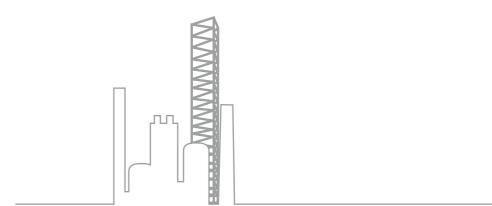
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# **Corporate Social Responsibility Initiation and Organization**

TSRCCSROrganization – CSRSteering Committee, led by the President and CEO, and holding 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(customers, employees / labor union, investors, government(authorities),media, suppliers, society(includes community / NGOs / local residents influenced by operation activities),a total of seven categories of stakeholders).



The CSR Promotion Secretary Office 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 material Aspects 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.



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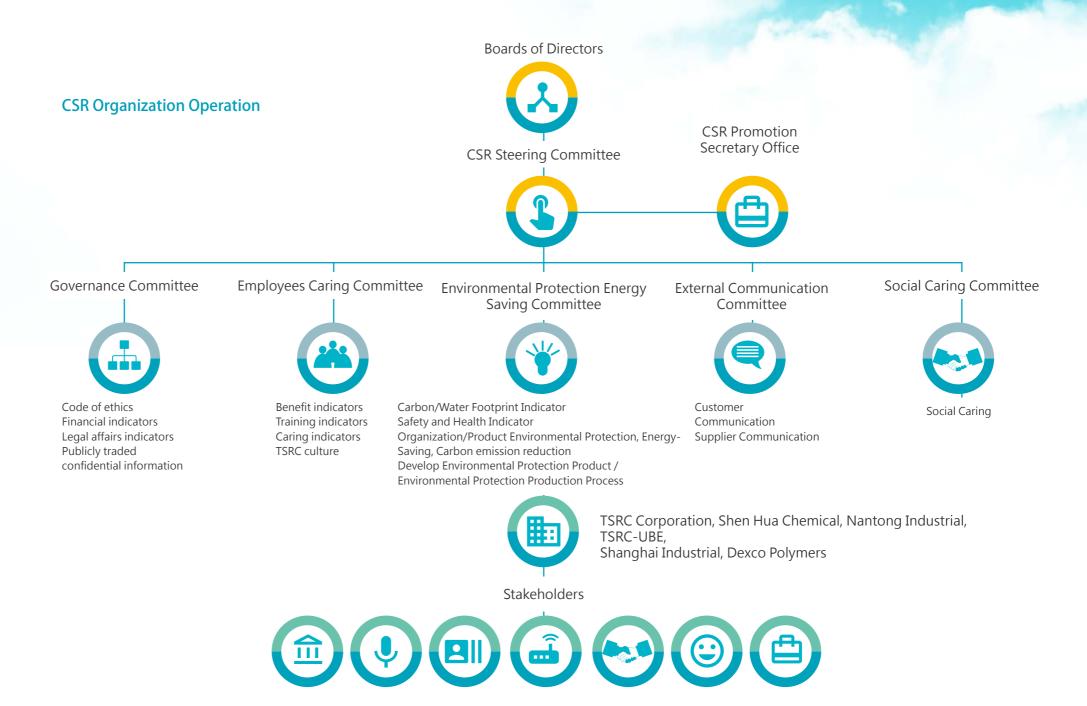
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### Communication with Stakeholders and Material Issues Analysis

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 2017. Based on the daily operation and external business communication conducted by TSRC's relevant departments, in accordance with the

practical topic selection mechanism, the CSR Promotion Secretary Office convenes each department's personnel to search for the stakeholders using the organizational operation communication and the stakeholder tolerance level to identify the stakeholders, selects the prioritized communication targets and responds to their concerned issues, and initially determines the primary stakeholders and their concerned issues.



Based on the daily operation and external business communication conducted by our relevant departments, we identified 7 categories of the primary stakeholders.

TSRC's aspects were based on the principles and definitions of the report content guidelines in the GRI G4 Sustainability Report Framework, external international related sustainability standards and GRI G4, sustainability information (such as DJSI, CDP, SA8000, COP etc.) and stakeholder's communication process and feedback. Internal referred to the Company's sustainability policies, the company's operation strategies and objectives. After the discussion of the meeting, we integrated these into GRI aspects.

all types of interactions with stakeholders through daily business, TSRC also utilized different channels. including telephone communication, meetings, satisfaction surveys, visits, participation in associations, and other ways. The 2017 concerned level analysis of material issues was based on 187 questionnaire survey results in 2016 and reviewed the 2017 stakeholder's concerned level of material issues by each department.

In addition to maintaining

Our managers and members of CSR Promotion for Small Group, who are responsible for corporate suitability, measured everyissue's impact on TSRC's CSR image and listed 2017 impact levels.

CSR Promotion Small Group focused on the primary stakeholders' concerned level of the issue, analyzed two factors of the Company's economic, environmental, social high and low impacts, to identify 23 concerned material issues. For every identified material issue, we assess its impact and determine whether the Aspect is influenced inside or outside of the organization.

According to the material issues matrix diagram, we selected 42 specified indicators as the major disclosure items of this report and detailed explained the adaptation strategies and performance results.

completeness and demonstrated the company's performance and sustainability impact. Feedback the concerned issues of stakeholders in each relevant chapters. Sent the report to the advisory committee and the Board of Directors for audit and publicly published and collected stakeholders' opinions for the feedback in the next

Examined the report

#### Noto:

- 1.DJSI: Dow Jones Sustainability Index,
- 2.CDP: Carbon Disclosure (Climate Change Program),

report.

- 3.SA8000 (Social Accountability),
- 4.COP: UNFCCC Conference of the Parties, COP.

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# Stakeholders, Concerned Issues and Communication Channels are as follows:

Stakeholders	Concerned Issues	Communication Channels	Responding Chapters
Customer	Product and Service Labeling Occupational Health and Safety Product Laws and Regulations Compliance	Annual Interactive Seminar Visit (Email, Telephone, Questionnaire, etc.) Product Safety Data Sheet Customer CSR Audit Disclosure of the Company's Website Information	CH1. Mission and Vision CH3. Corporate Social Responsibility - Economic CH5. Corporate Social Responsibility - Social
Employees/ Labor Union	Occupational Health and Safety Economic Performance Labor Employment Relations	Employees Welfare Committee TSRC Safety Data Sheet Responsible Care Committee Health Promotion Forum (if Required) Employee Complain Mailbox Industrial Safety Bulletin Labor Union Representatives Conference	CH4. Corporate Social Responsibility - Environmental CH5. Corporate Social Responsibility - Social
Investor	Product and Service Labeling Social Laws and Regulations Compliance Occupational Health and Safety	Disclosure of the Company's Website Information Investor Service Mailbox Public Information Observation Post Shareholder's Meeting	CH2.Corporate Social Responsibility and Sustainability Issues Management CH3. Corporate Social Responsibility - Economic CH4. Corporate Social Responsibility - Environmental
Media	Local Community Effluents and Waste Disposal	Corporate Social Responsibility Report CSR Mailbox on the Company's Website Unscheduled Telephone Communication Unscheduled Visits Product Safety Data Sheet	CH4. Corporate Social Responsibility - Environmental CH5. Corporate Social Responsibility - Social
Supplier	Occupational Health and Safety Marketing Communication Customer Health and Safety	Supplier CSR Evaluation CSR Mailbox on the Company's Website Supplier CSR Publicity Supplier Environmental Protection Evaluation Annual Supplier Evaluation	CH2. Corporate Social Responsibility and Sustainability Issues Management CH3. Corporate Social Responsibility - Economic
Social	Effluents and Waste Environmental Protection Laws and Regulations Compliance Occupational Health and Safety	Non-scheduled Visits Industrial Park Manufacturers Association Industrial Park Service Center Disclosure of the Company's Website Information	CH 2. Corporate Social Responsibility and Sustainability Issues Management CH4. Corporate Social Responsibility - Environmental
Government	Occupational Health and Safety Social Laws and Regulations Compliance Customer Health and Safety	Corporate Social Responsibility Report Government Laws and Regulations Publicity Government Official Documents Stock Annual Report	CH3. Corporate Social Responsibility - Economic CH4. Corporate Social Responsibility - Environmental

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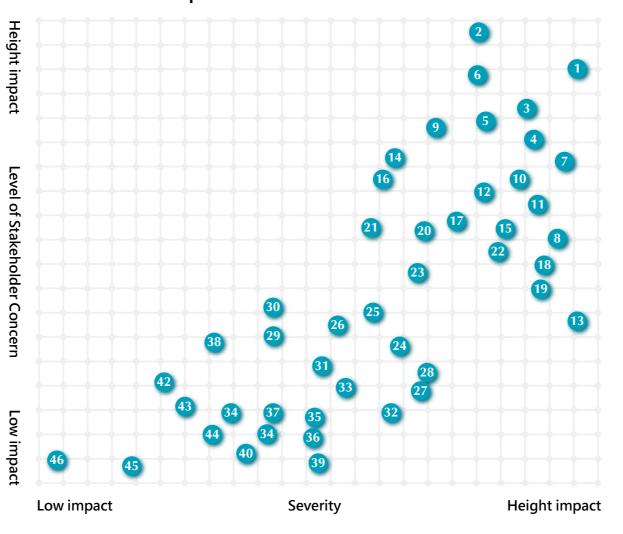
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# **Material Aspect Analysis Result**





- Occupational Health and Safety
- Customer Health and Safety
- Product and Service Labeling
- **Economic Performance**
- **Effluents and Waste**
- Product Laws and Regulations Compliance
- **Emissions**
- Social Laws and Regulations Compliance
- Labor/Management Relations
- Marketing Communication
- Non-discrimination
- **Environmental Protection Laws and Regulations Compliance**
- **Local Communities**
- Anti-Corruption
- **Employment**
- Market Presence
- Training and Education
- Energy
- **Indirect Economic Impacts**
- Forced or Compulsory Labor
- Overall Situation of Environmental Protection
- Water
- **Public Policy**

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### SR and Sustainability Issue Management 1

# The Aspect Boundary

For every identified material issue, we assess its impact and determine whether the Aspect is influenced inside or outside of the organization.

Boundaries - Aspects		Within the Organization					Outside the Organization			
		TSRC	Shen Hua Chemical	Nantong Industrial	TSRC- UBE	Shanghai Industrial	Dexco polymers	Supplier*	Contractor	Customer
	Energy	•	•	•	•	•	•	-	-	-
Envi	Water	•	•	•	•	•	•	-	-	-
	Emissions	•	•	•	•	•	•	0	-	-
ronr	Effluents and Waste Disposal	•	•	•	•	•	•	0	-	-
Environment	Environmental Protection Laws and Regulations Compliance	•	•	•	•	•	•	•	•	-
	Overall Situation of Environmental Protection	•	•	•	•	•	•	0	-	-
Ecc	Economic Performance	•	•	•	•	•	•	0	-	0
Economic	Market Presence	•	•	•	•	•	•	-	-	-
mic	Indirect Economic Impacts	•	•	•	•	•	•	<b>•</b>	-	-
	Labor Employment Relations	•	•	•	•	•	•	-	•	-
	Labor/Management Relations	•	•	•	•	•	•	-	-	-
	Occupational Health and Safety	•	•	•	•	•	•	<b>-</b>	<b>•</b>	-
	Education and Training	•	•	•	•	•	•	-	-	-
	Non-discrimination	•	•	•	•	•	•	<b>•</b>	•	-
	Forced or Compulsory Labor	•	•	•	•	•	•	-	-	-
Social	Local Community	•	•	•	•	•	•	-	-	-
	Anti-Corruption	•	•	•	•	•	•	0	-	0
	Public Policy	•	•	•	•	•	•	0	-	-
	Social Laws and Regulations Compliance	•	•	•	•	•	•	-	-	0
	Customer Health and Safety	•	•	•	•	•	•	-	-	-
	Product and Service Labeling	•	•	•	•	•	•	•	-	-
	Marketing Communication	•	•	•	•	•	•	-	-	0
	Product Laws and Regulations Compliance	•	•	•	•	•	•	<b>•</b>	-	-

Icon	Description				
	Material				
-	Non-material				
•	Fully disclosed in this Report.				
•	Partially disclosed in this Report.				
0	Unable to disclose due to lack of information.				

Note: Compared to 2016, 2017 annual material issues has added "Overall Situation of Environmental Protection" and excluded "Anti-competition" .

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#### **TSRC Milestones**

- Completed the construction of SBR Factory and started production (the first E-SBR factory in Taiwan).
- Established Taiwan Synthetic Rubber Corporation in Taiwan in 1973.



Global Business Headquarter



Kaohsiung Factory

1970's

**Beginning** 

- Moved the USA Phillips SBS factory from Texas to Kaohsiung and completed Kaohsiung TPE Factory construction and started ordering material for trial run.
- Completed the construction of BR Factory that can produce 40,000 tons BR and started production.





TPE Factory

- Successfully developed the first generation SEBS technology.
- joint plan of producing 50,000 tons BR per year in Thailand.
- The TPE plant built the second SBS production line in Kaohsiung.
- Received ISO 14001 & ISO 9001 Certifications.
- Established a Shen Hua Chemical Industrial Co. Ltd which can produce 10 million tons of E-SBR per year in Nantong, Jiangsu.



Shen Hua Chemical Industrial Co. Ltd

- Participated in the
- TOTAL



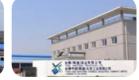
TSRC (Jinan)

Nantong Industrial

- Successfully developed the second generation SEBS technology.
- Prepared to build joint factories that can produce 20000 tons SEBS (TSRC (Nantong)) and 50,000 tons BR (TSRC-UBE (Nantong)) per year separately in Nantong, Jiangsu.
- Prepared to build admixture factory in Shanghai Songjiang (TSRC (Shanghai) Industries Ltd.) and in Shandong Jinan (TSRC (Jinan)) separately.
- Applied Material Business Division Gangshan Factory officially started production.



Gangshan Factory



TSRC (Shanghai) Industries Ltd.



TSRC-UBE (Nantong)



Started the building of the second SEBS

- commercial plantinKaohsiung city.
- Established a production line for Advanced shoe materials in Gangshan.
- Prepared to build 25,000 tons SIS factory in Nantong, Jiangsu.
- Acquired Dexco Polymers of the USA.
- Prepared to build 120,000 tons E-SBR joint factory (ISRL) and NBR joint factory (Arlanxeo-TSRC) in India and in Nantong, Jiangsu.
- Signed the SBS technology licensing contract with Russia Company, which was the first technology out-licensing by TSRC.



Arlanxeo-TSRC



Indian Synthetic Rubber



Dexco Polymers L.P

2010's

Globalization

2000's

**Expansion of** production lines

1980's

Early growing stage

Rapid Regional Expansion

1990's

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# The international leader of Synthetic Rubber

TSRC is a publicly traded company in Taiwan with major shareholders comprising domestic and foreign operations and individuals, Stock Code 2103.

TSRC, formerly known as "Taiwan Synthetic Rubber Corp.", was established in 1973 by the founder Mr. Glyn T.H. Ing to support the government' s policy on developing the petrochemical industry in Taiwan. From a sole synthetic rubber manufacturer in Taiwan, TSRC has become a leader in today's synthetic rubber and Styrenic Block Copolymer (SBC) products in the Asia Market, and our products with excellent and stable quality have been highly acclaimed and widely adopted by major customers all over the world. The founding base of Kaohsiung Factory is located in Dashe Petrochemical Industrial Park, Kaohsiung that is still one of the most important production bases today.

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. In 2017, in addition



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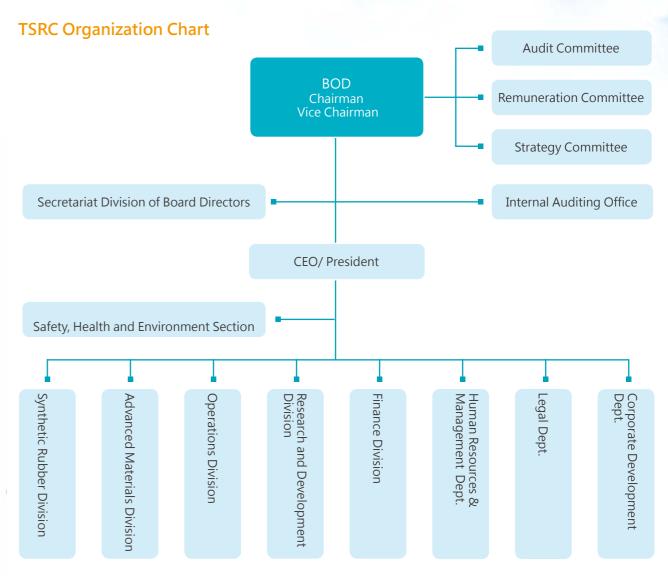
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to international certifications like ISO 9001(quality) / 14001(environment) / 18001(safety) / QC 080000 (Hazardous Substance Free) / ISO 50001 (Energy), each TSRC's manufacturing plant have continue to complete the management system correcting of ISO 9001 and 14001: 2015.





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#### **Market Situation**

The 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, (including E-SBR, S-SBR, BR, TPE), nonsynthetic rubber:Applied Materials, etc. All are upstream raw materials for producing consumer products.

Our rubber product customers are mostly the automobile industries, used in tires, engine tubing, airbag covers, and window trims. In addition, our products are also used in daily lives and industrial products, such as soles, toys, construction materials, daily necessities, industrial supplies and others.

Relevance of the upstream, midstream and

### Planned new product development

- Continue development of solution polymerized butadiene-styrene rubber (SSBR) for high performance and environmental protection energy conservation tires. Also formed partnerships with customers to develop new specifications.
- Development of differentiated application oriented SBC products, including the development of high-end medical materials, customized shoe materials, printing thin films, lubricating oil viscosity modifiers and other high valueadded TPE products.
- Development of special catalytic system for BR products to apply to automobile tires, soles and plastic modification in order to conform to different customer's application demand in different industries.
- Continue to develop green rubber products in compliance with the environmentally friendly policy.
- Establish the most suitable production process technology to provide customers with the best product quality.

Synthetic rubber /

Downstream customers

Tires, adhesives, plastic modifiers, shoe materials, etc.

downstream industries:

Upstream raw materials

Crude oil, natural gas

Intermediate raw material

Ethylene, butadiene, styrene, etc.

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From being the only synthetic rubber manufacturer in Taiwan, to today's important rubber industry leader in the Asian market, TSRC has been actively globalizing our business recently: R&D and technology focused on global planning, acquired Dexco Polymers in the USA, introduced Dexco Polymers' advanced production process technology, developed high value-added products, and worked with the development of customized products to expand the scope of product applications and increased sales of high value-added TPE products.

TSRC established an operation center and sales channels in Europe. The focus of production business is still in Asia with two production factories in Taiwan, and four subsidiaries and warehouse bases established in Mainland China. In addition, we have a joint venture of LANXESS-TSRC with German Lanxess. We also cooperated with Indian Petroleum Company to form the India Factory. Nantong factory has increased the production line that can produce 25,000 tons of SEBS, which has higher intensity, ozone resisting, UV resisting, thermal stability and also a high temperature material that can be easily

applied to plastic modification, thin elastic films and adhesives. In place of this ever-changing market, only continuous innovation can TSRC gain the competitive advantage.

In 2017, the global economy strongly recovered, the US, Europe and Asian emerging markets improved gradually, has also led to an increase in the market demand for TPE related industries. The global market demand for TPE grew about 4.2%, and the demand in Asian emerging markets was even stronger. But due to the sharp fluctuations in raw material prices in the first half of the year, the annual profit was affected. In addition, SBS and SIS markets were still showing an oversupply, resulting in fierce price competition in the market. However, facing the severe competitive market environment, TSRC continues to implement product differentiation and further strengthen its cooperation with the target customers in new industrial technologies and new products for long term business partnership and to maintain TSRC's competitive advantage in the market.

Being a responsible corporation to the stakeholders, TSRC releases the monthly financial report every

Unit: NT\$ 1,000

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 gueried 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.

Unit: NT\$ 1,000

#### Financial Numbers

	Items	2015	2016	2017	
Financial	Sales	25,981,759	26,955,090	31,766,237	
Ability	Total Assets	29,993,985	29,769,927	28,999,341	
	Net Profit after Tax	601,147	1,093,607	849,717	
Profitability	Earnings Per Share after Tax (NTD)	0.64	1.2	1.06	

# Technology Research and Development Overview /International Technology Cooperation

Items	2015	2016	2017
Net Sales	25,981,759	26,955,090	31,766,237
R&D Expenditure	328,614	346,700	375,550
R&D Expenditure/Net Sales (%)	1.3	1.3	1.2

<sup>\*</sup> Information in this table is extracted from the consolidated financial statement of TSRC and subsidiaries.

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#### TSRC Annual Allocated Economic Value (% in Revenue)

Year	Operating Cost %	Employees' Salary and Benefits %	Payments to Shareholders %	Payments to Government %
2015	88.1%	7.1%	4.8%	0.2%
2016	93.9%	7.2%	3.3%	1.9%
2017	96.9%	6.2%	2.6%	0.9%

\*\*Please refer to the TSRC Corporation Annual Report for detailed information.

- 1: Operating Cost: The cost and expense of doing business (but does not including the employees' salary and benefits).
- 2: Employees' Salary and Benefits: including salary, labor and health insurance, retirement funds, and other expenses for benefits.
- 3: Payments to the government: Taxes (for example: sales tax, income tax, and property tax, others).



TSRC actively developing patent

# **Company Strategy**

Applied Materials is a functional product possessed with various material characteristics, which was developed from TSRC produced TPE products blended with other plastic. After the plastic modification of the downstream molding factory through injection molding, calendaring and filming, applied materials can apply to industries like shoe materials, automobiles, hand tools, consumer electronics and medical products. In the rise of environmental awareness, its characteristics of nontoxic, low pollution and recyclable with excellent processing properties of plastic with the elasticity of rubber, has gradually replaced PVC and traditional rubber products. The application aspects of TPE also expanded as the applied materials develop.

In addition to a complete global supply chain system, TSRC has continued to implement product differentiation and accelerate the transformation of industrial applications, develop high value-added markets and a variety of new products recently with the target customers actively, such as high liquidity SEBS, medical grade TPE, special viscose non-linear structures and SIS products suitable for repeated adhesiveness; downstream products like T-blend® TPE application materials are segmented according to terminals markets, using its leading blending

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**CSR and Sustainability Issue Management** 

#### CSR - Economic

- TSRC Milestones
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technology to cooperate with brand customers to develop and focus on high value-added product applications such as high quality shoe materials, soft matter, kitchenware and wearable devices. These allow TSRC to maintain business growth and solid competitiveness in the face of severe market competition and changing economic environments.

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. Besides the complete renovation of Kaohsiung's R&D center in January, 2017, with the growth of enterprise size and globalization, TSRC has fasten the development in personal care synthetic rubber products with high performance that applied to medical and special films through the R&D centers in Kaohsiung and the USA. Also TSRC entered forward the high value markets including medical treatment, lubricating oil viscosity modifier, high quality shoe materials and environmental protection tires. The total amount of 2017 research and development expenditure was NTD 375 million.

TSRC actively applies for patents to protect the results of Research and Development and advance production processes as differentiated tools against the competitors. In 2017, there were 8 patents awarded.



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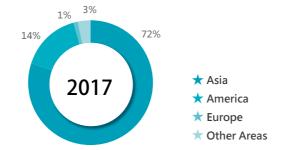
#### 2017 Results

TSRC consolidated revenue was NTD 31,766 million, EPS NTD 1.06. The sales percentage of synthetic rubber products was 97% with major markets in Mainland China, Thailand, Japan, Malaysia, Vietnam, Indonesia, the USA, Germany, Portegual, India and other countries. The sales percentage of nonsynthetic rubber products was 3% with major markets in Mainland China, Southeast Asia, Europe, and the United States.

#### 2018 Outlooks

Looking forward to 2018, the International Monetary Fund (IMF) estimated an annual GDP growth rate of 3.9 % in Asia. The China Association of Automobile Manufacturers estimated a growth rate of 3 % for China's auto sales, and LMC Automotive estimated a growth rate of 4.8 % for automobile sales in Asia outside of China. Estimated tire and synthetic rubber demand is expected to grow steadily. In addition, the imposition of anti-dumping duties on Korean synthetic rubber factories by the USA and India also brings new turning point of synthetic rubber.

# The sales percentage of synthetic rubber products



# The sales percentage of nonsynthetic rubber products



# Memberships in Association and Organizations, Cooperation

- ◆ Petrochemical Industry Association of Taiwan
- ◆ Taiwan Rubber & Elastomeric Industries Association
- Dashe Petrochemical Industrial Park Manufacturers Association
- ◆ Interlibrary Cooperation Association
- Industrial Safety and Health Association of the R.O.C.
- Ren Da Industrial Park Association for Promoting Labor Safety and Health
- ◆ Taiwan Responsible Care Association
- International Institute of Synthetic Rubber Producers (IISRP)
- Intellectual Property Rights Association of Chinese National Federation of Industries
- Chinese National Association of Industry and Commerce, Taiwan
- ◆ Safety & Health Association of Taiwan
- Benjou Industrial Park Manufacturers' Association, Gangshan, Kaohsiung
- ◆ China Rubber Industry Association
- ◆ China Adhesives and Tape Industry Association
- ◆ Nantong Standards Association
- 2nd Board, Production Safety Management Network, Nantong Economic and Technology Development Area

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# **Corporate Governance**

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The Board of Directors has nine directors (three are independent directors)

6

The Audit Committee has three members, all of whom are independent directors. 6 meetings held in 2017.

The Remuneration Committee has three members, all of whom are independent directors. 4 meetings held in 2017.

In 2017, TSRC did not receive any complaint about violating customer's privacy, no violation of any financial and business-related domestic or international policies or laws. TSRC was not penalized with any monetary fines, and was not involved in any events of corruption or anticompetitive behavior.

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 represents the chairperson of the shareholders and the board internally and represents TSRC externally.

The Board of Directors of the Company participates intermittently in the relevant governance education training organized by the Taiwan Securities and Futures Institute (SFI) and Corporate Governance Association (CGA). We also established 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 Managers, and clearly divide the responsibilities between the Board of Directors and the Managers.

In order to implement high-quality corporate culture and maintain the Company's image and corporate ethics, the Company established a "Business Execution Code of Conduct", "Guidelines of Ethics and Behaviors" in accordance

with the "Company Act", "Securities and Exchanges Act" and "Corporate Governance Best-Practice Principles for TWSE/GTSM Listed Companies" to regulate all employees and directors and managers; to avoid taking advantage of their own job duties to seek improper profits for themselves and relatives, and prohibit leaks of the customer's privacy when they are handling business activities and procedural regulations. At the same time, we also established internal whistle blowing, disciplinary and appeal procedures. We regularly review the Company's "Corporate Mission, Vision and Value" and "Core Competencies" and "Management Competencies", and request compliance from all relevant personnel, and implement those in the Annual Performance Review Form for employees. For employees who violate the relevant regulations, they shall be handled in accordance with the "Rewards and Disciplinary Operating Regulations".

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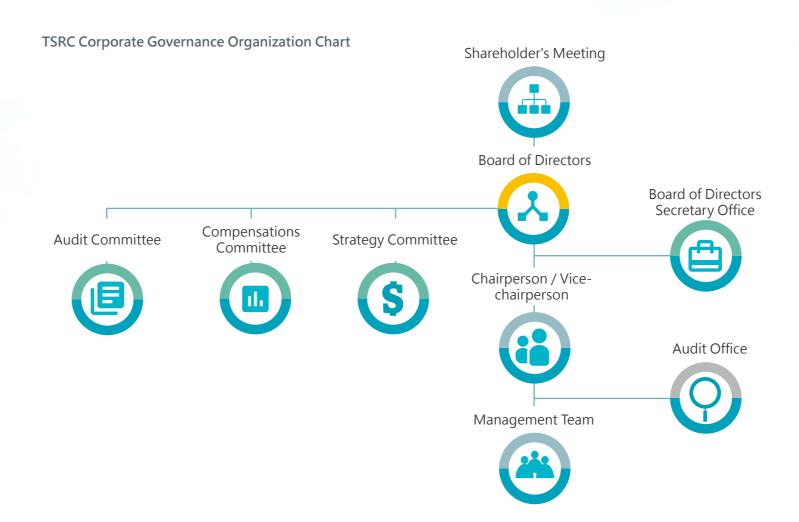
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# P Board of Directors Note 1

TSRC Board of Directors members are elected by the Shareholders' Meeting. The Company business shall be conducted based on the resolutions of the Board of Directors, except for the business items to be resolved by 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 financial riskrelated 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, the Audit Committee, Compensation Committee and Strategy Committee, set up under the Board of Directors, Each functional Committee assists the Board of Directors to enhance management and supervision functions according to their authorities.

The Members of the TSRC Board of Directors shall have the wealth of knowledge, business experiences and industrial judgments capable of executing their job duties, Note including: operating judgment, accounting and financial analysis capabilities, operation management capabilities, crisis management capabilities, industrial knowledge and international market perspectives, in order to achieve the ideal goals of the corporate governance.

#### Audit Committee

The Compensations Committee has three members, all of whom are independent directors. There were 6 meetings held in 2017. In accordance with "Regulations Governing the Exercise of Powers by Audit Committees of Public Companies" and related regulations, we established the "Audit Committee Foundation Rules". Members of the Committee shall perform the duties in accordance with the rules, submit the review to the Board of Directors and be responsible to the Board of Directors.

# Compensations Committee

The Remuneration Committee has three members, all of whom are independent directors. There were 4 meetings held in 2017.



Shareholders' Meeting

In accordance with "Regulations Governing the Appointment and Exercise of Powers by the Remuneration Committee of a Company Whose Stock is Listed on the Stock Exchange or Traded Over the Counter" and related regulations, we established the "Compensations Committee Foundation Rules". Members of the Committee shall perform the duties in accordance with the rules, submit the review to the Board of Directors and be responsible to the Board of Directors.

### Strategy Committee

The Strategy Committee has four members and held 1 meeting in 2017.

Based on the Company's future direction, the Committee provides mid to long term

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development strategy to the Board of Directors. After the approval of the Boards, the manager department will plan the execution and the Committee will regular traces the execution of the manager department.

# Directors, supervisors and accounting manager participated in related courses

TSRC arranges the directors and supervisors to participate in related courses or encourage them to participate external training and forum. The participated courses in 2016 and 2017 are listed as following:

- The Display of the Independent directors' efficiency.
- The attack and defense against hostile takeovermerger aspect and litigation aspect.
- The legal risk and liability of the Company's Board of Directors and Manager Level.
- Advance courses for continuous professional development of principal accounting officers of issuers, securities firms, and securities exchanges.

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

### Anti-Corruption, Confidential Non-Disclosure Policies

TSRC has established and announced the ethic 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 and avoid a conflict of interest between the Company and individuals that benefits personal profit. Any non-disclosure information that may potentially influence the Company's stock prices shall be kept strictly confidential.

Since the promotion of CSR, TSRC expected the voluntary actions to transcend law compliance, fulfill sustainable growth and integrate CSR into core operation process. For the compliance of all employees, we had formulated internal regulations like "Confidential Information Management Regulations", "Personal Information Operation Management Regulations" and "Official Business Operation Code of 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, to clearly regulate the employees must follow the effective use of resources

and assets, protection of the business secrets, prevention of insider trading, antitrust regulations, fair trade, avoid conflicts of interest between the company and the individual, avoid the opportunity of taking private interests, prohibit bribery, code of network access, part-time jobs and other matters when executing relevant internal and external business with the job duty assigned by the Company, and set up with the corresponding punishment system.

TSRC upheld the position on not participating in public policy lobbying and has never made political contributions, but encouraged employees to fulfill their civic responsibility, and actively participate in public election voting, and according to the law to give leave for statutory reasons. TSRC has also been concerned and paid attention to the public affairs that affect the industry, the economy and the life of the employees.

In 2017, TSRC did not receive any complaint about violating customer's privacy, no violation of any financial and business-related domestic or international policies or laws. TSRC was not penalized by any monetary fines, and was not involved in any events of corruption or anti-competitive behavior.

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# Internal Control and Establishment and Implementation of the Internal Audit System

The Audit Office is directly under the Board of Directors, responsible for auditing the internal control system and tracking the discovered defects and abnormal activities until improved. Audit reports and self-evaluation results are submitted to the Board of Directors and Management Level for review. The internal control system includes the internal audit system, in addition to the annually scheduled self-evaluation of the internal control system, and also reviews, amends and establishes or revises the important control operations at any time responding to the internal and external environmental changes, which must be reviewed and approved by the Board of Directors. With an internal audit and internal control system, TSRC promoted the soundness in corporate governance.

# **TSRC Risk Management**



The risk management of TSRC is managed through current departments or functional units. Our external related issues includes: economic issues, social / cultural issues, political issues, regulations / acts issues, technique / technology issues, competitor / market (industrial environment) / customers, 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 identified possible risk / events that may have impact on business objectives, decided appropriate response measures after evaluation to reduce, transfer or avoid risk. Each functioning departments of TSRC reported to the manager level about the risk environment, risk management emphasis, risk evaluation and adjustment measures the Company encountered every year in compliance with internal control system evaluation and management system review. The auditing office regular reported to the Audit Committee. The Audit Committee made suggestions according to the risk evaluation and effect and reported to the Board of Directors.

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Focusing on important emergencies like fire, chemical leak, information service interruption, supply chain interruption, environmental events or external water and electricity supply interruption, we all had corresponding standard operation procedures (for example: crisis operation management regulations / emergency response operation management regulations) to proceed with risk management.

# **Scope of TSRC Risk Management**



# **Strategy Aspects**

Compliance and adjustment to law changes Policy development Industrial market changes and market demand Technology R&D and the competitive edge



# **Operation Aspects**

Intellectual property rights Recruitment of talents Corporate image



# **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



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# Supply chain sustainable management

#### **CSR Procurement Policy**

Procurement Policy Hazardous Substances Free Policy

#### **Supplier Management**

Raw Materials Contract General

### **New Supplier Selection**

Raw Materials Supplier Selection Contractor Supplier Selection

#### **Supplier Evaluation**

Annual / Regular / Irregular
CSR Evaluation Sheet / Supplier
Code of Conduct
Subcontractor Evaluation

### **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 TSRC and its partners.
- TSRC believed the supply chain members play a very important factor in the execution and development of CSR and expected our partners will agree and spare no efforts to take the social and environmental responsibility as the business principles.
- Expected our partners follow TSRC's Partner Code of Conduct (PCC), including categories like environment, occupational safety and health, human rights and labor policy, and ensured the products and services provided comply with all nations and other applicable laws and regulations.
- TSRC will first select suppliers that correspond to PCC.

#### **Hazardous Substances Free Policy**

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

# **Raw Materials**

The main raw materials: butadiene and styrene, the contract suppliers in the Taiwan area are mainly for CPC Corporation, Taiwan, Formosa Petrochemical Corporation, and Taiwan Styrene Monomer Corporation, Benzene and Grand Pacific Petrochemical Corporation, the Mainland China area are mainly Sinopec Sales, CNOOC and Shell Petrochemical Company Limited, Fujian Refining & Petrochemical Company Limited and SECCO Petrochemical Company Limited.

### **TSRC Subcontractor**

# Contract

Mainly are contract services, equipment construction, construction and building activities, environmental protection and factory operations. There are 150 employees in warehousing and on-site contract services and 150-200 subcontractors every year in Taiwan area.

# General

General subcontractors besides raw materials and contract types

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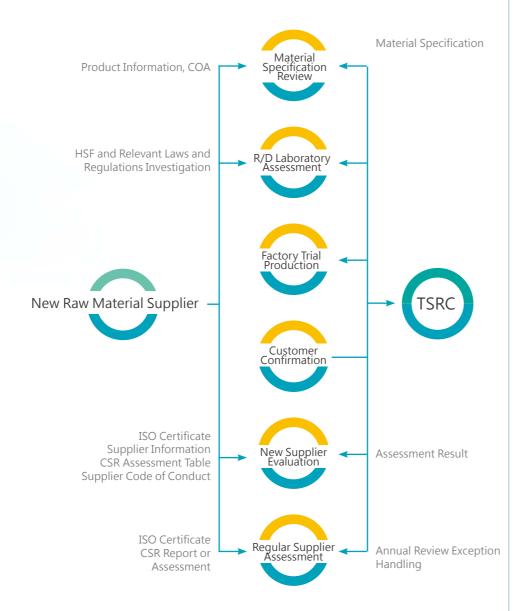
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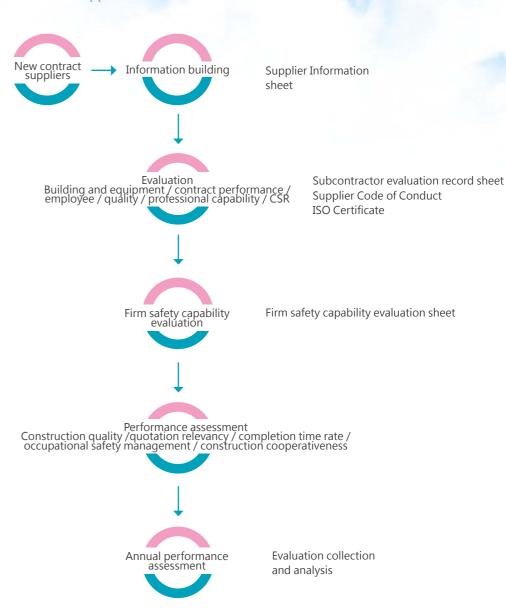
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# New Supplier Selection Raw Materials Supplier Selection Procedure



#### **Contract Supplier Selection Procedure**



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In supplier selection, the procurement department implemented a "Hazardous Substance Free (HSF)" graded management and control measures for the supplier to provide a chemical Material Safety Data Sheet, even with the use of trial chemicals, to ensure the raw materials in the TSRC products are in compliance with the HSF specifications. All departments shall select the suppliers passed relevant system certification in priority; all new suppliers are required to pass the TSRC's CSR evaluation process in all three, environmental / economic / social, aspects, for example: supplier CSR report or CSR evaluation sheet and uphold the principle of fairness to decide suppliers.

# Supplier cooperation and win-win situation

In addition to evaluating and scoring the qualified suppliers by product quality (include the demand for Hazardous Substance Free), delivery punctuality, cooperativeness, and industrial safety management every year. In the communication between the suppliers and TSRC, in additional to the routine communication between TSRC purchasing personnel and suppliers, we have established the SAP communication platform to communicate, such as the amendment of the supplier data, purchase order inquiry, confirmation and other businesses.

In addition, TSRC established the "TSRC's Partner Code of Conduct" to request for labor, occupational safety, environment, ethical conducts in accordance with the spirit of CSR and encouraged the suppliers to observe the nation and other applicable laws and regulations and become a sustainable company in the leading

position. We also encouraged the suppliers to establish code of conduct and spread to this behavior to the supply chain.

TSRC request our partners to observe the local laws and regulations, ban forced / compulsory labor, and ensure legal work hours, wages, and benefits. TSRC has included ISO 9001, RoHS (HSF), QC 080000, ISO 14001, OHSAS 18001, CNS 15506 and CSR as important indicators in the evaluation and selection of all suppliers. The Company also requests our suppliers to observe the regulations of the freedom of assembly and association, abolition of child labor and elimination of forced / compulsory labor, to maintain basic human rights. There has been 30 raw material production suppliers published the CSR report in 2017. We also executed regular evaluation of two raw material suppliers and found no violation.

In addition to the strict abolition of child labor, TSRC will not work with any suppliers hiring child labor, and demand our cooperation partners to respect and encourage employees to develop and engage with overall employee welfare in compliance with the local laws and regulations. If the supplier is found violating any of the aforementioned activities, they shall be managed in accordance with "TSRC's Partner Vendor Management Procedure". We had two new raw materials suppliers in 2017 and no violations were found in the evaluation results in accordance with the raw materials supplier CSR evaluation sheet.

We also expects the supplier partners to participate in the relevant management

mechanisms of labor, safety and health, environment, and ethical regulations, to provide the sustainable development of corporate operation and achieve a win-win situation for both parties.



Supplier on-site auditing

Remarkable

42%

Conformed

58%

2017 TSRC Supplier Evaluation Results (744 suppliers were evaluated)

Disqualified ( )

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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.

# **Product Responsibility and Customer Relations**

TSRC's current primary products are BR, SBR and bulk synthetic rubber products, followed by the widely used TPE. The Company's mid to long term development strategy in the next five years, in addition to the primary business of bulk synthetic rubber products, is developing other new products toward the transition of highend specialty synthetic rubber, used in high quality shoe materials, printed thin films, medical related materials, adhesives and other products not affected by economic conditions. In terms of shoe materials, the Company's TPE materials are equipped with functional capabilities and had already received Western sport shoes leading manufacturers' certification and further to build a three way cooperation with the brand name manufacturers and their sub-contractors, so that the Company can cooperate directly with the name brand manufacturers on a technical level to build a more stable supplier relationship for the future.

# **Product Hazardous Substance Management**



Regulations and the customer's specification Establish hazardous substance information database Establish management goals and plans



Research and development phase and product / raw materials evaluation



Establish green procurement request Employee regular publicity and training



QC080000 system internal audit
Hazardous substance conformity
Products verified by the third party independent
laboratory



Hazardous substance management system investigation
Management goal achievement
Non-compliance items improvement and prevention

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TSRC has established 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 continued to use the "Green Data Manager System" to perform assessment management of supplier's raw material HS information and each product's chemical substance database to ensure



- Comply with the REACH Laws and Regulations, SVHC Information Delivery Requirements
- Reduce hazardous substances in the products
- Update the supplier HSF supporting information



- Polymer products SVHC inspection achievement ratio 100%
- Complete Product Trial Production
- Achievement ratio 100%



- Polymer products SVHC inspection achievement ratio 100%
- Update the supplier HSF supporting information

all raw materials are in compliance with the RoHS and the latest EU Chemical (REACH), Substance of Very High Concern (SVHC), and other international environmental protection directives/specifications specified in the laws and regulations. In addition to establishing the "Hazardous Substances Free









CIT Excellent Award Presentation

Management Procedure" to ensure providing the customer with HSF products, TSRC also continues to manage the supplier's sustainability issues, further achieving "Hazardous Substance Free" or "Hazard Substance Reduction", to enable the chemical substances in the materials, packaging material, semi-finished product and finished product to be in compliance with the laws and regulations and the requirements of the customer's specification. Also reducing the product of toxic substances residue, and improving the product quality to achieve the

Corporate Social Responsibility and commitment to the customers.

In recent years, while the fairness and reasonableness of material sources have been gaining more importance across the world, such as the Conflict Minerals Rule established by the US Securities and Exchange Commission (SEC) and other relevant specifications; therefore, after TSRC assessed the material sources of suppliers in collaboration with customers to ensure all raw materials and TSRC

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products comply with the Conflict Minerals Free (CMF) specifications.

In 2017, TSRC completed all inventory inspections on 174 renewed laws and regulations of the EU SVHC (Substance of Very High Concern). All substances requested for inspection by the customers in 2017 have completed assessment in accordance with the Management Procedure, and responded with the corresponding Declarations.



Green Data Manager System (GDM)

From the development to waste phase, all products of TSRC has passed the health and safety impact assessment and control. When marketing products in this industrial trend, TSRC also evaluates the competitiveness of products in the perspectives of health and safety, and actively demonstrates

the product advantages when contacting the customer in the product exhibition. Considering global environmental protection, and energy-saving awareness that also led to the green development trend of synthetic rubber, TSRC also has begun to develop environmental protection rubber materials and actively promote those concepts to customers and communicate the efforts with them. We also emphasized our Company's operating philosophy of sustainable products on websites, customer visits or in the publicity (such as conferences and product launch etc.) with our customers.

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): The TSRC SDS is to control the addition, revision of Safety Data Sheet, and application for production of different language versions in accordance with the "Regulations for Product Safety Data Sheet Operation Management".





ISO 9001 QMS Certificate

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TSRC's products clearly state that sustainability is taken into account in all processes. Through integrating internal competent authorities to promote customer's sanctification, provide more convenient services, protect privacy and secure transactions. We also conduct the quality (includes HSF), delivery time, and cooperativeness satisfaction survey with customers at any time. If the customer demands an HSF investigation, it will be compared and verified against the Chemical Substance (Product Safety Assessment) Database established by TSRC; and respond to the customer's demand in accordance with the "Hazard Substance Free Management Operation Procedure".

At present, all TSRC products have used the above product description of sustainability and were produced, labeled and sold in accordance with national related product regulations, including GHS regulations, fair trade laws, intellectual properties protection and personal data protection laws etc. There have been no lawsuit penalties in violation of the health and safety regulations, voluntary code of conducts and product specifications and no violation of the marketing laws and regulations and infringement caused by product liability in 2017.







5S Excellent Award Presentation



Shen Hua rewarded for TPM

#### **Customer Satisfaction**

TSRC believes customer satisfaction affects customer loyalty, in order to understand whether the products and services meet the real needs of customers, whether there is any area that needs improvement, TSRC performs annual customer satisfaction surveys toward major customers and collects information from mail / interview or daily business with customers to perform classification, statistics, graphics, and classify 5 grades for comparative analysis. We studies

and plans for improvement measures toward the customer's dissatisfaction, and follow up on the implementation of improvement measures to further improve the quality of products and services.

TSRC values our customers, we always uphold the concept of "Customer First", establish a close working relationship with customers, pursue better product quality continuously. For the comments and requests submitted by our customers auditing

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TSRC in person, we have achieved those through our teamwork execution to operate with a more precise/ more stringent quality management system. In 2017, we provided customers with improvement reports for all non-compliance and suggested items in the audit, and all the improvement measures have been completely implemented. In order to fully understand the customer's needs, TSRC conducts a satisfactory survey on a regular basis and executes reviews with the regular management review meeting, expecting 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 Team (CIT), and created five Continuous Improvement Teams (across all subsidiaries) in 2017, with the methods of QC7 / 8D / KT / DOE experimental design, and with a series of test and presumption, regression analysis, statistical software professional education training, use problem analysis / logic and statistics approaches with their expertise, and continues to improve the quality, production process capability, and related topics. In the end of year, groups with outstanding results will be awarded.

TSRC also encourages employees to propose Error Cause Removal (ECR) improvements. In 2017, each department proposed a total of 1603, about 968 were adopted, and encouraged with bonuses. In addition, the Kaohsiung and Nantong area production plants implemented Total Productive Management (TPM) and establishes a full employee engagement production maintenance activity to improve equipment integration efficiency and labor productivity, and reduces market complaints and all types of losses.



**Corporate Mission and Vision** 

CSR and Sustainability Issue Management

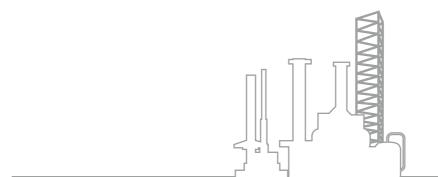
CSR - Economic

### **CSR - Environment**

- Greenhouse Gas Management
- Energy Conservation
- Water Resource
- Waste and other pollution discharge management
- Other Air Pollutants Discharge Management
- Environmental Laws and Regulations Compliance and Ecological Conservation
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CSR - Environment

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## **Environmental Policies**

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



# **Energy Policies**

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

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## **Greenhouse Gas Management**



## Direct emissions from the TSRC Factories

- Greenhouse gas used in the manufacturing process
- For the greenhouse from fuel use, Taiwan area mainly uses natural gas and fuel oil, and the Mainland China area mainly uses black coal.
- Moving combustion source and fugitive greenhouse gas emissions



## Energy indirect greenhouse gas emissions

• Greenhouse emissions from the purchase of electricity and vapor



### Other indirect emissions

 Fixed identified emissions source by TSRC includes: employee commutes, business travel, outsourced logistics/ repair and outsourced waste disposal, landfill and incineration, and other activities

TSRC's 2017 greenhouse gas (GHG) emissions were 625,057 tons of CO2carbon dioxide equivalents, calculated with the internal CSR indicator management system. Scope 1 was 316,487 tons and Scope 2 was 308,571 tons. We completed Scope 3

### identification.

With the warning signs of global warming and climate change on the rise, greenhouse gas-related issues are more important than ever. In addition to the construction of greenhouse gas verification standard procedures, the implementation of greenhouse gas inventory, the TSRC Kaohsiung Factory has completed the greenhouse gas inventory and external verification, the inventory results have been registered in the "Environmental Protection Administration, Executive Yuan - National Greenhouse Gas (GHG) Registry" In the mainland subsidiaries, Shenhua Chemical, Nantong Industrial and TSRC-UBE have completed two methods of 2016 greenhouse gas inventory according to ISO 14064 and the provincial key enterprise GHG emissions reporting system. In 2017, TSRC used the certified method and the TSRC CSR indicator system to complete the internal calculation of greenhouse gases. With a systematic environmental management model, we continue to increase the efficiency of energy use (using clean fuel), reduce operation costs and decrease greenhouse gas emissions to achieve the goal of continuous improvement of carbon reduction.

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

### electricity.

For the low-carbon specific action, the Kaohsiung Factory uses natural gas as fuel to replace dark oil. We also are more active on assessing to expand more compatible devices of clean fuel, replacing fuel oil. With all the above measures, the emissions intensity of unit product decrease from 1.26 to 1.23 (ton carbon equivalent/ton) even when our production in 2017 increased. We effectively decreased the greenhouse gas emissions and reduce the load on the environment, but also through the management clean system to track the trend of environmental change, TSRC promotes the production process, strengthens the internal autonomy to achieve resource efficiency, equipment performance improvement, pollution source reduction, raw materials replacement, waste reclamation, and other work projects.



ISO 14001 2015 EMS Certificate-TSRC Corporation

### **Corporate Mission and Vision**

CSR and Sustainability Issue Management

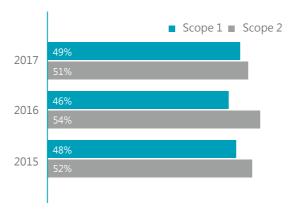
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## Percentage of Scope 1/Scope 2



## **Greenhouse Gas Reduction**

## **Our Performance**

The GHG emissions of 2020 goes back to the

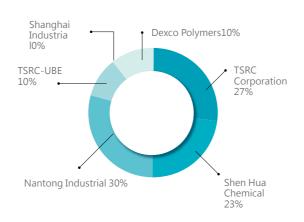
The greenhouse emissions was 20% lower than 2005 (Base year), achieving the target at the first phase

## **Our Visions**

The greenhouse gas emissions by 2050 becomes 50% of the 2005 emissions or less, showing the Company's determination of actively promote energy conservation and carbon reduction.

## 2015 to 2017 Percentage of Scope 1/Scope 2

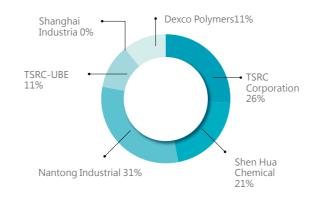
### 2015GHG



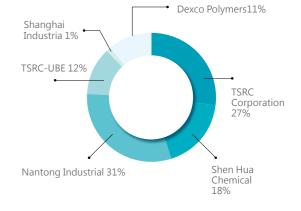
### • 2016GHG

**Our Goal** 

standard of 2005



### 2017GHG



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TSRC Corporation is committed to promoting energy conservation and waste reduction, and classified them as an important goal, introduced the Hazard Substances Free management and verification in the research and development phase in order to reduce the environmental impact of the products, continued to invest in the development of green production process technology, and responded to the market trends requirement of "non-toxic environments". For example, the Application Research Center researches and develops the environmentally friendly gases 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 safety laws and regulations certification in the RSL to ensure that the Company's products are Hazard Free to the environment.

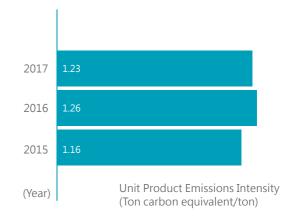
In Taiwan area, we comply with the boiler emissions standard in the "Emission Standard of Air Pollution

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 the China area, we also actively cooperate with the promotion plans in the "13th Five-Year Energy Conservation Plan of China". We also constructed the LADR (Leak Detection and Repair) to monitor the emissions to set energy conservation and carbon reduction as an important goal of optimizing the economic structure, promoting the green loop low-carbon development, and accelerating the construction of an ecological civilization.

With capital investment to strengthen the production process improvement and equipment efficiency enhancement, and promote the relevant energy conservation and carbon emissions reduction measures every year. TSRC's greenhouse gas emissions were 20% lower than in 2005 (Base year), and the first phase of the target (GHG emissions back to 2005 in 2020) has been achieved, and the self-commitment to reduce the greenhouse gas

emissions by 2050 to 50% of the 2005 emissions or less, to show the Company's determination of actively promote energy conservation and carbon reduction.

## Trend of TSRC Group's Greenhouse Gas Intensity



#### vote:

1. In 2016, electricity and steam consumption increased due to changes in production and process changes.

2. In 2017, although the output increased, the GHG emissions increased slightly, but the emission intensity decreased with system management and various emission reduction measures.

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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 strove for enhanced energy utilization efficiency to reduce energy consumption, continue to improve production process, upgrade equipment, recycle materials to achieve the objective of energy conservation and control every year.

Given the fact that electricity use was restricted in Taiwan in 2017, the Kaohsiung Factory is equipped with heat and power station. TSRC is also committed to equipment transformation, site management, office equipment and other aspects to implement energy-conservation measures, with the inventory of the ISO 50001 energy management system, to completely inventory the equipment with more energy consumption, and establish baseline data to establish the energy conservation objectives. Recognize our own position and future direction in the global wave of carbon reduction after

understanding our own GHG total emissions and energy intensity in order to effectively conserve 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, recyclable and still has basic properties for reprocessing, and is more effective in reducing environmental pollution and energy consumption. And AMD continues to be committed to a foaming ultra-lightweight material. Through the foaming technology, the use of raw materials accounted for only 30 to 50% of the original general plastic or rubber materials, greatly reduced the consumption of raw materials, but also reduced the burden on the social environment for the finished product.

TSRC will continue to consolidate the energy performance project plan through energy review for the larger energy consumption factories such as Kaohsiung and Nantong, and develop energy conservation objectives on the existing energy baselines and regularly review the operational results. TSRC has been concerned for a long time about climate change and energy efficiency improvement issues, through the ISO 50001 energy management system, the relevant measures and idea of energy conservation and industrial waste reduction have become TSRC's culture and normal state.

### **Corporate Mission and Vision**

CSR and Sustainability Issue Management

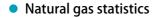
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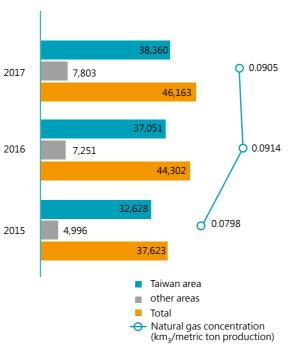
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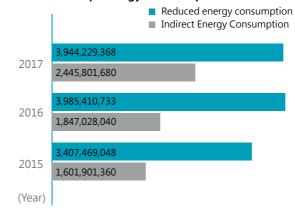


#### Note.

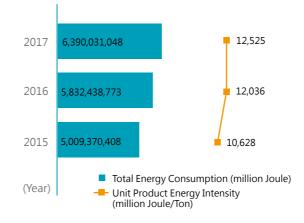
Bituminous coal is used in China, Fuel oil and natural gas are used in Taiwan, TSRC continues to use energy that is low or non-polluting to the environment.

In 2017, natural gas use accounted for about 44%.

### TSRC Group Energy Consumption



## TSRC Group Energy Consumption



# **Energy Conservation Methods, Measures and Outcome**

## 2017 Energy Conservation Performance

Taiwan Area 9 major items

Other Areas 3 major items

**Energy conservation result** 

264,761GJ

## 2018 Energy Conservation Plans

Taiwan Area 9 major items

Other Areas 2 major items

Equipment update energy saving, Process changes improve efficiency, reduce electricity consumption, Process optimization saves steam, optimize boiler operation to reduce energy consumption.

GJ=10<sup>9</sup>Joules

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2017 Energy Conservation Achievements			
Factories	Methods and Measures		
Taiwan Area	SBR Factory replaced the (PC-3201) ammonia compressor to save electricity		
	BR Factory' s ammonia condenser in the exit of the ammonia freezer was changed into parallel to reduce back pressure and increase efficiency, saving the electricity		
	The manufacturing process of SEBS in the TPE Factory was optimized to save electricity		
	Electricity conservation on the high pressure feed pump blade and the hydraulic couplers in the Public Factory		
	Renewing the windmill blades of the cooling water tower in the Public Factory		
	The steam heating tube on the heavy oil storage tank in the SBR Factory used the condensate of vapor to replace recycled heat source to save the vapor		
	The medium pressure steam ejector was replaced with high pressure one in the BR Factory to reduce the use of vapor		
	The manufacturing process of SEBS in the TPE Factory was optimized to save vapor		
	The Public Factory purchase vapor from the Grand Pacific Petrochemical Corporation, reducing the vapor produced by itself		
Mainland China Area	TSRC-UBE, Nantong Industrial	Increasing the second temperature by 5° C in the SIS manufacturing process to reduce the solvent amount entering stripping, decreasing the vapor consumption in stripping.	
		SEBS shut down 1 cooling water pump when the temperature is lower.	
	Shanghai Factory	Replacing parts of the lighting system (LED) Optimizing the production plan, reasonable stocking, and reducing the electricity loss of changing clean-ups.	



<sup>1.</sup> tce(ton of standard coal equivalent)=700\*4.1868=29.3076GJ 2. The heat absorption needed to vaporize a ton of water = 2.26 GJ 3. 1 thousand kilo watt = 3.6 GJ



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**Water Resource** 

30%

940,000<sub>tons</sub>

The water recycle rate of Kaohsiung Factory reached 30% in 2017

The total recycled water amount of TSRC was 940,000 tons, which was 30% more than 2017. All production sites endeavored to improve water treatment system and reduce water consumption in the manufacturing process.

120,000<sub>tons</sub>

The loop water cooling of TSRC-UBE installed an optimized equipment in 2017 to increase waste water recycling, decreasing almost 120,000 tons of wastewater discharge.

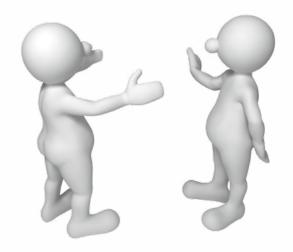
Kaohsiung Factory installed a new set of wastewater treatment equipment in 2017, showing an attentive action to use environmental investment for improving the quality of wastewater

In 2017, total water consumption of TSRC Group was 4.83milliontons. TSRC pays attention to the extreme weather and impact of the continuous operation of the cooperation, especially even there are more than 2000mm of rainfall in the Taiwan area, due to the narrow space for a large population, steep hill slopes, rain concentration, coupled with the short and rapid flowing of rivers, so most of the rain water flows into the ocean quickly. Because of the impact of global change that caused changes to the original pattern of rainfall, and environmental pollution problems, urbanization effect and indiscriminate deforestation,

that have made Taiwan the eighteenth ranking water shortage country in the world.

The main water source of the Kaohsiung plant is from 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.



### **Corporate Mission and Vision**

**CSR and Sustainability Issue Management** 

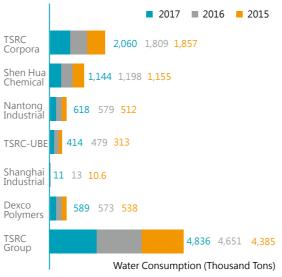
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### TSRC Water Consmption

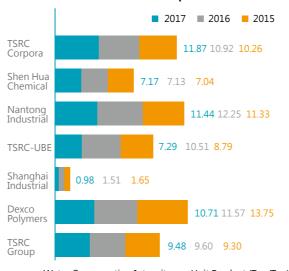


#### Note:

- Due to increased production in 2016 and the use of wet desulphurization, the water consumption increased for the Nantong Industrial and TSRC-UBE.
- 2. Due to the production reduction and product type's change, the water consumption intensity was slightly high in Taiwan area.

All TSRC production bases are striving for water recycling, mainly used for cooling systems. The Kaohsiung Factory's 2017 production process wastewater recycling rate reached 30%, all Companies in the Group continue to implement

### Water Consumption Intensity of Each Affiliate in the Group



Water Consumption Intensity per Unit Product (Ton/Ton)

water-conservation measures, focus on production process wastewater recycling and reuse(such as TSRC-UBE improving the cooling loop water tower-related measures to reduce the consumption of tap water, Shanghai Industrial replaced the water

pipe and pump vacuum waste water reuse in the production line.TSRC's total water recycled was 940,000 tons, which increased by 30% compared to 2017, and all factories were committed to improve the water treatment system and production process water consumption.

TSRC's 2017 total water drainage was 3.01 million tons. The main components of wastewater were mainly COD and SS. Wastewater from each subsidiary was drained directly to the dedicated wastewater treatment plant in the industrial park, and the quality of the drained water is also monitored by the industrial park. In addition to the flow of wastewater and real time online monitoring of the flow meter/ water quality, also conduct regular wastewater testing, to ensure compliance with the water standard of the wastewater treatment plant (the Taiwan area is for the Ren Da/Benjou Wastewater Treatment Plant). Kaohsiung Factory further installed new wastewater treatment equipment in 2017, showing an attentive action to use environmental investment for improving the quality of wastewater.

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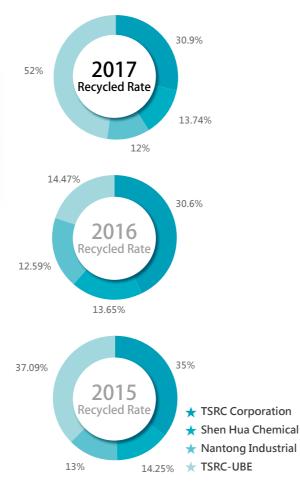
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### — Water Recycled Rate



<sup>\*</sup> The loop water cooling of TSRC-UBE installed an optimized equipment in 2017 to increase wastewater recycling rate, reduce RW usage and decrease almost 120,000 tons of wastewater discharge at the same time.

## Waste and other pollution discharge management

Systematically controlled waste, managed and reported the trace of clean up and disposal to prevent pollution of the environment. Volume of waste per unit product decreased 9% from 2015 to 2017.

TSRC' s waste disposal received the approval of waste disposal plan and processed in accordance with the laws and regulations. The management unit systematically controls general business waste and hazardous business waste, and securely clean up and give reports of clean up and disposal to prevent pollution of the environment; announces recyclable and reusable waste and containers, and establishes a strict categorization system for recycling. In addition, various of raw materials recycled and reused or applied to other usage can reduce the impact on the environment through the improvement of production process and integration of various technology.

Currently, TSRC's waste is divided in three categories, general business waste, hazardous business waste and resources waste. All waste produced is processed in accordance with the laws and regulations, and the management unit systematically controls general business waste and hazardous business waste.



Tons/Thousand Tons

and engages lawfully contracted waste treatment companies to securely clean up and give reports to prevent pollution of the environment. Resource waste includes rubber waste, metal waste, plastic waste, waste pallets and paper/cardboard, etc., after being collected by categories and recycled by the local qualified recyclers. Every operation bases cooperated to recycle and reuse waste and containers, implement a categorization system for recycling in order to reduce the quantity of waste and protect the environment

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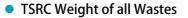
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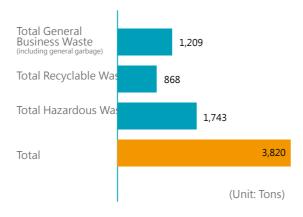
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## 2017 Weight of all Wastes



## ○— Type of Waste Percentage%



### **Hazardous Business Waste**

Incineration Treatment37 (Tons) Solidification Treatment 2 (Tons) Type of Waste Percentage 3.58%



### **General Business Waste**

Incineration Treatment 252 (Tons) Landfill Treatment 166 (Tons) Heat Treatment 36(Tons) Reuse 54 (Tons) Type of Waste Percentage 46.65%



## Recyclable Resources

Type of Waste Percentage 49.77%





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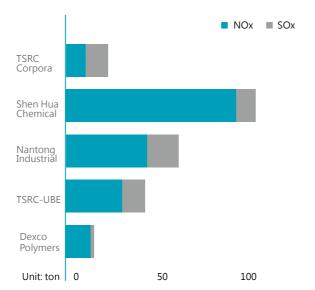
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## Other Air Pollutants Discharge Management

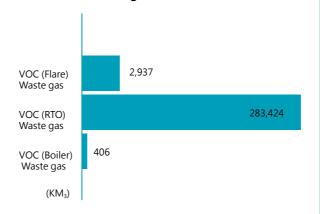
To protect the environmental impact on ambient air quality, TSRC has installed air pollution prevention and control equipment, automatic boiler chimney exhaust monitoring systems in accordance with the provisions of the law and regulations, and all have received permits for installation and operation and continueto monitor the air quality in the Factory site (For example, Kaohsiung factory has verified the OP-FTIR testing in 2017 and completed 2012~2017 annual self-monitoring concluding report). We continue to monitor, analyze and track the inspection results to ensure that all exhaust within the Factory complies with the provisions of the laws and

2017 Volume of Air Pollution Emitted



regulations. So far, the air pollutants discharged in all major operation bases include VOCs, NOx, and SOx. Shen Hua Chemical regularly tests the air pollution control equipment in the Factory and Tank areas. It hires contractors to test the exhaust gas burning furnace regularly in accordance with the laws, and the operators are licensed to ensure the furnace is operated safely; exhaust treatment facility has wet magnesia desulfurization dust removal equipment, denitrification system, etc., install smoke on line detector and continue to monitor the test results to ensure exhaust discharge shall be complied with the laws and regulations.

2017 VOC Waste gas



TSRC is committed to environmental protection responsibility and emphasized the compliance with related regulations. All global operational bases review the identification of environmental laws and evaluation to comply with local government's environmental protection regulations like air pollution prevention, water pollution prevention and waste and toxic substances control. After evaluation, if there is any potential risk of violation, such as Environmental Protection Agency's "First Phased Control Target of Greenhouse Gas Reduction", "13th Five-Year Plan for Energy Conservation and Emission Reduction" and "The Management of Existing Industrial Pipeline", we will immediate arrange improvement plans.



On-site inspection

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## **Environmental Laws and Regulations Compliance and Ecological Conservation**

spill accidents this year. There was no community complaint in 2017.

TSRC did not have any chemical

12

TSRC emphasized the compliance with related regulations and reviewed the identification of environmental laws and evaluated improvement monthly.

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 there was not any negative impact in all operational bases.

In 2017, Kaohsiung factory violated the Air Pollution Prevention Act once and air pollution control equipment and monitoring equipment regulation once. All were improved immediately.

## **Underground Pipeline Maintenance**

Three years after the Kaohsiung gas explosions, the public concern has decreased but TSRC still paid much attention to the underground pipeline maintenance and stability and the self-discipline in safety. In 2017, TSRC has promoted the underground pipeline maintenance management safely and steadily and executed the 2016 Operation, Maintenance and Testing report and 2018 Maintenance Project, to continue the execution of pipeline inspection, pipeline drawing updates, emergency response drill, the pipeline risk assessment, and an on-line immediate leak detection system building. According to the complete assessment under the confirmation of the third party

certification organization, we completed the online pipeline testing, close potential testing, pipeline pressure testing works to ensure the safe operation of the pipeline, to protect the public safety of the citizens neighboring the underground industrial pipelines and the operation safety of the working laborers.

TSRC is actively involved in the operation of the Regional Joint Protection organization of Pipeline Bundle 6 and Pipeline Bundle 8, and served as deputy chairperson for the Pipeline Bundle 8, to complete the pipeline cathodic anti-corrosion rectifier station renovation and test station repair,

conduct the emergency response live drill of Pipeline Bundle 6 and Pipeline Bundle 8, manage the pipeline safety education training courses. Based on the high relevancy of the delivery topographical conditions and operating factories and for the complementary and efficient operation promotion of the Pipeline Bundle organization, Pipeline Bundle 6 and Pipeline Bundle 8 were combined and cooperated to Pipeline Bundle 6 in January 1, 2018. After the continuous monitoring and investigation, to enhance the safety and reliability of equipment and personnel training, there was not any negative impact in all operational bases.

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TSRC did not have any chemical spill accidents this year. During the 2017 reporting period, the total amount of NT\$ 200,000 was fined for Kaohsiung factory violating the Air Pollution Prevention Act once and the pollution control equipment operation regulation once. In view of the violation, the relevant review and improvement meetings were promptly held and education training was conducted and emergency response drills were implemented for relevant personnel. This was followed by contracting the testing operator to conduct comprehensive testing in the factory to confirm the time, frequency, of effusion source and the direction of the pollution source. Up until now, there were significant improvement results. The follow-up random check on "Air Pollution Emission Situation" and "Ambient Odors" by the competent authority were verified to conform to regulations and laws up to the present.

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 products' raw material access is contracted by the Contractors following the industrial park route, the delivered hazardous raw materials must be labeled and apply for approval. Up until now, the assessment results have shown no major impact to the environment. Besides, through industrial area management center, TSRC has long been actively

participating in the local community neighborly relations and peaceful living and devoted to the improvement of local community living and local culture preservation. We encouraged employees to participate in local community relationship and local community care in order to create a more harmonious life with local community through social participation. If the local community has any complaint, it can be communicated through the Environmental Safety and the Administrative unit. TSRC also actively participated in social activities to communicate with local community and there was no complaint from the local community in 2017.

## **Ecological Conservation**

TSRC's production factories and offices are neither located in the protection required or restoration habitat, nor in the six categories of protected areas or biologically diverse areas or genetically diverse areas specified by the IUCN (International Union for Conservation of Nature) World Conservation Union. None of the species in the industrial park is listed species in the "Red List" or "National List of Protected Species in Taiwan" . TSRC Corporation planted trees and turf in the Kaohsiung Factory area to actively green and beautify the environment to reduce the impact on local species. Although all of TSRC's factories are located in the industrial area and

non-residential communities, employee commuting has a limited impact on the environment of the living area and nearby local residents. To improve the Company's ecological conservation results in the future by the means of explaining the ecosystem during the time sponsoring the disadvantaged groups to participate in farm activities and other ways.







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CSR and Sustainability Issue Management

CSR - Economic

**CSR - Environment** 

- Greenhouse Gas Management
- Energy Conservation
- Water Resource
- Waste and other pollution discharge management
- Other Air Pollutants Discharge Management
- Environmental Laws and Regulations Compliance and Ecological Conservation
- Ecological Conservation
- Environmental Protection Investment

CSR- Society
Attachments



## **Environmental Protection Investment**

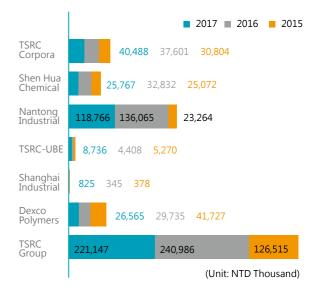
Currently, TSRC profits and competitiveness are not affected by environmental pollution. TSRC is actively handling all environmental issues and complies with the laws and regulations to manage improvement works, dedicate our efforts

in environmental protection to enhance the Company's image and strengthen our products 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 fulfill the responsibility of environmental protection. Garbage, resource recycling, and kitchen waste also has dedicated personnel to handle recycling and statistics monitoring. 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 2017, TSRC's expenditures in overall Environmental Protection and Investments were NTD 221,147,000 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-conditioners, computer peripherals and consumables, etc. TSRC also actively promotes and sets priority to use recycling and reuse products to lower the impact to environment.

## Expenditures of Environmental Accounting



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### CSR- Society

- Labor Structure, Employment and Rights
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- Support for Chemistry Education
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**Labor Structure, Employment and Rights** 

Implementation of the safety and health

awareness of all colleagues emphasized

and supported by the CEO. There was no

management system requirement

and the reinforcement of the safety

Occupational disease rate was 0 and health examination results were free from significant abnormal conditions.

work injury in 2017.

85%

There are 1,474 employees and since TSRC is a manufacturing industry, male employees account for approximately 85%.

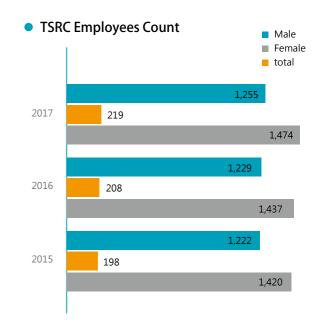
1,727

In response to organizational internationalization, TSRC actively invests in employee multiple learning, expecting that employees can grow together with TSRC. In 2017, TSRC invested NT\$ 11,727,000 on training for 6,143 person-times.

Zero illegal discrimination events Zero grievance report on human rights cases Zero child labor

Employees count of TSRC in Taiwan Area/ Mainland China Area and the USA Area is total of 1,474 (at the end of 2017), in terms of the work locations, approximately 49% of employees are in Mainland China Area. In terms of gender, since TSRC is a manufacturing industry, male employees account for approximately 85%. Hiring at TSRC is based on their competency only and the employees' benefits and compensations will not be affected because of their ethnic origin.





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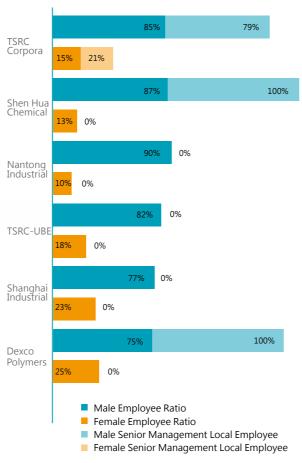
**CSR - Environment** 

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### Ratio of age, gender and area structure of TSRC Employees



#### Note

- 1. Senior Management is a position with a job grade of 19 or higher, a total of 29 persons.
- 2.TSRC hires employees with disabilities in accordance with the law and regulations, and pays employment insurance in case of an insufficient number of employees with disabilities is hired. (A total of 6 employees in the Taiwan area, a total of 2 employees in the Mainland China area)
- 3. The youngest employee of the Company is 20 years old.

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 adjustments 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

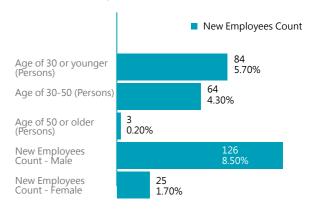
"Employee Performance Evaluation Regulations" . In terms of new employees who are hired based on their professional competency and work experience required by job duty, and local residents will be hired with priority among all job applicants of identical qualifications.

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 business subsidiaries

are located in the industrial parks or business areas approved by the local competent authorities through comprehensive assessment of operational and hiring conditions, number of employees and spending in local areas, etc., with all produce positive benefits to the local communities. And, the local employment opportunities shall be created, at the time the relevant suppliers deliver supplies to conduct relevant operations in the factory, and the Contractors perform maintenance and other engineering operations during annual repair period with the increased demand for operation personnel.

# TSRC Employee's Composition Ratio - (Age and Education)

### New Employees and Leave / Retirement



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CSR and Sustainability Issue Management

CSR - Economic

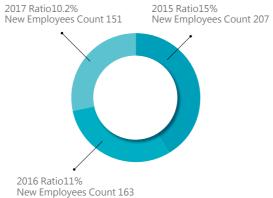
**CSR - Environment** 

**CSR-Society** 

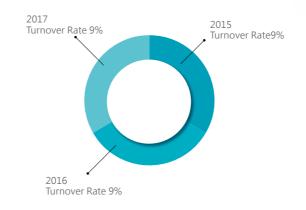
- Labor Structure, Employment and Rights
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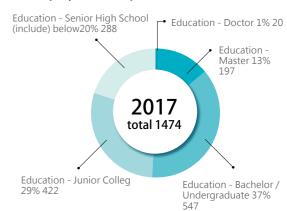
## New Employees Ratio Over the Years



## Employees Turnover Rate Over the Years



## Employee's Composition Ratio(Education)











Visit employees for heatstroke prevention and temperature reduction

**Corporate Mission and Vision** 

CSR and Sustainability Issue Management

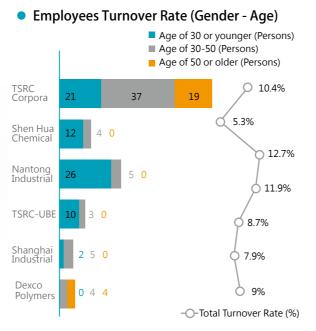
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Turnover Rate: Turnover number of employees (including retirement) / (Turnover number of employees + Total employees)

## **Employee Rights**

TSRC guarantees employees equal job opportunities and reasonable performance evaluation system, provides better salary and rewarding system than the provisions specified 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, maintain open and smooth communication channels between employers and employees, and employees can bring up any unfair incidents at any time. In addition to pursuing the safe working environment for the employees' physical health, TSRC also pays attention to their mental health, providing all types of recreational venues to help employees' physical and mental health as well as relieve their stress.

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

are disclosed. The content also complies with SA8000 Behavior Guidelines to urge our suppliers to achieve 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: protect personal freedom and prohibit discrimination. When there is an update or publication of Human Rights-related laws and regulations (such as gender equality, sexual harassment prevention, and other Human Rights Acts), the Company will take the initiative to publicize those updates to our employees.

All TSRC subsidiaries are required to comply with the local labor-related laws and regulations, implement the regulations of personal freedom protection and without discriminations, and TSRC has never hired child labor. All salary adjustments of hiring, evaluation, promotion and transfer, and pay raises are determined by the competency and annual performance evaluation result of the employee, and will not be affected by the factors of their

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age, gender, area, religion, marital status, and sex orientation.

Up until now, there has not been any discrimination event. The management of labor employer relations on the employee's transfer is also in compliance with the labor laws and local regulations in Taiwan / Mainland China / USA, and supervised by the Labor Union of each factory.

After employees have reported to work or have been transferred, we clearly define their job duty according to their position and allow them to resign on their own free will. Hence, there has not been any case of forced or compulsory labor. There has not been any violation of labor laws and regulations or offense of the rights of natives or minority groups (including aboriginal employees). Employee discrimination, and zero grievance report on human rights cases made through the Labor Union, Human Resources Department, Audit and other mechanisms in this year. TSRC complied with labor basic principle and rights, including the Freedom of Assembly and Association, Collective Bargaining Agreements, Abolition of Child

Labor and elimination of Forced / Compulsory Labor, elimination of 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



TSRC Labor Union Representative Conference

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 and Systems**

Based on the status of operations, market competition, and the result of annual employee performance evaluations, TSRC designed encouraging compensation systems 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 utilization status through the "Labor Pension Reserve Supervisory Board", to protect employees' retirement benefits.

And, 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 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) 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 employee benefits such as meal allowances. New Year's Eve Banquets, occupational disease health examinations, annual group travel, employee insurance, employee long service rewards, and gifts for weddings, childbirth, injury and cash subsidies for disease, and funerals, and many benefits are provided. And, the Company also provides emergency assistance measures for employees with

difficulties. For the Mainland China area, TSRC has also arranged a cooling subsidy for employees.

#### Note

<sup>1.</sup>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.

<sup>2.401(</sup>k): Retirement Savings Plan of the USA.

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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.

## 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. In the Taiwan area, the new modification of one fixed and one flexible day off per week in "Labor Standard Law" has had great impact on production factory shift pattern. Besides holding five conference presentations in the northern, middle and southern Taiwan, we announced the modified parts of the law on the Company internal billboard to let employees fully understand. After the labor / management meetings, we signed a collective bargaining agreement with the labor union in accordance with "Taiwan' s Collective Agreement Act" to protect the rights and benefits of both labor and management and the Human Resource department will also regularly provide attendance report for control. In addition, the annual Labor Union representatives Conference invites the chairperson of the labor union of other factories in Renwu and Dashe Districts to attend the meeting every year to discuss specific topics on labor practices to reach a consensus. In the Mainland China area, TSRC 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











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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.





## **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 will actively introduce or build relevant systems (such as ISO-14001 Environmental Management System and the OHSAS 18001 and CNS15506 Occupational Safety and Health Management System and Standardize safety Production, etc.), and inherit the spirit of the Responsible Care Committee established by most companies within the chemical industry, TSRC participated in TRCA and Ren Da Association for Promoting Safety and Health to inspect and learn from each other's industrial safety, health and environmental protection aspects and promote the safety and health protection of operators. Fire prevention drill and industrial safety education training is regularly held every

year to cultivate employee' s emergency response and self-safety management capability. Kaohsiung Factory has regulated emergency response operation procedure for adjusting to emergency like raw materials spills, fire / explosion / earthquake generated by work activities.

Upholding the spirit of the Safety and Health Management System, TSRC continues to improve the safety, health, and fire prevention works 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 zero injuries.

## Safety and 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.

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## 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 OHSAS 18001 and CNS 15506 Occupational Safety and Health Management System) established with the industrial characteristics in Head Office TSRC Corporation, the subsidiary of each area also sets up a dedicated committee responsible for labor safety and health business in accordance with the Occupational Safety Laws and Regulations, and calls labor safety and health meetings chaired by the Person in Charge of the Business Operation or designated representative regularly. 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.

TSRC Occupational Safety System, from the ignition property of the product raw materials, safety of life of work environment during work activities, consider the health risks of local communities, and expand to "safety, health, environmental protection, green" and other core work to comply with the industry standards and community/social expectations · and the Kaohsiung Factory also worked with the "Ren Da Industrial Park Neighboring Community Residents Health Risk Evaluation Plan" in 2014, through hazard confirmation, dose effect evaluation, exposure evaluation, risk characteristics description and other steps to integrate the analysis result and propose the Risk Management Measures and Environment Improvement Suggestions to maintain the health of residents surrounding the industrial park and eliminate the residents' suspicion.

Emergency response subcommittee

Energy conservation and carbon emission reduction sub-committee

Regulation and discipline subcommittee

Product distribution safety management sub-committee

**Responsible Care** 

Committee

Contractor safety management sub-committee

Product specification and liability sub-committee

Process safety management subcommittee

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TSRC Corporation Kaohsiung Factory, Nantong Industrial, TSRC-UBE, and Shen Hua Chemical have all passed the Occupational Safety and Health Management System (OHSAS 18001) Certification, and TSRC Kaohsiung Factory has also passed CNS15506 Certification. In order to pursue the goals of zero occupational hazards and zero occupational injuries, we appointed professional consulting companies to provide guidance on the exposure condition of the operating personnel and actual condition of work environment, based on the large quantity of chemicals used in the petrochemical production processes in accordance with the laws and

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

regulations.

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.

In 2017, we required implementation of the safety and health management system requirement and the reinforcement of the safety awareness of all colleagues emphasized and supported by the CEO. There was no work injury in each department. In addition to performing Monthly Environmental Safety and Health Laws and Regulations compliance inventory, TSRC also 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 self-review, to learn from other's mistake and push the improvement of similar deficiencies within the factory in parallel.

## 2017 Drill Number TSRC Corpora Total 19 Shen Hua Chemical Total 56 13 Nantong Industria Total 17 TSRC-UBE Total 9 1 Shanghai Industrial ■ Spill Response Fire Response ■ Industrial Pipelines Spill Response ■ Production Process Safety Response

## **Emergency Response Implementation Process**



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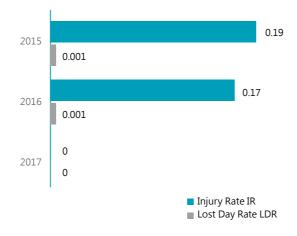
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## **Occupational Hazard Injuries**

TSRC employees / contractor employees has no work injury in 2017.

Occupational Disease Rate (ODR) is zero.

### Lost Day Rate and Injury Rate



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

   Employees angaged in limited duty or substitution in the same
- Employees engaged in limited duty or substitution in the same organization is not included in lost days.
- 2. Injury Rate (IR) = (Total occupational injuries / Total Working Time) \*200,000
- 3. Occupational Disease Rate (ODR): The frequency of occupational diseases within the total working time during the report period.
- 4. Injury statistics: 1: does not include commuting traffic accidents. 2: TSRC's statistics was in accordance with labor safety and health laws. 3: Mainland China area statistics is based on Injury Insurance Regulations of the State Council of People Republic of China.

## **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 2017, Kaohsiung Factory organized a series of activities with a total of 176 participants.

- Publicity for "Occupational Unlawful infringement Prevention" and workplace unlawful infringement prevention through respect seminar.
- Health counseling, health caring and afterward tracing is proceeded.
- Organize the Activity of "Free Flu Vaccination for Specific Group of People".
- Holding "cardiovascular disease prevention" health seminar.

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

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environment site testing, air pollution control equipment, ambient odors and noise around the factories and other special environment items, we have voluntarily reinforced the test of ionizing radiation and continued to monitor, analyze and track the test results, to 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.

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 2017 for all factories were free from significant abnormal conditions.

With reference to the OHSAS18001 management system and self-safety management, the job positions of all TSRC factories that need to conduct special physical examination are as follows:

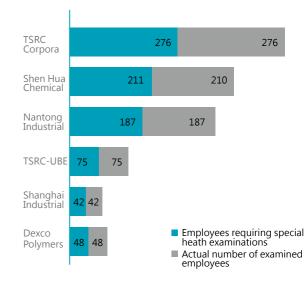
Companies	Occupational Disease Hazard Factors
TSRC	Powder Dust, Noise, Chemical
Nantong Industrial	Powder Dust, Noise, Chemical
TSRC-UBE	Noise, Chemical
DEXCO polymer	Powder Dust, Noise
Shen Hua Chemical	Noise, Powder Dust, Chemical
Shanghai Industrial	Powder Dust, Noise
Description	

### Description

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.

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.

### 2017 Employees requiring special heath examinations



One female employee in Shen Hua given up health examinations due to pregnancy. Relevant case history is recorded for reference. TSRC has added 1,3-butadine and carbon disulfide inspection due to the regulations, thus increased the number of employees requiring special heath examinations.

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## Middle Management

- Responsibility
- Time management Interpersonal relationships and communication skills

Employees

Conflict management

## First Level Management

- Essential leadership
- Target setting
- management
- solution

# Management

Situational leadership

Authorization skills

Cross department

decision making

Strategic thinking and

cooperation

Inspire team performance

- Revolution guiding
- Innovation strategy and growth mindset
- Senior training
- Global vision
- Business acumen

# Leadership<sup>+</sup>

Global leaders conference Excellent leader development plan

BD Sphere Tank Fire Brigade Joint Exercise

Fire Emergency Response



Shanghai Industrial Fire Prevention Technique Training

- Cultivate subordinates
- and performance
- Problem analysis and

## **Professional and General Education for Employees**

To "Improve Human Quality" has always been the core of our human resource development at TSRC, cultivate talents and characters in all aspects. Talent means the professional skills and competencies and character is the ethical quality of a person, from the human heart, spirit and behavior, to cultivate the employee's ethics and social caring. 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, work experience and job transfer, we established correspondent education training like management micro learning: using lunch time to plan one management subject at a time and welcome internal experience sharing. We promote management maturity through communicating different management technique together.

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



Shanghai Industrial management training



Shen Hua Chemical education training



Occupational safety training



Strategic thinking and project management

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 "Lifelong Learning" through internal and external training. An irregular questionnaire survey is conducted for the training requirement, after the consolidated analysis, the analysis results will be used as the important reference basis for the Training





Guidance and communication Project management

In 2017, TSRC actively constructed knowledge management system as the important reference basis for the further Training Development Planning. In 2017, TSRC invested NT\$ 11,727,000 on training for 6,143 person-times. The average training hours is listed as following.



### Career development

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



### Talents management

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



### Professional knowledge

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

**Corporate Mission and Vision** 

CSR and Sustainability Issue Management

CSR - Economic

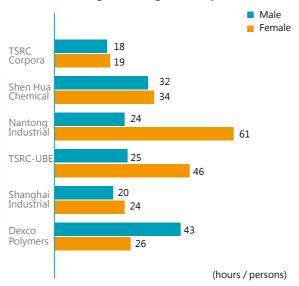
**CSR - Environment** 

**CSR-Society** 

- Labor Structure, Employment and Rights
- Support for Society
- Support for Chemistry Education
- Local Community

### Attachments





## • 2017 Average training hours By Rank



- Senior Management includes the Senior Manager and Higher Level Management Personnel, Mid/First Level Management are the Deputy Manager to Manager Levels Management Personnel.
   Direct Employees are the personnel including operator, group leaders whom directly responsible for production line operations.



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## **Support for Society**

900 hours of volunteer time

Involved in nearly 13 sessions of Chemical education in rural areas, has been involved with 124 membertrips, and nearly 900 hours of volunteer time. 2,390,000

The donation was a total of approximately NTD 2,390,000 for social caring in 2017.

For year

TSRC Social Caring Committee has set aside special funds to give back to three elementary schools of Dashe District where the Kaohsiung Factory is located and the donation is entering the seventh year, with help to thousands needed school children.

TSRC and Manufacturers of Ren Da Industrial Park established "Petrochemical Industry Characteristics Program" with

Characteristics Program" with Renwu Senior High School through industry-academia collaboration since 2014.

Since promoting Support for Society systematically, this is the seventh year, and through the Social Caring Committee and in accordance with social caring principles, operation direction and promotion methods, TSRC understand and respond 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, so we gradually construct the TSRC Social Caring Map based on our factory locations, not only donating money, but also combining the social welfare activities with the Company's business operations. TSRC will use our product rubber - as the material and work with cooperating manufacturers to produce appropriate products to help disadvantaged organizations, support the organizations to protect and educate disadvantaged groups and enhance the stability of our society.

## **TSRC Social Caring Committee Operation Structure**



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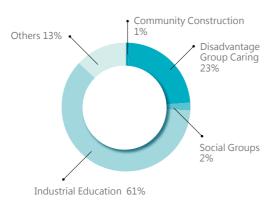
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## Social engagement





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## **Support for Chemistry Education**

## TSRC and the Origin of "Chemistry on the Go"

The story of chemistry begins with Madame Curie's lifetime and the "Chemistry on the Go" activity is organized by Tamkang University Center for Science Education,

is a Chemistry Education Service Project supported by the Ministry of Science and Technology, Ministry of Education and Chemistry Industry. We used the most easiest way to convey chemistry to the community and young students through the various historical chemistry stories to current affairs, including the Formosa Fun Coast's dust explosion, gas explosions occurred in KaiXuan Road of Kaohsiung, diesel engine pollution control, Canada forest fire and oil shale, copper chlorophyll in food security, the graphene that is going to change people's living and



Website connection: Dashe Junior High School Station
Documentary

various pigment and Light Stabilizer encountered in daily life. During team activities in every tour, we spread the seeds of chemical research all over Taiwan and let the students enter the world of chemistry through news and history.

For TSRC in the industry, this deeply agrees with the purpose of "Chemistry on the Go", since 2012 we have continue to

cooperated with the Tamkang team and planned membertrips to volunteer in schools in every factory area by TSRC employees. We have involved in nearly 13 sessions of Chemical education in remote areas, has been involved with 124 member-trips, and nearly 900 hours of volunteer time for seven years. This activity has used a remodeled mobile chemistry truck, filled with stories, performances, and experimental equipment to tour around the places. The main theme of the "Chemistry on the Go" Activity is with Listen, Watch and Handson activities, hoping for the

students to touch the chemistry knowledge closest to life in a relaxed environment and enjoy the fun of studying chemistry. Since all types of necessities for life are almost

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chemical-related, TSRC also provides the relevant product raw materials - raw plastic samples, in addition to having fun with chemistry, it also allows students to better understand the chemistry industry, touch the raw rubber materials hands-on, and enter the campus to enjoy with the students as volunteers, as the one of the best way of corporate feedback and social responsibility.

TSRC has participated in a total of 19 member-trips in the "Chemistry on the Go" Activity in 2017 with employees visiting Kaohsiung City Dashe Junior High School and Yuanfu Junior High School as volunteers to perform interactive chemistry education activities. With the support of TSRC, the chemistry education team has held 16 activities in Kaohsiung City and a total of 1,280 students participating and 768 hours of activity time.





吸新消息 關於我們 活動規劃 活動紀錄 聯絡化學車



永光化學的產品涵蓋色料化學

目前化學遊樂趣使用的化學車

提供了多種樣品在活動中展

次在桃園地區的活動。

示,同時,永光化學參與了多

品、特用化學品、電子化學

合成橡膠生產廠商, 專長於民生 域,台橡公司是化學遊樂趣活動 歷史最久的夥伴, 長期與我們合 作舉辦高雄大社國中與大洲國中 的活動, 並一直支持著化學遊樂 趣在高雄地區的場次。



三福氣體與三福化工支持著化學 遊樂趣在台南地區的活動,其中 三福氣體具有全球頂尖液化天然 氣的工藝技術和設備供應商。因 此提供了與液態凱相關的實驗與 表演, 是化學遊樂趣在台南地區 巡迴時,最受學生歡迎的單元之







Awarded prizes to outstanding



To turn the acousto-optic effect of chemical reaction into a performance

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"Chemistry on the Go" posters



Filming "Chemistry on the Go" documentary



"Chemistry on the Go" Activity group photo



Outstanding students in the Activity performance



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# **Local Community**

#### Mainland 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 September, 2017, the foundation donated RMB 66,000 at the "Tenth Poverty Alleviation and Student Aid Granting" and encouraged the students to study hard and become a useful person to society and feedback to society after being a successful person, hope to continue the spirit of "When disaster struck, help came from all sides".



#### Taiwan Area

TSRC and Manufacturers of Ren Da Industrial Park established "Petrochemical Industry Characteristics Program" with Renwu Senior High School through industry-academia collaboration since 2014. This has established the successful transformation model of corporate feedback to local, innovated the school's new characteristic and provided young people new turning point in the local employment. Visits and internship at cooperating factories are provided for students to understand the factory's working environment, organization culture and product features and to strengthen students' future development intentions.

TSRC donated Good Neighbor Feedback to the neighboring residents of the factory area through the Factory Association (the Feedback FundNote is operated by the Dashe District Good Neighbor Feedback Review Team, and used the fund subsidies of water and electricity for the local residents, student scholarships and aids, nutrition lunches for the elderly living alone and middle and low income elderly and entire district water and electricity subsidies, and further subsidize the junior high school and elementary school books, insurance, tuition, school expenses and tutoring expenses,

and increase the subsidy for English learning for each elementary school), to take root in long term localization. TSRC Corporation also continues to support the local fishing, agricultural products and purchases various types of agricultural products through the TSRC Employees Welfare Committee as gift to all employees.





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# Other TSRC Support for Society Activities

- TSRC Social Caring Committee has set aside special funds to give back to three elementary schools of Dashe District (Dashe District Elementary School / Guanyin Elementary School / Jiacheng Elementary School) where the Kaohsiung Factory is located and the donation is entering the seventh year, to sponsor meal expanses, tuition or other special needed expenses. This activity has helped thousands needed school children. Except for Certification of Appreciation, TSRC kindly declines any other types of return and also has exchange of views with the community through this positive activity.
- ◆ Continue to sponsor the "Children Are Us Foundation" .
- TSRC invited the children of Sweet Home Orphanage in 2015 and 2016to participate in the Company sponsored Meinong radish pulling activity and we further invited students in rural areas (Jiacheng Elementary School) in 2017. In addition giving the children the opportunity for farming experience, it also shows the employees' enthusiastic support for society.
- The donation was a total of approximately NTD 2,390,000 for social caring in 2017.











Note: Dashe District, Kaohsiung City Good Neighbor Feedback Fund Web Page: http://www.dsrtg.gov.tw/p06\_07.aspx?type=5

Corporate Mission and Vision

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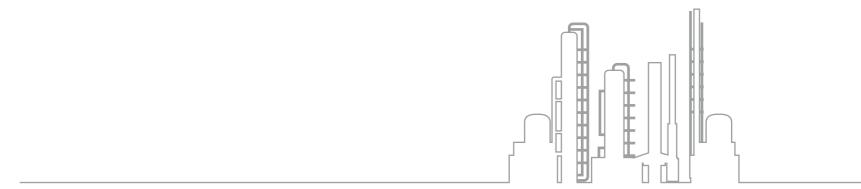
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# **About the Report**

Since 2012, TSRC has publicly published Corporate Social Responsibility Report (TSRC CSR Report) for seven years. TSRC aims at the economic, environmental and social aspects in accordance with the GRIG4 guidelines, to expand the communication and engagement with all stakeholders and discloses all key issues of CSR management policies, performance information of actions and responses.

# **Report Period**

Year 2017 (January 1, 2017 ~ December 31, 2017). And, facts that occurred before or after this report period, and future policies, goals and plans will be partially disclosed in this Report.

# **Report Guidelines**

This report is compiled in accordance with the Core Option of Global Reporting Initiative (GRI) Report Guidelines G4 to disclose the strategy, concept, measures and performance in the business 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.

# **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 2018
Previous Report: June 2017
Next report: scheduled for June 2019

# **Report Publication**

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

#### **TUV NORD Verification Certificate**



Note: Global Reporting Initiative (GRI) Report Index G4

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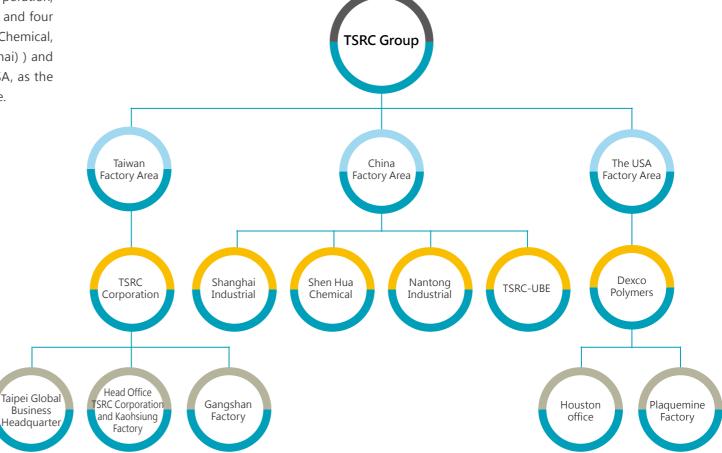
**CSR- Society** 

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# Scope and Boundaries of the Report

As described in the previous Report, the boundaries of TSRC Group CSR Report this year will disclose TSRC Corporation in Taiwan (including Taipei Global Business Headquarter, Head Office TSRC Corporation, Kaohsiung Factory and Gangshan Factory) and four subsidiaries in China (including Shen Hua Chemical, TSRC (Nantong), TSRC-UBE, TSRC (Shanghai) ) and the subsidiaries, Dexco Polymersin the USA, as the primary coverage of the report performance.



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# Important Purposes and Production Process of TSRC's Main Products

# 1. Important Purposes and Production Process of Main Products:

Emulsion Styrene-Butadiene Rubber (E-SBR)	General automobile tires, soles, conveyor belts, hoses, sports equipment, toys and other industrial products.
Solution Styrene-Butadiene Rubber (S-SBR)	Energy-saving (low rolling resistance) tires, high-performance tires, winter tires and all-weather tires.
Butadiene Rubber (BR)	High-speed tires, polystyrene modifier (HIPS), soles, sports equipment, and other industrial products.
Thermoplastic Elastomer (TPE)	Adhesives, hot-melt adhesives, plastic modifier, medical thin films and other special application industrial applications.
Applied Materials	High quality shoe materials, foam shoes, toys, stationery, wire and cable, baby supplies, personal care, hand tools covered materials, automotive industry and the refrigerator side strip and other industries.







Emulsion Styrene-Butadiene Rubber (E-SBR)	Use Emulsion to produce ESBR, conduct polymerization with Butadiene (BD) and Styrene Monomer (SM) into polymer latex using soap liquid as the reaction medium, then condense the rubber with condensation method after added antioxidant oil (add factice product then add extended oil), packaged after dehydrated dry and briquetted.
Solution Styrene-Butadiene Rubber (S-SBR)	Use Solution to produce SSBR rubber, conduct polymerization of Butadiene (BD) and Styrene Monomer (SM) into polymer latex, then make colloid particles through stripping separation recycle solvent after added antioxidant oil (add factice product then add extended oil), packaged after dehydrated dry and briquetted.
Butadiene Rubber (BR)	Use Solution to produce BR rubber, conduct polymerization of Butadiene (BD) into polymer latex, and condense into colloid particles, wash off the ash, then dehydrated dry and briquetted.
Thermoplastic Elastomer (TPE)	Use Solution to produce TPE rubber, BR rubber, conduct polymerization of Butadiene (BD) and Styrene Monomer (SM) into polymer latex, then dehydrated cutting into particles through stripping separation recycles solvent, packaged after it has dried.
Applied Materials	Perform mixing blending and granulation for the TPE products, other polymers and other raw materials.

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# **GRI G4Guidelines Index**

General Standard Disclosures

	General Standard Disclosures	Page Number/Note	External Verification (Page Number)
◆ Strateg	gy and Analysis		
G4-1	Statement from the most senior decision-maker of the organization	6	71
G4-3	Name of the Organization	83	71
G4-4	Primary brands, products, and services	19	71
G4-5	Location of the organization's headquarters	Back cover Attachment	71
G4-6	Number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report	20	71
G4-7	Nature of ownership and legal form	18	71
G4-8	Markets served by the organization	23	71
G4-9	Scale of the reporting organization	23 \ 50	71
G4-10	Total number of workforce by employment type	50	71
G4-11	Percentage of employees covered by collective bargaining agreements	53	71
G4-12	Describe the organization's supply chain	28	71
G4-13	Significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain	There was no major change in the organization in 2017.	71
G4-14	Whether and how the precautionary approach or principle is addressed by the organization	27	71

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	General Standard Disclosures	Page Number/Note	External Verification (Page Number)
◆ Strateg	gy and Analysis		
G4-15	List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses	Currently, no relevant initiatives endorsed.	71
G4-16	Memberships in associations (such as industrial associations) and the national or international advocacy organizations	23	71
♦ Identif	ied Material Aspects and Boundaries		
G4-17	List all entities included in the organization's consolidated financial statements or equivalent documents	Back cover Attachment	71
G4-18	Process for defining report content and the aspect boundaries	11	71
G4-19	List all the material Aspects identified in the process for defining report content	13	71
G4-20	For each material Aspect, report the Aspect Boundary within the organization	14	71
G4-21	For each material Aspect, report the Aspect Boundary outside the organization	14	71
G4-22	Report the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement	No re-statement	71
G4-23	Report significant changes from previous reporting periods in the Scope and Aspect Boundaries	No re-statement	71
◆ Stakeh	older Engagement		
G4-24	List of stakeholder groups engaged by the organization	9	71
G4-25	Report the basis for identification and selection of stakeholders with whom to engage	11	71
G4-26	Approaches to stakeholder engagement	11	71
G4-27	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns	12	71

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	General Standard Disclosures	Page Number/Note	External Verification (Page Number)
◆ Report	Profile		
G4-28	Reporting period for information provided	71	71
G4-29	Date of most recent previous report	71	71
G4-30	Reporting Cycle	71	71
G4-31	Provide the contact point for questions regarding the report or its contents	Back cover Attachment	71
G4-32	Report the "in accordance" option, GRI Content Index, reference to the External Assurance Report	71	71
G4-33	Policy and current practice with regard to seeking external assurance/confirmation for the report by the organization	71	71
<b>♦</b> Govern	nance		
G4-34	Governance structure of the organization	10	71
◆ Ethics a	and Integrity		
G4-56	The organization's values, principles, standards and norms of behavior	24	71

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**Specific Standard Disclosures** 

Indicators Number	Description	Report Content or Descriptions	Page Number	Material Aspect (Yes/No)	Certified by the Third Party Independent Organization (Yes/No)
Category: Economic					
Aspect: Eco	nomic Performance				
G4-DMA	Generic Disclosures on Management Approach		20	Yes	Yes
G4-EC1	Direct economic value generated and distributed by the organization		20	Yes	Yes
G4-EC3	Coverage of the organization's defined benefit plan obligations		20	Yes	Yes
Aspect: Mar	ket Presence				
G4-DMA	Generic Disclosures on Management Approach		51	Yes	Yes
G4-EC5	Ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation		51	Yes	Yes
G4-EC6	Proportion of senior management hired from the local community at significant locations of operation		51	Yes	Yes
Aspect: Indirect Economic Impacts					
G4-DMA	Generic Disclosures on Management Approach		62	Yes	Yes
G4-EC7	Development and impact of infrastructure investments and services supported		64	Yes	Yes

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Indicators Number	Description	Report Content or Descriptions	Page Number	Material Aspect (Yes/No)	Certified by the Third Party Independent Organization (Yes/No)	
Category: Environment						
Aspect: Ene	Aspect: Energy					
G4-DMA	Generic Disclosures on Management Approach		39	Yes	Yes	
G4-EN3	Energy consumption within the organization		40	Yes	Yes	
G4-EN5	Energy intensity		40	Yes	Yes	
G4-EN6	Reduction of energy consumption		41	Yes	Yes	
Aspect: Wat	rer					
G4-DMA	Generic Disclosures on Management Approach		42	Yes	Yes	
G4-EN8	Total water withdrawal by source		42	Yes	Yes	
G4-EN10	Percentage and total volume of water recycled and reused		42	Yes	Yes	
Aspect: Emi	ssions					
G4-DMA	Generic Disclosures on Management Approach		37	Yes	Yes	
G4-EN15	Direct greenhouse gas (GHG) emissions (Scope 1)		38	Yes	Yes	
G4-EN16	Energy indirect greenhouse gas (GHG) emissions (Scope 2)		38	Yes	Yes	
G4-EN17	Other indirect greenhouse gas (GHG) emissions (Scope 3)		37	Yes	Yes	
G4-EN18	Greenhouse gas (GHG) emissions intensity		39	Yes	Yes	
G4-EN21	NOX, SOX, and other significant air emissions		45	Yes	Yes	

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Indicators Number	Description	Report Content or Descriptions	Page Number	Material Aspect (Yes/No)	Certified by the Third Party Independent Organization (Yes/No)
Category: Environment					
Aspect: Efflu	ients and Waste Disposal				
G4-DMA	Generic Disclosures on Management Approach		43	Yes	Yes
G4-EN22	Total water discharge by quality and destination		43	Yes	Yes
G4-EN23	Total weight of waste by type and disposal method		44	Yes	Yes
G4-EN24	Total number and volume of significant spills		46	Yes	Yes
G4-EN26	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff		47	Yes	Yes
Aspect: Envi	ronmental Protection Laws and Regulations Compliance				
G4-DMA	Generic Disclosures on Management Approach		46	Yes	Yes
G4-EN29	Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with environmental laws and regulations		46	Yes	Yes
Aspect: Ove	Aspect: Overall Environmental Situation				
G4-DMA	Generic Disclosures on Management Approach		48	Yes	Yes
G4-EN31	Environmental protection expenditures and investments by categories		48	Yes	Yes

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Indicators Number	Description	Report Content or Descriptions	Page Number	Material Aspect (Yes/No)	Certified by the Third Party Independent Organization (Yes/No)	
Category: So	Category: Social					
Sub-Catego	ry: Labor Employment Relations					
G4-DMA	Generic Disclosures on Management Approach		51	Yes	Yes	
G4-LA1	Total number and rates of new employee hires and employee turnover by age group, gender and region		51	Yes	Yes	
G4-LA2	Benefits provided to full-time employees (that are not provided to temporary or part-time employees), by significant locations of operation		54	Yes	Yes	
Aspect: Lab	or/Management Relations					
G4-DMA	Generic Disclosures on Management Approach		55	Yes	Yes	
G4-LA4	Minimum notice periods regarding operational changes, including whether these are specified in collective agreements		55	Yes	Yes	
Aspect: Occ	upational Health and Safety					
G4-DMA	Generic Disclosures on Management Approach		56	Yes	Yes	
G4-LA5	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs		56	Yes	Yes	
G4-LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work- related fatalities, by region and by gender		58	Yes	Yes	
G4-LA7	Workers with high incidence or high risk of diseases related to their occupation		59	Yes	Yes	

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Indicators Number	Description	Report Content or Descriptions	Page Number	Material Aspect (Yes/No)	Certified by the Third Party Independent Organization (Yes/No)
Category: So	ocial				
Aspect: Edu	cation and Training				
G4-DMA	Generic Disclosures on Management Approach		60	Yes	Yes
G4-LA9	Average hours of training per year per employee by gender, and by employee category		61	Yes	Yes
G4-LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category		51	Yes	Yes
Sub-Catego	ry: The human rights				
Aspect: Nor	n-discrimination				
DMA	Generic Disclosures on Management Approach		53	Yes	Yes
G4-HR3	Total number of incidents of discrimination and corrective actions taken		53	Yes	Yes
Aspect: Forced or Compulsory Labor					
G4-DMA	Generic Disclosures on Management Approach		53	Yes	Yes
G4-HR6	Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor		53	Yes	Yes

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Indicators Number	Description	Report Content or Descriptions	Page Number	Material Aspect (Yes/No)	Certified by the Third Party Independent Organization (Yes/No)
Sub-Category: Social					
Aspect: Loca	Aspect: Local Community				
G4-DMA	Generic Disclosures on Management Approach		62	Yes	Yes
G4-SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs		67	Yes	Yes
Aspect: Anti-Corruption					
G4-DMA	Generic Disclosures on Management Approach		26	Yes	Yes
G4-SO5	Confirmed incidents of corruption and actions taken		26	Yes	Yes
Aspect: Pub	lic Policy				
DMA	Generic Disclosures on Management Approach		26	Yes	Yes
G4-SO6	Total value of political contributions by country and recipient/beneficiary		26	Yes	Yes
Aspect: Compliance					
DMA	Generic Disclosures on Management Approach		26	Yes	Yes
G4-SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations		26	Yes	Yes

Corporate Mission and Vision

CSR and Sustainability Issue Management

CSR - Economic

CSR - Environment

CSR- Society

- About the Report
   Important Purposes and Production Process of TSRC's Main Products

Indicators Number	Description	Report Content or Descriptions	Page Number	Material Aspect (Yes/No)	Certified by the Third Party Independent Organization (Yes/No)
Sub-Categor	ry: Product Responsibility				
Aspect: Cus	tomer Health and Safety				
G4-DMA	Generic Disclosures on Management Approach		32	Yes	Yes
G4-PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes		33	Yes	Yes
Aspect: Prod	duct and Service Labeling				
G4-DMA	Generic Disclosures on Management Approach		33	Yes	Yes
G4-PR3	Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirements		33	Yes	Yes
G4-PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes		34	Yes	Yes
Aspect: Marketing Communication					
G4-DMA	Generic Disclosures on Management Approach		33	Yes	Yes
G4-PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by type of outcomes		34	Yes	Yes

Corporate Mission and Vision

CSR and Sustainability Issue Management

CSR - Economic

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#### Attachments

- About the Report
- Important Purposes and Production Process of TSRC's Main Products

G4-PR9

GRI G4 Guidelines Inde

Indicators Number	Description	Report Content or Descriptions	Page Number	Material Aspect (Yes/No)	Certified by the Third Party Independent Organization (Yes/No)
Sub-Category: Product Responsibility					
Aspect: Product Laws and Regulations Compliance					
G4-DMA	Generic Disclosures on Management Approach		32	Yes	Yes

34

Yes

Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services

Attachments 91

Yes

**Corporate Mission and Vision** 

CSR and Sustainability Issue Management

CSR - Economic

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**CSR- Society** 

Attachments



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**Corporate Mission and Vision** 

CSR and Sustainability Issue Management

CSR - Economic

**CSR - Environment** 

**CSR-Society** 

Attachments



# Design concept:

Under the blue sky is the clean and energy-saving factory which the cloud forms the image of CSR, signifying Taiwan Synthetic Rubber Corporation's friendly faith in earth. Through fulfilling environmental concept of energy conservation and reducing greenhouse gas emissions, implementing the commitment of environmental protection, factories, factories coexisting with the blue sky without any conflict, TSRC expresses its efforts on environmental protection throughout and creates aan everlasting generation with all creations on earth.



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Telephone: +886 7 351 3811 Telephone: +886(2) 3701 6000 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.





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