TSRC CORPORATION

TSRC
2021 Sustainability Report

TSRC CORPORATION

Index

About this Report

This is the 2021 Sustainability Report (hereinafter referred to as this "Report") of TSRC Corporation (also called “the Company”)and discloses corporate environmental (E), social (S), governance (G), and sustainability plans and implementation. This Report is prepared in comply with the GRI Standards: Core items for disclose, chemical industry standards of the Sustainability Accounting Standards Board (SASB), and discloses climate-related risks and opportunities according to the framework recommended by the Task Force on Climate-related Financial Disclosures (TCFD). This Report is reviewed by the TSRC ESG Committee and issued after being approved by Chairman of TSRC Corporation.

Reporting Period and Publishing Cycle

TSRC Corporation issued the Corporate Social Responsibility (CSR) Report five times from 2016 and 2020. The Report is renamed as the Sustainability Report in this year. The information and descriptions in this Report are the implementation status of governance including economic, social, and environmental topics in 2021 (from January 1 to December 31). The previous Report was issued in June 2020, and the next Report is expected to be issued in June 2022. TSRC Corporation plans to publish the Sustainability Report once a year.

Scope of the Report

The contents of this Report cover implementation and performance in governance including economic, social, and environmental aspects in TSRC including the global business headquarter, Kaohsiung plant, and Gangshan plant and six subsidiaries, Shen Hua Chemical, TSRC Nantong Industrial, TSRC-UBE, TSRC-Shanghai, TSRC (Vietnam) Company Limited, and TSRC Specialty Materials LLC. The scope of this Report is consistent with all manufacturing entities included in the consolidated financial statements. In this year, we include TSRC (Vietnam) Company Limited into the scope of Report. In this Report, the global business headquarter refers to the head office of TSRC located in Taipei City, Taiwan. For readers to understand the names of related organizations, explanations are provided as follows:

- **TSRC Corporation:** Refers to TSRC Corporation located in Taiwan, including the global business headquarter located in Taipei, Kaohsiung plant, and Gangshan plant.
- **TSRC:** Refers to TSRC Corporation and six subsidiaries, including Shen Hua Chemical, TSRC Nantong Industrial, TSRC-UBE, TSRC-Shanghai, TSRC (Vietnam) Company Limited, TSRC Specialty Materials LLC, global business headquarter, Kaohsiung plant, and Gangshan plant. The terms TSRC, TSRC Group, and the entire group are used interchangeably in this Report.
- **TSRC Specialty Materials LLC** were originally named Dexco Polymers L.P. in 2020. it was renamed in 2021 as TSRC Specialty Materials LLC.

Restatements of Information

The data on GHG emissions, energy usage, water resources, waste, and air pollutants etc. in 2019 and 2020 disclosed in this Sustainability Report have been restated due to c the adjustment of data source or the change of coefficient citation, etc. Restated data will be noted in the statistical chart.

Third Party Verification and Assurance

This Report is prepared by TSRC's ESG Taskforce, which collected and summarized data, and reviewed by supervisors of each function to ensure that the contents cover all Material topics. The Company engaged SGS Taiwan to provide assurance that this Report is in compliance with the GRI Standards: Core items and AA1000 Type 2 moderate level assurance. Additionally, SASB indicators and TCFD information disclosed by TSRC also are assessed by SGS Taiwan, and the assurance statement is provided in the Appendix.

Furthermore, KPMG Taiwan was commissioned to provide limited assurance of four chemical industry indicators for this Report in accordance with the Assurance Standard No. 1 "Assurance Engagement of Examinations or Audits of Non-historical Financial Information" (established in accordance with ISAE 3000 Revised) issued by the Accounting Research and Development Foundation. The independent assurance statement issued by the accountants is included in the Appendix.

This Report can be downloaded at: https://www.tsrc.com.tw/tw/csr/publication-download/

Contact Person

If you have any advice or recommendations regarding this Report or TSRC's ESG strategies and practices, please contact:

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Letter from the CEO

For the past many years, TSRC devoted to keep stable operations, well communication with stakeholders and contribute to the environment and society. In response to the global ESG trend (Environmental, Social, Governance) and the impact of climate change, TSRC aimed to sustainability as mission and continues to strengthen operation mechanisms and measures to enhance the corporate long term operation capability.

Despite the challenges brought by global logistics and supply chain issues, as well as China's dual control system on energy intensity and total consumption in 2021, we achieved the best business performance in the past decade by seizing favorable conditions in downstream market demand and raw material price changes, achieving a consolidated net operating profit of NT$3.928 billion, lifted 378% compared to 2020. With regard to the implementation of ESG, we converted the original CSR Committee into the ESG Committee in 2021 and established the ESG Taskforce under it to facilitate joint implementation among functions. In response to the risks and impacts brought by extreme weather events to operations, we assess climate-related risks and opportunities according to the methodology of the TCFD, and formulate measures to strengthen our operational resilience to climate change. We not only disclose ESG information according to the framework of the Global Reporting Initiative (GRI) but also state ESG measures according to chemical industry standards of the SASB, so that stakeholders will fully understand our ESG performance and future plans.

With facing the trend of climate change and low-carbon economy, we have formulated ESG strategies and focus on three major aspects: "promoting environmental protection," " creating social positive impact" and "strengthening governance resilience." We developed nine focus area for improvement, including towards carbon neutrality operations, optimizing water resource use, reducing product's carbon footprint, strengthening employee safety and health, and enhancing operational resilience. We set targets for each area such as reducing total carbon emissions, using renewable energy, increasing the use of recycled water, and lowering the occupational injury rate. In terms of product innovation, we will dedicate our efforts to developing new generation rubber, such as SSBR, to increase the wear resistance of tires and improve the fuel efficiency of vehicles, which will reduce carbon emissions. We will also develop recyclable styrene block copolymers (SBC) for application in medical equipment, shoe materials, and plastic modification. These ESG efforts aim to achieve TSRC's sustainability.

TSRC's ESG performance in 2021 is as follows:

Environmental

TSRC continues to develop green manufacturing technologies and reduce energy consumption at production sites. Emission intensity (i.e., carbon emissions per ton of product) reduces 4.67% to 1.02 versus 2020. The two subsidiaries TSRC-UBE and Nantong Industrial stopped using coal-fired boilers, reducing black coal usage by 47,000 metric tons. Furthermore, waste intensity (i.e., metric tons of waste per ton of thousands of products) is down to 7, which is lower than 2020 by 14.32%. The Company will continue to reduce its environmental impact and product's carbon footprint.

Social

The Company devoted to talent cultivation. In 2021, we held 16 online sharing events to share operational topics for employees' interdisciplinary learning. We continue to implement talent development and leadership training plans. Furthermore, we organized social caring activities during the pandemic and donated medical supplies to the medical team in Shanghai, PRC. We also organized green chemical education activities in Kaohsiung, Taiwan to support the learning and development of underprivileged students. Facing the rapid spread of new variants of COVID-19, protecting the health and safety of our employees has become our primary task. The Company quickly took emergency response measures to maintain the normal operations of production sites and continuously cared about employees' health conditions.

Governance

Corporate governance is the foundation of business management. We amended numerous policies and strengthened implementation in 2021. In light of the volatile environment, we have also dedicated our efforts to improving risk management mechanisms. In addition to monitoring operational risks, information security has also been a critical area to improve. We conducted numerous drills and organized multiple training sessions in 2021 while installing anti-virus devices to improve information security.

Looking forwards the future, the threat of new variants of COVID-19 still exists, geopolitical conflicts are still ongoing, global supply chains remain strained, and extreme weather events continue to cause disasters. All of these keep challenging our long-term operations. To facing these challenges, we maintain a pragmatic attitude. We not only focus on business growth but also actively implement strategies to achieve TSRC's ESG targets. We cherish Earth's resources by developing low carbon manufacturing processes and working together with upstream and downstream partners to create solutions with scientific methods. We aim to achieve mutual prosperity with the environment and increase interactions with stakeholders to create our positive impact.

Chai Wei Cheang Joseph

CEO of TSRC Corporation

Stories for Sustainability——Contribution of Saving Energy to Environment

Responding to the global trend of carbon reduction, TSRC continues to pursue product innovation for a contribution to the environment. We develop new-generation synthetic rubbers for green tires, such as solution polystyrene-butadiene rubber (SSBR). The new-generation synthetic rubbers can improve vehicle fuel efficiency, reduce tire rolling resistance by 20%, and reduce fuel consumption by about 2-3%.

When a vehicle is operated, the tire bears a weight load. The trend contacts the ground, and the tires are squeezed and deformed, resulting in energy loss and slowness of the speed. When the rolling resistance gets greater, the vehicle needs to consume more fuel to generate propulsion for moving forward. The rolling resistance of tires has a decisive impact on a vehicle's fuel efficiency. Thus, the development of energy-saving green tires focuses on reducing rolling resistance while maintaining a certain degree of wet grip and wear resistance as well as reducing noise, which is also known as the golden triangle—safety, environmental protection, and comfort.

The SSBR produced by TSRC has been tested and proved with a significant improvement in the stability of the linkage between silicon dioxide and rubber molecules. TSRC's SSBR can effectively reduce the rolling resistance of tires and improve the wear resistance and grip, making it the indispensable raw material for energy-saving tire manufacturers.

As countries gradually phase fossil-fuel vehicles out and vigorously promote the popularization of electric cars, the desire for low tire rolling resistance and high wear resistance is even greater. An electric vehicle is equipped with heavy batteries, which increases a load of tires and the energy loss when tires are in contact with the ground. Meanwhile, an electric vehicle can start faster than a gas car because of the greater instantaneous torque, which transmits more force to the ground. To maintain decent performance, electric vehicles need tires with low rolling resistance. TSRC's new-generation SSBR products, combined with other synthetic rubbers, have successfully reduced rolling resistance compared with the previous generation products. With TSRC's innovative products and technologies, we bring excellent growth opportunities for the future automotive market.

Stories for Sustainability——Sharing & Learning towards Transformation

Facing the fourth industrial revolution, TSRC realizes that the traditional production model must be transformed from a single and standardized way to a customized, intelligent, and service-oriented business model to respond to the rapidly changing market and customers' requirement. The transformation needs diverse talents from different fields, and it also requires horizontal and vertical integrated applications across various functions to stay ahead of the industry trends and accelerate crossover innovation.

Since 2021, TSRC has held a series of knowledge-sharing events in Taiwan. Experts from various fields and departments of the Company to share their professional experience and insights with other colleagues. The knowledge-sharing series comprise four themes including future trends, products and markets, department business, and core competencies and technologies. The zero-distance sharing activities break the barriers between departments and support knowledge and skills transmitted among different business units, resulting in amazing "chemical reaction." With **1,800** colleagues' participating, the sharing activities obtained up to **93%** satisfaction. We will soon expand the activities to other sites and combine the content with colleagues 'career development paths to leverage infinite potential.

Core competencies and technologies

- TSRC's crisis and risk management
- Problem solving and innovation

The future trends

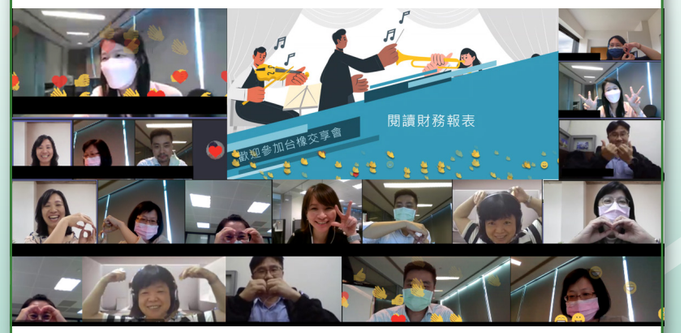
- Exploring the infinite possibility of your career
- How to build self-development
- Robotic Process Automation (RPA) learning and digital analytics
- What is enterprise digital transformation

Products and markets

- Main raw material supply and demand analysis and price forecast
- The market of advanced materials
- The application of synthetic rubber
- Product knowledge that TSRC people must know
- Taiwan's tire market and main product characteristics

The business of departments

- Trade secrets and Non-Competition
- How to read financial statements
- Strategic planning
- The process of the five-year plan
- Understanding the salary research



Stories for Sustainability——Taking Care of People to Overcome the Pandemic

COVID-19 has caused varying degrees of impact around the world. The pandemic began in 2020 and continues to spread in 2021. Taiwan raised the COVID-19 alert to Level 3 in May 2021, cluster infections occurred in China in July and the pandemic hit Vietnam and the United States in the third quarter. Since 2020, all TSRC subsidiaries have established response teams so that TSRC can respond to the rapid outbreak in 2021. By keeping abreast of all the pandemic information and local authorities' prevention measures, the Company plans and develops pandemic prevention procedures and contingency plans. We establish anti-pandemic measures in the factories, including the work-from-home mechanism, regular disinfection, and the strict control of foreign guests entering the factory area to reduce the risk of infection that employees may face during work.

The target of TSRC's pandemic prevention measures is to "ensure the physical and mental health and safety of all employees." We sympathize with colleagues about the risks and pressures brought by the pandemic. Thus, we provide employees with masks every day and distribute basic anti-COVID kits. We also offer appreciation incentives to thank employees who went to the factories during the pandemic. With colleagues' hard work and persistence, TSRC can maintain stable production and profit even when the pandemic is raging. We then reward colleagues for their hard work with decent allowances and salaries. In addition, considering that many expatriate colleagues are unable to return home due to the pandemic prevention and control measures, TSRC provides these colleagues with paid leave and allowances. Meanwhile, we assist non-local employees in applying for local government epidemic subsidies and provide substantial assistance as much as possible. In 2021, TSRC spent more than NT$2.3 million on anti-COVID materials, benefiting more than 1,500 employees and more than 400 outsourcers and contractors.

Shen Hua Shanghai UBE Nantong

TSRC subsidiaries subsidize non-local employees for celebrating in place, providing three days of paid leave or subsidies. In addition, the four subsidiaries offer employees who have been quarantined paid leave. A total of 200 days has been implemented for colleagues based in the four subsidiaries.

TSRC provides pandemic prevention kits for employees and contractors. We also offer free surgical masks, disinfectants, and thermometers every day to maintain the health and safety of employees.

Taipei Kaohsiung Gangshan

We provide more than NT$1.92 million in fixed subsidies to those who stayed on duty during the pandemic, with an appreciation for their efforts to maintain the operation and production of the company.

We offer a one-day paid leave to encourage employees to get vaccinated. If employees have COVID-19 symptoms or their footprints overlap with those diagnosed, TSRC provides free rapid antigen tests for employees.

TSM

Due to the severe pandemic situation in the United States, TSRC Specialty Materials continues to employ the work-from-home mechanism. We follow the regulation to provide paid sick leave for colleagues who have been diagnosed or quarantined at home. If their actual leave days exceed the statutory ones, employees can file an insurance claim to maintain their income. If employees have to go to the factory due to business needs, TSRC Specialty Materials provide two days of special honorary leave. In 2021, a total of 1,044 hours of leave had been employed.

Vietnam

In the early stage of the pandemic, the work-from-home mechanism is quickly started. Manufacturing and technical units are stationed in the factory in advance. TSRC (Vietnam) Company provides medical materials and daily necessities to ensure that employees would not be exposed to the risk of infection when commuting. TSRC (Vietnam) Company also offers a safe working environment.

Unlike other local companies that experience strikes and profit loss due to insufficient pandemic prevention measures, TSRC (Vietnam) Company maintains stable operation thanks to advanced plans and deployment. We even provide local employees with subsidies and year-end bonuses.

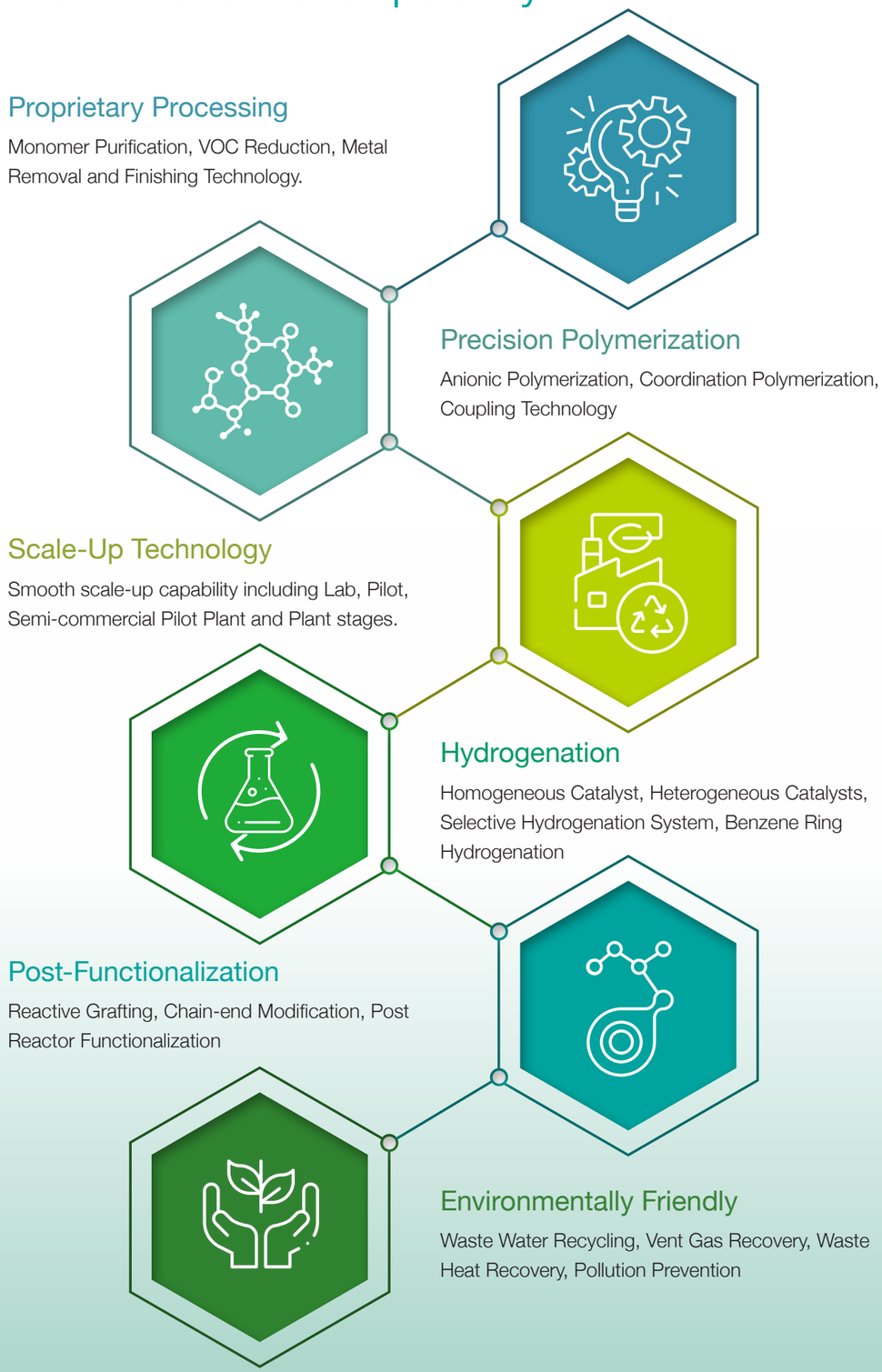
Stories for Sustainability——R&D Center for Innovative Capability

TSRC is a leading manufacturer of styrene block copolymer (SBC) and synthetic rubber (SR). To strengthen TSRC's innovation capability and global configuration for effectively supporting customers based in the European and American markets, TSRC accelerates the production growth of the specialty polymers. In 2021, TSRC established global R&D center in Katy, a western suburb of Houston, Texas, USA, also the regional operating headquarters of TSRC Specialty Materials LLC, a subsidiary of TSRC.

The global R&D center located in the United States is TSRC's second multifunctional R&D center in the world and the first one overseas. The R&D center realizes TSRC's strategy of expanding its globalization and accelerating the growth of the specialty polymer business. Through collaborating with local customers and integrating the sales and production capabilities of TSRC Specialty Materials, the R&D center will accelerate the development of specialty chemical applications and product commercialization.

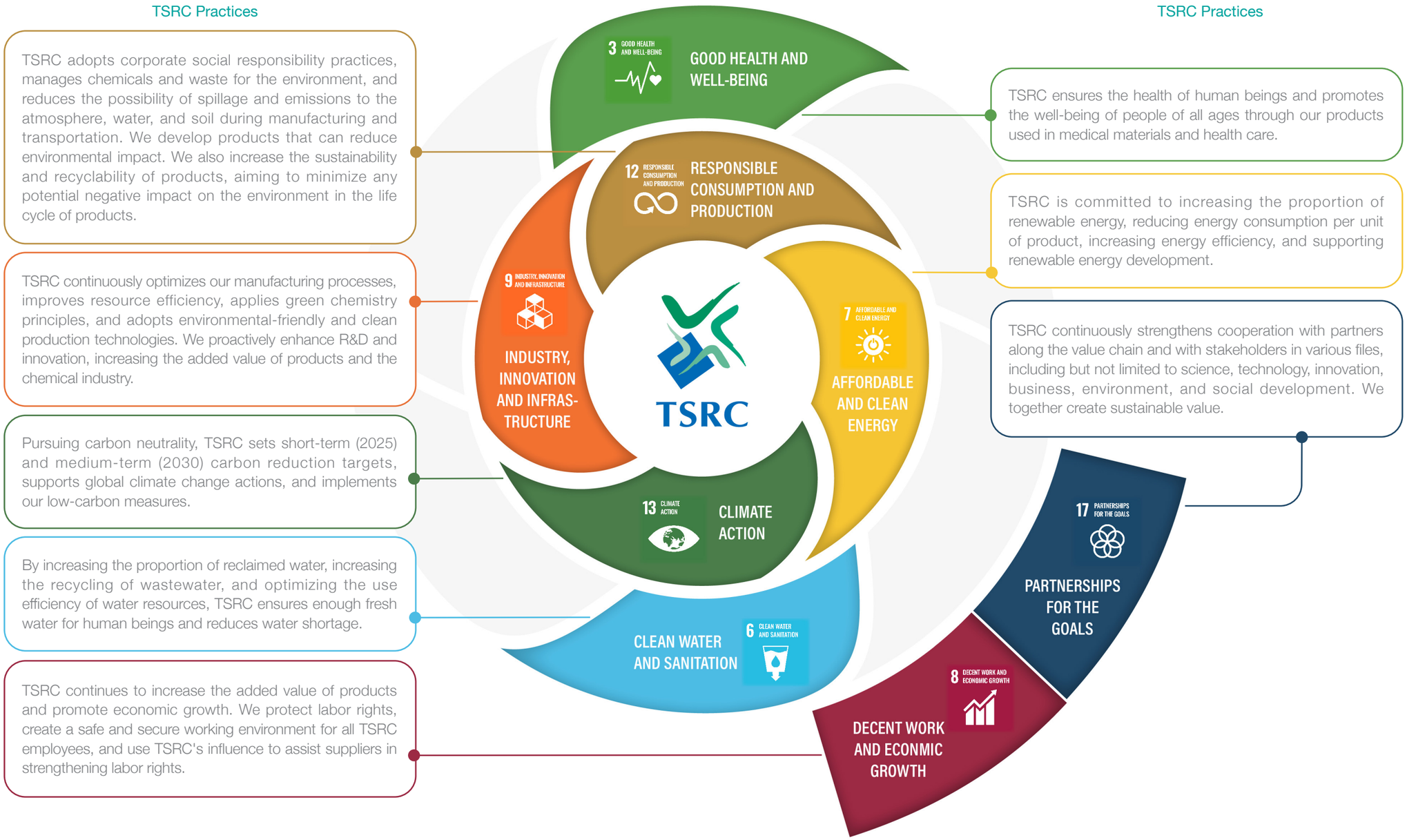
The global R&D center will focus on the development of specialty styrene block copolymer (SBC) products, including polymer structure and functionalization design, process technology development, end application, and customer technical services. It will effectively combine TSRC's global technical capabilities and will be dedicated to markets such as medical materials, hygiene products, adhesives, films, asphalt modification, and elastic non-woven fabrics.

Technology platforms serve as the foundation and building blocks for our differentiated products that perform in a wide variety of applications. At TSRC we have been continuously investing in sustainable innovation over the past decades, developing enabling technologies, and improving our fundamental know-how. These platforms provide flexibility in new product design and enable us to shorten development cycles.

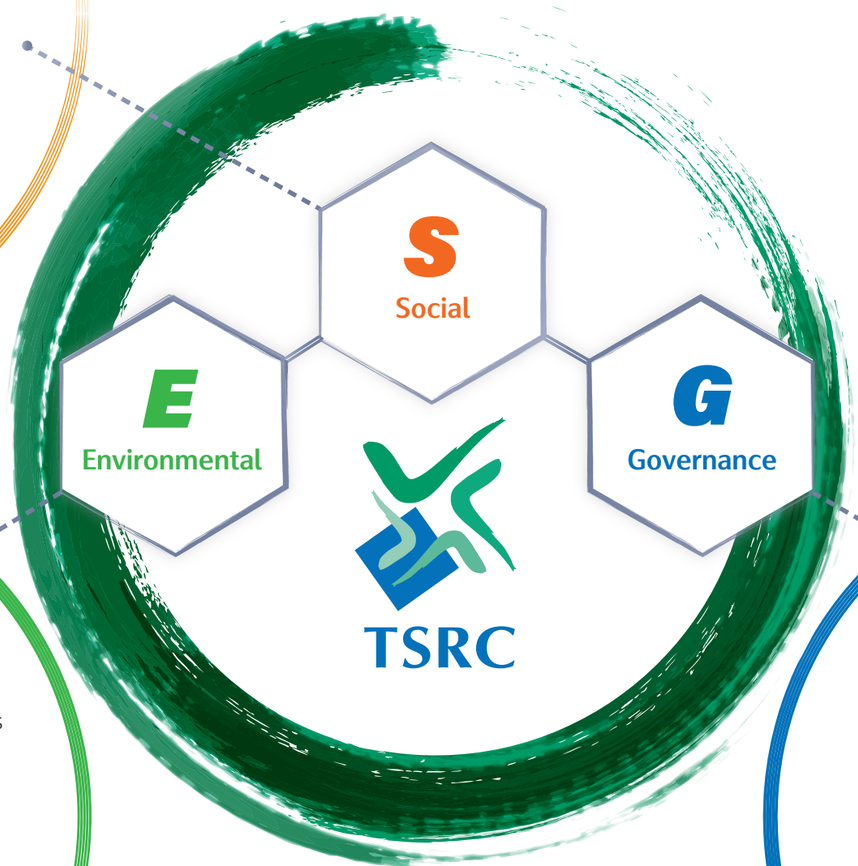


ESG Strategy

In response to the global ESG trends and climate change, TSRC has held an ESG consensus-building workshop led by the ESG Committee in 2021. With participants composed of managers of the headquarters and production sites, we review the global ESG development trend, the United Nations Sustainable Development Goals (SDGs), and ESG strategies and practices of benchmarking companies in the chemical industry. We jointly discussed the SDGs that TSRC should focus on in the future and can make contributions including Good Health and Well-being (SDG 3), Clean Water and Sanitation (SDG 6), Affordable and Clean Energy (SDG7), Decent Work and Economic Growth (SDG 8), Industry, Innovation and Infrastructure (SDG 9), Responsible Consumption and Production (SDG 12), Climate Action (SDG 13), and Partnerships for the Goals (SDG 17).



TSRC ESG Committee formulates our ESG Strategy for the next decades by integrating the Company's long-term vision and core business goals. The Strategy is composed of 9 major areas and 24 targets. The ESG Committee will regularly monitor and review all areas. The milestones will be checked in the short-term (2023), mid-term (2025), and long-term (2030). We will enhance TSRC's ESG performance with a proactive and practical attitude.



Social

- Pursuit the common good of human beings and build a safe and healthy environment for employees
- Create a friendly workplace and cultivate employees with multi-functions
- Maintain good communication with stake-holders and support local environment and increase social engagement

Environmental

- Take actions to global carbon reduction and invest in developing green manufacturing process
- Lift product value and be the first choice for clients to reduce environmental impact and carbon emissions
- Develop an innovative circular economy business model and strengthen the efficiency of energy and resource

Governance

- Implement corporate governance and integrate long-term strategies and operational plan
- Build a corporate culture encouraging innovation and create a diversified business portfolio
- Build operational resilience and cooperate with business partners to create sharing values

Environmental

In response to the global trend of carbon reduction and the scarcity of energy resources, TSRC cherishes the earth's resources and formulates our carbon reduction targets. We will be towards carbon neutrality by increasing the use of renewable energy, recycled water, and recycled raw materials. We also develop products and services that support customers to reduce resource usage. With our innovative thinking, TSRC cooperates with business partners towards low-carbon economy.

Focus Area	Target	2023	2025	2030
Towards Carbon Neutrality Operation	Reduce total carbon emission Scope1+2; Base year:2021	Total carbon emissions reduction by **5%** versus base year	Total carbon emissions reduction by **10%** versus base year	Total carbon emissions reduction by **22.5%** versus base year
	Increase the use of renewable energy	Increase renewable energy to **5%** of total electricity consumption	Increase renewable energy to **10%** of total electricity consumption	Increase renewable energy to **30%** of total electricity consumption
Water Resource Optimization	Increase wastewater recycling	Increase wastewater recycling to **25%** of total volume of wastewater	Increase wastewater recycling to **36%** of total volume of wastewater	Increase wastewater recycling to **40%** of total volume of wastewater
	Increase recycled water utilization	Increase recycled water utilization to **15%** of total water consumption	Increase recycled water utilization to **34%** of total water consumption	Increase recycled water utilization to **40%** of total water consumption
Lower Products' Carbon Footprint	Develop eco-friendly products	• Develop new-generation synthetic rubber for green and EV tires/shoe materials to reduce carbon emissions by around **150,000** mt (based on sales projection) • Develop eco-friendly foaming product • Special styrene block copolymer (SBC) developed for medical equipment, shoe materials, plastic modification aim to increase recyclability and decrease medical waste	• Develop new-generation synthetic rubber for green and EV tires/shoe materials to reduce carbon emissions by around **300,000** mt (based on sales projection) • Develop eco-friendly foaming products with recyclability • New type of special styrene block copolymer (SBC) developed for reducing energy consumption and organic solvents in customer production process	• Develop new-generation synthetic rubber for green and EV tires/shoe materials to reduce carbon emissions by around **1,500,000** mt (based on sales projection) • Develop eco-friendly foaming products that use renewable materials and more recyclability • Medical TPE products developed for reducing medical waste by **10%** compared with previous generation products by sales
	Product process optimization	Optimize production process of TPE products, reduce use of steam to achieve **1,800** mt per year of carbon emissions reduction	Optimize production process of TPE products to reduce electricity and energy consumption	Optimize production process of TPE products, reduce electricity and energy consumption to achieve **9,000** mt per year of carbon emissions reduction
	Use of renewable materials*	Develop renewable raw material suppliers	Renewable raw materials account for **5%** of total raw material purchase	Renewable raw materials account for **15%** of total raw material purchase
	Increase Sustainable products**	Sustainable Products account for **3%** of total sales	Sustainable Products account for **20%** of total sales	Sustainable Products account for **40%** of total sales

*Renewable Materials : (1) Agriculture based (2) Bio-based (3) Waste of other products

** TSRC sustainable product: (1) Reduction: reduce product carbon emission intensity /product for reducing environmental impact/products for reducing customer's energy consumption of process (2) Recycle: product with recyclability (3) Renewable: products using renewable materials (4) Replace: Products that can safely replace other products

Social

To increase competitiveness, TSRC continues to strengthen organizational ESG development, talent cultivation as well as promote multi-functional development and learning and external cooperation and exchanges to lift TSRC long-term sustainable value. Employee safety and health are the foundation of TSRC's stable operation. We will continue to optimize the global operating environment, improve employees' physical and mental health, and enhance the sense of belonging and cohesion. With our resources and employee enthusiasm, we make positive influence on humanities and society by improving chemistry education, supporting social welfare, and helping local education and community development.

Focus Area	Target	2023	2025	2030
Strengthen Organization's Sustainability Capability	Enhance organizational ESG development and employee competency	• **30%** of employees (cumulative) undergone multiple competency training • Build organizational ESG mindset through completion of ESG training program globally	• **60%** of employees (cumulative) undergone multiple competency training • Strengthen organizational ESG capacity via development and integration of ESG information & management systems	• **80%** of employees (cumulative) undergone multiple competency training • Enhance ESG performance analysis
	Sustainable Cooperative Program with business partners or outside institutions	Achieve **> 300** participants (cumulative) for academic or technology exchange with business partners or outside institutions	Achieve **> 1,000** participants (cumulative) for academic or technology exchange with business partners or outside institutions	Achieve **> 5,000** participants (cumulative) for academic or technology exchange with business partners or outside institutions
Improve Health, Safety & Wellbeing of Employees	Enhance global workplace safety	TRIR **≦ 0.36**	TRIR **< 0.3**	TRIR **< 0.3** and achieve one or more years of zero recordable injuries
	Strengthen employee engagement	**70%** engagement score via employee engagement survey	**72%** engagement score via employee engagement survey	**75%** engagement score via employee engagement survey
	Enhance employee's physical and mental care	**> 500** employees (cumulative) participated in physical and mental health activities or lectures	More than half of global sites provide physical and mental consulting services	All global sites provide physical and mental consulting services
Enhance social engagement	Support environmental protection and social care programs	**> 300** volunteers (cumulative) for social care or environmental protection activities	**> 600** volunteers (cumulative) for social care or environmental protection activities	**> 1,000** volunteers (cumulative) for social care or environmental protection activities
	Promote science education programs	**> 150** participants (cumulative) for science education activities	**> 300** participants (cumulative) for science education activities	**> 1,000** participants (cumulative) for science education activities

Governance

TSRC is committed to enhancing the governance and supervision mechanism. Based on integrity, we embed ethical standards in our daily operations. We abide by relevant laws and regulations and pay close attention to the risks and challenges faced by various operating sites worldwide. We build a risk-tolerant and flexible supply chain to ensure the stability of products and service. TSRC actively innovates products and enhances service. We aim to be the best partner for our customers and pursue sustainable growth of operations.

Focus Area	Target	2023	2025	2030
Strengthen Corporate Governance	Enhance risk & crisis management	Refine climate risk management mechanism, protection measures, and timely disclosure	Strengthen risk monitoring and improve operation management via digital management system	Continuous improvement on global risk management and crisis response mechanisms
Integrate Sustainability and Business Strategies	Build new sustainable business	Evaluation of new business	New business contributes **>5%** of total consolidated revenue	New business contributes **>10%** of total consolidated revenue
	Strengthen innovation momentum	Increase new products development activities	New products contribute **>15%** of consolidated revenue	Increase new product revenue contribution
	Uplift customized -service value*	Increase the sales of easy-to-process synthetic rubber by more than **8%** versus 2021, and evaluate other solutions for customized services	Increase The sales of easy-to-process synthetic rubber by **20%** versus 2021, and pilot other new customized products or services	Increase the sales of easy-to-process synthetic rubber by **> 50%** versus 2021 and commercialize other new customized products or services
Build Resilient Operation	Accelerate reduction of supplier's GHG emission	Require top **20** suppliers (by purchase spent) to implement GHG emission reduction target and actions	Require top **50** key suppliers by purchase spent) implement GHG emission reduction target and actions	Require all suppliers implement GHG emission reduction target and actions
	Strengthen supply chain integrity	**>70%** (total purchase spent) of raw materials from local sourcing and develop local suppliers of renewable raw materials	**>75%** (total purchase spent) of raw materials from local sourcing and develop local suppliers of renewable raw materials	**>80%** (total purchase spent) of raw materials from local sourcing and develop local suppliers of renewable raw materials

*TSRC customized service: (1) Easy Processibility: Assist customers to reduce production process to save energy or resource consumption (2) eco-friendly packaging: Assist customers to reduce carbon emissions in transportation and logistics process (3) High-value application: cooperate with value chain partners, provide solutions, and assist customers enter green industry chain (4) Others

1. About TSRC

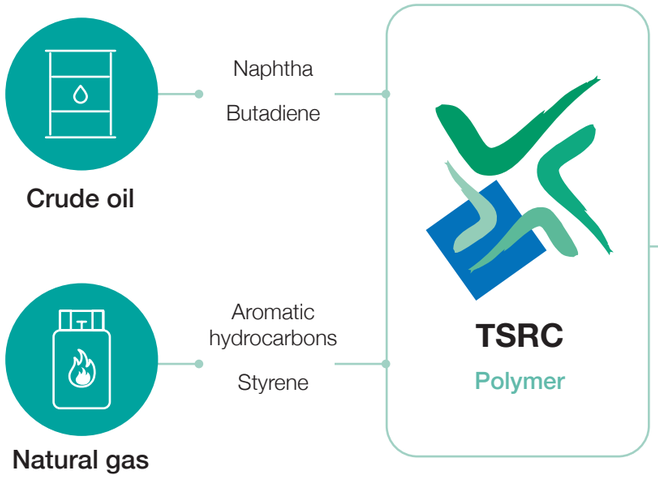
1. About TSRC

Material topic	**Business strategies and performance**
Corresponding chapter	**1.1.4 Business Performance**
Management purpose	To establish the Company's sustainability strategy and business model, ensure business performance, create return to shareholders, and share economic value with employees and society to have a positive impact on society.
Management approach	• Execute sustainability and business strategy , enhance the ability of innovation, and upgrade R&D and product innovation • Maintain close relationships with clients, seize opportunities responding to market changes, and maintain stable operational performance
Assessment mechanism	• Consolidated revenue, net operating profit, and earnings per share each year • Employees' compensations in each year
Mid and long-term management goals	• Maintain the company's growth momentum and continue to achieve excellent performance • Improve strategies for sustainable development and share economic value with stakeholders
2021 Achievement of KPI	• **Objective: Maintain the company's growth momentum and continue to achieve excellent revenue performance** Implementation status: Consolidated revenue was approximately NT$**32.533 billion** in 2021, up **35%** compared to 2020. Net operating profit was NT$**3.928 billion**, up **378%** compared with the previous year. The earnings per share reach to **4.76**, up **479%** compared to 2020. • **Objective: Enhance sustainability strategies and share economic value with stakeholders** Implementation status: Compensation and benefits of employees are over NT$**2.2 billion** in 2021, up **22%** compared to 2020.

1.1 Industry Positioning

TSRC was founded in 1973 and is a listed company in Taiwan. TSRC has been the leader of the rubber industry in Asia's market. TSRC targets the global market with its R&D and technology and mainly develops high value-added products. We also developed customized products to expand the scope of applications and increase product sales. Besides application in synthetic rubber products, such as tires, airbags, and shoe materials. TSRC has accelerated the development of specialty chemicals in response to market changes in recent years, and successfully expanded to high-value applications, such as high-end shoe materials, medical materials, and hygiene products. In response to international sustainability trends and the rapidly growing demand for green products, the Company has developed a new generation of rubber products for electric vehicle tires and eco-friendly tires, as well as styrenic block copolymers (SBC) for medical devices, shoe materials, and plastic modification. We continue to improve product quality to enhance the Company's competitiveness.

Association of TSRC with Upstream, Midstream and Downstream Industries



Synthetic Rubber

- Butadiene rubber (BR)
- Emulsion polymerized styrene-butadiene rubber (E-SBR)
- Solution styrene-butadiene rubber (S-SBR)
- Butadiene-acrylonitrile rubber (NBR)

→ Tire and auto parts; Tire and conveyor belt; Green tire; Shoe soles and foaming

Advanced Materials

- High-end shoe materials
- Foaming material
- Soft material
- Overmolding meterial

→ Yoga mat and footwear accessories; Insole; Auto Accessories and tool grip

Thermoplastic elastomer

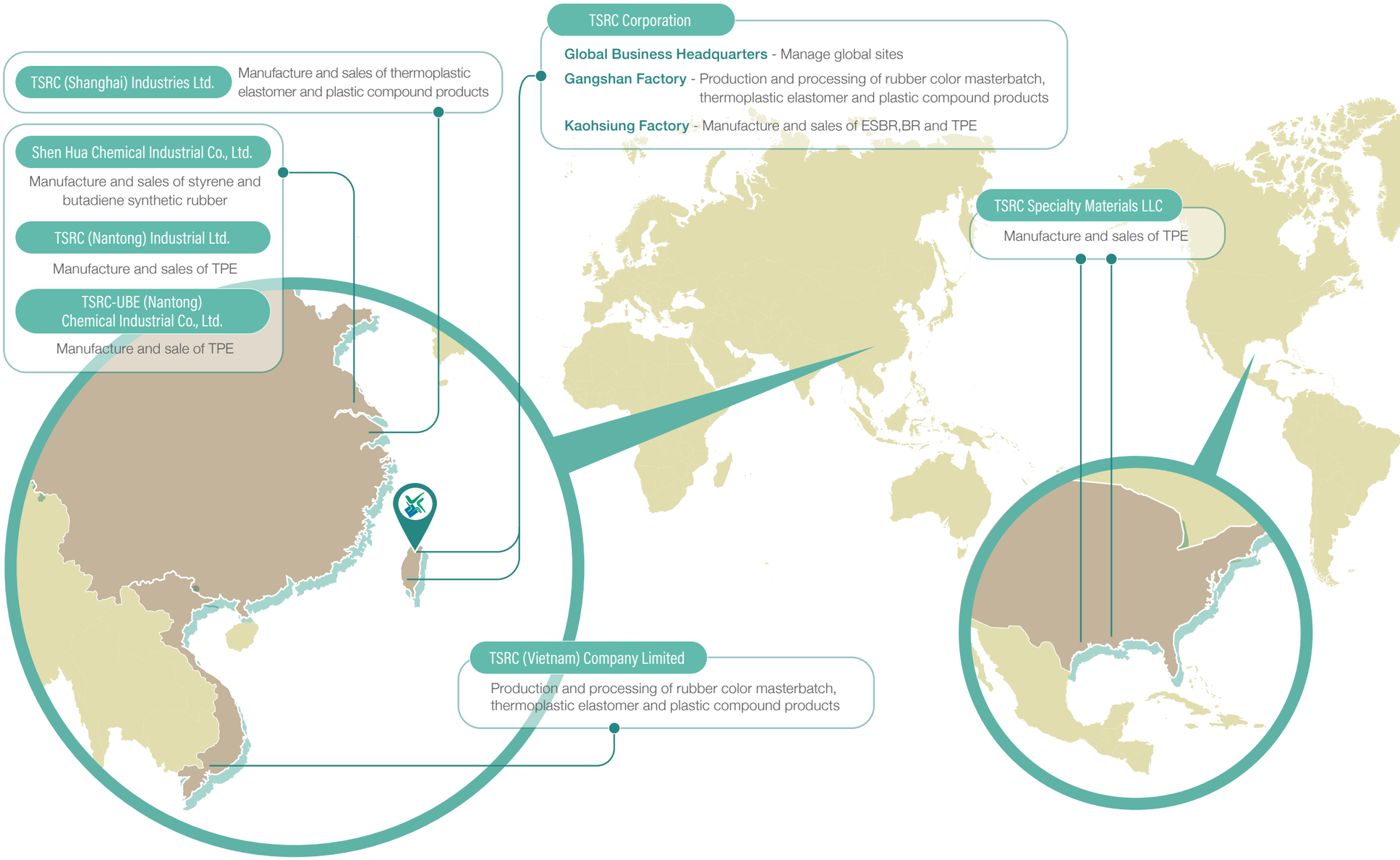
- Styrene-Butadiene-Styrene copolymers (SBS)
- Styrene-Isoprene-Styrene copolymers (SIS)
- Styrene-Ethylene/Butylene-Styrene copolymers (SEBS)

→ Packaging and family hygiene; Plastic modifiers and family hygiene; Infusion bag and medical tubing

1.1.1 Globalization

TSRC is headquartered in Taiwan but seeks to expand its global presence with locations in Europe, Asia, and America. TSRC's head office and two plants (Kaohsiung and Gangshan) are located in Taiwan, four subsidiaries are located in mainland China (Shen Hua Chemical, TSRC Nantong Industrial, TSRC-UBE, and TSRC-Shanghai), TSRC Specialty Materials LLC is located in America, and subsidiaries with only trading function are located in Singapore and Luxemburg. Furthermore, TSRC and ARLANXEO established the joint venture ARLANXEO-TSRC with each company holding 50% shares. TSRC jointly established its India factory with IndianOil. To expand into the high-end shoe-materials market, TSRC (Vietnam) Company Limited located in Vietnam also provides growth momentum for TSRC.

TSRC Globalization



TSRC Corporation Profile

Company name	TSRC Corporation	Industry	Rubber industry
Address	Headquarter - 18F, No. 95, Sec. 2, Dunhua S. Rd., Taipei City	Registered Address - No. 2, Singgong Rd., Dashe Dist., Kaohsiung City	
Paid-in capital	NT$ 8,257,099,780		
Number of employees	1604 employees	Female - 265 (16.53%)	Male - 1339 (83.47%)
Output volume of main products in 2021	Synthetic rubber productsr - 548,218 metric tons	Non-synthetic rubber products - 13,920 metric tons	

1.1.2 Vision and Mission

A global specialty materials enterprise that enriches the quality of life for humanity through innovative technologies and creates sustainable value and returns for our stakeholders

Mission

Be an essential partner to our customers, a socially responsible member of our community, and an enterprise committed to innovation, sustainable growth, and excellence

TSRC

Vision

Core Value

Integrity, Innovation, Teamwork, Excellence, Accountability

1.1.3 Main Products and Applications

Synthetic Rubber

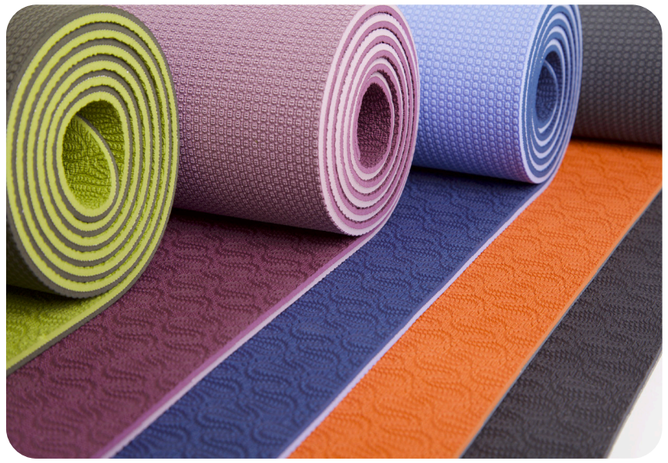
	Product description	Main applications	Trademark
BR	BR has excellent elasticity and is wear resistant, low temperature resistant, and impact resistant. It is mainly used to make high speed radial tires and modify high impact resistance HIPS. Market demand on BR has continued to increase following the widespread application of HIPS in personal computers, home appliances, and electronics.	High speed tires, HIPS, outsole, sports equipment, and other industrial products	TAIPOL® BR
E-SBR	E-SBR has higher wear resistance than natural rubber and is easier to process. Moreover, its quality and production capacity are not limited by weather and geographic environment, which has made ESBR the most extensively used synthetic rubber product.	Tires, outsoles, conveyor belts, rubber belts, tank and trailer tracks, sports equipment, toys, and other rubber products	TAIPOL® ESBR
S-SBR	S-SBR has low rolling resistance, wet-skid resistance, and wear resistance. Eco-friendly or electric vehicle tires made using SSBR can increase the fuel efficiency of vehicles.	Energy-saving (low rolling resistance) tires, high performance tires, winter tires, and all-weather tires	TAIPOL® SSBR
NBR	NBR has excellent oil resistance, solvent resistance, heat resistance, and ageing resistance.	Oil pipes, oil seal, roller, industrial gasket, drive belt, shoe materials, foaming materials, and conveyor belt	TAIPOL® NBR

Thermoplastic Elastomer (TPE)

	Product description	Main applications	Trademark
SBS	SBS has relatively high strength and is easy to process. It has excellent cohesive force, low initial viscous force, high viscosity, high transparency, excellent tensile strength, and easy to process at low temperatures It is suitable for modification of styrene impact/resilience applications and styrene/olefins compatibilizer and adhesive.	Elastic film, composite materials, medical supplies adhesives, labels, adhesives, and shoe materials	TAIPOL®/ VECTOR® SBS
SIS	SIS has good thermal stability, relatively high cohesive strength, coating ability, and excellent adhesive force. It has excellent flexibility, high initial viscous force, low viscosity, and excellent processability and flexibility.	Hot glue, elastomer blending and plastic modification, elastic film, label adhesive, tape adhesive, and medical supplies adhesive	TAIPOL®/ VECTOR® SIS
SEBS	SEBS has high strength, ozone proof, and UV resistance, and also has thermal stability, resistant to high temperature, and easy to process. It is resistant to oxidation, ozone, UV, heat, and chemicals, and has high oil absorption, resilience, and compression resistance, and easy to process. It is highly compatible with styrene/olefins, elastic, and has excellent hysteresis.	Composite materials, plastic modification, packaging, flexible die, adhesive, medical, automotive, wires, and shoe materials	TAIPOL®/ VECTOR® SEBS

Advanced Materials T-BLEND

	Product description	Main applications
T-BLEND Advanced Shoe Materials	The T-BLEND ASM series consists of SEBS composite materials that are mainly used in shoe materials. It is compatible with EPDM and EVA, and makes new designs possible while increasing product value. Materials produced by TSRC have excellent performance, including excellent resilience and stable continuous force, high shock absorption, alleviates heel and sole pain, and reduces energy return. It is a high value material that has both resilience and shock absorption.	Midsole and outsole of running shoes, walking shoes, and fitness and training shoes
T-BLEND Foaming Material	T-BLEND foaming materials have simple formulas and manufacturing processes, better than EPDM, EVA, and SBR, but also highly compatible. It has numerous characteristics, including high rate of elongation, rigidity, higher compressive strength and deformation resistance, soft touch, outstanding flexibility and resilience, and better performance than EVA, PU, and CR.	Yoga mat, sports products, highly supportive and elastic shoes, and polymers that require foaming
T-BLEND Soft Materials	T-BLEND's soft touch and gel products make shoes stronger, more durable, comfortable, safe, and appealing. It can be used to make soft and flexible shoe pads and durable and warm snow boot covers. TSRC's materials can be bound to common plastics, such as PP, ABS resin, PC, and nylon, expanding the scope of application.	Shoe pad, midsole and outsole of footwear, and sports accessories
T-BLEND Overmolding Material	T-BLEND overmolding materials make products comfortable, safe, flexible, durable, and appealing. The materials make new designs possible and create a competitive advantage. The materials are suitable for handles that generate vibration and impact when used.	Handles of various tools, handles of on-road and off-road bicycles, stylus, daily life accessories, and automobile accessories

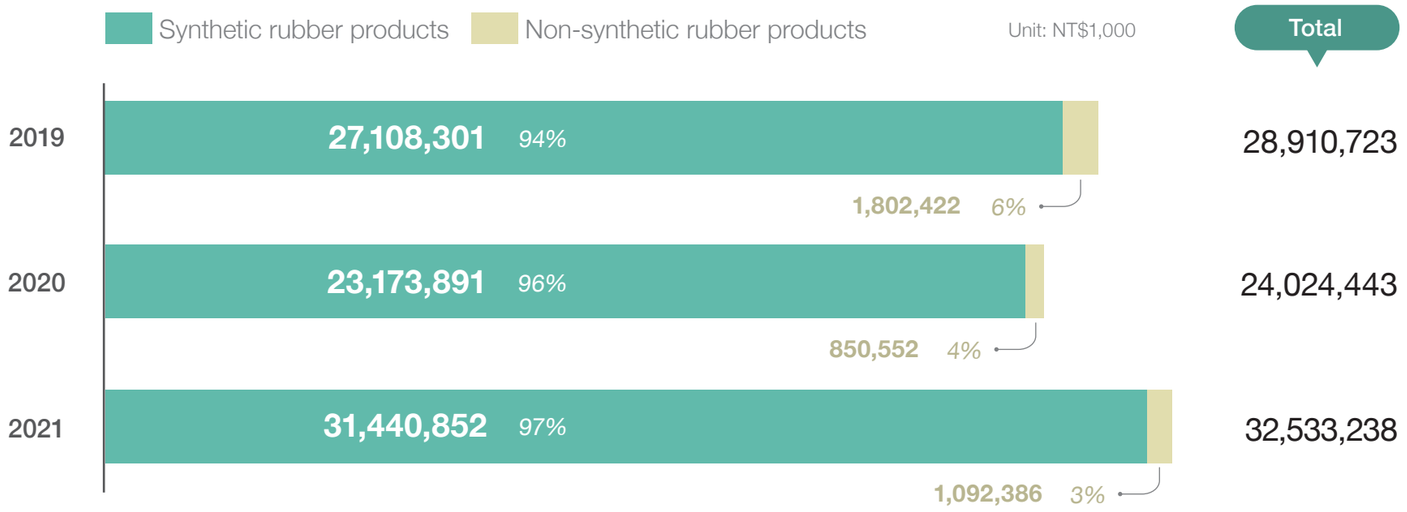


1.1.4 Business Performance

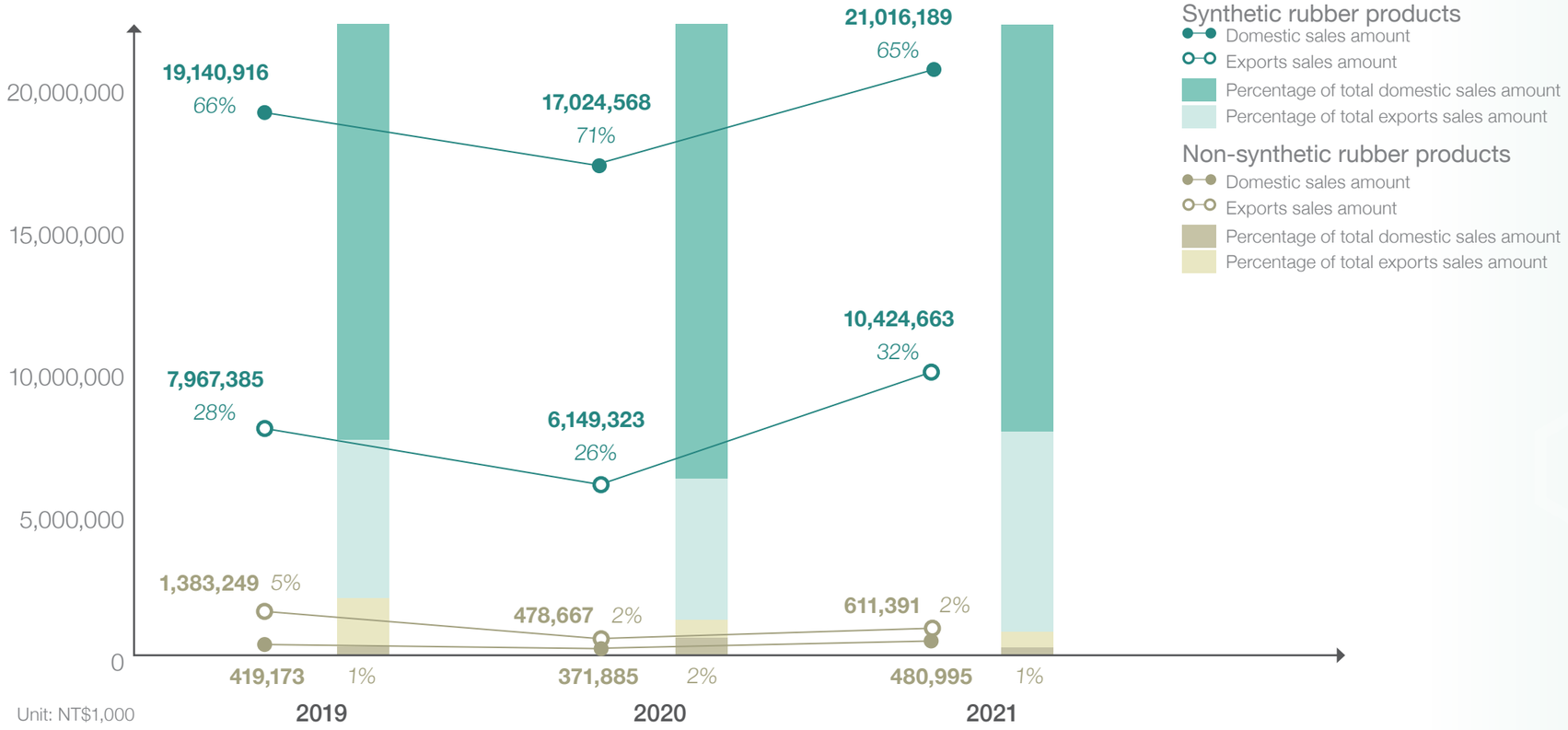
TSRC provides solutions through scientific methods and achieves business growth to vision of sustainability. TSRC achieved excellent business performance in 2021. Despite the challenges brought by global logistics and supply chain issues, the spread of new variants of COVID-19, and China's dual control system on energy intensity and total consumption, TSRC seized the opportunities brought by the recovery of downstream market demand, tide supply of synthetic rubber products, and increasing price difference of natural rubber and butadiene. We effectively implemented our marketing strategies to demonstrate our operational resilience. We maintained close contact with customers and made timely adjustments in response to market changes to maintain growth momentum, which allowed TSRC to achieve the highest revenue and profits in the past decade. With regard to investments, our two joint ventures, Indian Synthetic Rubber Private Limited and ARLANXEO-TSRC (Nantong), benefited from the recovery of India and China's markets, and profits grew substantially. Our consolidated revenue was NT$32.533 billion in 2021, up 35% compared to NT$24.024 billion in 2020. Consolidated net operating profit of NT$3.928 billion increased 378% compared to 2020; consolidated net profit after tax reached NT$3.931 billion and EPS was NT$4.76.

Business Overview

Overview of Revenue from Products



Overview of Domestic Sales and Exports of Products



1.2 Communication with Stakeholders

TSRC identified seven primary stakeholders based on the five principles of the AA1000 Stakeholder Engagement Standard, daily operations and external business communication of related departments. The primary stakeholders are employees, customers, society (including communities, NGOs, and residents affected by operating activities), media, shareholders and investors, suppliers, and the government (competent authorities). TSRC attaches importance to internal and external engagement and communication. We make timely revisions and adjustments based on feedback from stakeholders. We also promote sustainable operation and exert our influence on society to fulfill our corporate social responsibility.

Communication Results with Stakeholders

Stakeholders	Issues of concern	Main communication channel/frequency	2021 communication results	Corresponding chapters in this report
Employees	• Employee care and labor protection • Talent appointment and development • Business strategies and performance	• Employee Welfare Committee meeting/ Multiple times a year • Health promotion forum/Multiple times a year • Employee complaint mailbox/Irregular • Labor Union Representatives Conference/Regularly each year	• Invest in employee education and training and provide a safe workplace • Organize online sharing events to provide employees with cross-disciplinary learning opportunities • Provide employees with English language courses • Provide multiple health seminars to improve employee health • Periodically organize CEO communication meetings to accelerate employees' understanding of the Company's developing direction	2.2 Integrate Sustainability and Business Strategies 4.1 Strengthen Organization's Sustainability Capability 4.2 Improve Health, Safety & Wellbeing of Employees
Customers	• Customer relations • Innovation management • Material events and risk management	• Annual Interactive Seminar/Irregularly each year • Customer meetings or interviews (e-mail, telephone, video chat)/Irregularly • Technology or industry seminar/ Irregularly each year • Domestic and overseas exhibitions/ Irregularly each year • Information disclosure on the company website/Irregularly • Customer satisfaction survey/Annually • Customer CSR audit/Once a year • Corporate Social Responsibility Report/ Updated on the website each year	• Complete customer satisfaction survey each year to maintain high level of satisfaction • Immediately respond to customers' questions and meet their needs • Conduct interviews to build long-term partnerships with customers	2.1 Strengthen Corporate Governance 2.2 Integrate Sustainability and Business Strategies 2.3 Strengthen Innovation Momentum

Stakeholders	Issues of concern	Main communication channel/ frequency	2021 communication results	Corresponding chapters in this report
Social Includes communities, NGOs, and residents affected by operating activities	• Employee care and labor protection • Talent appointment and development • Communication with communities	• Community visits/Irregularly each year • Industrial Park Manufacturers Association/ Regularly each year • Industrial Park Service Center Meeting/ Regularly each year • Information on the company website/ Irregularly updated • Corporate Social Responsibility Report/ Regularly each year • Set up CSR mailbox on the company website/Any time	• Visited nearby communities of our Kaohsiung factory to understand issues they are concerned about • Take action to support local farmers • Sponsor lunches of elementary schools	4.1 Strengthen Organization's Sustainability Capability 4.2 Improve Health, Safety & Wellbeing of Employees 4.3 Enhance Social Engagement
Media	• Compliance • Waste and hazardous substance management • Employee care and labor protection	• Investor conference/At least once a year • Set up a mailbox on the website/Any time • Telephone communication and interviews/ Irregularly each year • Information disclosure on the CSR Report website/Updated annually	• Convened 2 investor conferences • Information on the company website and MOPS is updated each month • Responded to material issues via telephone and e-mail	2.1 Strengthen Corporate Governance 3.3 Develop Model of Circular Economy 4.2 Improve Health, Safety & Wellbeing of Employees
Shareholders and investors	• Corporate Governance • Compliance • Customer relations	• Information disclosure on the CSR Report website/Updated annually • Investor service mailbox on the company website/Any time • Market Observation Post System/ Irregularly updated • Shareholders' meeting/Once a year	• Convened a shareholders' meeting • Convened investor conferences two times in 2021 • Information on the company website and MOPS is updated each month • Responded to all questions of shareholders regarding material issues via telephone and e-mail	2.1 Strengthen Corporate Governance 2.2 Integrate Sustainability and Business Strategies

Stakeholders	Issues of concern	Main communication channel/ frequency	2021 communication results	Corresponding chapters in this report
Suppliers	• Employee care and labor protection • Talent appointment and development • Compliance	• Supplier CSR assessment/Once a year • Set up CSR mailbox on the company website/Any time • Supplier CSR promotions/Irregularly each year • Supplier environmental protection assessment/Regularly each year • Information disclosure on the CSR Report website/Updated annually • Annual supplier evaluations/Once a year	• Irregularly interviewed local suppliers and formed partnerships • Completed annual supplier audits	2.1 Strengthen Corporate Governance 4.1 Strengthen Organization's Sustainability Capability 4.2 Improve Health, Safety & Wellbeing of Employees
Government Competent authority	• Water resource management • Compliance • Waste and hazardous substance management	• Interviews (telephone or physical meetings)/Irregularly • Corporate Social Responsibility Report/ Regularly uploaded each year • Promotion of government laws and regulations/Irregularly • Official documents/Irregularly	• Participated in the EPA's forums on strengthening climate change adaptation regulation – Company risks and disclosures under climate change • Responded to public company surveys of the TWSE • Participated in seminars organized by the TWSE • Maintained close contact with the TWSE to inquire about and verify material information and announcements	2.1 Strengthen Corporate Governance 3.3 Develop Model of Circular Economy 3.4 Water Resource Optimization

Note: The name was not yet changed in 2021, so this table still uses the terms "Customer CSR audit", "Supplier CSR assessment", and CSR Report in website. We expect to change names from CSR to ESG at the end of July 2022.

1.3 Identification and Analysis of ESG Material Topics

In 2021, TSRC identified 16 ESG topics with the consideration of stakeholder feedback (regularly and irregularly collected), concern by international ESG ratings agency (such as Dow Jones Sustainability Indexes(DJSI), international standard such as carbon disclosure Project (CDP), and Sustainability accounting Standards Boards(SASB), benchmarking companies in the chemical industry, and our internal business strategy. These topics are used as the basis of disclosures in this Sustainability Report and internal management.

TSRC uses "the impact on stakeholders' decision-making" as the main principle for assessment the materiality of sustainability topics. We distribute online and offline questionnaires to 7 types of stakeholders to understand stakeholders' level of concern about these topics. In addition, we take into account the impact of sustainable topics on TSRC's operations. We invited our employees and members of the ESG Committee to assess the impact of the 16 sustainable topics on the Company's four aspects—income, cost, reputation, and operational risks to determine the materiality.

We collected 345 effective questionnaires during the survey process, including 256 questionnaires from employees (8 members of the ESG Committee also included) , 51 questionnaires from customers, 16 questionnaires from suppliers, 7 questionnaires from investors and shareholders, 3 questionnaires) form media, 6 questionnaires from community, and 5 questionnaires from competent authority .

We develop the materiality matrix based on the two principles—"the impact on stakeholders' decision-making" and “the impact on the Company's income, cost, reputation, and operational risks." The matrix was then reviewed and discussed by the ESG Committee. The materiality of ESG topics was adjusted based on responses and feedback obtained from communicating with stakeholders during daily operations, potential future changes, industry development trends, and the Company's business plans. We then selected 8 Material topics that have the highest level of impact on stakeholders' decision-making and the Company. The Material topics are Innovation management, corporate governance, business strategies and performance, material event risk management, compliance, climate strategy and GHG emissions, waste and hazardous substance management, and water resource management.

To make stakeholders easily understand TSRC’s ESG performance, in 2021, we made some adjustments to rearrange the ESG topics and their implications. Compared with the Material topics in 2020, we added "Innovation management" and "Material event risk management" to TSRC's material issues in response to the Company's business plans and stakeholders' expectations. With regard to "Occupational health and safety", even though it was not selected as a material issue, we still voluntarily disclosed it according to GRI Standards in this Report, considering the characteristics of the chemical engineering industry.

Identification

- Feedback from stakeholders
- International ESG rating, such as Dow Jones Sustainability Indexes (DJSI)
- International standards and norms, such as Carbon Disclosure Project (CDP) and Sustainability Accounting Standards Board (SASB)
- Topics that chemical engineering companies pay attention to
- TSRC operational targets and strategies

Develop a list with 16 ESG topics

Analysis

- **The impacts on stakeholders’ decision-making**
  345 effective questionnaires, including 256 questionnaires from employees (8 members of the ESG Committee also included) , 51 questionnaires from customers, 16 questionnaires from suppliers, 7 questionnaires from investors and shareholders, 3 questionnaires) form media, 6 questionnaires from community, and 5 questionnaires from competent authority .
- **The impact on the Company's income, cost, reputation, and operational risks**
  256 questionnaires from employees (8 members of the ESG Committee also included)

Confirmation

ESG Committee reviews the matrix and adjust the ranking of materiality according to:

- **Feedback and response from stakeholders in the daily operation communication**
- **Future environment changes**
- **The industry development trends**
- **The corporate operation planning**

Confirm 8 Material topics

Disclosure

- **Disclose the management results of the Material topics to the public**

♦ The 8 material issues in 2021 ♦ The 13 material issues in 2020

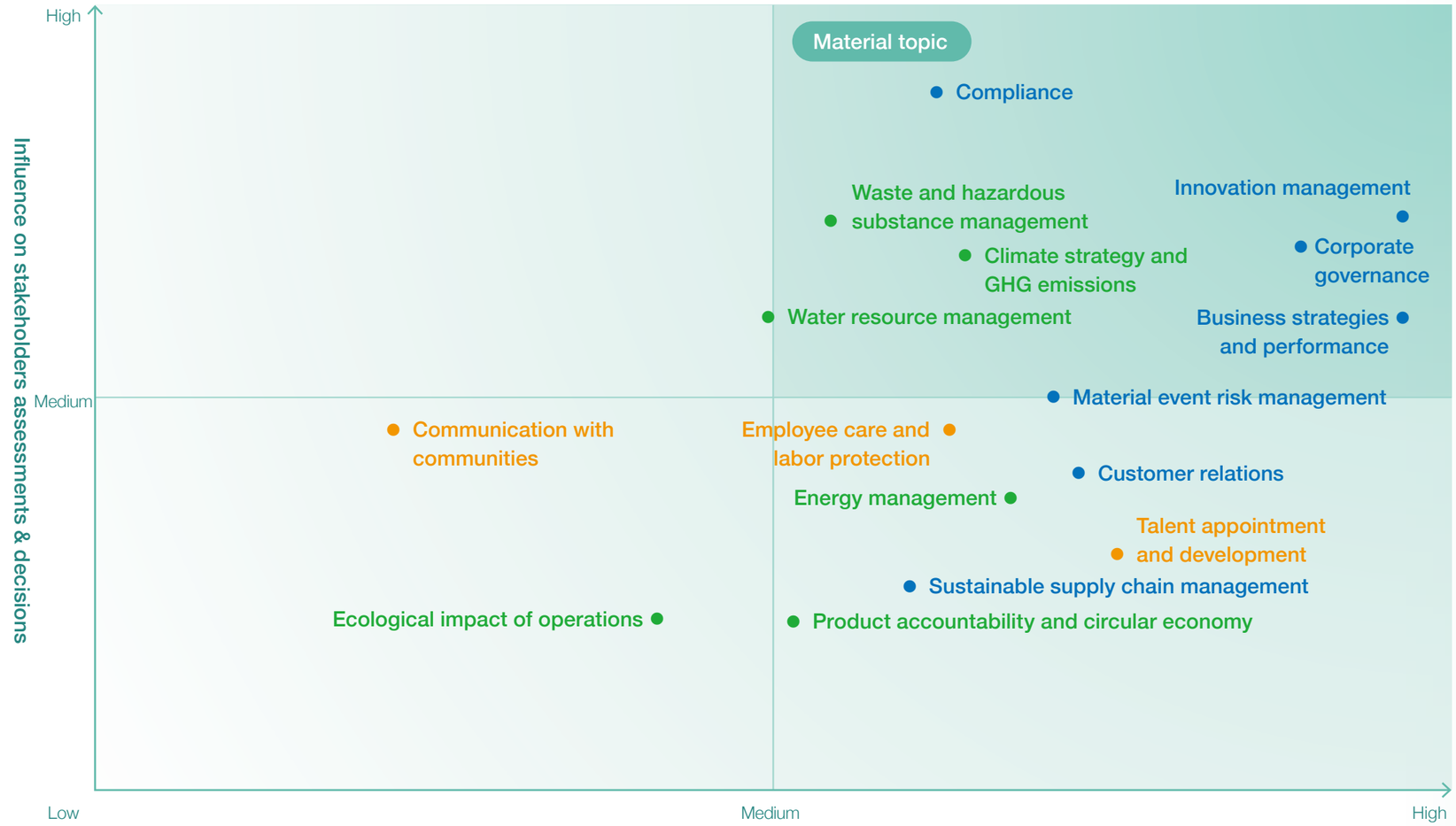
16 ESG issues in 2021	Corresponds to 34 ESG issues in 2020	Changes compared to the contents in 2020	Reason for adjustment
♦ Innovation management	-	Newly added	Newly added in 2021 because innovation is one of the main forces driving TSRC's sustainable development
♦ Corporate governance	♦ Anti-corruption • Taxation • Anti-competitive behavior • Public policy	Renamed, merged, and adjusted the meaning	Merged material issues in 2020 and expanded the scope to "Corporate governance", including ethical corporate management, anti-corruption, anti-competitive behavior, and Board operations
♦ Business strategies and performance	♦ Economic performance • Market position • Indirect economic impact	Renamed, merged, and adjusted the meaning	Merged material issues in 2020 and expanded the scope to "Business strategies and performance", including business management vision and goals, sustainable development strategy, and economic performance
♦ Material event risk management	-	Newly added	Newly added in 2021 in response to TSRC and stakeholders' concern about risk management (including climate risks)
♦ Compliance	♦ Environmental compliance • Socioeconomic compliance • Marketing and labeling	Newly added	Merged material issues in 2020 and expanded the scope to "Legal compliance", including compliance and implementation of ESG regulations
♦ Climate strategy and GHG emissions	♦ Emissions	Renamed and merged	Strengthened TSRC's concern about climate issues; renamed and adjusted the meaning to "Climate strategy and GHG emissions"
♦ Waste and hazardous substance management	♦ Effluent and waste	Renamed and merged	Strengthened TSRC's waste and hazardous substance management; renamed and adjusted the meaning to "Waste and hazardous substance management"
♦ Water resource management	♦ Water and effluent	Renamed and merged	Strengthened TSRC's overall management of water resource use, recycling, and discharge; renamed and adjusted the meaning to "Water resource management"
Sustainable supply chain management	• Procurement practices • Supplier social assessment • Supplier environmental assessment	Renamed, merged, and adjusted the meaning	Merged contents of supplier management, and integrated social assessment and environmental assessment into "Sustainable supply chain management"

♦ The 8 material issues in 2021 ♦ The 13 material issues in 2020

16 ESG issues in 2021	Corresponds to 34 ESG issues in 2020	Changes compared to the contents in 2020	Reason for adjustment
Customer relations	♦ Customer privacy	Renamed and merged	Expanded the scope to "Customer relations", including customer satisfaction and customer relationship management
Energy management	♦ Energy	Renamed	Strengthened management measures and renamed it "Energy management"
Product accountability and circular economy	• Materials ♦ Customer health and safety	Renamed, merged, and adjusted the meaning	Strengthened TSRC's management and concern about the social and environmental responsibility of its products, merged material issues in 2020, and expanded the scope to "Product accountability and circular economy"
Ecological impact of operations	• Biodiversity	Renamed	Emphasizes the potential impact of TSRC's operations on surrounding areas; renamed "Ecological impact of operations"
Employee care and labor protection	♦ Employer-employee relations ♦ Labor-management relations ♦ Occupational health and safety • Forced or compulsory labor • Freedom of association and collective bargaining • Human rights assessment	Renamed, merged, and adjusted the meaning	Merged material issues in 2020 and expanded the scope of this issue to "Employee care and labor protection", emphasizing TSRC's protection of labor conditions and workplace safety
Talent appointment and development	• Training and education • Rights of indigenous people • Security practices • Non-discrimination • Employee diversity and equal opportunity ♦ Child labor	Renamed, merged, and adjusted the meaning	Focuses on talent appointment and career development opportunities, and merged into "Talent appointment and development"
Communication with communities	• Local communities	Renamed and adjusted the meaning	Strengthened the community engagement and communication process of TSRC, and changed the name to "Communication with communities"

Besides identifying the impact of Material topics on operations, TSRC also identifies the boundaries of Material topics and discloses performance indicators. We collect internal data, information, and management policies according to the GRI Standards. TSRC has established related management strategies, policies, goals, and indicators for Material topics. We track the achievement of annual goals and implementation results. The achievement and implementation results are disclosed in this Report. We also commissioned external third parties to verify the contents of disclosures and accountants for assurance, which serve as the basis for implementing sustainability management. For other ESG topics that are not material, TSRC also discloses annual performance in related chapters.

Material Topic Matrix



No.	Governance	Environmental	Social
1	Corporate governance	Climate strategy and GHG emissions	Employee care and labor protection
2	Compliance	Energy management	Talent appointment and development
3	Business strategies and performance	Water resource management	Communication with communities
4	Sustainable supply chain management	Waste and hazardous substance management	
5	Material event risk management	Product accountability and circular economy	
6	Innovation management	Ecological impact of operations	
7	Customer relations		

Boundaries of Material Issues

Aspect	Material topic	Importance of the material issue to TSRC	Related GRI Standards	Boundaries of material issues in 2021: Suppliers	TSRC Operations	Customers	Social
Governance / Economic	Innovation management	Innovation management is the momentum for TSRC's sustainable development. We provide customers with innovative products/services, and ensures that solutions developed by TSRC meet the market and customers' expectations. The constant development of high-quality products drives TSRC's continued profit growth.	103: Management Approach 2016		●	●	
	Business strategies and performance	The value of companies in sustainability is based on companies having long-term competitiveness and meeting environmental and social expectations. TSRC has made precise plans and executed forward-looking business strategies to pursue better business performance. In the meantime, we emphasize the ability to create economic value for stakeholders, generate opportunities for communities, make actual contributions to society, and create a virtuous cycle.	103: Management Approach 2016 201: Economic Performance 2016		●		●
	Corporate governance	A good governance framework and well-developed management mechanisms are the foundation of TSRC's development. TSRC upholds the principle of ethical corporate management and continues to improve operations management to drive business growth, while creating a positive impact on society and the economy.	103: Management Approach 2016	●	●	●	●
	Compliance	TSRC implements the code of ethics in daily operations, and strictly abides by laws and regulations to avoid any violations on governance, environment, products or services, and finance. We put efforts to reduce the negative impact on society, the economy, and the environment.	103: Management Approach 2016 307: Environmental Compliance 2016 416: Customer Health and Safety 2016 417 Marketing and Labeling 2016 419: Socioeconomic Compliance 2016		●	●	●
	Material events and risk management	We monitor and step up risk assessment and forecasts, establish complete risk management mechanisms, and lower the potential damages and impact of risks. This is an important foundation for the Company's stable operations and continued growth.	103: Management Approach 2016	●	●	●	●
Environmental	Climate strategy and GHG emissions	Climate change is an opportunity but also a risk. TSRC has exerted every effort to strengthen the capacity of all production sites to respond to climate change. We have implemented GHG reduction measures, including preparing for climate disasters, conducting GHG inventories, setting GHG reduction policy, and disclosing information about carbon emissions of our product/ service life cycle. We accelerate the low carbon transformation.	103: Management Approach 2016 305: Emissions 2016	●	●	●	●
	Waste and hazardous substance management	We reduce waste and hazardous substances generated by operations, such as waste reduction and recycling. We aim to reduce TSRC's negative impact on the environment. Furthermore, we are actively managing substance recycling to develop new business opportunities for TSRC.	103: Management Approach 2016 306: Waste 2020		●	●	●
	Water resource management	Some sites of TSRC are in regions with high water resource risk. Hence, it is fundamental for TSRC's sustainable development to reduce water consumption, examining and managing the Company's water withdrawal, water consumption, and discharge measures, including water resource reduction and recycling or recycled water management.	103: Management Approach 2016 303: Water and Effluent 2018		●		●

1.4 ESG Initiatives and Participation in Associations

1.4.1 International ESG Initiatives

TSRC supports the UN Global Company and emphasizes that companies must strictly abide by the 10 principles of human rights, labor, environment, and anti-corruption in their operations. TSRC has incorporated principles of the UN Global Compact in its internal regulations governing labor, gender equality in the workplace, and environment protection, and has established human rights protection and labor policies and measures on this basis.

TSRC supports global climate actions and the Paris Agreement, and strives to reduce GHG emissions in its operations. We support the Carbon Disclosure Project and respond to its questionnaire, taking action to reduce carbon emissions and appropriately disclosing information on carbon emissions. TSRC also supports the Task Force on Climate-related Financial Disclosures (TCFD), identifies climate related risks and opportunities, and formulates response strategies, which are disclosed in detail in Chapter 2 of this Report.

TSRC supports and respects the spirit and principles of the International Labor Office Tripartite Declaration of Principles, The OECD Guidelines for Multinational Enterprises, and UN Universal Declaration of Human Rights, exerting every effort to protect basic human rights and not allowing any factors and events from infringing on human rights.

1.4.2 Participation in Industry Associations

To gain an in-depth understanding of the industry's sustainable development trends and fulfill its CSR by making substantial contributions to sustainability issues, TSRC is a member of the following industry associations, and participates in discussions and organizational operations in related issues. This allows us to exert our influence and drive even more chemical companies to fulfill their corporate social responsibility.

Association name	Operation	Role	Benefits
Petrochemical Industry Association of Taiwan	• The general meeting is held annually. • The Petrochemical Industry Journal is published every month/The Petrochemical Industry Annual Report is published every year.	Director	• Develop the whole petrochemical industry and collect information about the petrochemical industry. • Maintain good relationship with other petrochemical companies to solve common problems.
Taiwan Rubber & Elastomeric Industries Association	• The general meeting is held annually. • Information about rubber technologies is provided.	Member	• Maintain and develop good relationship with downstream manufacturers. • Collect information about rubber processing technologies.
Dashe Petrochemical Industrial Park Manufacturers Association	• Hold regular meetings to discuss and solve the common problems of the companies in the industrial park (including Good Neighbor Feedback activities).	Member	• Participate in the operation of the Association to protect the rights and interests of the Company in the industrial park, collect the information on other companies, and solve common problems.
The Institute of Internal Auditors, R.O.C.	• Organize theoretical and practical researches, workshops, discussions and visits with respect to the internal audit and promote audit education.	Member	• Introduce the latest theories and practices of internal audit, improve the audit capability, and exchange experience in internal audit techniques with other companies.
Human Resource Managers Association of Petrochemical Companies	• Organize regular activities, exchange information, and communicate and coordinate human resource related policies.	Member	• Understand the status of the industry and keep close contact with other companies.
Industrial Safety and Health Association of the R.O.C.	• Hold one general meeting every year to review the operation of the Association.	Member	• Collect relevant information on occupational safety and health to facilitate inspection and coordinate of industrial safety.
Ren Da Industrial Park Association for Promoting Labor Safety and Health	• The administration center holds regular meetings.	Member	• Exchange safety and health information with other factories, provide supports with safety equipment, discuss safety and health issues and propose relevant suggestions.

Association name	Operation	Role	Benefits
Taiwan Responsible Care Association	• Hold the general meeting on a regular basis, reflect the opinions of the members to the government, and organize relevant training courses.	Director	• Understand the responsibility of the petrochemical industry to the society in Taiwan and improve the performance in the environment, health and safety on an ongoing basis.
International Institute of Synthetic Rubber Producers (IISRP)	• Hold the annual meeting every year.	Director	• Collect the information on the global synthetic rubber to form international horizons.
Chinese National Association of Industry and Commerce, Taiwan	• Provide members with relevant information and promote international economic and trading cooperation. • Organize trading and investment events as well as technology discussion and visiting activities for the industries.	Member	• Understand the status quo of the industry and facilitate communication with other companies.
Safety & Health Association of Taiwan	• Hold one regular meeting every year.	Member	• Prevent accidents with respect to safety, health and environment and perform relevant investigation, research, implementation and prevention.
Association of Bio-based Material Industry	• The members hold regular meetings by rotation. • Provide e-paper for the members to collect more information about the industry.	Member	• Explore the development trend of biomass technology, promote technical exchange in the industry, facilitate cooperation with other companies and participation in large- scale cooperative programs, and strive for external supports.
Taiwan Chemical Industry Association	• Hold the annual industrial forum and TSRC dispatches representatives for the forum.	Member	• This is the window for international communication and cooperation. It follows the international development trend and leads the chemical industry in Taiwan to bring innovation and transformation into practice.
Kaohsiung City Gangshan Benjhou Industrial Park Manufacturers Association	• Hold regular meetings to discuss and solve the common problems of the companies in the industrial park	Member	• Participate in the operation of the Association to protect the rights and interests of the Company in the industrial park, collect the information on other companies, and solve common problems.
China Rubber Industry Association	• Hold one industrial production technique exchange meeting every year. • Hold forums and seminars on an irregular basis.	Member	• Communicate the information of the industry and the latest development in the technique, production, safety and environment. Facilitate the healthy and long-term development of the industry.
Nantong Standards Association	• Hold one annual meeting every year. • Hold forums on an irregular basis.	Member	• Understand the development of the international standardization in a timely manner, give effective guidance in the evaluation of quality indicators, and improve the quality development of the products.
Production Safety Management Network, Nantong Economic and Technology Development Area	• Hold one board meeting every quarter	Director	• Maximize the capability of corporate safety production management and continue the improvement of the self-control, mutual control and joint control capability for the safety production in the area where the factory is located to effectively prevent occurrence of accidents.
Kaohsiung City General Industrial Association	• The general meeting is held once a year pursuant to the Industrial Group Act.	Member	• Understand the status of the industry and keep close contact with other companies.
Chinese Society for Quality	• Organize committees. • Issue monthly publications. • Hold the annual meeting every year.	Member	• Collect information on QC technique and training. • Attend QC related workshops. • Introduce applicable QC techniques to improve the QC level of the factory.

2. Governance

TSRC continues to strengthen corporate governance, improve risk supervision and management mechanisms, and makes innovative breakthroughs to develop new products and services, becoming the best partner for customers to achieve sustainability. At the same time, TSRC monitors the risks and challenges faced by our global sites, builds a supply chain able to withstand risk and flexibly respond, and ensures the high stability of products and services.

Green procurement amount in Taiwan in 2021

NT$ 97.96 million

Domestic procurements accounted for 81% of the total procurement amount in 2021, up 6% compared to 2020

Increased local procurement by 6%

Total R&D expenses of NT$370 million in 2021, up 6% compared to 2020

Increased R&D expenses by 6%

Corporate Governance

7
board members

3
independent directors

Female director is
14%

Ethical Corporate Management

There was a totally **695** participants in business ethics and insider trading prevention training sessions in 2021

Green Procurement

Green procurements in Taiwan amounted to NT$ **97.96 million**

Local procurements accounted for **81%** of the total procurement amount, up **6%** compared to 2020

Innovation Management

Established **1** global R&D center in Texas, USA

16 patents were approved, **7** more than in 2020

R&D expenses of NT$ **370 million** increased **6%** compared to 2020

2. Governance

Material topic	Corporate Governance	Material Events and Risk Management
Corresponding chapter	2.1 Strengthen Corporate Governance	2.1 Strengthen Corporate Governance
Management purpose	To disclose the Company's long-term business management performance, policies, strategies, and goals. In addition, to effectively implement ethical corporate management, strictly abide by the Code of Ethics, strengthen the professional competencies of the Board of Directors and senior management, increase the Company's sustainable value, and improve stakeholder engagement and communication, exerting TSRC's positive influence through good interactions.	To step up risk assessment and forecasts, establish sound risk management mechanisms, implement risk management strategies and countermeasures, and lower the potential damages and impact of risks, in order to stabilize the Company's operation and sustainable growth.
Management approach	• Implement ethical norms in daily operations along with our principle of integrity • Strengthen the implementation of the company's ESG short-, medium- and long-term goals, and regularly report ESG performance and future planning to the Board of Directors	• Clarify and standardize the risk management principles, responsibilities, and the operation mechanism • Execute all risk management procedures and related operations, and implement risk management at all levels of operations and decision-making
Assessment mechanism	• Chinese and English sustainability reports with third party assurance/verification are published every year, transparently disclosing the impact on ESG. • The remuneration of directors and managers is disclosed in the annual report according to regulations and rules every year. • The implementation of corporate governance is updated on the Company's website each year.	• Risk management status is reported to the Board of Directors every year • The implementation of risk management and climate risk assessment are disclosed in the Sustainability Report and on the company website every year
Mid and long-term management goals	• Strengthen corporate governance supervision and management mechanisms and improve the corporate governance culture • Monitor international ESG trends and development and continue to improve TSRC's overall ESG performance	• Establish risk management and supervision mechanisms and strengthen risk management and crisis management response. • Strengthen climate-related risk management mechanisms, assess the financial and non-financial impact of risks, and use it as the basis for business strategies and important capital expenditures.
2021 Achievement of KPI	• **Objective: Strengthen corporate governance supervision and management mechanisms and improve the corporate governance culture** Implementation status: 1. Published Chinese and English version of sustainability reports prepared according to the GRI Standards and obtained third party assurance/verification 2. Established the "Corporate Governance Guidelines", "Code of Business Conduct", and "Management Procedure for Insider Trading" 3. Amended the "Procedure Rules of the Board of Directors meeting", "Procedure of performance evaluation of Board of Directors"," Audit Committee Charter, Remuneration Committee Charter", "Code of Ethics", and "Management Procedure for Whistleblowing" • **Objective: Monitor global ESG trends and development and continue to improve TSRC's overall ESG performance** Implementation status: Established TSRC's ESG strategy, and set short-, mid-, and long-term (until 2030) goals and indicators	• **Objective: Establish risk management and supervision mechanisms, and strengthen risk management and crisis management response** Implementation status: 1. Established the Risk Management Policy and completed the 2021 group risk assessment and action plan 2. Included the operational risk management status in the quarterly operation report to the Board of Directors, with detailed report about the management and implementation situation 3. Reported to Board of Directors about the information security risk in May 2021 • **Objective: Strengthen climate-related risk management mechanisms, assess the financial and non-financial impact of risks, and use it as the basis for business strategies and important capital expenditures** Implementation status: Implemented the TCFD framework and conducted an assessment, which is disclosed in the Sustainability Report and company website

Material topic	Compliance	Innovation management
Corresponding chapter	2.1 Strengthen Corporate Governance	2.3 Strengthen Innovation Momentum
Management purpose	To ensure TSRC is compliant with the law with respect to production manufacturing, operations, procurement, labor, and environment, and reduce the negative impact on the environment and society.	Innovation is TSRC's core value. Patent and intellectual property rights are important indicators of TSRC's technology and R&D capabilities. It is also the foundation for driving the Company's sustainable growth. TSRC enhances product competitiveness through R&D and innovation, and develops solutions based on scientific methods to create long-term value for the Company.
Management approach	• Employees must abide by the “Code of Business Conduct”, “Code of Ethics”, “Administrative Measures for Business Gifts and Entertainment”, and abide by relevant laws and regulations in daily operations	• Encourage employees to innovate technology and apply for patents • Reward colleagues for applying innovative thinking in various fields of daily work, and continue to optimize the process
Assessment mechanism	• Number of violations each year • Number of reports each year	• Annual R&D expenses • Number of patents approved each year
Mid and long-term management goals	• Improve the reporting and whistleblower system to provide internal and external personnel with reporting channels • Comply with laws and regulations, reference the standards of the industry benchmark, and provide the highest quality products and services	• Upgrade proprietary technologies to increase product sales and patent acquisition • Deepen the corporate culture of innovation
2021 Achievement of KPI	• **Objective: Improve the reporting and whistleblower system to provide internal and external personnel with reporting channels** Implementation status: 1. Amended the “Management Procedure for Whistleblowing” 2. Added a whistleblower mailbox and address for written reports on the company website 3. None of reported cases in 2021 • **Objective: Comply with laws and regulations, reference the standards of the industry benchmark, and provide the highest quality products and services** Implementation status: The Kaohsiung factory was fined approximately NT$710,000 for violating the Air Pollution Control Act. TSRC immediately took response measures to improve process equipment and intensify inspections (see Section 3.5 Environment Management)	• **Objective: Upgrade proprietary technologies to increase product sales and patent acquisition** Implementation status: 1. Established a global R&D center in Texas, USA and focused on innovative specialty polymer products and total solutions 2. **16** patents were approved in 2021, over **7** cases compared to 2020 3. The R&D expense in 2021 was NT$ **370 million**, an increase of **6%** compared to 2020 • **Objective: Accelerate corporate culture of innovation** Implementation status: Distributed a total of NT$ **1.18 million** in rewards for **17** innovation cases

2.1 Strengthen Corporate Governance

2.1.1 Management Approach

TSRC has upheld stable operations as mission for many years and owned a good governance framework and supervision mechanisms as the foundation for management. TSRC upholds the principle of ethical corporate management in governance, implements the code of ethics in daily operations, and strictly abides by laws and regulations to avoid violations of governance, environmental, products or services, and finance. We continue to strengthen operation management and enhance our operations to have a greater positive impact on society and economy.

TSRC regularly identifies and manages potential risks and opportunities in its operations and formulates business goals and plans according to the Company's long-term business strategies. We balance the concerns and interests of stakeholders and strive to reduce the negative impact on society and environment.

2.1.2 Corporate Governance

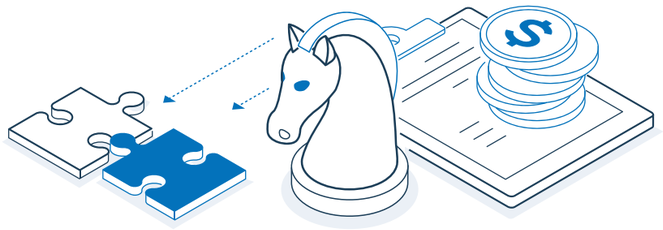
Board of Directors and Related Duties

TSRC's Board of Directors is consisted of 7 directors, including 1 female director (14%) and 3 independent directors (43%). The term of directors is 3 years, and directors are elected under Shareholder Nomination of Directors. Shareholders elect directors from the list of candidates announced by the Company; directors may be elected to consecutive terms. The Board of Directors is led by the chairperson and meets at least once a quarter to decide on the Company's business policy, implement a good corporate governance system, strengthen supervision, and enhance management functions, exerting efforts to maximize stakeholders' rights and interests. This includes environmental (including climate related issues) and social risks, opportunities, and economic impacts. 9 Board meetings were convened in 2021 and attendance rate reached 100%. (The Operations of the Company's 17th Board of Directors is announced on the company website, or scan the QR code below)

The Company incorporated the concept of diversity and the knowledge, experience, and abilities required by Board members to perform their duties which is regulated in the Article 21 of the Corporate Governance Guidelines to have a better implement in Board of Directors governance system and considering diversity and profession of directors. The composition of Board members must be diverse and compliant with laws and regulations, and consider the Company's business type, operations, market, and future development. The Board of Directors as a whole must have business judgment ability, accounting and financial analysis ability, business management ability, crisis management ability, knowledge of the industry, and the leadership for global operation, and decision-making ability, and global perspective. The Company's directors do not concurrently hold managerial officer positions. The abilities of the Board of Directors as a whole comply with the diversity policy and meets the Company's needs for future business development.

The Company has liability insurance for directors each year which cover the individual liabilities of directors due to negligence when performing their duties.

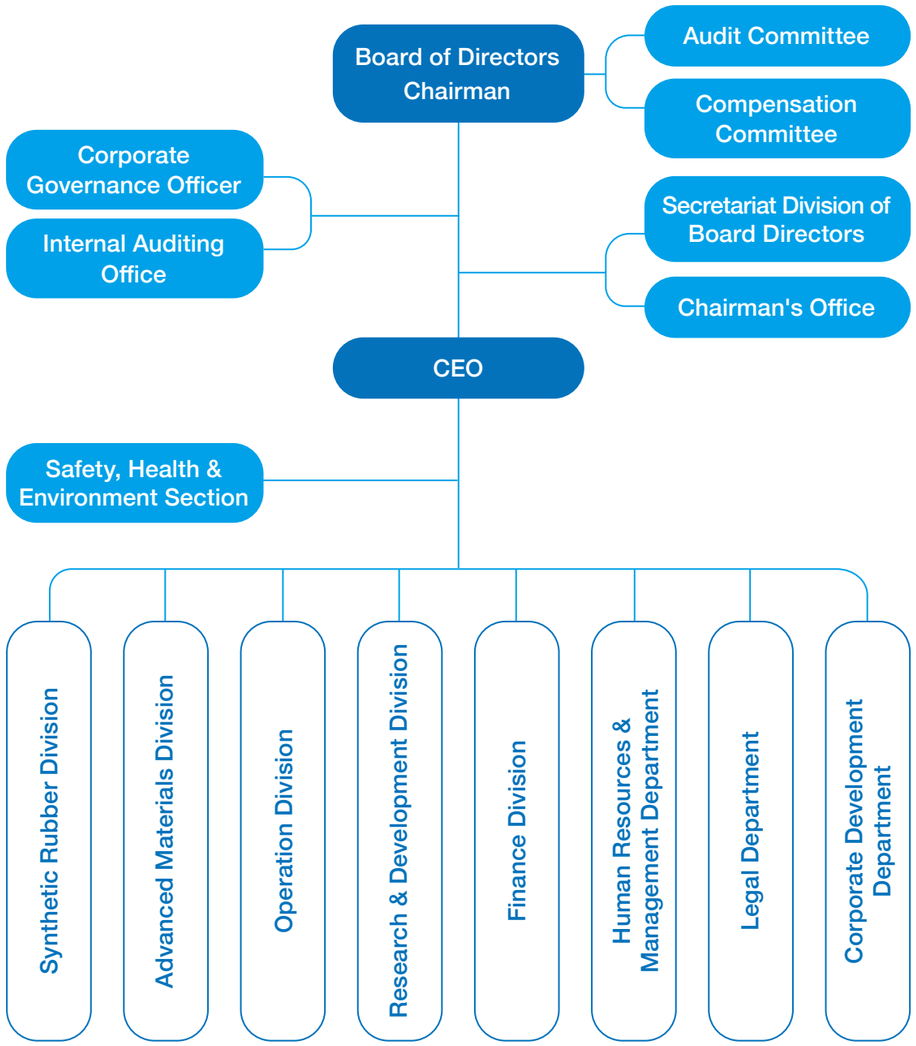
Furthermore, the Company also schedules continuing education courses for directors and senior managers each year to enhance directors' competencies, and increase the overall knowledge in economic, environmental, and social topics. Topics of courses for directors in 2021 include "Key to Be a Sustainable Enterprise: ESG Practice," "Sustainability Training Course" organized by the Taiwan Institute for Sustainable Energy, "Digital Resilience of Companies – Emergency Response to Ransomware Incidents" organized by Taiwan Corporate Governance Association, and "ESG Sustainable Finance Trends and Response Strategies" organized by the Accounting Research and Development Foundation. The 7 directors took totally courses of 62 hours in 2021.



The Operations of the Company's 17th Board of Directors

In recent years, the Company's Board of Directors continues to monitor the physical and transformation risks brought by climate change, and periodically examines the management of operational risks through quarterly audit reports. The Board of Directors understands risks and the Company's response measures through operation reports prepared by the management team, and improves protection equipment and operational resilience through capital expenditures planned in annual budgets.

TSRC Organizational Structure



Performance Evaluation of the Board of Directors

TSRC focuses on the results of Board operations, and thus conducts a performance evaluation at least once a year. The evaluation period is from January 1 to December 31 each year. Performance evaluation results must be completed before the end of the first quarter of the following year and reported to the competent authority according to regulations. Depending on the focus and purpose of evaluation that year, the evaluation method may include internal evaluation of the Board of Directors, self-evaluation by Board members, peer evaluation, and commissioning external professional institutions, experts, or other appropriate methods. TSRC commissions a third party to conduct Board performance evaluations at least once every three years. Evaluation results are reported to the Board of Directors as the basis for review and improvements and also for selecting or nominating directors.

The 2021 evaluation was conducted via a self-evaluation questionnaire, and the meeting affair unit was responsible for execution. The evaluation period is from January 1 to December 31, 2021, and the scope of evaluation includes the Board of Directors, functional committees, and individual Board members. The 2021 Board performance evaluation results are summarized below:

1. Overall Board performance evaluation results were "meet expectations." The Board of Directors has a complete system and transparent information in compliance with regulations. All directors highly agree that the Board composition and structure is professional and diverse. All Board members were attendance during Board meetings, directors fully participated in discussions, provided the management team with directions for improvement and risk issues they should pay attention to, and fulfilled their responsibility to provide guidance and supervise the Company's strategies to meet expectations for directors.
2. Overall performance evaluation results for functional committees were "meet expectations." The Audit Committee and remuneration Committee are highly professional and independent, and fully understand their duties. Committee members were all in attendance during committee meetings and fully participated in discussions, helping the Board of Directors make decisions. Independent directors showed their independence and expertise and were able to effectively evaluate and supervise the internal control system; they provided recommendations and reminders that greatly assisted the Board of Directors in making decisions, which effectively enhanced Board functions.
3. Overall performance evaluation results for individual directors were "meet expectations." Board members approve of the Company's complete system and information transparency, which provide directors with sufficient information to monitor the Company's operations. Board members have the necessary professional abilities, and used their professional knowledge, and experience to contribute significantly to the Company's operations management and decision-making quality.

Remuneration Policy for the Board of Directors and Senior Management

The remuneration of Board members is determined by the Board of Directors based on the participation and contribution of each Board members to operations and industry standards. Pursuant to Article 28-1 of the Company's Articles of Incorporation, if the Company is profitable in that year, it shall allocate no less than 1% as employee bonuses, and no more than 1% as directors' remuneration, which must be reviewed by the Remuneration Committee and approved by the Board of Directors. The remuneration to directors is reported to the shareholders' meeting each year.

The remuneration to the management is determined based on industry standards and followed relevant regulations, such as the TSRC Level of Authority Table. In comply with the level or nature of the position, the remuneration is submitted to the Remuneration Committee for review and Board of Directors for discussion. The annual performance bonus of each manager is determined based on the annual performance.

Framework and Duties of Functional Committees

The Company established an Audit Committee and Remuneration Committee under the Board of Directors to enhance corporate governance. The Audit Committee is formed by 3 independent directors who are responsible for supervising the fair presentation of financial statements; the appointment (dismissal), independence, and performance of accountants; the effective implementation of internal controls; compliance with related laws and rules; control of the Company's existing or potential risks. The Committee meets at least once quarterly and may convene meetings at any time if necessary. A total of 8 Audit Committee meetings were convened in 2021, and average attendance percentage was 100%.

The Remuneration Committee is formed by 3 independent directors who are responsible for establishing and periodically reviewing director and manager performance evaluation standards, and the remuneration policy, system, standards, and structures. The committee regularly evaluates the achievement of performance by the Company's directors and managers and determines their individual remuneration. Meetings are convened at least twice yearly, and may be convened at any time if needed. The Remuneration Committee convened 5 meetings in 2021 with 100 % of attendances.

Corporate Governance Manager

The Board of Directors passed the resolution to appoint a corporate governance officer on March 11, 2021 to implement corporate governance and assist in meeting affairs of the Board of Directors and shareholders' Meeting. The corporate governance officer's main duties include: Mainly responsible for handling matters of Board meetings and shareholders' meeting and preparing the meeting minutes, assisting in the appointment and continuing education of directors, providing data needed by directors to perform their duties, assisting directors with compliance, and other matters specified in the Articles of Incorporation or contracts, and also coordinates related departments in carrying out planning and implementation of corporate governance operations. The corporate governance officer completed 21 hours of continuing education courses related to corporate governance in 2021, including "Key to Becoming a Sustainable Enterprise: ESG Practices," "How Corporate Governance Personnel Improve the Performance of the Board of Directors and Functional Committees," and other courses related to sustainable development.

Internal Audit

The Company established an Auditing Office under the Board of Directors to assist the Board and managers in checking and evaluating the effectiveness of internal controls and assessing the results and efficiency of operations, providing timely recommendations for improvement, and ensuring the continued effective implementation of the internal controls system. The Company has assigned competent full-time internal auditors. The appointment and dismissal of the chief internal auditor must be approved by the Audit Committee and Board of Directors. Pursuant to the "Management Regulations for Audits of Subsidiaries," subsidiaries appoint competent full-time internal auditors based on the scale of their operations. The Auditing Office formulates annual audit plans and conducts audits. The Audit office submits audit reports to independent directors according to the annual plan and attends meetings of the Audit Committee and Board of Directors to give reports. The status of communications between TSRC's independent directors and accountants in 2021 is available on the company website or QR code.

The status of communications between TSRC's independent directors and accountants

Framework and Duties of the ESG Steering Committee

TSRC cherishes Earth's resources and pursue stable operations and growth. We have dedicated efforts to fulfill our corporate social responsibility, reduce the negative impact of business operations and products on the environment and society and aim to have a positive impact on society.

Since 2011, TSRC has established the CSR Steering Committee to fulfill its corporate social responsibility. The committee manages the Company's implementation of corporate social responsibility and long-term operations, and establishes related systems, policies, and plans. It is responsible for improving the Company's management mechanisms for sustainability, and effectively responds to issues that stakeholders concerned which are relating to TSRC's corporate governance, environmental protection (including climate-related issues), and social care. With consideration to the growing emphasis of stakeholders on ESG, TSRC renamed the CSR Steering Committee into the ESG Steering Committee. The ESG Steering Committee is formed by the Company's management team and responsible for planning and implementing TSRC ESG strategies. The ESG Steering Committee convened 6 meetings in 2021, and discussed the Company's strategies and goals for sustainable development. Two additional meetings were convened to discuss climate-related risks. TSRC established the TSRC Task Force under the ESG Steering Committee to effectively implement ESG. The task force plans and effectively implements the Company's ESG strategies and action plans through cross-departmental cooperation for the Company's long-term development. The ESG Task Force convened six meetings and numerous discussions on specific issues in 2021, and actively formulated ESG-related goals and action plans. After TSRC's ESG Steering Committee formulated strategies and goals, it reports and discusses them with the Board of Directors, and discloses ESG performance in the annual Sustainability Report, providing stakeholders with immediate and complete ESG-related information.

The five committees originally subordinate to the CSR Steering Committee were merged into four implementation teams according to different ESG aspects including: environmental, social, governance and stakeholder maintenance. The ESG Steering Committee, ESG Task Force, and individual implementation teams convene regular meetings each year, and strengthen the Company's implementation of short-term, mid-term, and long-term targets according to their duties. They report their ESG implementation status and future plans to the Board of Directors at least once a year, and let directors fully understand and fulfill their supervision duties in ESG issues.

The four implementation teams under the ESG framework are described below according to their implementation items and functions:

Framework of the ESG Steering Committee

2.1.3 Risk Management

Risk Management Policy and Framework

The Company established the Risk Management Policy to provide a basis for risk management by TSRC and its subsidiaries. The policy sets forth clear risk management principles, responsibilities, and operating mechanisms. The Company also established the “Risk Management Operating Procedures” to carry out all risk management procedures and related operations, implementing risk management in all aspects of its operations and decision-making. TSRC conducts risk assessments every year and regularly tracks 9 categories of risks. We mapped the risk level based on possibility and severity of impact, and formulate reactions based on the level.

The Board of Directors is the highest-level governance body of risk management at TSRC and is responsible for supervising the implement of risk management and process. TSRC's management team, which is composed of CEO and heads of functional units (9 people in total), is responsible for the management of TSRC's risks. Depending on the nature of the risk, risk management is carried out by the Risk Management Team or the Risk Management Task Force, which is formed by members from each functional unit, whereas functional units implement all measures regarding risk management. Internal auditors audit the risk management of functional units and subsidiaries according to annual and special audit plans, ensuring that risks are managed and controlled.

The risk management process includes identification, assessment, prioritization, action plan implementation, and risk disclosure. The management and control results of key risks is assessed by examining the operation or management reports of each subsidiary and functional department.

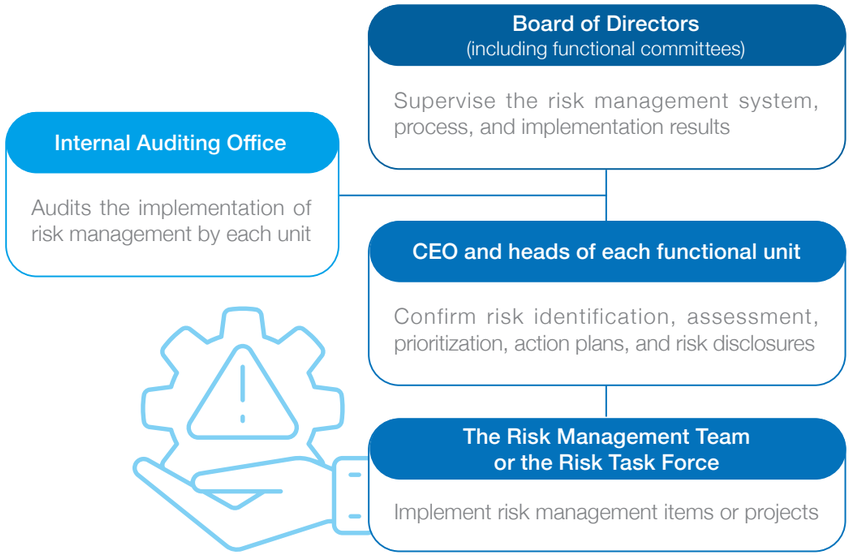
The Risk Management Task Force regularly updates risk management and improvement actions, and periodically reports to the CEO based on the level of importance of topics. The management of important operational risks is included in the management team's quarterly operational reports to the Board of Directors. The management team reports overall risk management and implementation to the Board of Directors to let directors fully understand the status of operations. Furthermore, with consideration to the rising importance of information security to companies, the implementation status of information security risk was reported to the Board of Directors in May 2021.

Risk Identification and Management

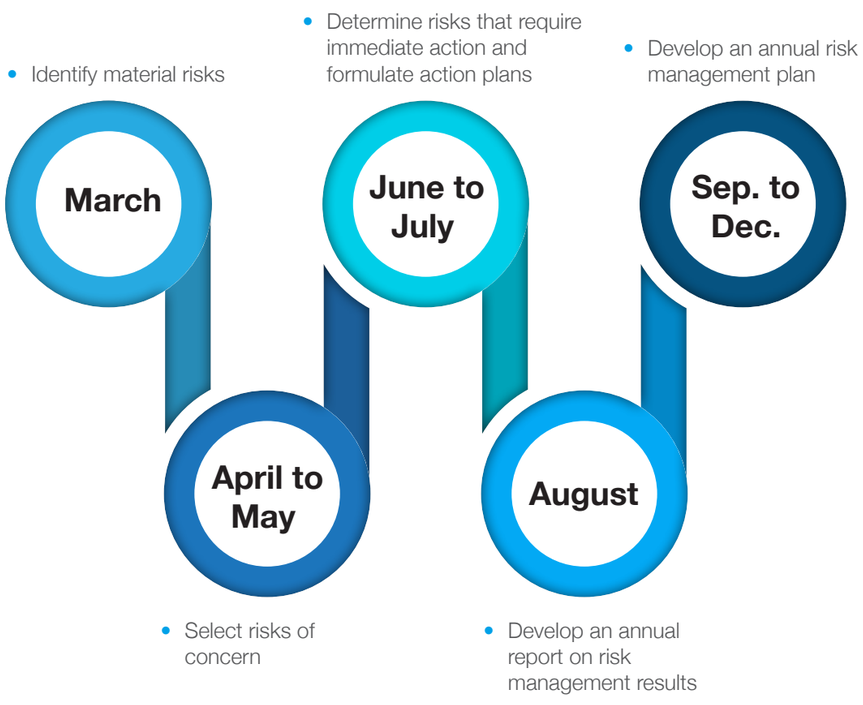
Functional units and business departments of TSRC periodically identify risks in the first quarter of each year based on the external environment and the Company's operational needs. For risks that are identified, the X-axis stands for "probability of occurrence" and Y-axis is "level of impact." The risks are quantitatively or qualitatively divided into three levels, and a risk matrix is developed accordingly.

The management team divides risks in to level 1 (low risk), level 2 (medium risk), and level 3 (high risk) according to the risk matrix. High risks are these have a high probability of occurrence and high level of impact on the Company. Medium risks are risks that have a low probability of occurrence but high level of impact on the Company, or a high probability of occurrence but a low level of impact on the Company. TSRC selects risks of concern from high and medium risks based on their priority to its operations, and then determines risks that require immediate action based on the Company's current risk management measures and implementation results.

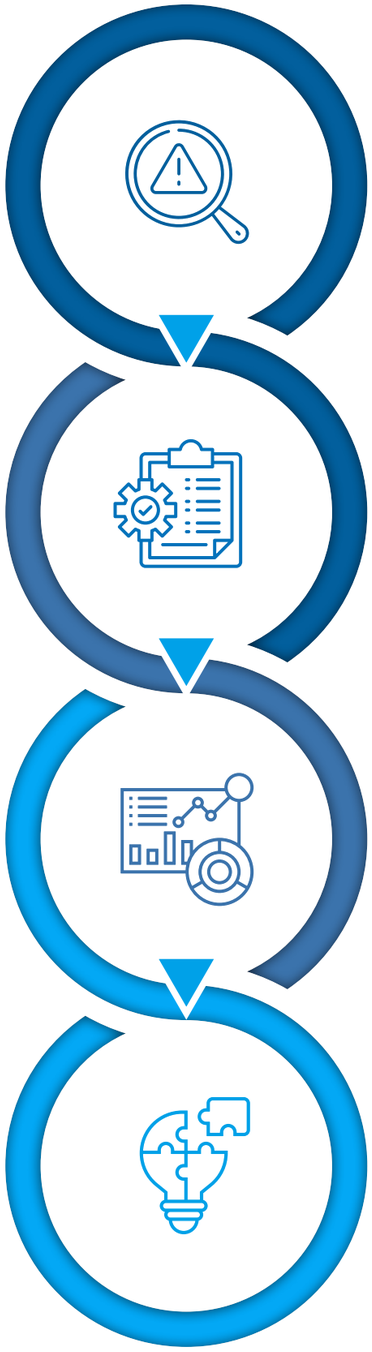
TSRC's Risk Management Framework



Risk Identification Timetable



Risk Identification Process



Step 1 | Risk Identification

Functional units and business departments identify risks based on the external environment and the Company's operational needs

Step 2 | Risk Prioritization

Divide risks into levels based on probability of occurrence and level of impact, and develop the risk matrix

Step 3 | Risk Effectiveness Analysis

Select risks of concern based on the priorities of the Company's operations. Further analyze management actions for various risks, and carry out effectiveness analysis to verify if effective management actions are being taken

Step 4 | Response Strategies Formulation

Identify risks that require immediate action, and formulate risk management actions and response strategies

Risk Category

No.	Risk category	Risk description
1	Strategic risk	Environment changes, constrained industrial development, investment risks, value chain impact
2	Contract management and compliance risk	Growingly strict environmental protection laws and regulations, lawsuits, increased cost of carbon emissions, carbon emission limit
3	Asset management and subsidiary management risk	Increased management cost, substantive management and firewall issues, regulatory restrictions on asset use
4	Financial risk	Exchange rate fluctuation risk, higher interest rates on loans, different regulations on lending in other countries
5	Operating risk	Risk of concentrated procurements, risk of concentrated sales, severe product price competition, raw material price fluctuations, supply chain tightening, business suspension, information security issues
6	Geographical and industrial risk	Regulatory restrictions on production locations, growingly strict requirements on the chemical engineering industry in each region, challenge of replacing raw materials due to industry structure
7	ESG related risk	Increased cost of carbon emission, development speed of carbon reduction technologies, changes in customer behavior, stigmatization of the industry, the Company's implementation of ethical corporate management, climate change risks, difficulties with talent recruitment, relatively slow talent cultivation, and increased sustainability regulation of each country
8	R&D and intellectual properties management risk	Leakage of important R&D information, leakage of trade secrets, disputes or lawsuits over intellectual property rights
9	Information Technology, Cybersecurity, and Technology risk	Weak information security, increased threat of viruses, insufficient information security judgment of employees

With regard to the identification of risks in 2021, we added COVID-19, information security related risks, and climate-related risks in response to changes in the external environment and market and the top 10 global risks published by the World Economic Forum in 2021. We formulated risk management actions and response strategies for 7 risks that require immediate action determined through the identification and assessment process. The following actions and strategies were implemented in 2021, including increasing stakeholder engagement and communication, reexamining equipment with high failure rate and adjusted the maintenance cycle, improving equipment to increase production capacity, and improving formula design and manufacturing ability.

7 Risks that Require Immediate Action and Response Strategies

No.	Risks	Response measures
1	Regulatory changes may cause the risk of lawsuits in production sites	• Continue to negotiate with associations and actively engage and communicate with stakeholders
2	Mechanical equipment suspension	• Review equipment with high failure rate and reexamine the maintenance cycle • Strengthen education and training for the repair of machinery, instruments, and electrical equipment • Adjust the running method to lower the shut-down frequency of important facilities
3	Price competition	• Production, sales, and procurement units actively cooperate, coordinate, and reallocate resources
4	Changes in industry structure	• Improve equipment to increase production capacity, and improve formula design and manufacturing ability
5	Excess market supply	• Monitor changes in product prices and markets to determine sales opportunities
6	Changes in customers' behavior	
7	Changes in raw material cost	• Continue to monitor the inventory and difference in product prices of raw materials suppliers, and effectively determine the right time to purchase raw materials

Business Continuity Management

When facing uncertain changes in the environment, TSRC monitors the impact of various risks and considers emergency situations and develop business contingency management scheme with the consideration of all emergencies. The TSRC's business contingency management scheme is composed of Business Contingency Plans, Emergency Response Plan for Continued Supply, and Crisis Management based on the level of continuousness and emergency. Through these three management procedures, TSRC takes immediate and effective response measures to reduce the impact of various risks.

• Business continuity plan

To effectively assess risks and ensure that response procedures meet actual needs, TSRC simulates emergency response to strengthen response mechanisms, and makes adjustments to the system's deficiencies. The simulation process includes creating an annual schedule, plans, drills, rehearsal, and actual drills, preparing for risks that may be encountered. After completing a drill, we prepare a drill report and conduct review to determine if it is necessary to revise the plan.

Work Flow

TSRC's business continuity plan focuses on the following 10 potential events:

• Emergency response plan for continued supply

With regard to business continuity management, fulfilling our commitment to customers and delivering products as schedule is one of the factors TSRC has been successful over the years. In particular, the ability to continue supplying products to customers during emergencies is TSRC's primary consideration. TSRC established the “Regulations of Governing Emergency Response Plan for Continued Supply” to effectively manage and control the impact of emergency events to maintain business continuity.

Emergency events mainly affect the production schedule and delivery to customers. These events include the following:

Risk Item	Level of impact	Emergency response measure
Malfunction of major equipment	Equipment stops operating and products cannot be produced	1. The engineering unit carries out repair or seeks external support 2. sales negotiate how to deal with the matters with customers
Suspension of external product supply, processes, and services raw material shortage	Delay in the process prevents timely delivery and causes the customers' production line to be suspended	1. Ask suppliers to make an emergency delivery/allocate raw materials 2. Sales negotiate how to deal with the matters with customers 3. Adjust the priority of shipments in response to customers' inventory and needs
Natural disaster	Equipment stops operating	1. Carry out recovery according to the Emergency Response Operation Management Regulations 2. Sales timely negotiate shipments with customers, and production units carry out emergency production procedures 3. Check damages, evaluate the stability of supply, and handle dispatch
Fire accident	Equipment stops operating/ Supply of raw materials and personnel transportation is suspended	
Suspension of utilities e.g. water supply cut-off, power outage	Shut down of equipment and products cannot be produced	1. Purchased water 2. Adjust production capacity in response to different water shortage situations 3. Operate the co-generation plant according to the situation
Labor shortage includes labor shortage caused by epidemics	Unable to deliver on time	1. Flexibly adjust the manpower allocation of each factory
Suspension of infrastructure e.g. suspension of IT system	Shipments are affected because the system was shut down	1. Disconnect and isolate the equipment 2. Use backup data for recovery 3. Emergency shipment via manual operations

TSRC conducts annual drills of emergency supply to completely assess the risk of emergency events and ensure the effectiveness of response measures. We prepare drill reports and reviews based on scheduling and scenario planning results. If necessary, we revise the “Regulations of Governing Emergency Response Plan for Continued Supply”.

• Crisis management mechanism

TSRC emphasizes the immediacy of response to crises, whether it may or already has affected or damaged the Company's reputation, asset or personnel , must be immediately handled to prevent and effectively control further damage. TSRC manages the decision-making process based on the principle of DISCO (Dual Path Process, Immediate Process, Stakeholder, Containment, Ownership). When a crisis occurs, the CEO of TSRC launches emergency response procedures, members of the emergency response team and CEO assign responsibilities to other members and effectively monitor and assess the impact and response method of events, taking immediate action to mitigate the impact and providing suitable explanations to stakeholders.

Categories of TSRC's Crisis

Emerging Risks: Climate-Related Risks

• Climate Risk Governance Framework of Climate Risk

The Board of Directors is the highest governance body to oversee the management of climate-related risks while the TSRC's management team is responsible for managing the Company's climate-related risks. In light of the increasing frequency of extreme weather events and growing impact on the Company, TSRC identified climate-related risk as an emerging mid-and long-term risk in 2021 and adopted the Recommendations of the Task Force on Climate-related Financial Disclosures for identification, analysis, quantification of the risks. TSRC's TCFD Task Force, which is identical to the Risk Management Team with identical members to the ESG Task Force, carries out climate-related risk management.

In 2021, the TCFD Task Force and supervisors and employees of global production sites held 3 large workshops, which the Company determined climate-related risks and opportunities applicable to TSRC, with reference to international research reports on climate risks and opportunities, practices of the industry benchmark in climate-related risk management, and the recommendations of external consultants. TSRC's management team convened 2 meetings to verify the climate risks that were identified, their impact, and risk level based on climate risk assessment results.

Furthermore, in response to the physical risks that occurred at TSRC's global production sites in 2021, such as water shortage at the Kaohsiung plant and the hurricane that hit the USA plant, the management team reported the impact of climate change on the Company's operations and response measures to the Board of Directors during quarterly operation reports, so that directors immediately understood the impact of climate risks on TSRC and management mechanisms.

• Climate Risks and Opportunities

TSRC identified13 climate-related risks and 5 climate-related opportunities with reference to the risk types recommended by TCFD, international sustainability index, and climate risks concerned by peer benchmarking companies, as well as TSRC’s operating bases and characteristics. The risks cover transition risks such as policy and legal risks and market risks and physical risks such as extreme weather events.

To clearly understand the impact of climate-related risks on TSRC's value chain, the TCFD Task Force and colleagues at each site reviewed the impact level and scope of each risk on TSRC's suppliers, TSRC’s operations, and clients. The 3-level scoring method is used to identify the impact of climate-related risks on the value chain (the scoring scale is from 1 to 3, with 3 standing for the highest degree of impact and 1 standing for the lowest degree of impact). TSRC then ranked the impact level of each risk in each category (suppliers, TSRC’s operations, and clients) by serial percentile, with the top 33.4% as high impact, 33.4% to 66.7% as moderate impact, and the last 33.3% as low impact. The level of impact of 13 climate-related risks on TSRC's value chain serves as one of the reference bases for operational strategies planning.

To manage climate-related risks according to materiality, the TCFD Task Force and colleagues at various sites, including Mainland China, Taiwan, the United States, and Vietnam, dived into the impact of climate-related risks on TSRC's operations. We assessed the materiality of 13 climate-related risks according to the following three aspects: the potential impact on TSRC, the vulnerability of TSRC when facing these risks, and the possibility. Colleagues at the operating sites in the region were responsible for scoring the materiality of risks of the region. The comprehensive process is applied to assess the materiality of climate-related risks to TSRC’s operations.

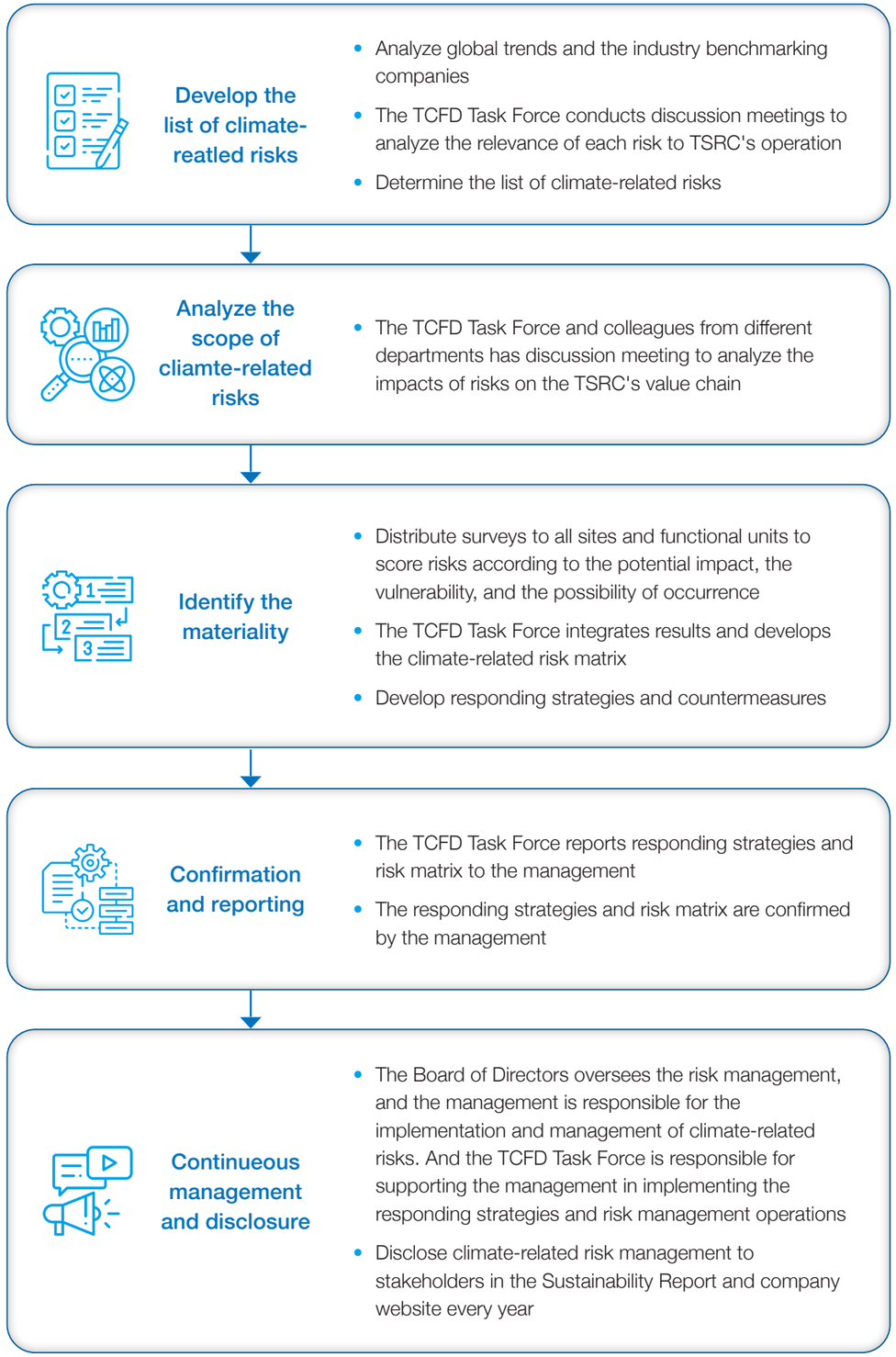
The potential impact on TSRC refers to the impact level of the climate-related risk on TSRC before any mitigation and improvement measures are taken. This aspect includes three indicators: the direct financial impact, the indirect financial impact, and the impact on brand image. The direct financial impact refers to the property loss caused by the climate-related risk. The indirect financial impact refers to the impact of the climate-related risk on TSRC's daily operations, and the impact on brand image refers to the impact of climate-related risk on TSRC's reputation. Each indicator is scored on a 5-Point Scale, and then the total score of the three sub-facets is summed up into a score of "potential impact ". The vulnerability of TSRC focuses on assessing whether a company's current level of preparedness and adaptation

competency is sufficient to deal with climate-related risks. This aspect includes two indicators: a company's readiness and adaptability. If the company is relatively well prepared and adaptable, the potential vulnerability is low, and vice versa. Each sub-facet is scored on a 5-Point Scale, and the total score of the two sub-facets is then summed up into a score of "potential vulnerability". Regarding the possibility, it refers to the possibility and frequency of climate-related risks that may occur in the future, taking into account the short, medium, and long-term time horizons of climate-related risks and the length of time that affects TSRC. It is scored on a 5-Point Scale, with short-term and frequent risk scored 5 points, and long-term and rare risk scored 1 point.

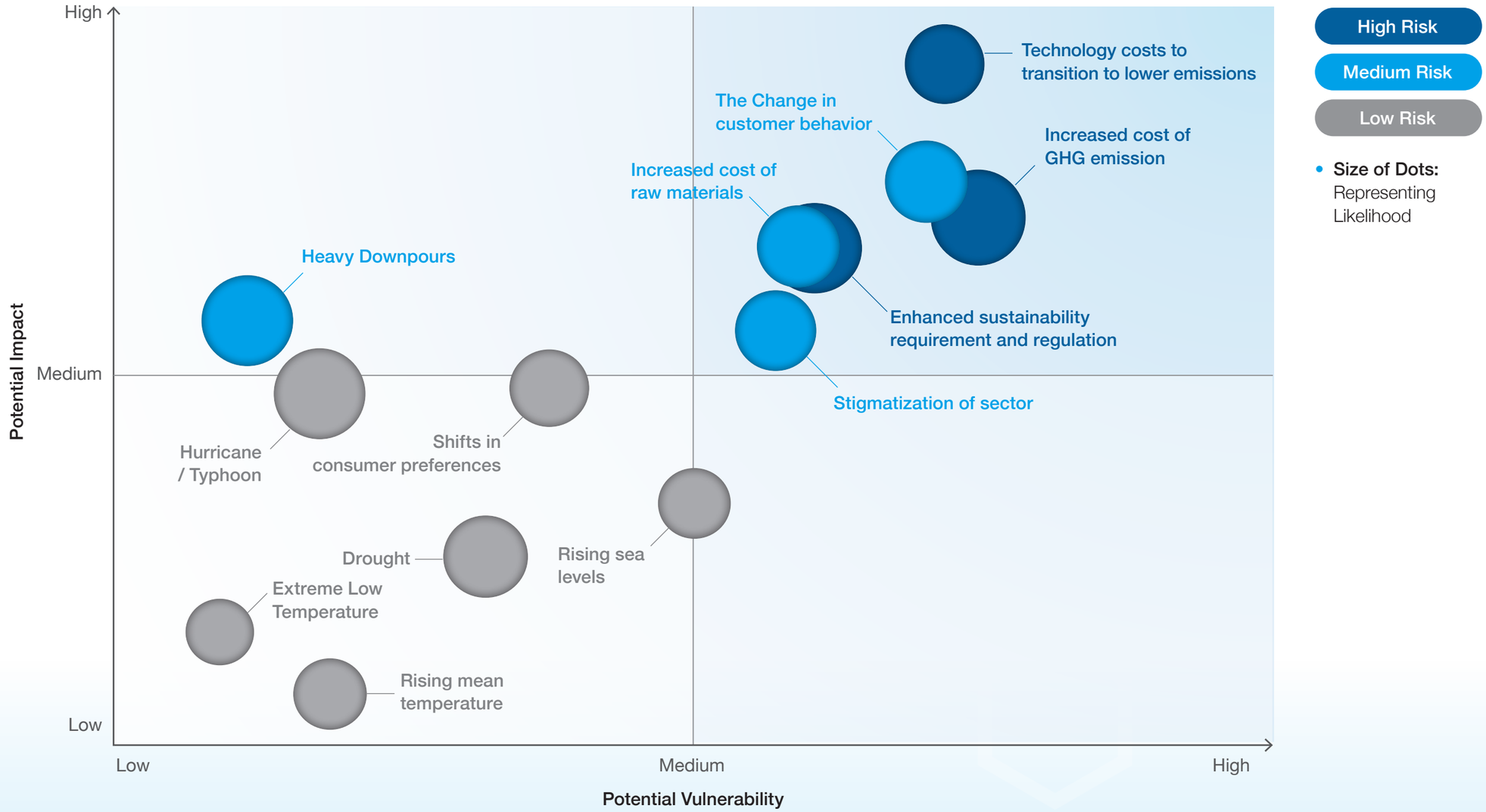
After synthesizing the scores from the three aspects of the potential impact, the vulnerability, and the possibility of occurrence, we multiplied the scores of the three aspects to obtain the total score. We have the total score of four regions (Mainland China, Taiwan, the United States, and Vietnam) and rank the score by serial percentile, taking the top 20% as high risk and the last 40% as low risk. We developed four regional climate-related risk matrixes. The TCFD Task Force then adjusted the climate risk matrix of each region based on factors such as the operation of each region, the development of relevant laws and regulations, and suggestions from external consultants. The adjustment was agreed upon and approved by the management. For example, considering the implementation of carbon pricing in Taiwan, TSRC may be incorporated in the first tier of charging and adjusted the level of impact and possibility of the risk of increased pricing of GHG emissions in Taiwan. Another example is that considering the future climate change scenarios of the Northwest Pacific, such as the increased intensity of typhoons and the location of TSRC's operations, the impact and probability of extreme weather events (typhoons) may increase in the mainland China.

After the management adjusted the climate-related risk matrix of each region, we integrate four regional matrixes into a group risk matrix. With the revenue ratio of each region as the weight, the scores of each risk of each regional are weighted into the group risk score. We ranked the scores by serial percentile, taking the top 20% as high risk and the last 40% as low risk. In the group risk matrix, the top 3 high risks are increased pricing of GHG emissions, costs to transition to lower emissions technology, and enhanced sustainability requirement and regulation. The moderate risks are the change of customer behavior, increased cost of raw materials, stigmatization of sector, and increased severity of extreme weather events – heavy downpours. The remaining 6 risks are low risks.

According to the impact of climate-related risks on TSRC's value chain and the materiality of climate-related risks, the TCFD Task Force thoroughly discussed the corresponding adjustments of operational strategies and relevant countermeasures. We consider all aspects of TSRC's operations that may be affected by climate-related risks and opportunities to formulate response strategies and measures. These measures were brought to the management team for confirmation. Measures are implemented in the daily operation and risk management procedures.



Climate-Related Risk Matrix



Level of Impact of Climate-Related Risks on the Value Chain and Countermeasures

Type of risk	Risk profile	Risk	Impact on TSRC	Level of impact on TSRC's value chain			Countermeasure
				Upstream suppliers	Own operations	Downstream customers	
Transition risks	Policy and Legal	Increased cost of GHG emission	TSRC will need to pay carbon fees, carbon tax, and carbon tariffs for its products, and will also need to pay fees if GHG emissions exceed the quota due to climate-related policies and regulations of other countries (such as carbon tax/tariffs, carbon trading system, and carbon price/fees). Controls may become stricter each year and carbon fees and taxes will gradually increase.	**High**	**High**	Medium	• Reduce carbon emissions from processes and products • Improve energy efficiency of processes and use renewable energy • Develop renewable raw materials • Continue to develop low-carbon solutions
		Enhanced sustainability requirement and regulation	The international trend of net zero emissions has caused sustainability requirements and regulations to increase, and also affected customers' requirements on products. This has caused TSRC to accelerate its climate actions, such as increasing the ratio of renewable energy use, reducing the carbon footprint of products, improving environmental safety and management, and increasing the transparency of information on green chemistry and related information.	**High**	**High**	Medium	• Accelerate the reduction of product carbon footprint • Improve energy efficiency of processes and use renewable energy • Develop renewable raw materials • Optimize water resource use • Waste reduction management
	Market	The Change in customer behavior	Customers switch to raw materials and products with lower carbon emissions and environmental impact in response to the global trend of net zero emissions and to reduce impact on the environment. Customers may also require that the Company provide products/ services with more transparent environmental information.	Medium	Medium	**High**	• Use more efficient transportation models • Develop products/services with low carbon emissions and environmental impact • Provide customers with customized services
		Increased cost of raw materials	In response to the IPCC's study, the world will gradually transition to low carbon energy sources before 2050. It is expected to entirely eliminate fossil fuels by 2100. In the long-term, TSRC's value chain will significantly increase raw materials costs.	**High**	**High**	**High**	• Continue to require suppliers to engage in climate adaptation and energy transformation, and develop a supply chain with climate resilience • Continue to develop renewable raw materials
	Technology	Technology costs to transition to lower emissions	In response to the global trend of sustainable development, TSRC is gradually planning low carbon transformation. After evaluating technologies of carbon reduction and equipment currently available in the market or being developed, the cost of low carbon technologies, maturity of technologies, and large-scale commercialization will affect TSRC's carbon reduction cost and return on investment.	**High**	**High**	**High**	• Jointly develop high performance equipment and technology and products together with partners • Replace old electricity consuming equipment • Actively search for low carbon transformation talent, and train employees for the low carbon transformation era • Assess low carbon investments within an acceptable scope of risk
	Reputation	Stigmatization of sector	Emphasis on climate change issues will continue to increase. Stakeholders prefer companies with low carbon emissions or have a positive impact on humanity or the environment. The petrochemical industry has the stigma of having high carbon emissions and high pollution.	**High**	Medium	Low	• Strengthen response and prevention of climate change • Appropriate disclosure of company information • Accelerate low carbon transformation and GHG management • Optimize water resource use • Improve communication with stakeholders
		Shifts in consumer preferences	Extreme weather events can easily affect the stability of supply chains, and customers may switch to local suppliers. Furthermore, customers prefer low carbon raw materials and sustainable products. TSRC has to understand customers' needs and enhance the competitiveness of products.	Low	Medium	Medium	• Implement climate risk assessment and continue to improve the prevention measures and response mechanisms of each production location • Strengthen the stability of local supply • Strengthen communication with customers and understand their needs

Type of risk	Risk profile	Risk	Impact on TSRC	Level of impact on TSRC's value chain			Countermeasure
				Upstream suppliers	Own operations	Downstream customers	
Physical risks	Acute	Increased severity of extreme weather events – Hurricane/ typhoon	Increase in frequency and intensity of hurricane/typhoon will have the following impact: • Hurricane/typhoon may destroy power systems and cause power outage in certain regions, causing business or service suspension • Hurricane/typhoon causes disruption of supply chain • Increase in insurance premiums for assets in "high risk" regions will increase operating costs	Medium	Medium	Medium	• Strengthen loss control measures of production locations with an emphasis on flood prevention • Strengthen emergency response measures • Establish a manpower allocation mechanism • Step up the localization of suppliers
		Increased severity of extreme weather events – Heavy Downpours	When the frequency and rainfall of heavy downpours increases, it may damage production sites, causing services to be suspended, or preventing employees from going to work	Medium	Medium	Medium	• Strengthen flood prevention measures and response measures at production locations • Establish a manpower allocation mechanism
		Increased severity of extreme weather events – Extreme Low Temperature	Sudden drop in temperature or snowstorm may have the following impacts: • Extreme low temperature events may cause water pipes, equipment, and instruments of operations or production locations to become frozen, which will cause water pipes to rupture, instruments to be damaged, and further cause supply chain disruption • Employees will not be able to go to work when roads are closed, which will lower production capacity and increase operating costs	Medium	Low	Low	• Strengthen loss control measures of production locations with an emphasis on low temperature prevention • Strengthen emergency supply mechanisms
		Increased severity of extreme weather events – Drought	Water supply may be cut off due to droughts. Water shortage will increase water fees and external water sources to be cut off. This will affect process water consumption and may cause operating shut down	Low	Low	Low	• Implement water conservation measures • Strengthen process wastewater recycling and improve water resource usage efficiency • Increase use of recycled water • Strengthen emergency supply mechanisms
	Chronic	Rising sea levels	Sea level rising will cause business and production sites to be flooded and result in significant financial losses	Low	Low	Low	• Strengthen loss control measures of production locations with an emphasis on coastal areas
		Rising mean temperature	Global climate change will extend the drought season in East Asia and increase the duration of extremely high temperatures, which will cause the following impacts: • Cause employees to have a heat stroke or other health conditions, resulting in lower work efficiency • Persistent high temperature may increase electricity demand or impact production performance • Drought caused by persistent high temperature creates the risk of business suspension	Low	Low	Low	• Continue to carry out equipment maintenance and monitor electricity consumption to maintain the stability of electricity consumption • Strengthen process wastewater recycling and improve water resource usage efficiency • Strengthen emergency supply mechanisms

Climate-Related Opportunities and Countermeasures

Opportunities	Name of opportunity	Impact on TSRC	Countermeasures
Products and Services	Development and/or expansion of low emission goods and services	Evaluate the development of low carbon markets and market demand of each country, provide low carbon solutions to help customers produce low carbon products and expand their market share, and continue to maintain the Company's competitiveness by meeting customers' needs	• Develop high-value low-carbon products or reduce the environmental impact of products • Help customers reduce the carbon footprint of their products or reduce their environmental impact
	Development of climate adaptation solutions	As extreme weather events continue to occur, provide customers with products for responding to extreme weather events	• Develop products with climate tolerance
Resource Efficiency	Use of more efficient production and distribution processes	• Work with value chain partners and adopt highly efficient transportation processes to increase resource efficiency and lower operating costs. • Adopt highly efficient processes to reduce resource use and lower operating costs	• Equipment replacement • Implement energy conservation and carbon reduction plans • Establish water-saving processes or increase recycled water processes • Increase renewable energy use and take energy conservation measures • Promotion of waste recycling and reuse • Select low carbon transportation to deliver products
Market	Increase sustainable financing	Good ratings from international investment and rating institutions for the Company's ESG performance will help the Company attract capital	• Strengthen contact and communication with stakeholder • Complete and timely disclosure of ESG performance • Strengthen risk management and supervision mechanisms • Implement climate risk assessment and response mechanisms
	Positive reputation	In-depth connection with SDGs and gaining a good business reputation will have a positive impact on the Company	• Expand stakeholder communication in climate issues • Disclose the Company's connection to the SDGs and results of efforts

TSRC formulates climate risk management strategies based on the materiality of risks. We first conduct quantitative analysis of the impact of high risks, and then adjusts the Company's business strategies based on quantitative analysis results. We will continue to expand the scope of quantitative assessments of risk impacts, analyze the financial impact of medium and low risks, reexamine the Company's risk tolerance and appetites, and formulate countermeasures.

• Analysis of the impact path of material climate risks

TSRC analyzes the potential impact path of the three high risks: increased cost of GHG emission, technology costs to transition to lower emissions, and enhanced sustainability requirements and regulation. We analyze the potential impact of these three risks on production, sales, procurement, and R&D, so that we can assess the required resource of investment and allocation when risk mitigation and adaptation measures are taken. In the future, TSRC will gradually complete the financial impact assessment of material climate risks and update assessment results in response to related policies, regulations, and low carbon technologies.

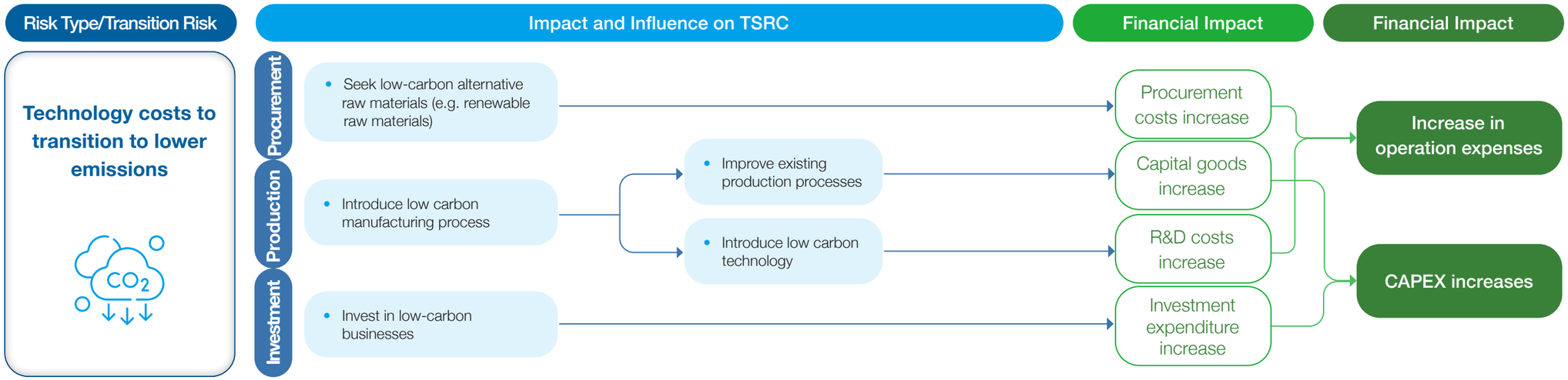
Risk: Increased cost of GHG emissions

Risk Type/Transition Risk	Impact and Influence on TSRC	Financial Impact	Financial Impact
Increased cost of GHG emissions Domestic and foreign carbon related regulations, including: • Domestic GHGs emission reduction and management Act revised to levy carbon fee • Draft international carbon tariff (EU/ US carbon tariff) and permit (China)	**Production** • Increased carbon fee for domestic production emissions • Increased carbon fee, tariff or permit for overseas production emissions	Operation costs	Increase in operation expenses
	Sale • Product carbon emissions higher than overseas standards • Increased import cost for overseas sites • Face challenges of selling as overseas clients face increased cost of products	Revenue	Decrease in revenue
	Procurement • Increased operation costs for energy suppliers • Transferred energy costs • Increased electricity bill • Increased operation costs for upstream equipment/raw material manufacturers • Increased shipping costs for logistics providers • Transferred procurement costs	Procurement costs	

Risk: Enhanced Sustainability Requirement & Regulation

Risk Type/Transition Risk		Impact and Influence on TSRC		Financial Impact	Financial Impact
Enhanced Sustainability Requirement and Regulation Regulations require TSRC to increase the proportion of renewable energy use and etc	Production	• Increased the demand for renewable energy in the energy market, as well as the price of renewable energy certificates risen		Energy costs increase	Increase in operation expenses
	Procurement	• Installed renewable energy facilities	• Procurement of renewable energy power generation equipment • Procurement of energy storage equipment	Capital goods increase	CAPEX increases
		• Signed renewable energy direct purchase agreement			
Enhanced Sustainability Requirement and Regulation Require TSRC to reduce product carbon footprint and etc.	Production	• Provide low carbon products (including carbon neutral product)	• Improve existing production processes • Purchase carbon permit • Obtain product carbon neutrality and carbon footprint certification	• Purchase new equipment with higher efficiency • Retire old &inefficient equipment • Adjusting existing process parameter	Capital goods increase Early retirement of assets Manufacturing costs increase
	Procurement		• Use of low-carbon fuels • Using of low-carbon raw materials • Adopt low-carbon transport logistics	Procurement costs increase	Increase in operation expenses
	R & D		• Low carbon product development	R&D costs increase	

Risk: Technology Cost to Transition to Lower Emissions



• Climate risk financial impact assessment

With consideration of the Company's business strategies and international development trends in carbon management, TSRC first assessed the financial impact of "increased cost of GHG emission" with reference to examples of climate risk disclosures by domestic and overseas benchmarks in the industry. As climate change becomes even more severe, countries intend to implement climate-related policies. For instance, the international carbon tariff and Taiwan's carbon pricing are to charge a certain fee on companies whose GHG emissions exceed the allocated amount. This may increase costs when customers import TSRC's products. Furthermore, carbon pricing-related policies and regulations will not only affect TSRC but also impact suppliers. The cost of raw materials, equipment, and electricity may gradually increase. Hence, TSRC dived into the three dimensions—the increase in upstream costs, climate-related policy proposals, and customers shifting or reducing purchase orders—to assess the corresponding financial impact.

1. The increase of upstream costs:

TSRC will increases procurement costs due to climate factors in 2023-2030. In terms of electricity, considering that power companies located in the same region as TSRC's business sites may increase costs due to responding to climate change and incorporating new energy (e.g., renewable energy) into the portfolio, the electricity price may rise by 2030. Furthermore, the cost of electricity may continue to increase until 2030 due to electricity purchases under TSRC's carbon reduction strategy. As for the cost of raw materials, equipment, and logistics, the production cost of suppliers may increase due to controls on carbon emissions in the country where they are located, the charge of a carbon tax and carbon fees, or the implementation of a carbon trading system. Suppliers may transfer their costs to TSRC. In response to the continued increase in upstream costs, TSRC is actively implementing energy transformation and plans to work with new suppliers that have completed climate response measures, establishing a supply chain with climate resilience. We will also periodically examine upstream costs to lower the financial impact of this risk.

2. Climate-related policy proposals:

TSRC evaluates the additional carbon fees that production sites may need to pay while the overall GHG emissions decrease each year, with consideration of the proposed regulations of countries where our main production sites are located, including Taiwan's "Climate Change Response Act (Draft)", California's Western Climate Initiative (WCI), emissions quota in China's "Interim Regulations on the Management of Carbon Emissions Trading" and "Measures for the Administration of Carbon Emissions Trading (for Trial Implementation)", and the amendment to Vietnam's Environmental Protection Act. We also reference domestic and overseas carbon pricing research reports, as well as the spot price of the carbon exchange. Our analysis shows that the cost of carbon emissions that our business sites need to pay until 2030 in the 1.5℃ and 2.0℃ scenarios will increase each year along with the carbon pricing. Furthermore, TSRC also considers the potential impact of carbon tariffs when products are exported in the future. According to carbon tariffs that have been formulated and implemented on a trial basis by other countries, such as the Carbon Border Adjustment Mechanism (CBAM) announced by the European Union, TSRC's carbon tariffs cost will be peak in 2026 in the 1.5℃ and 2.0℃ scenarios. As the carbon pricing and carbon tariffs increase but our carbon emissions per unit product decrease until 2030, the amount of payment of carbon tariffs will decrease each year. Forward looking, TSRC

will continue to monitor the progress of climate-related legislation in Taiwan and overseas, and periodically examine if the direction of TSRC internal carbon reduction strategies meets the requirements of authorities. We will make corresponding improvements and adjustments to business strategies, in order to minimize the financial impact of climate-related policies.

3. Challenges from the market:

In response to the climate-related policies of different countries, the carbon tariffs scheme may also impact the downstream of the value chain. Since customers may need to bear the cost of carbon tariffs when they import TSRC's products, it may cause customers to shift or reduce purchase orders. TSRC references the "Report on the Manufacturing Purchasing Managers' Index (PMI)" published by the Chung-Hua Institution for Economic Research and the China Manufacturing PMI released by the National Bureau of Statistics of the Peoples Republic of China to assess the value and market position of products. We assume that a certain percentage of customers will shift their purchase orders due to carbon tariffs and related fees in the future and assess the financial impact on this basis. TSRC's main strategy is to reduce carbon emissions from its operations or reduce the carbon footprint of its products, and thereby provide customers with more competitive products and services with respect to carbon reduction, continuing to lower business or market risks.

• Metrics and targets

In response to the impact and challenges of climate change, TSRC set short-term and mid-term climate risk targets of mitigation in 2021. Climate risk-related targets are integrated the annual targets of the management and connected with annual performance appraisals to ensure an effectively achievement. It is regularly monitored by the Board to facilitate better performance.

TSRC hopes to protect the earth through the joint efforts of itself and its business partners and has contribution to the next generation and the future environment. We disclose greenhouse gas emission data in this report (covering Scope 1 and Scope 2, please refer to Section 3.1). It is expected to complete the external third-party verification of ISO14064-1:2018 by the end of 2022.

Focus Area	Target	2023	2025	2030
Towards Carbon Neutrality Operation	**Reduce total carbon emission** Scope1+2; Base year: 2021	Total carbon emissions reduction by **5%** versus base year	Total carbon emissions reduction by **10%** versus base year	Total carbon emissions reduction by **22.5%** versus base year
	Increase the use of renewable energy	Increase renewable energy to **5%** of total electricity consumption	Increase renewable energy to **10%** of total electricity consumption	Increase renewable energy to **30%** of total electricity consumption
Water Resource Optimization	**Increase wastewater recycling**	Increase wastewater recycling to **25%** of total volume of wastewater	Increase wastewater recycling to **36%** of total volume of wastewater	Increase wastewater recycling to **40%** of total volume of wastewater
	Increase recycled water utilization	Increase recycled water utilization to **15%** of total water consumption	Increase recycled water utilization to **34%** of total water consumption	Increase recycled water utilization to **40%** of total water consumption
Lower Products' Carbon Footprint	**Develop eco-friendly products**	• Develop new-generation synthetic rubber for green and EV tires/shoe materials to reduce carbon emissions by around **150,000** mt (based on sales projection) • Develop eco-friendly foaming product • Special styrene block copolymer (SBC) developed for medical equipment, shoe materials, plastic modification aim to increase recyclability and decrease medical waste	• Develop new-generation synthetic rubber for green and EV tires/shoe materials to reduce carbon emissions by around **300,000** mt (based on sales projection) • Develop eco-friendly foaming products with recyclability • New type of special styrene block copolymer (SBC) developed for reducing energy consumption and organic solvents in customer production process	• Develop new-generation synthetic rubber for green and EV tires/shoe materials to reduce carbon emissions by around **1,500,000** mt (based on sales projection) • Develop eco-friendly foaming products that use renewable materials and more recyclability • Medical TPE products developed for reducing medical waste by **10%** compared with previous generation products by sales
	Product process optimization	Optimize production process of TPE products, reduce use of steam to achieve **1,800** mt per year of carbon emissions reduction	Optimize production process of TPE products to reduce electricity and energy consumption	Optimize production process of TPE products, reduce electricity and energy consumption to achieve **9,000** mt per year of carbon emissions reduction
	Use of renewable materials*	Develop renewable raw material suppliers	Renewable raw materials account for **5%** of total raw material purchase	Renewable raw materials account for **15%** of total raw material purchase

*Renewable Materials: (1) Agriculture based (2) Bio-based (3) Waste of other products

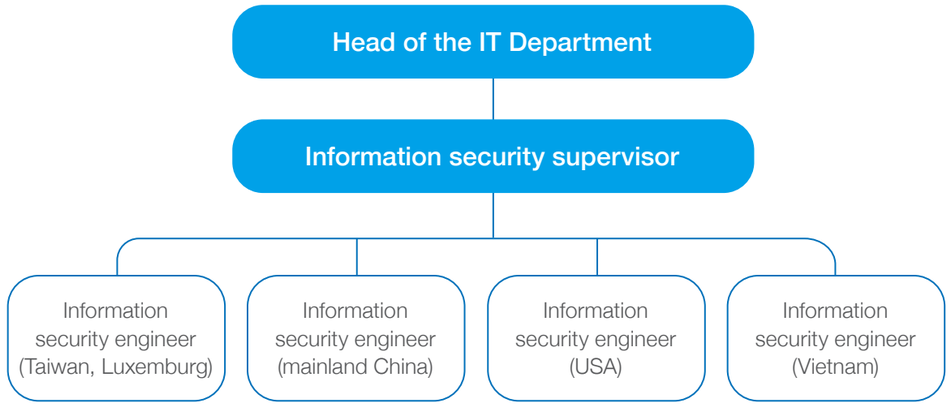
Emerging Risks: Information Security

TSRC actively protects the Company's important information assets and defends and prevents internal and external information security threats whether planned or unintentional. We have established a complete information security management framework and corresponding information security risk management regulations, implementation regulations, and details. The scope of processes includes Identifying the risk level of the core system, periodically reviewing information and communication equipment, and conducting annual information security risk assessments. The head of the IT Department, Finance Division also serves as the head of the information security unit, which has one information security supervisor and several professional IT personnel responsible for planning the internal information security policy, planning and implementing information security operations, and promoting and implementing the information security policy. A summary of the Company's information security governance is reported to the Board of Directors each year. The Company established the Information Security Policy, which clearly specifies the scope of technology and information assets, responsibilities when using the Company's information assets, preventive measures when facing information security threats, and response procedures when the Company encounters information security threats.

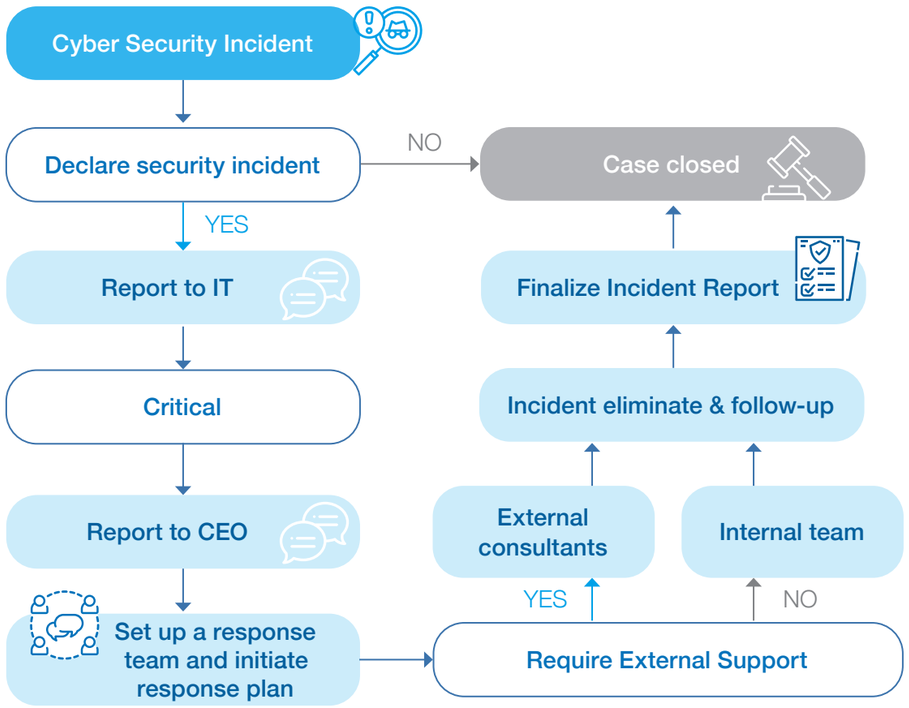
In 2021, TSRC delivered the annual information security report to the Board of Directors in May, and expanded virus prevention measures in Taiwan, America, Europe, and Southeast Asia in the second quarter, enhancing the threat detection and active defense abilities of terminal equipment. We conducted 2 penetration tests each quarter in the second quarter and third quarter, in order to strengthen the Company's security against external systems and reduce information security risks. We conducted 2 social engineering drills and training sessions each quarter in the third and fourth quarters, raising employees' awareness of information security.

Considering the importance of information security, in the upcoming year, TSRC will expand virus behavior protection, enhance the threat prediction and active defense capabilities of terminal equipment, improve the information security protection network, and establish a zero-trust structure and physical network access control. We aim to strengthen network access control, enhance the security strength of the company's information environment, and reduce information security risks. In the long-term, TSRC will strengthen the information security of factories, comprehensively monitor OT/OA network traffic, reduce the possibility of network hacking, and reduce information and network security risks.

Information Security Organization Structure



Information Security Response Procedures



2.1.4 Integrity

Integrity is the foundation of TSRC's governance and also most important corporate culture. TSRC established the Code of Business Conduct and Code of Ethics, which were approved by the Board of Directors and describe the philosophy and principles of integrity, establishing the framework for all employees to abide by. The Legal Department is responsible for implementing the policy and unethical conduct prevention measures, and the Audit Office audits the implementation of related systems.

The Code of Business Conduct states that the Company's personnel must clearly express the Company's ethical management position when interacting with business counterparts (including suppliers, customers, agents, and distributors). Before forming business relationships, it is necessary to first evaluate if the counterpart previously engaged in unethical conduct. During contract signing, we require counterparts to agree to abide by TSRC Corporation's integrity principles, and to protect intellectual property rights and trade secrets. In the contract signing stage, we also include compliance with the ethical management Policy in audits and evaluations.

To strengthen the implementation of ethical management, regarding anti-corruption and anti-bribery, TSRC formulates the "Administrative Measures for Official Gifts and Entertainments", which provides norms that employees must follow when providing or accepting gifts and entertainment when performing official business. TSRC establishes channels for reporting illegal, unethical, and immoral conduct (e.g. e-mail or address for delivering documents) with the CEO responsible for overall management, in order to strengthen the implementation of ethical corporate management. Depending on the aspects involved in each case, CEO will designate personnel without a conflict of interest to form a task force to investigate and determine how to deal with the case. If the case involves the CEO or a director, then it will be handled by the chairperson or Audit Committee of TSRC. In principle, the whistleblower should be named when filing a report, but anonymous reports may be accepted when the contents of the report and evidence is clear.

Furthermore, TSRC also regularly organizes training and promotion activities, and provides information on the Company's ethical corporate management philosophy, policy, unethical conduct prevention measures, and consequences of violations to employees and business counterparts. We have incorporated the implementation of ethical corporate management into the performance management system of each department. A total of 4 training and promotion activities were organized in 2021, including online sessions on conflict of interest and disclosures, online courses on trade secrets and non-compete clauses, insider trading, and online and offline courses on unlawful infringement in the workplace; the activities had a total of 625 participants. New employees also took basic courses on legal affairs and trade secrets in 2021, and a total of 51 employees completed training.

TSRC has stepped up promotion of the importance of ethical corporate management and provided education and training. A supplier attempted to bribe the Company's personnel in 2021, the employee immediately reported the situation, and TSRC terminated its cooperation with the supplier. This event shows employees' emphasis on ethical corporate management and has also been used as an example for promoting TSRC's position and measures for refusing unreasonable gifts and entertainment to units.

Prevention items in the Code of Business Conduct

TSRC established the Management Procedure for Insider Trading in 2021. The procedure clearly stipulates that the Company's personnel may not use material information that has not yet been disclosed for insider trading, disclose the information to others, and let others make trades on their behalf. The Legal Department is responsible for maintaining and implementing the Management Procedure for Insider Trading and organizes training and promotion activities on insider trading each year to improve employees' understanding of insider trading regulations and maintain the confidentiality of material information. One 1-hour online training session was held in 2021 and had a total of 93 participants. We send e-mails to employees each quarter to promote the prevention of insider trading and conflict of interest and sent written notices in the third quarter to promote the "Procedures and Notices for Changes in Shareholding of Insiders" and "Common Violations of the Securities and Exchange Act by Insiders Applying for Changes in Shareholding."

Code of Business Conduct

Management Procedure for Insider Trading

Training Session

2.1.5 Compliance

TSRC complies with laws and regulations for governance, environment, products or services, and finance, and requires the management team and employees to comply with the Code of Ethics, uphold the principles of honesty and creditability, and abide by professional standards and related laws and regulations. TSRC Corporation did not have any one of the following situations in 2021:

- Receive fines or non-monetary sanctions due to violation of corporate governance or economic laws and regulations
- Receive fines or non-monetary sanctions due to violation of labor rights or human rights laws and regulations
- Products or services violated consumer health and safety laws and regulations
- Products or services violated information or labeling laws and regulations
- Compliance of products or services with marketing and communication related regulations

In 2021, three environmental fines have occurred: :

1. In the TPE manufacturing procedures of the Kaohsiung plant, the value of one part of process equipment exceeded the standard for VOCs and emissions regulations, and a fine of NT$450,000 was imposed for violating Article 20, Paragraph 1 of Taiwan's Air Pollution Control Act.
2. Due to the replacement of monitoring facilities, a weekly test was not conducted before the review of the monitoring facility verification report was completed, and the number of effective monitoring hours did not reach 85% in the third quarter and fourth quarter. A fine of NT$200,000 is expected to be imposed for violating Article 22, Paragraph 2 of Taiwan's Air Pollution Control Act.
3. In the three-part form for outsourced joint disposal of business waste, the weight of waste (flammable waste liquid) reported by Kaohsiung plant did not match the weight reported by the disposal company, and a fine of NT$60,000 is expected to be imposed.

Please see 3.5 Environmental Management for details on enhanced management measures for air pollution.

2.1.6 Looking Forward

Corporate governance is the most important foundation for ESG. Along with TSRC ESG Strategy, we have set short, mid, and long-term targets for strengthening corporate governance. In the future, TSRC will continue to improve governance and supervision mechanisms and implement related systems. We will effectively implement ESG strategies and goals through the ESG Committee, and periodically report the status of ESG implementation to the Board of Directors, so that the Board of Directors is updated on the attainment of key ESG goals. Furthermore, TSRC will continue to improve risk management mechanisms for its operational resilience, and will periodically report the implementation status of risk management to the Board of Directors, while conducting quantitative analysis of the financial impact of climate-related risks and taking preventive measures. Looking towards the future, TSRC will continue to improve its ESG performance through integrating with digital information system and enhancing risk monitoring and management. We will also increase the engagement with stakeholders and achieve our goal of low carbon transformation.

2.2 Integrate Sustainability and Business Strategies

2.2.1 Management Approach

TSRC's main strategy to its business expansion over the years has been to accurately identify global market trends, and plan and implement forward-looking business strategies. TSRC firmly believes that a company's sustainable value is based on its long-term competitiveness and meeting environmental and social expectations. TSRC pursues business growth and emphasizes the ability to create economic value for stakeholders, create opportunities for communities, make actual contributions to society, and create a virtuous cycle for companies and society to mutually prosper and achieve the goal of stable long-term development.

2.2.2 Business Strategies and Business Models

TSRC plays a crucial role in the upstream industry. Besides being one of the main producers of synthetic rubber products, TSRC has been actively engaging in high-value transformation in recent years based on its core technologies. Our long-term business strategy is to achieve organic growth, improve our business portfolio, and increase our profits, which are our three major themes. We are developing product applications for transportation, sports and leisure, and healthcare, and are expanding to markets in North America, Europe, Southeast Asia, and South Asia. We have gradually been a global company for special chemical materials.

TSRC's mission is to provide customers with the best solution through scientific methods, and our main products and services can be divided into three categories: Synthetic rubber, thermoplastic elastomer, and advanced materials. We have different sales strategies and business models for the characteristics of product application markets, in hopes that products will not only increase our profits but also continue to solve customers' problems, create value for shareholders, have a positive impact on the environment and society, and create sustainable value for TSRC.

Synthetic Rubber Products

Main product applications of synthetic rubber are automobile accessories, tires, and outsoles, which are commodities. Demand on electric vehicles and related markets has significantly increased as global climate actions are being accelerated, and countries are implementing growingly strict standards on automobile energy consumption. Brand customers are thus attaching greater importance to GHG emissions in the life cycle of rubber materials. TSRC is actively implementing the strategy of "optimizing products, reducing emissions, and increasing applications," and continues to adjust processes and optimize formulas for current products, making products easier to process to help customers reduce energy use, while reducing GHG emissions from product processes. TSRC utilizes its technologies to support the climate actions of value chain partners. At the same time, TSRC has increased the development of product and service targeting green applications. Regarding raw materials, we have increased the use of biomass materials. About our products, we are stepping up the development of customized products with lower carbon emissions and reducing the fuel consumption of cars and energy consumption of rubber product production. We have established a vertically integrated business model that links together the electric vehicle and eco-friendly tire industry chain, playing a crucial role in green low-carbon supply chains through triangular strategic cooperation.

TPE

The main product applications of TSRC's TPE are adhesives, flexible film, automobile materials, plastic modification, asphalt modification, and water-proof materials. Demand has rapidly grown in the thermoplastic elastomer market following changes in population structure, rapid growth of e-commerce, higher quality requirements on consumer products, eco-friendly non-toxic materials, and the trend of carbon reduction. TSRC's business strategy is to develop innovative product technologies, innovative business models, close partnerships, immediate customer support, stable and reliable global supply and localized services, combining different product and material application abilities to provide customers with total solutions. Development focuses on new markets and new technology platforms, replacing materials that are hazardous to the environment and health, simplifying downstream product production procedures, improving the production efficiency and performance of downstream products, and optimizing process technologies to reduce consumption and emission.

Advanced Materials

Main applications of advanced materials include high-end footwear, soft overholding materials, and plastic modification. The development of high-end footwear in recent years has focused on foam midsoles and special accessories, providing soft and comfortable materials that are also strong. In response to the features of different shoe models and the pursuit of differentiation by brands, TSRC strives to make breakthroughs in physical properties to meet customers' needs, and provides a total solution for precision color inspection, production optimization, and stable quality. Following the trend of products that feature sustainability and lower environmental impact, TSRC has begun developing non-crosslinking physical foaming technology platform to replace the use of chemical additives. We have also added the option of closed loop recycling to the recycling, upgrade, and re-engineering of foam products to improve the quality and stability of recycled products.

2.2.3 Customer Relations

Over the years, TSRC continued to provide customers products and services that meet their needs through its global network. We insist on pursuing better quality, safety, and services, and firmly believe that only high quality will bring high value. Hence, all products and services must have the highest quality and also meet regulatory requirements of each sales region on product safety and performance to provide services that meet and even exceed customers' expectations. TSRC actively builds close relationships with customers based on accountability and has obtained a high level of trust from customers and understanding of customers' needs. TSRC created value for customers through aligning with TSRC's triangular business strategies and models.

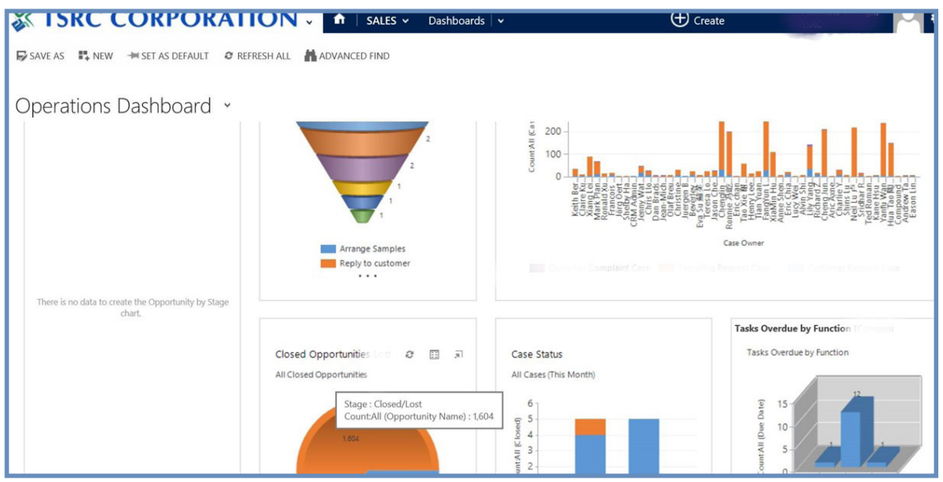
In response to global ESG trends, brand customers have growingly strict requirements on the ESG performance of their suppliers. Customers have significantly higher requirements on our ratings of international rating institutions (e.g., Ecovadis and CDP). Besides closely monitoring customers' expectations on our ESG performance, we also provide supplementary ESG information to individual customers as needed and make timely adjustments to our business strategy based on customers' needs.

Global Customer Relationship Management

TSRC has established sales and supply locations across Europe, America, and Asia based on the four critical sites in Luxemburg, Houston, Taiwan, and mainland China, and is able to immediately provide comprehensive technical services. In order to provide customers with better services and accurately provide customers' opinions to each site, TSRC implemented a customer relationship management system and established a global customer relationship management platform, allowing employees around the world to exchange issues and opinions on the customer end, which helps sales personnel on the front lines to provide first-hand information to production locations and the R&D center. This accelerates the improvement and customization of product quality and allows customers' problems to be accurately resolved.

TSRC upholds the spirit of providing customer-oriented services and has established standard operating procedures to properly handle customer complaints and refunds. The quality assurance unit of each factory serves as the contact person for customer complaints, regulatory requirements, and customers' special needs. It is responsible for monitoring the progress of related units when handling a quality assurance case, so that product quality and delivery issues can be quickly resolved. When quality specifications are incorrect or do not meet customers' needs, the knowledge management system established through standard operating procedures provides consistent response, ensuring that TSRC provides professional responses. We also analyze the cause and use it as the basis for improving product quality, sharing information with locations worldwide for global customer relationship management. We continue to improve product quality to exceed customers' expectations.

TSRC Customer Relationship Management System

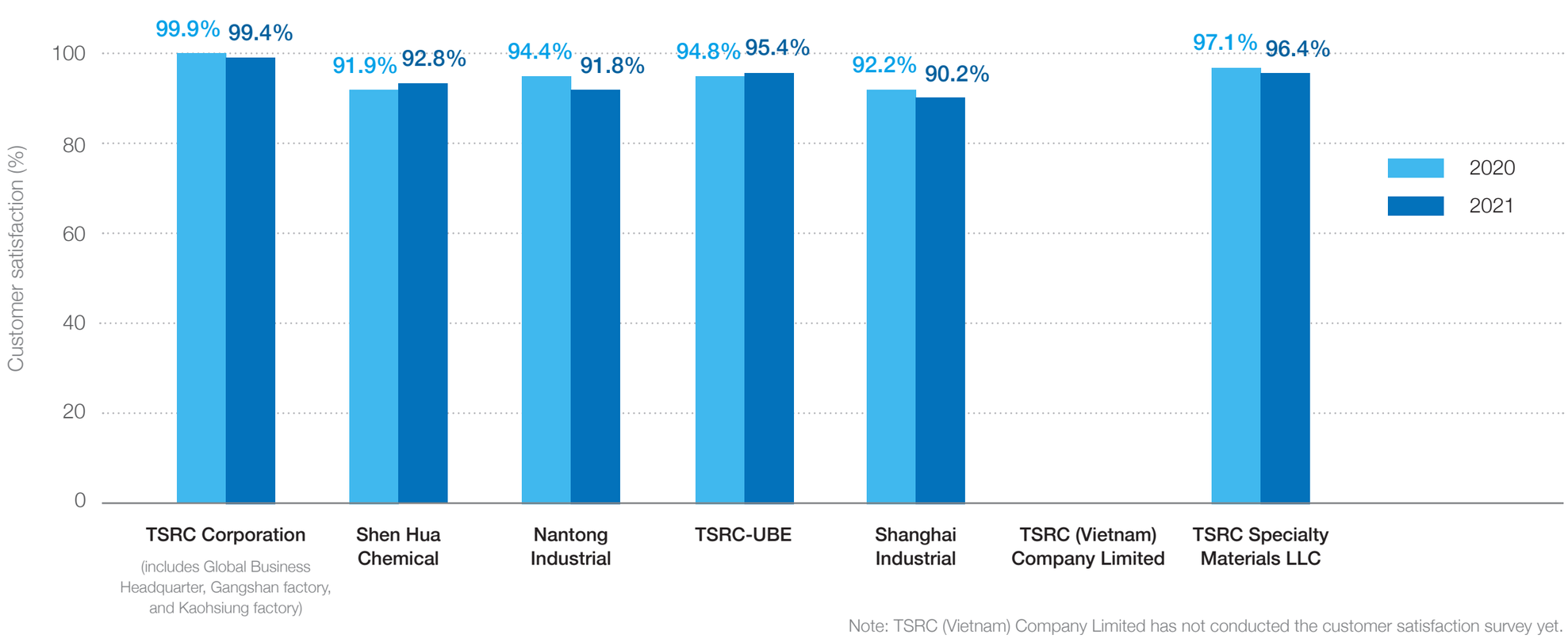


Enhance Customer Satisfaction

TSRC pays attention to customers' needs and attaches even greater importance to customer satisfaction. TSRC conducts customer satisfaction surveys on major customers and obtains customer feedback through a variety of methods, including e-mail, interviews, and business communication. Satisfaction survey items mainly include business services, transportation services, product quality, technical services, and complaint handling. Due to the different customer characteristics and composition at each site, the actual survey items are adjusted in each region.

TSRC conducts customer satisfaction surveys at its production sites (Taiwan, mainland China, USA) every year. Overall satisfaction reached 90% and above in 2021. For parts that customers in Taiwan, TSRC Nantong Industrial, and TSRC Shanghai Industrial were unsatisfied with, such as the service quality, technical service quality, and customer complaints during product delivery and transportation process, TSRC has already formulated improvement plans and will make improvements as fast as possible.

Customer Satisfaction



Note: TSRC (Vietnam) Company Limited has not conducted the customer satisfaction survey yet.

2.2.4 Looking Forward

Continuing to strengthen customer relationships is a key point of TSRC's development. TSRC will further focus on the development of products with low environmental impact and customized green services for its business model in the next three years. We will strengthen interactions and cooperation with customers through diverse platforms and even stronger business partnerships. With regard to green customized services, TSRC will gain a thorough understanding of customer characteristics when they use and process TSRC products to provide customized services accordingly. We have made TSRC products easier to process, helping customers reduce excessive processing procedures and further avoiding unnecessary energy and resource use. At the same time, TSRC will continue to utilize its advantages and integrate upstream and downstream partners in the green transportation value chain in an attempt to form a strategic alliance to show its leadership in the chemistry industry. Regarding green products, besides continuing to optimize products and help customers reduce GHG emissions in the product usage phase, we will accelerate the development of renewable raw materials, improve formulas to make products easier to recycle and reuse, and reduce the amount of waste generated.

2.3 Strengthen Innovation Momentum

2.3.1 Management Approach

Innovation is one of the main forces driving TSRC's sustainability. Over the years, TSRC has dedicated its efforts to creating a corporate culture of bravely making breakthroughs, encouraging employees to develop new technologies, and applying for patents. TSRC rewards employees for applying innovative concepts in their field of work and continuing to optimize processes. TSRC's R&D team and business units have found a way to work together by understanding from the front lines what customers really need. We integrate market sales, R&D, production, quality assurance, product safety and regulations, and supply chain through the global customer relationship management platform and global R&D centers located in Asia and America to ensure that the developed solutions meet the expectations of markets and customers. This reflects the actual meaning of customization and has transformed the image of TSRC from being a conventional manufacturing company to a first mover that delivers value through innovation and services, which will continue to maintain the Company's growth momentum.

2.3.2 Innovation Capabilities

TSRC's R&D strategy is to continue enhancing its innovation capability and accumulating technical ability. Developing high-quality products for customers has also become crucial to TSRC's continued profit growth. We have a total of 168 R&D personnel worldwide responsible for the planning, development, and implementation of new products and new processes, as well as the management of know-how. The R&D personnel jointly visit customers together with sales and quality assurance departments and discuss trends in product applications with customers. The personnel actively understand customers' expectations for products and their needs for new materials, and the R&D experts utilize the information as the basis for product development. TSRC's R&D expenses totaled approximately NT$370 million in 2021, up 6% compared to 2020.

To be a global company for special chemical materials, TSRC in 2021 established the R&D center in Texas, USA, which is its second R&D center worldwide and first R&D center overseas. The R&D center integrates the production base and business system of TSRC Specialty Materials LLC and is expected to accelerate the development and commercialization of special chemicals, expand cooperation and innovation with customers in Europe and America, and realize TSRC's strategy of accelerating the business growth of specialty polymer products by increasing its global presence according to its long-term plan.

Global R&D center in Texas, USA

The Global R&D Center in Katy, a city in the Houston metropolitan area in the Texas of U.S.A, is located at the same place as the regional operations head office of TSRC Specialty Materials LLC. It is the second multi-functional R&D facility of TSRC, following the Global Application Research Center established in Shanghai, China, in 2010. The center strives to upgrade advanced materials and synthesis formula R&D personnel and technologies and improve global innovation capabilities and efficiency with a particular focus on quality improvement to provide customers with specialty polymer products and total solutions that are friendly to the environment.

As the base of TSRC's innovation, the R&D center in the US will integrate sales, R&D, production, quality assurance, product safety and regulations, and supply chain to focus on developing SBC products and providing cost-effective solutions. The center will also integrate process technology development, terminal applications, and technical services for customers. It will utilize TSRC's global sales network and technical abilities to develop medical-grade materials, hygiene products, adhesives, film, asphalt modification, and elastic non-woven fabrics.

TSRC Global R&D Center (Shanghai, Mainland China) / TSRC Global R&D Center (Taiwan)
TSRC Technology Center / TSRC Global R&D Center (USA)

Innovation Incentives

TSRC established several innovation incentive mechanisms, which reward teams or individuals that contribute to developing new products and processes and to accelerating change and innovation. A total of 139 employees worldwide received the innovation incentives in 2021; a total of 17 incentives were provided, and the Company offered a total of NT$1.20 million in rewards. The innovation incentive encourages employees to convert their ideas into projects that can be implemented to improve product quality and increase the value of TSRC products.

Besides developing new products and projects, TSRC emphasizes continual improvement and encourages teams to use innovative methods for continual improvement of processes and quality. We organize continual improvement contests based on changes in the industry environment, customer feedback, and business strategies, creating a corporate culture of continual improvement and improving the team's problem-solving ability. A total of 7 continual improvement projects were implemented in 2021, and approximately NT$70,000 in rewards were distributed. The Company encourages employees to use logical and statistical analysis methods for error cause removal and continues to propose quality and process improvement measures. The Company has thus established mechanism incentives. A total of approximately NT$300,000 in rewards was distributed to 1,725 projects in 2021.

TSRC Innovation Incentive Mechanisms

Incentives for contribution to innovation

Encourage the use of innovative methods to develop new products or processes, optimize production, and propose new key projects

Incentives for continual improvement

Reward product and process and improvements that improve product quality

Incentives for error cause removal

Reward the use of logical and statistical analysis methods for improving product quality and processes

Exchanges of Innovative Technologies

Despite the impact of the pandemic in 2021, TSRC still provided information on innovative products and technologies through online platforms (e.g., online webinars) or technology sharing and exchanges with teams of business partners (e.g., engagement with footwear manufacturer PUMA and sporting goods retailer DECATHLON); a total of 619 participants. In developing advanced materials, we have expanded future cooperation opportunities in the advanced materials and high-end footwear market and with business partners through technology exchanges.

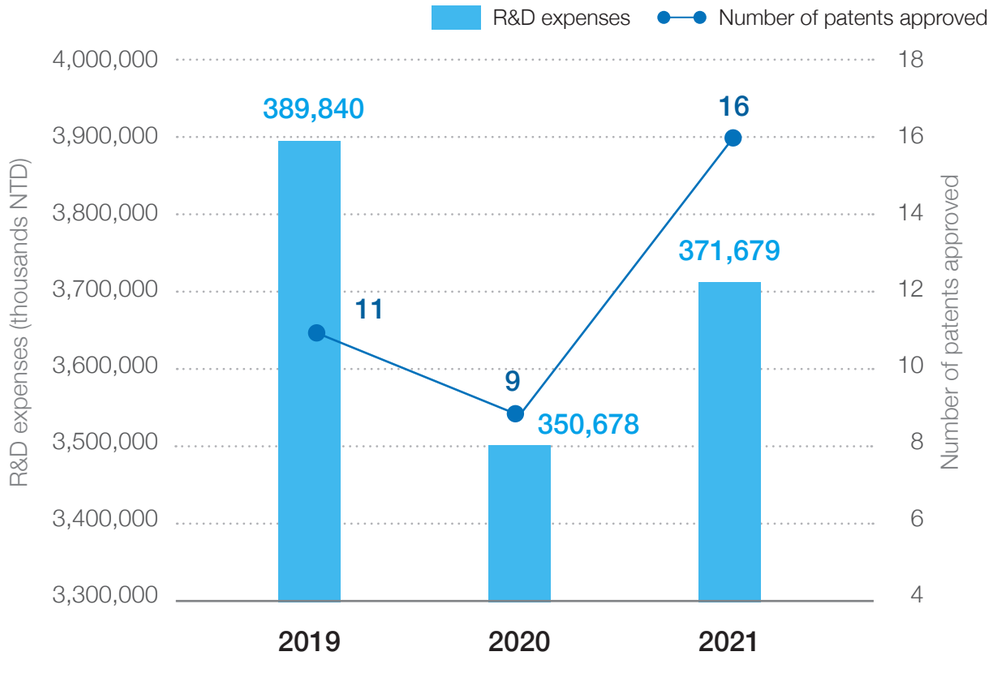
Name of meeting	Number of Participants	Promotion item	Benefits
SIS new product application promotion and technology exchange event	323	• Promotion of new VECTOR SIS Elastic Film	• 90% of suppliers that participated were satisfied, and discussed a collaborative development project with one of the suppliers
SEBS medical materials and new product technology exchange event	296	• Promote medical solutions and SEBS related products	• 90% of suppliers that participated were satisfied

Patent Management and Results

TSRC has successfully obtained numerous patents through innovation incentives and technology exchanges. Patents are an important indicator of TSRC's technological innovation and R&D capabilities, and the Company continues to encourage R&D personnel to engage in technology and product innovation. Hence, we have established complete patent management regulations and incentives system. We also distributed bonuses for each patent right obtained in each country. A total of NT$80,000 was distributed as a bonus for 4 patents that were obtained in 2021. TSRC received 16 patents, over 7 patents versus in 2020, and the highest over the years. As of the end of 2021, TSRC applied for a total of 519 patents worldwide, and 422 patents were approved.

TSRC regularly organizes patent training courses to raise employees' patent awareness and skills, which will enhance the Company's competitive advantage and provide customers with high-quality solutions. The Company has a patent evaluation committee, which engages in in-depth discussions of invention proposals and ensures the quality and applicability of patents. Each year the committee evaluates whether to maintain or abandon patents based on their patentability and commercial value. The committee continues to optimize TSRC's patent strategy and our patent portfolios. TSRC also established a trade secret incentives mechanism for the promotion of intellectual property and protection of trade secrets. The mechanism encourages employees to generate even more trade secrets, allowing the Company to gain technological leadership and customers' trust.

Patents and R&D Expenses over the Years



2.3.3 Innovative Products

Synthetic Rubber SSBR

TSRC targeted green tire and electric vehicle market when developing the latest generation of innovative, customized S-SBR products, contributing its key technological capabilities for reducing energy consumption by the automobile market. As international automobile manufacturers are attaching greater importance to environmental protection and energy conservation, the resistance and wear of tires have become a key factor in reducing fuel consumption. TSRC's third-generation solution polymerized styrene-butadiene rubber for green tires effectively reduces rolling resistance by approximately **10%** compared to the second generation. It is expected to reduce rolling resistance by approximately **2-3%** when applied to downstream tires. When used together with other special synthetic rubber products, it will further reduce rolling resistance by **20%** compared to the second-generation SSBR.

According to data from the National Highway Traffic Safety Administration (NHTSA), when tire rolling resistance is reduced by 20%, it will reduce fuel consumption by 4%. This contributes to the reduction of energy and resource consumption and GHG emissions. The third-generation products have successfully obtained the certification of domestic and foreign tire brand customers and will continue to help customers reduce the environmental impact of their vehicles. We expect green tires made from SSBR and other special synthetic rubber products will reduce carbon emissions by over **150,000** tons in a year.

Advanced Materials Supercritical fluid foaming material

Regarding foaming technologies for midsoles, chemical crosslinking foaming technology is still mainly used in the current phase, but this technology causes residue chemical foaming agent that is a risk to the human body and environment. Products cannot be restored after crosslinking. The high-end footwear market is gradually shifting to supercritical fluid foaming technology, which injects non-toxic gas (e.g., nitrogen) into raw materials for physical foaming. No chemical foaming agent is added, achieving lightweight, non-crosslinking, and **100%** recyclable. TSRC is currently dedicating its efforts developing supercritical fluid foaming materials, developing lightweight foam products with high energy feedback, durability, and transparency. We are gradually increasing the percentage of supercritical fluid foaming materials to reduce our environmental impact.

TPE **SEBS V-8245D**

SEBS V-8245D is a specialty product developed to meet the needs of high-end markets, especially medical materials. As the elderly population continues to increase, the demand in the medical market will rapidly increase, and customers and regulations will have growingly strict requirements on raw materials. Medical materials will attach greater importance to materials that do not harm the environment and health, and producers will give priority to recyclable and easy-to-process materials.

Common soft medical materials (such as medical bags and tubes) are mainly made using PVC, which needs to add plasticizers in the manufacturing process to increase its flexibility and softness. There is the risk of releasing the commonly used plasticizer DEHP when using PVC. DEHP is an environmental hormone, and PVC is hazardous to ecology and human health, potentially causing cancer, harming fetal health, and causing sexual precocity. Furthermore, incinerating waste containing PVC will generate dioxin, which is highly toxic and may cause cancer and other diseases. It will also become a global threat because it can be scattered in the environment and will not disappear. More and more medical institutions around the world are reducing the use of PVC and DEHP and switching to other alternatives.

V-8245D is **easy to process, eco-friendly, non-toxic, and recyclable**. It has good transparency and physical properties and is considered an excellent substitute for PVC in medical applications. The recycling and reuse of medical bags and tubes made using V-8245D will reduce the amount of waste generated from disposable medical products.

Unit: NT$1,000

Name of research project	Expected R&D expenses
Development of new generation high performance tire products	50,000
Differentiated new butadiene rubber products	37,000
High added value TPE products	178,000
High-performance shoe materials and formulas	106,000
Cutting-edge process technology development	86,000

2.3.4 Looking Forward

In the future, TSRC will continue to develop a technological platform for micro-structure adjustment and modification of properties, develop new generation S-SBR rubber products, and use it to develop green, environment-friendly, and high-performance tires for electric vehicles. The BR technological platform will be another focus of R&D to develop more product applications, meet customers' requirements for shoe materials and plastic modifications, and improve product performance. Regarding material development, we will focus on HSBC products for differentiated applications, including the development of high-end medical materials, hygiene materials, lubricating oil viscosity modifiers, and other high-added value TPE products. We will continue to develop special functional film materials for application in medical and electronic products to meet the requirements of different customers. Besides continuing to develop new products, TSRC will increase the ratio of sustainable specialty products.

Concerning internal innovation, TSRC plans to organize Box 3 mobile learning and ESG green proposal activities, and we will implement plans with sustainability value, which will be combined with TSRC's long-term business strategies. We will facilitate the integration of upstream and downstream partners in the value chain based on green products and services, make products more recyclable and reusable, and help customers reduce the negative environmental impact of GHG emissions from processes.

2.4 Increasing the Resilience of Operations and Supply Chain

2.4.1 Management Approach

TSRC views suppliers as business partners that jointly create value in hopes of building a service value chain that can achieve sustainable development together with suppliers. We aim to lower environmental and social risks while providing customers with the best solutions, creating an active and responsible value chain.

TSRC not only attaches importance to the quality of products and services provided by suppliers and the timeliness of delivery but also monitors the ESG performance of our partners. We conduct periodic evaluations to understand the business situation of suppliers and engage in two-way communication, improving the abilities of both parties to achieve sustainability. We also encourage suppliers to internalize ESG into their company management and operations to benefit their long-term operations.

2.4.2 Supply Chain Management

TSRC's main production processes rely on petrochemical raw materials purchased from suppliers for polymerization. After completing synthesis, it is made into chemical and rubber materials that are sold to downstream customers (including tire manufacturers and medical product manufacturers), and downstream customers use the materials to produce the end consumer product. Upstream raw material suppliers are TSRC's most crucial value chain partners. Furthermore, each site's labor and service contractors are partners that assist TSRC in creating value. TSRC monitors human rights, environmental, and social values. We attach importance to suppliers' and contractors' environmental, social, labor safety, and rights management. We continue to urge value chain partners to comply with the TSRC CSR Procurement Basic Policy and require all suppliers to sign TSRC's Partner Code of Conduct (PCC). TSRC understands and actively utilizes its influence to ensure that the products and services provided by value chain partners meet and even exceed requirements outlined in laws and regulations, reducing any negative impact on the environment and society, and further fulfilling our corporate social responsibility.

To effectively implement supply chain management, TSRC divides Tier-1 suppliers into raw materials suppliers, contractors, and general vendors. Raw materials suppliers refer to suppliers who provide primary raw materials (including butadiene and styrene) and auxiliary materials. These suppliers are mainly located in Asia, mainland China, and the USA. Contractors refer to labor contractors (including cleaning, security, cafeteria, and administrative work), equipment repair, civil engineering, warehousing, and logistics. General vendors are suppliers that do not fall into the two categories above.

New Supplier Selection Procedure and Standards

TSRC's supplier selection standards incorporate ISO 9001, QC 080000, ISO 14001, and ISO45001. We prohibit suppliers from forcing and exploiting workers, and we require suppliers to comply with statutory work hours and freedom of association and to provide employees with reasonable salaries and benefits. We hope that suppliers will jointly establish a business model with TSRC that is friendly to society and the environment, so the companies can achieve sustainable development and create a win-win situation.

TSRC CSR Procurement Basic Policy

Emphasis on Integrity

- 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 our partners.

Joint Commitment to Social Responsibility

- TSRC believes that the members of the supply chain play a very important role in the execution and development of the CSR and expects that our partners will agree on and spare no efforts to fulfill their social and environmental responsibilities, and take these as a guideline of their business.

Compliance with the Law and Regulations

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

• Suppliers of Raw Materials

TSRC's selection standards for raw materials suppliers consist of three indicators—quality of raw materials, none of hazardous substances, and corporate social responsibility. We require suppliers to meet the highest standards for quality, environment, and social responsibility. TSRC strictly inspects the quality of raw materials. The R&D department reviews raw materials and products provided by suppliers, ensuring the source of raw materials is stable, and the quality meets TSRC's high standards. All new raw materials suppliers must sign the Hazardous Substances Free (HSF) or provide a statement verifying that raw materials and products do not contain any hazardous substances and are safe. Suppliers must pass the screening standards of raw materials quality and none of the hazardous substances before entering the trial production phase. Once suppliers enter the trial phase, TSRC conducts actual tests to ensure that raw materials meet our process requirements. After the trial phase, suppliers must complete the CSR evaluation form, sign the Supplier Code of Conduct and complete the safety ability evaluation to become a qualified supplier of TSRC.

Raw Materials Supplier Selection Procedure

• Suppliers of Contract

For contractors and general vendors, TSRC selects suppliers based on three principles—service performance, professional abilities, and corporate social responsibility. TSRC requires suppliers to provide their previous performance to verify suppliers' abilities to provide services. We then inspect suppliers' professional abilities based on whether or not they have obtained related ISO certificates. After verification, the supplier must complete the safety ability evaluation, fill out the corporate social responsibility evaluation form, and sign the Supplier Code of Conduct before becoming an important partner of TSRC.

Contract Supplier Selection Procedure

Supplier Evaluation System

TSRC attaches importance to suppliers' products and services with stable quality, including no hazardous substances and a rate of on-time delivery. We monitor the management and performance of suppliers in human rights, safety and health, environmental impact, Code of Ethics, and social impact. We evaluate our suppliers at each site on an annual basis to ensure the actual implementation status of suppliers meets our strict standards and requirements. The evaluations are mainly in the form of on-site audits. For suppliers in Europe and America, TSRC may conduct a documentary audit due to considering labor and transportation costs and the distance making on-site audits inconvenient. Documentary audits may be conducted if sites are in the event of force majeure, such as a pandemic.

The evaluation results are divided into five grades. Grade A is for outstanding suppliers without any flaws. Grade B is for reliable suppliers with minor deficiencies that have been immediately improved. Grade C is for qualified partners that are requested to provide improvement measures for significant deficiencies. Grade D is for conditionally qualified vendors. TSRC will require the D-grade vendors to submit improvement results within a specific period to meet C-grade requirements. If suppliers do not complete the improvement within a certain period, they will be unqualified and blacklisted. Grade E is for unacceptable vendors that are deemed unqualified suppliers after evaluation.

TSRC evaluated a total of 123 suppliers in 2021. The audit included 10 raw materials suppliers of the Kaohsiung plant and Gangshan plant, 30 suppliers of Shen Hua Chemical, 21 suppliers of Shanghai Industrial, 12 suppliers of Nantong Industrial, 4 suppliers of TSRC-UBE, 43 suppliers of TSRC(Vietnam), and 3 suppliers of TSRC Specialty Materials LLC, in which on-site audits were conducted for 15 suppliers and documentary audits were conducted for remaining suppliers. 47 suppliers were rated as Grade A, accounting for 38.21% of all suppliers evaluated; 37 suppliers were rated as Grade B, accounting for 30.08% of all suppliers evaluated; 32 suppliers were rated as Grade C, accounting for 26.01% of all suppliers evaluated; 7 suppliers were rated as Grade D, accounting for 5.69% of all suppliers evaluated.

Grade A
- Outstanding Vendor
- No deficiencies

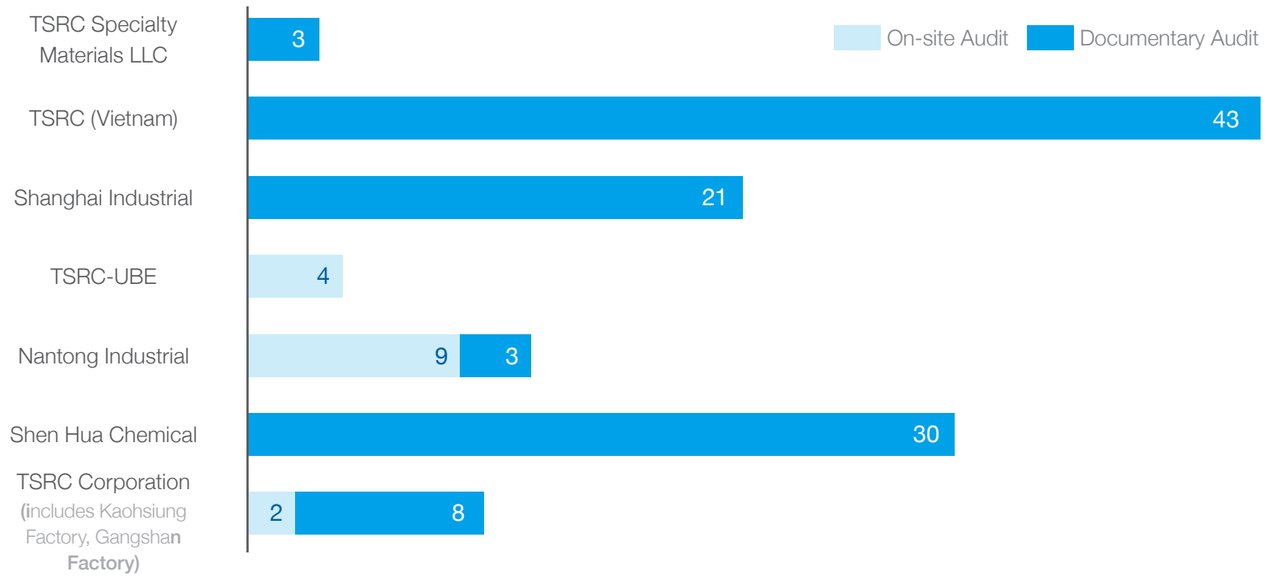
Grade B
- Reliable Vendor
- Has minor deficiencies that were immediately improved

Grade C
- Qualified Vendor
- Request the vendor reply improvement measures for major deficiencies

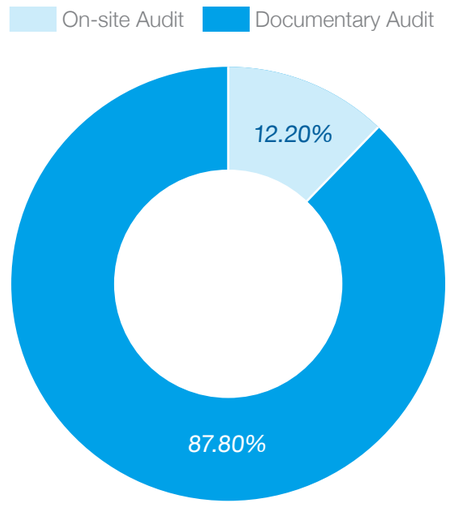
Grade D
- Conditionally qualified vendor
- The vendor must submit improvement results and meet Grade C requirements within the specified time period. Becomes an unqualified vendor if improvements are not completed within the time limit

Grade E
- Unacceptable vendor
- Deemed an unqualified vendor after evaluation

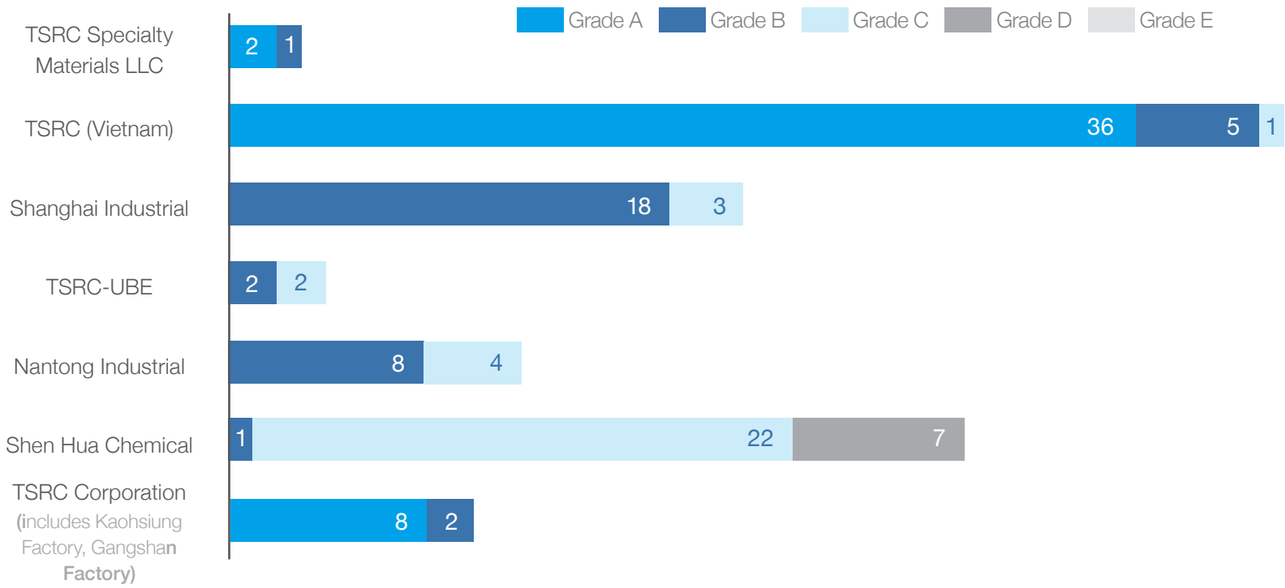
2021 Supplier Audit Method



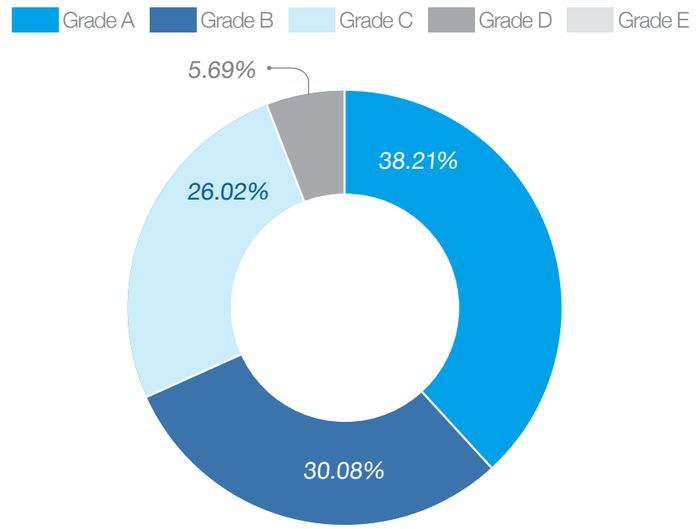
The Percentage of the Overall Audited Suppliers in 2021



2021 Supplier Audit Result



The Percentage of the Overall Audited Suppliers in 2021

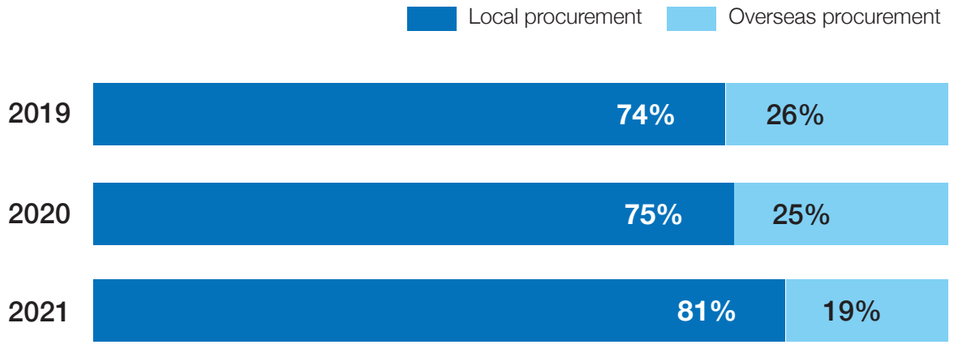


2.4.3 Green Procurement and Local Procurement

TSRC is actively implementing green procurement, prioritizes the purchase of products with the environmental protection label and energy label, supports reuse and circular economy through the rent-to-own model, and takes action to promote green manufacturing and eco-friendly products. TSRC Corporation's (including Kaohsiung factory, Gangshan factory, and the Global Business Headquarters) green procurement amount reached NT$97.96 million in 2021, in which the amount for leased metal boxes was NT$94.78 million, and the procurement amount of energy saving products, such as highly efficient motors, inverters, energy-efficient lighting, energy-conservation certified air-conditioners, computer peripherals and consumables, etc., was NT$3.18 million. The green procurement amount of subsidiary Nantong Industrial was RMB 54,160, with mainly the purchase of energy-saving refrigerators, lights, copy machine, printers, and inverters.

TSRC is actively reducing the carbon footprint of its value chain activities and has converted our supplier management into e-commerce to reduce paper use. Over 90% of suppliers use the online supplier management platform. TSRC also actively supports local procurement by procuring the primary raw material butadiene and other chemical raw materials (e.g. potassium hydroxide) locally. The transportation of materials is mainly through pipelines to ensure the safety of chemical materials and reduce air pollution and GHG emissions from tank cars. Local procurement by the TSRC Group accounted for 81% of the total procurement amount in 2021.

Local Procurement Ratio of the TSRC Group (by Procurement Amount)



Note:
1. "Local procurement" in this table refers to procurement in the country of the business sites.
2. The business locations in this table has the same boundaries as this report.

2.4.4 Looking Forward

In the future, TSRC will continue to dedicate its efforts to increasing the resilience of its value chain. We will revise supplier-related policies and procedures and strengthen the supplier evaluation mechanism to achieve ESG strategic goals. We expect to complete the first phase of ESG evaluation in 2022 and will also integrate risk management concepts into the supplier management system. We will identify the ESG risks of different suppliers and divide suppliers by risk level so that supplier ESG evaluation can be implemented in the supplier selection system.

TSRC has committed to joint carbon reduction with suppliers. We plan to support the GHG emissions reduction of our top 20 suppliers in 2023 in terms of procurement amount. We aim to have all suppliers have GHG reduction targets and action plans by 2025, and the GHG reduction measures of suppliers will be included in our supplier selection standards. Furthermore, we will continue to search for local suppliers of renewable raw materials and improve the local procurement ratio of each production location to lower the value chain's carbon footprint quickly. We aim to make fundamental contributions to the mitigation of climate change.

In the future, we will comprehensively understand the potential impact of value chain partners' operations on society and the environment. We will further work with suppliers to promote GHG reduction, value chain connection, and value sharing. We shoulder greater social and environmental responsibility while strengthening the resilience of our supply chain.

3. Environmental

In response to the international trend of carbon reduction and the pressure of energy and resource shortages, TSRC cherishes the Earth's resources and has set active carbon reduction targets to achieve carbon neutrality. We accelerate renewable energy usage, water recycling, and the use of renewable materials. We also develop products and services to help customers reduce their energy and resource use and jointly engage with all partners along the value chain for green innovation in chemical industry.

Carbon emission per unit product in 2021 decreased by 4.67% compared with 2020

Carbon emission per unit product decreased 4.67%

Water use per unit product in 2021 decreased by 7.63% compared with 2020

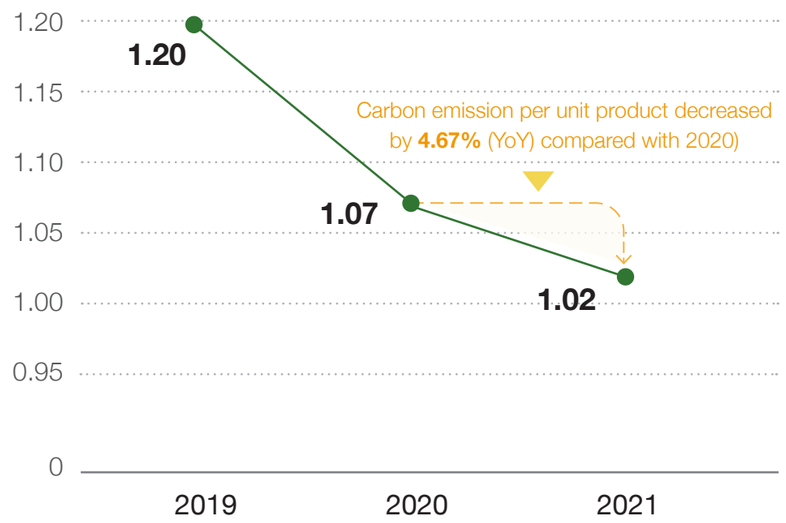
Unit water consumption decreased 7.63%

Waste generated per unit product in 2021 decreased 14.32% compared with 2020

Waste generated per unit product decreased 14.32%

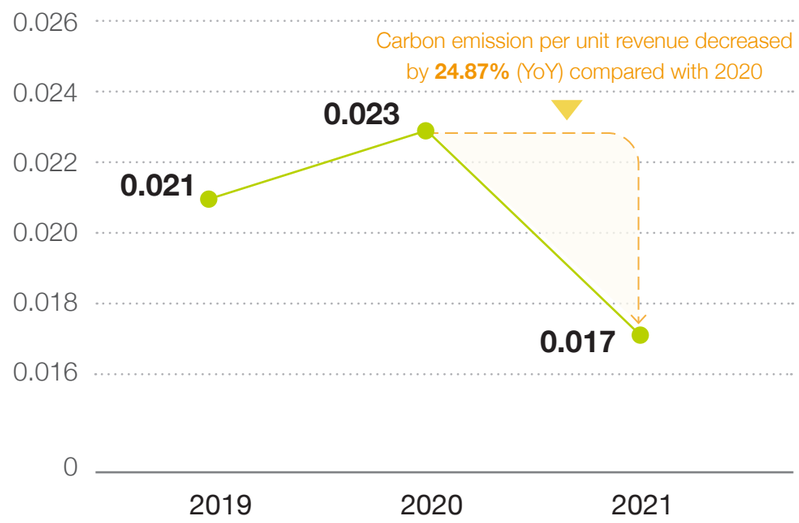
Carbon emissions per unit product

Unit: metric tons CO_2e/metric tons



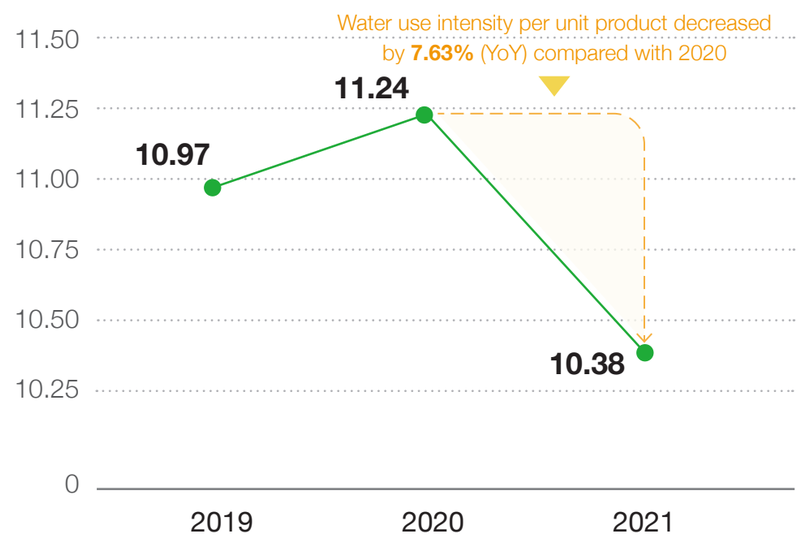
Carbon emissions per unit revenue

Unit: metric tons CO_2e/NT$1,000



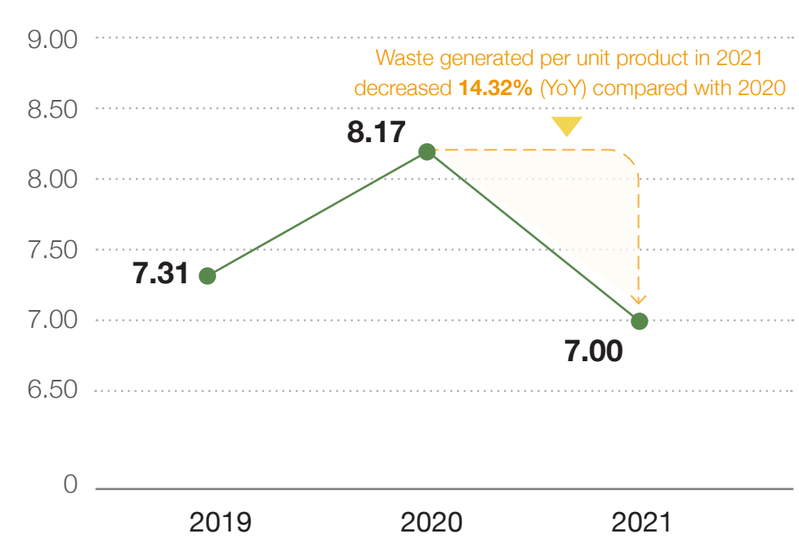
Water consumption per unit product

Unit: metric tons/metric tons production



Waste generated per unit product

Unit: metric tons/thousands of metric tons production



3. Environmental

Material topic	Climate strategy and GHG emissions
Corresponding chapter	3.1 Towards Carbon Neutrality Operation
Management purpose	Climate change is an emerging risk for TSRC but is also a critical opportunity for transition. TSRC's products are sold worldwide and have extensive applications that have profoundly impacted consumers' daily life and healthcare. TSRC supports global initiatives for net-zero and has adopted strategies to implement green process technologies and improve energy and resource efficiency. We aim to enlarge the use of renewable energy and renewable materials to exert our influence on climate change.
Management approach	• Facilitate low-carbon innovation in the manufacturing process and reduce energy consumption in all stages, including product research and development, manufacturing, processing, and others • Adopt renewable energy to accelerate carbon reduction • Invest in the circular economy and use recycled raw materials
Assessment mechanism	• TSRC Group's Scope 1+2 GHG emissions gradually decrease • Carbon emission intensity and energy intensity (per unit product) continue to decrease • Renewable energy accounts for an increasing percentage of total electricity consumption
Mid and long-term management goals	• Support global carbon reduction target to achieve carbon neutrality • Increase the ratio of renewable energy usage
2021 Achievement of KPI	• **Objective: Support global carbon reduction target to achieve carbon neutrality** Implementation status: 1. Carbon emission intensity was **1.02** metric tons CO_2e/metric ton of product, reducing **4.67%** compared to 2020 2. The Kaohsiung factory adopted a heat-recoverable dryer in 2021 and activated the combined heat and power equipment to reduce GHG emissions 3. Shen Hua Chemical Industrial Co., Ltd. completed upgrading the circulating water system with lifting pumps to reduce the electricity consumption in the manufacturing process • **Objective: Increase the ratio of renewable energy usage** Implementation status: Completed the evaluation of installing renewable energy facilities in the Kaohsiung factory and accelerated the feasibility assessment of renewable energy in other sites

Material topic	Waste and hazardous substance management	Water Resource Management
Corresponding chapter	3.3 Develop Model of Circular Economy	3.4 Water Resource Optimization
Management purpose	To implement the circular economy concept with the lifecycle and the mindset of considering the whole value chain, replace hazardous materials with non-hazardous ones whenever possible from the product development and design phase, and reduce the amount of waste generated. Actively explore renewable materials and reduce the amount of hazardous waste generated from raw materials input. Actively communicate and cooperate with customers, implement the product reverse logistics recycling plan and product formula adjustment plan, and reduce the amount of waste generated in downstream. Increase the recyclability of the end product.	To actively respond to water resource risks and reduce the potential negative environmental impact of operating activities when using and emission; to implement water conservation measures, increase water recycling at factories, and develop water recycling technologies for a comprehensive water circulation management.
Management approach	• Actively develop sources of renewable materials and reduce the generation of hazardous wastes from raw materials input • Cooperate with customers to optimize product formulations and logistics, reduce the generation of waste from the downstream, and increase the recyclability of products	• Strengthen the effective use of water resources in factories, increase process wastewater reuse and the recovery and reuse of condensate water • Build reclaimed water facilities to reduce possible negative environmental impacts on water-stressed areas • Carefully handle wastewater discharge to reduce potential negative effects on the ecosystem
Assessment mechanism	• Total weight of waste generated each year • The recycle rate of waste generated each year	• Wastewater recycling of total wastewater • Recycling water of total water consumption
Mid and long-term management goals	• Continue to adjust process formulas and parameters and reduce the amount of hazardous and general waste generated by operations • Continue to develop products that use renewable materials and reduce the use of petrochemical materials	• Increase the ratio of wastewater recycling • Increase the use of recycled water to reduce the consumption of natural resources
2021 Achievement of KPI	• **Objective: Continue to adjust process formulas and parameters, and reduce the amount of hazardous and general waste generated by operations** Implementation status: 1. The total weight of general industrial waste generated in 2021 was **3,937.77** metric tons, decreasing **323.48** metric tons, **7.7%** compared with 2020 2. The total weight of hazardous industrial waste recycled in 2021 was **1,186.75** metric tons, increasing **48.71%** compared with 2020 3. The total weight of hazardous industrial waste generated in 2021 was **1,346** metric tons, increasing **581** metric tons, **30.15%** compared with 2020 • **Objective: Continue to develop products with renewable materials, and reduce the use of petrochemical materials** Implementation status: Conducted an assessment on suppliers for renewable materials, investigate the feasibility of materials supply channels, and formulate mid-term and long-term procurement plans	• **Objective: Increase the ratio of wastewater recycling for circular use** Implementation status: Wastewater recycling to **22.6%** of TSRC Group's total wastewater • **Objective: Increase the use of recycled water to reduce the consumption of natural resources** Implementation status: Completed the evaluation of installing recycled water equipment and procurement of recycled water

3.1 Towards Carbon Neutrality Operation

3.1.1 Management Approach

The climate crisis has been in progress in 2021. According to Intergovernmental Panel on Climate Change (IPCC) report, climate change has caused several extreme weather events worldwide, and Earth's surface will continue to become hotter until the middle of this century at least. Unless carbon dioxide and other GHG emissions are significantly reduced within a few decades, global warming will surpass 2°C in the 21st century.

Facing the severe challenge of climate change, TSRC will continue to review and examine the balance between industry and the environment and dedicate our efforts to energy conservation and carbon reduction with the vision to achieve carbon neutrality. TSRC has adopted international environmental management systems based on our energy policy—to comply with laws and regulations, implement energy inventory, use high-efficient equipment, improve energy-saving performance, constantly make improvements, and reduce GHG emissions. Besides establishing standard procedures for GHG inventory complying with ISO14064-1, we also implemented ISO 50001 Energy Management Systems. The ESG Steering Committee set carbon reduction targets and formulated action plans to improve energy efficiency management and build resilience against climate change.

3.1.2 Reduce Carbon Emissions

Carbon Reduction Target

TSRC sets short-term (2023), mid-term (2025), and long-term (2030) carbon reduction targets with the vision to achieve carbon neutrality in response to global climate action. We plan to continue developing green processing technologies and renewable energy, improve processes and equipment efficiency, and implement carbon reduction measures.

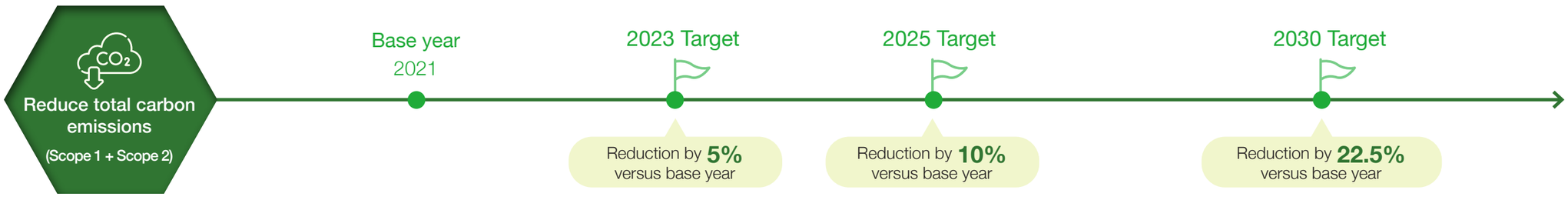
As the leader of the rubber industry, TSRC is focusing on low-carbon transition and prioritizes the reduction of Scope 1 and Scope 2 emissions, planning climate strategies while looking into carbon offset plans. In terms of products, TSRC continues to develop products with the feature of sustainability and reduce environmental impact. TSRC has developed easy-to-process products that will help customers reduce unnecessary energy consumption in their processes and reduce GHG emissions. In the manufacturing process, we will reduce energy consumption per unit of production through the innovation of green processes. Furthermore, TSRC will accelerate investments in process optimization. Subsidiaries in mainland China, including Shen Hua Chemical Industrial, TSRC (Nantong) Industrial, and TSRC-UBE (Nantong) Chemical Industrial, have suspended the use of boilers from 2020, which has significantly reduced direct carbon emissions (Scope 1). Considering the geographic limitations and overall carbon reduction benefits of factories in Taiwan and the United States, TSRC prioritizes the improvement of energy efficiency while increasing the use of renewable energy. We are also searching for ways to reduce Scope 1 emissions (such as reducing natural gas consumption) and effectively reduce our overall carbon emission to improve our carbon reduction.

Direction for Carbon Reduction

- **Direction 1: Innovation for low carbon processes**

TSRC dedicates its effort to energy saving and carbon reduction. We view energy conservation as critical target when designing and manufacturing product. We plan to calculate product carbon footprint at each production site and will inspect high-energy consumption equipment. All factories will replace energy-consuming equipment with energy-saving devices gradually. Green process technologies, such as the stripping heat exchange vapor recovery technology, will be implemented.

The Kaohsiung factory adopted heat-recoverable drying machines and cogeneration equipment in 2021, increasing the overall thermal efficiency of processes. It also replaced old motors to reduce GHG emissions of energy use. Shen Hua Chemical Industrial completed the modification of the water circulation system with lift pumps, leading to the result that the ammonia condenser can lower the temperature by 2°C during the summer, and the electricity consumption was reduced by 4%. Shen Hua Chemical Industrial also changed non-inverter and high-energy-consumption motors into inverter motors in 2021 to reduce carbon emissions. TSRC (Nantong) Industrial and TSRC-UBE (Nantong) Chemical Industrial added filters in low voltage segments of their SEBS production line to lower their energy use in 2021.



• Direction 2: Development of renewable energy

TSRC will continue to improve energy efficiency and reduce the energy consumption of processing at production sites to achieve our carbon reduction targets. We will develop renewable energy to support our carbon reduction actions. TSRC plans and evaluates the installation of solar panels, renewable energy purchase agreements, renewable energy certificates, or other approaches to enlarge renewable energy usage at production sites in Taiwan and mainland China. We aim that the renewable energy use to 5% of total electricity consumption in 2023, 10% in 2025, and 30% in 2030 to reduce our carbon emissions.

In 2021, in response to Taiwan's "Renewable Energy Development Act" and "Regulations for the Management of Setting up Renewable Energy Power Generation Equipment of Power Users Above a Certain Contract Capacity", TSRC Kaohsiung factory has planned to complete the installation of solar power generation equipment within three years. TSRC's subsidiaries in mainland China have completed the assessment of the installation of solar panels in 2021. We prioritize self-generation and use. Only when excess electricity occurs will it be provided to the local grid. The self-generated electricity will replace coal-fired electricity purchased from the local power grid and reduce TSRC's indirect carbon emissions.

• Direction 3: Application of renewable materials

With the international net-zero initiatives, renewable materials will be the key to future changes. This has triggered TSRC to step up its efforts to find renewable materials for the circular economy. TSRC cherishes natural resources and actively reduce the consumption of high carbon-intense raw materials such as petrochemical materials. We are gradually developing sources of renewable materials with supply chain partners and customers and continue to conduct product evaluation and testing for renewable materials, utilizing our core competencies to create a low-carbon circular economy business model.

The GHG Inventory

TSRC has adopted ISO 14064-1 Greenhouse Gas Inventories Standard at our major sites. Among all sites, the Kaohsiung factory is the first batch of industries requested by the competent authority to report GHG emissions; thus, since 2011, the factory has complied with the regulations to conduct the inventory. Since 2015, the Factory has conducted the inventory and commissioning external organizations to verify annually. The data is registered on the reporting platform required by the competent authority. Subsidiaries in mainland China, including Shen Hua Chemical, Nantong Industrial, and TSRC-UBE, also report their annual GHG inventory based on the “Report on Greenhouse Gas Emissions of Key Enterprises in Jiangsu Province” and the requirements of the local authority. Regarding TSRC (Shanghai) Industries, TSRC (Vietnam) Company Limited, and TSRC Specialty Materials LLC, these three subsidiaries voluntarily conduct GHG inventories. TSRC plans to adopt ISO 14064-1:2018 at all sites and complete the external verification by the end of 2022.

In 2021, the GHG emissions of TSRC global sites were 571,197 metric tons, slightly increasing by 2.13% compared with the past year. This was mainly attributable to the newly added production lines of Nantong Industrial and the deactivation of boilers by Nantong Industrial and TSRC-UBE to increase indirect energy usage. TSRC has taken measures by inventorying the high-energy-consuming equipment and arranging regular replacements to ensure that the long-term carbon reduction target will be achieved.

TSRC's revenue and production volume in 2021 reached the highest point over the past three years, but the carbon emission intensity was at the lowest, showing that TSRC's GHG management strategy in recent years has achieved significant results. In 2021, due to the phase-out of coal-fired boilers in Nantong Industrial and the replacement of fuel oil with natural gas in Kaohsiung factory, the scope 1 emissions of TSRC Group were 115,600 metric tons, decrease 50.29% compared to the previous year. Meanwhile, the carbon emission intensity per unit product in 2021 was 1.02 (tons CO2e/ton of product), decrease 4.67% compared to the previous year. The carbon emission intensity has continued declining for the third consecutive year since 2019, decreasing an average of 7.7% each year. This year’s carbon emission intensity per unit of revenue was 0.018 (tons CO2e/NTDK), decreasing 24.58% compared to the previous year.

Scope 1 Emissions in 2021 under the Emissions-Limiting Regulations

Unit: Metric tons CO_2e

	Emissions under the emissions-limiting regulations	Emission not under emissions-limiting regulated but voluntary disclosure	Total
	Kaohsiung Factory, Shen Hua Chemical, Nantong Industrial, TSRC-UBE	Global Business Headquarters, Gangshan Factory, Shanghai Industrial, TSRC (Vietnam) Company Limited, TSRC Specialty Materials LLC	
Scope 1	101,369.9	14,230.1	115,600
As a percentage of TSRC Group's Scope 1 emissions	87.69%	12.31%	100%
Scope 2	409,110.2	46,486.8	455,597
Scope 1+2	510,480.1	60,716.9	571,197

Note: 1. Sites under the emissions-limiting regulations refer to sites that are required to report GHG emissions in comply with local laws. These sites include Kaohsiung factory, Shen Hua Chemical, Nantong Industrial, and TSRC-UBE.
2. The GHG emissions are calculated by multiplying activity data with emission factors and GWP values, in which the emission factors is referred to Taiwan Environmental Protection Administration GHG Emission Factor Management Table Version 6.0.4, and the GWP value is referred to the IPCC AR5 Report.

GHG Emissions by Each Site and Carbon Emission Intensity Per Unit of Production in the Past Three Years

Unit: Metric tons CO_2e

Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory		TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC	Total
2019	Scope 1	83,081	4,365	152,690	2,153	69	0	20,100	262,458
	Scope 2	79,615	92,854	43,731	74,439	3,834	0	40,989	335,462
	Scope 1+2	162,696	97,219	196,421	76,592	3,903	0	61,089	597,920
	Production volume (metric tons)	169,431	151,831	57,519	54,956	12,785	0	50,308	496,854
	Emission intensity per unit of production (Metric tons CO_2e/ metric tons of production)	0.96	0.64	3.41	1.39	0.31	0	1.21	1.20
2020	Scope 1	89,910	4,785	52,000	68,874	27	0	16,935	232,531
	Scope 2	63,548	106,322	91,224	22,354	2,329	0	40,988	326,765
	Scope 1+2	153,458	111,107	143,224	91,228	2,356	0	57,923	559,296
	Production volume (metric tons)	173,773	170,426	55,560	63,036	12,214	0	46,521	521,529
	Emission intensity per unit of production (Metric tons CO_2e/ metric tons of production)	0.88	0.65	2.58	1.45	0.19	0	1.25	1.07
2021	Scope 1	89,937	5,467	3,959	2,033	33	5.5	14,165	115,600
	Scope 2	70,275	106,677	150,590	83,046	2,893	1,937	40,179	455,597
	Scope 1+2	160,212	112,143	154,550	85,080	2,926	1,943	54,344	571,197
	Production volume (metric tons)	194,194	170,988	73,815	65,285	9,934	0	47,921	562,138
	Emission intensity per unit of production (Metric tons CO_2e/ metric tons of production)	0.83	0.66	2.09	1.30	0.29	0	1.13	1.02

Note: 1. The GHG emissions are calculated by multiplying activity data with emission factors and GWP values, in which the emission factors is referred to Taiwan Environmental Protection Administration GHG Emission Factor Management Table Version 6.0.4, and the GWP value is referred to the IPCC AR5 Report.

2. The GHG inventory covers seven types of GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3), but TSRC's operating activities do not generate PFCs, SF_6, and NF_3.

3. The GHG inventory adopts the control approach. The status of third-party verification of all sites is explained as follows:

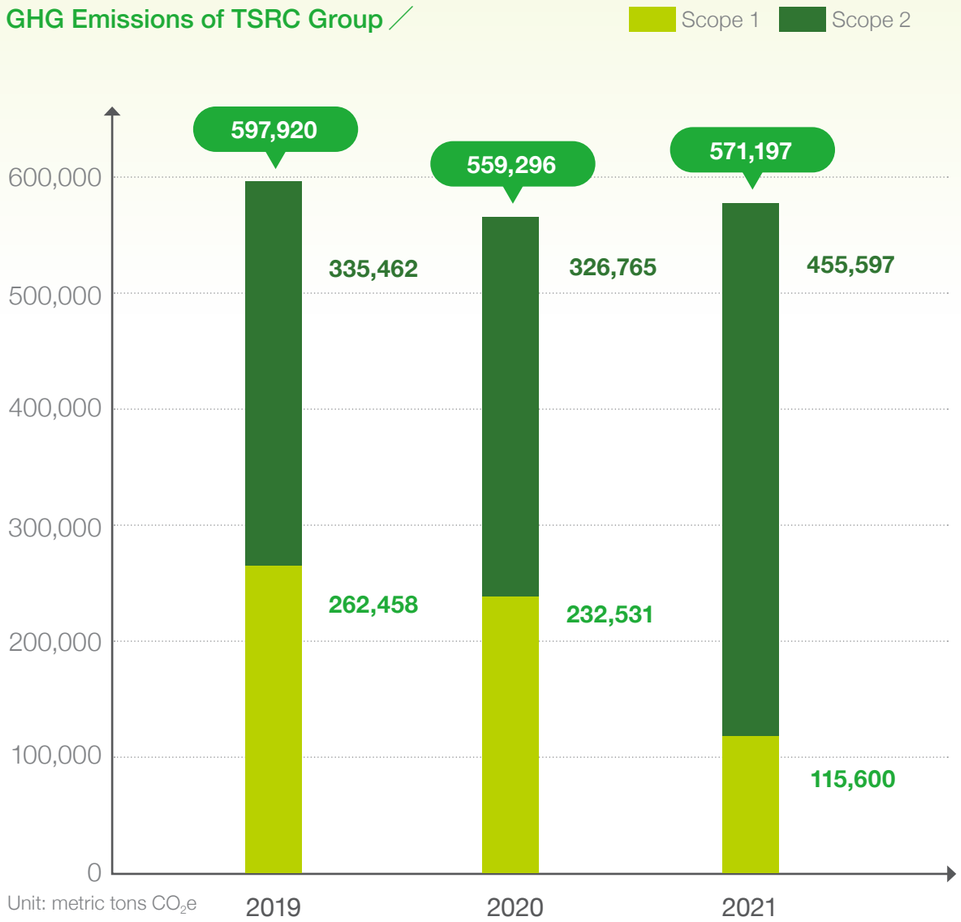
   a. The 2019-2021 GHG inventory in Kaohsiung was conducted based on the ISO14064-1:2006 Standard with the base year of 2005 and verified by a third party. To respond to the revision of ISO14064-1:2006 to ISO14064-1:2018, the GHG inventory will be re-conducted based on the new version of the Standard, and the base year will be revised to 2021. The inventory will be verified by a third party by the end of 2022.

   b. The 2019-2021 GHG inventory in Shen Hua Chemical, Nantong Industrial, and TSRC-UBE was conducted and reported in comply with the “Report on GHG Emissions of Key Enterprises in Jiangsu Province”. To respond to the revision of ISO14064-1:2006 to ISO14064-1:2018, the GHG inventory will be re-conducted based on the new version of the Standard, and the base year will be revised to 2021. The inventory will be verified by a third party by 2022.

   c. The 2019-2021 GHG inventory in Global Business Headquarters, Gangshan factory, TSRC (Shanghai) Industries, TSRC (Vietnam) Company Limited, TSRC Specialty Materials LLC, was voluntarily conducted based on the ISO14064-1:2006 Standard. To respond to the revision of ISO14064-1:2006 to ISO14064-1:2018, the GHG inventory will be re-conducted according to the new version of the Standard, and the base year will be revised to 2021. The inventory will be verified by a third party by 2022.

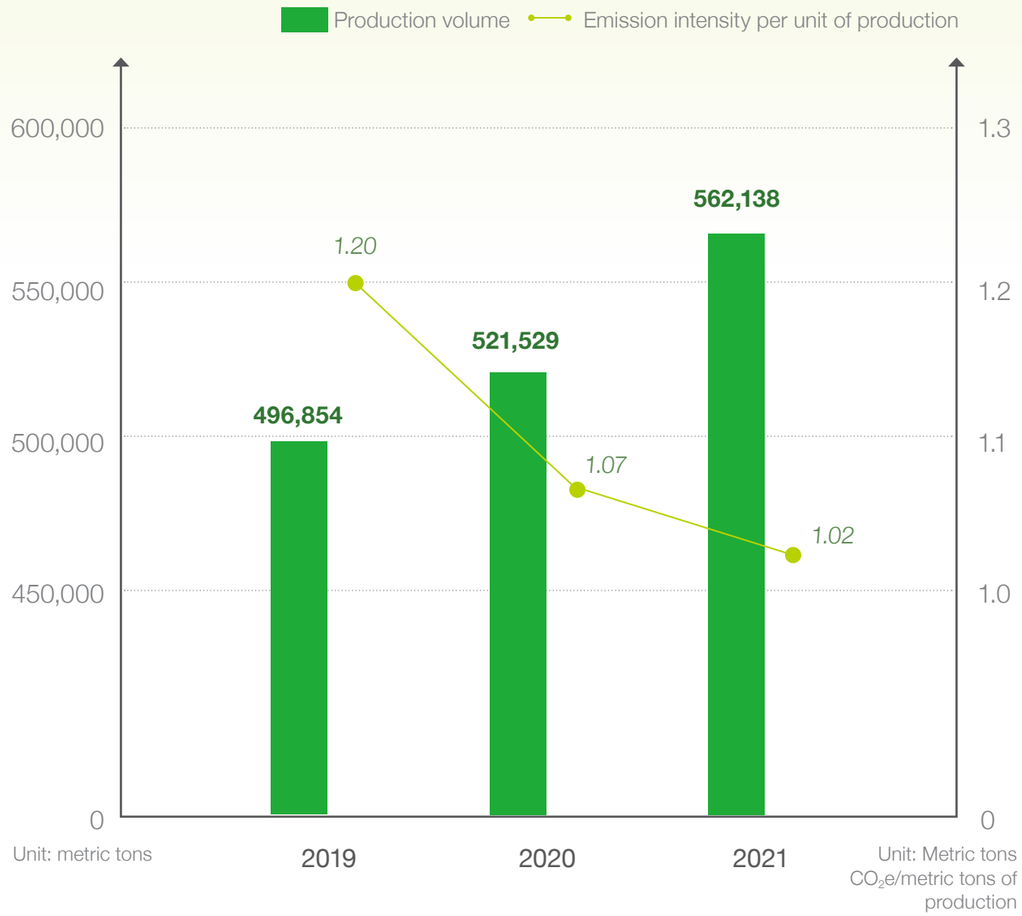
4. The 2020 GHG inventory and the emission intensity per unit of production are restated due to changes in data and parameters.

GHG Emissions of TSRC Group



Note: 1. The GHG emissions are calculated by multiplying activity data with emission factors and GWP values, in which the emission factors is referred to Taiwan Environmental Protection Administration GHG Emission Factor Management Table Version 6.0.4, and the GWP value is referred to the IPCC AR5 Report.
2. The GHG inventory covers seven types of GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3), but TSRC's operating activities do not generate PFCs, SF_6, and NF_3.
3. The 2020 GHG inventory and the emission intensity per unit of production are restated due to changes in data and parameters.

Emission Intensity Per Unit of Production of TSRC Group



Note: 1. The GHG emissions are calculated by multiplying activity data with emission factors and GWP values, in which the emission factors is referred to Taiwan Environmental Protection Administration GHG Emission Factor Management Table Version 6.0.4, and the GWP value is referred to the IPCC AR5 Report.
2. The GHG inventory covers seven types of GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3), but TSRC's operating activities do not generate PFCs, SF_6, and NF_3.
3. The 2020 GHG inventory and the emission intensity per unit of production are restated due to changes in data and parameters.

3.1.3 Energy Management

The type of energy used by TSRC's production sites mainly includes natural gas, liquefied petroleum gas, diesel, steam, and electricity. TSRC no longer uses coal after phasing-out two coal-fired boilers in Nantong Industrial in the end of 2020. The Kaohsiung factory completed the adjustment of boiler fuel in the same year and completely replaced oil with natural gas. The group no longer uses fuel oil as well. At the same time, in 2021, we began using waste gas and waste for energy recovery, including flare and VOCs. We also recycle butadiene and styrene, not only cutting GHG emissions from the use of primary petrochemical fuel but also reducing the potential negative environmental impact of air pollutants released in the manufacturing process.

TSRC adopts the ISO 50001 Energy Management Systems to periodically analyze energy use and consumption of main production sites. We also established energy performance indicators to monitor major energy consumption areas. This will improve our energy efficiency and reduce energy consumption, and we will continue to improve production processes and replace equipment to achieve energy management goals. In recent years, all subsidiaries have established ISO 50001 Energy Management Systems to check performance in order to improve the energy efficiency of factories. Among them, the Kaohsiung factory has received the ISO 50001 certificate. For high energy consumption sites such as the Kaohsiung factory and Nantong Industrial, we will continue to review energy performance work plans, implement energy conservation measures, and regularly review operation outcomes.

TSRC total energy consumption in 2021 was 5,156,524,089 million joules, decreasing 1.24% compared to 2020. TSRC's energy intensity per unit of production has declined for three consecutive years since 2019, reaching 9,173 million joules per metric ton of production in 2021, decreasing 8.38% compared with the previous year.

TSRC Group's Energy Consumption in the Past Three Years

Unit: Million Joule

		2019	2020	2021
Direct Energy Consumption (Non-renewable energy)	Black coal	1,510,519,874	1,179,652,248	0
	Fuel oil	22,804,398	22,762,089	0
	Diesel in factory area	9,551,193	14,775,473	5,283,020
	Natural gas	1,685,903,497	1,621,896,169	1,822,886,213
	Liquefied petroleum gas	6,393,279	4,161,604	1,824,435
	Gasoline	1,174,120	1,070,078	1,415,941
	Recycled butadiene	47,540,131	53,400,506	59,917,153
	Subtotal	3,283,886,491	2,897,718,167	1,891,326,762
Indirect Energy Consumption	Purchased electricity	869,032,800	921,085,200	975,171,600
	Purchased steam	1,530,006,440	1,402,533,400	2,290,025,727
	Subtotal	2,399,039,240	2,323,618,600	3,265,197,327
Total energy consumption		5,682,925,731	5,221,336,767	5,156,524,089
The percentage of grid electricity to total energy consumption		15%	18%	19%

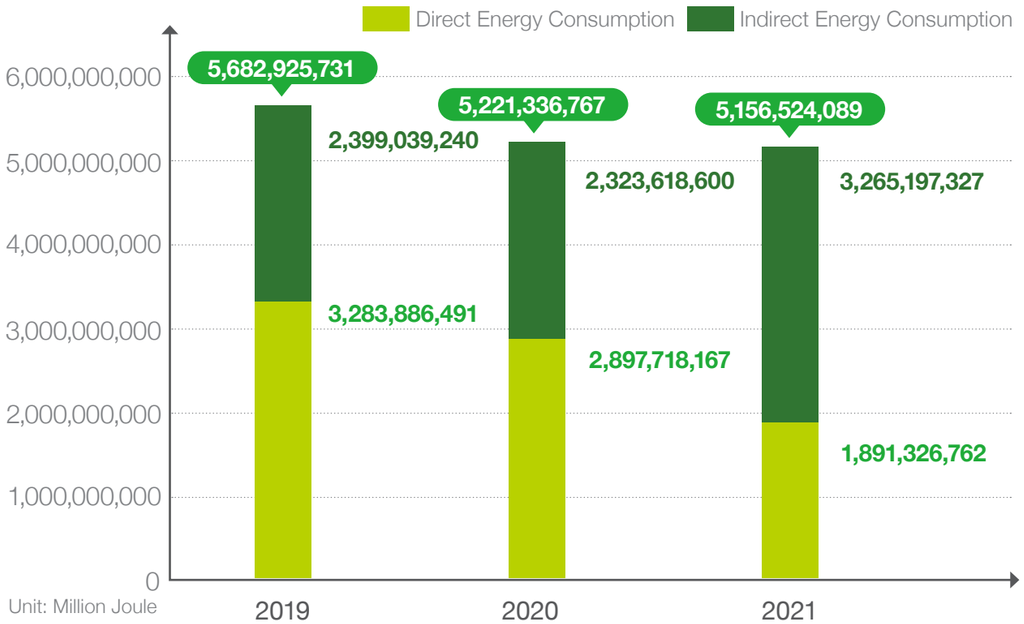
Note: 1. Total energy consumption of the organization is calculated as Direct energy (non-renewable energy) consumption + Consumption of purchased electricity and steam.
2. Calorific value conversion factor used for each type of energy: Black coal 5,600 kcal/kg, fuel oil 9,600 kcal/L, diesel 8,400 kcal/L, natural gas 8,000 kcal/m3, liquefied petroleum gas 6,635 kcal/kg, gasoline 7,800 kcal/L, and recycled butadiene 7,800 kcal/L.
3. All factories of the TSRC no longer use coals and fuel oil from 2021.
4. The 2019 and 2020 data are restated due to changes in data and parameters.
5. The data is calculated with higher heating values (HHV).

Energy Purchased by Each Site in the Past Three Years

Includes Global Business Headquarter, Gangshan , and Kaohsiung factory			TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC	Total
2019	Consumption of purchased electricity (thousands kWh)		108,244	46,023	39,921	20,518	4,650	22,042	0	241,398
	Consumption of purchased steam (metric tons)		72,537	169,983	54,883	201,369	0	178,222	0	676,994
	Total consumption of purchase electricity (Million Joule)	Electricity	389,678,400	165,682,800	143,715,600	73,864,800	16,740,000	79,351,200	0	869,032,800
		Steam	163,933,620	384,161,580	124,035,580	455,093,940	0	402,781,720	0	1,530,006,440
		Electricity + Steam	553,612,020	549,844,380	267,751,180	528,958,740	16,740,000	482,132,920	0	2,399,039,240
	Production volume (metric tons)		169,455	151,831	57,519	54,956	12,785	50,308	0	496,854
	Indirect energy intensity per unit of production (Million Joule/metric tons)		3,267	3,621	4,655	9,625	1,309	9,584	0	4,828
2020	Consumption of purchased electricity (thousands kWh)		105,790	53,467	49,993	21,868	4,576	20,163	0	255,857
	Consumption of purchased steam (metric tons)		49,068	192,784	176,435	22,935	0	179,368	0	620,590
	Total consumption of purchase electricity (Million Joule)	Electricity	380,844,000	192,481,200	179,974,800	78,724,800	16,473,600	72,586,800	0	921,085,200
		Steam	110,893,680	435,691,840	398,743,213	51,832,987	0	405,371,680	0	1,402,533,400
		Electricity + Steam	491,737,680	628,173,040	578,718,013	130,557,787	16,473,600	477,958,480	0	2,323,618,600
	Production volume (metric tons)		173,773	170,426	55,560	63,036	12,214	46,521	0	521,529
	Indirect energy intensity per unit of production (Million Joule/metric tons)		2,830	3,686	10,416	2,071	1,349	10,274	0	4,455
2021	Consumption of purchased electricity (thousands kWh)		108,106	54,051	60,513	21,338	4,170	20,413	2,290	270,881
	Consumption of purchased steam (metric tons)		59,025	192,407	392,510	230,190	0	139,154	0	1,013,286
	Total consumption of purchase electricity (Million Joule)	Electricity	389,181,600	194,583,600	217,846,800	76,816,800	15,012,000	73,486,800	8,244,000	975,171,600
		Steam	133,396,500	434,839,436	887,072,600	520,229,400	0	314,487,791	0	2,290,025,727
		Electricity + Steam	522,578,100	629,423,036	1,104,919,400	597,046,200	15,012,000	387,974,591	8,244,000	3,265,197,327
	Production volume (metric tons)		194,194	170,988	73,815	65,285	9,934	47,921	0	562,138
	Indirect energy intensity per unit of production (Million Joule/metric tons)		2,691	3,681	14,969	9,145	1,511	8,096	0	5,809

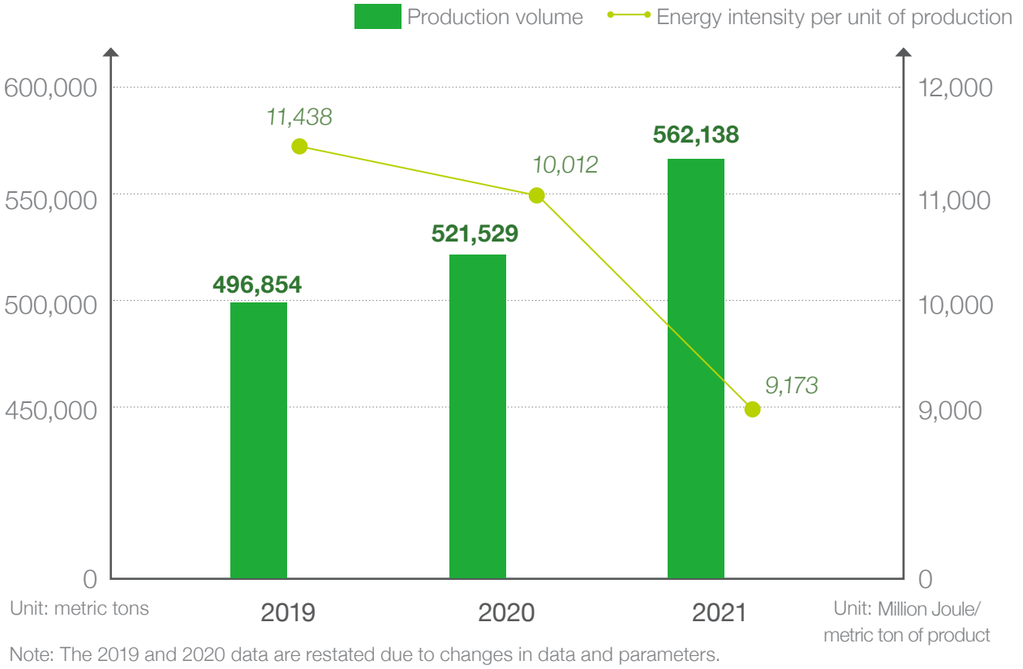
Note: 1. 1 kWh = 1 Kilowatt-Hour, 1W = 1 J/S, 1,000 kWh = 1000kW*3600S/H = 3,600,000 KJ = 3,600 MJ. The heat absorption needed to vaporize a ton of water = 2,260,000 J/kg (vaporization heat of water) x 1,000 kg = 2,260,000,000 J = 2,260 MJ.
2. TSRC Specialty Materials LLC ware originally named Dexco Polymers L.P., and was renamed TSRC Specialty Materials LLC in 2021.
3. TSRC (Vietnam) Company Limited provided OEM services to TSRC's Gangshan factory in 2021, so it used energy with no production volume which was counted as part of TSRC Corporation.
4. The 2019 and 2020 data are restated due to changes in data and parameters.

TSRC Group's Energy Consumption in the Past Three Years



Note: The 2019 and 2020 data are restated due to changes in data and parameters.

Energy Intensity Per Unit of Production of TSRC Group



Note: The 2019 and 2020 data are restated due to changes in data and parameters.

TSRC's business locations continue to implement measures to improve energy efficiency and reduce energy consumption. Besides low-carbon process innovation and replacement of process equipment to achieve the targets of carbon reduction, these sites use electric transportation vehicles and LED lights in factory areas. Furthermore, we have made major adjustments to energy selection, increased the ratio of process gas recycling as fuel, and recycling butadiene and styrene as fuel, reduced the use of petrochemical fuel and created a circular economy in factories.

Shen Hua Chemical recycling hot wastewater for heating rubber latex

Shen Hua Chemical water circulation system lift pump modification

Nantong Industrial and TSRC-UBE SEBSSIS Steam pipes replacement

Key Energy Conservation Measures and Results of TSRC Business Locations in 2021

Location of operations	Key energy conservation measures	Energy conservation benefits (annual energy saving)
Shanghai Industrial	• Replacing diesel forklifts with electric fork lifts	• 224 GJ
	• Replacing equipment with energy-saving electrical equipment	• 1.17 GJ
Shen Hua Chemical	• Recycling hot wastewater for heating rubber latex	• 3000 tons of steam per year
	• Water circulation system lift pump modification	• 900,000 kWh per year
	• Changing non-inverter motors with high energy consumption into inverter motors	• 150,000 kWh per year
Nantong Industrial TSRC-UBE	• Changing the pilot light for production equipment from liquefied petroleum gas to natural gas	• 1172 GJ Note: Saved 40 tons of standard coal per year, and calculated using one ton of standard coal equal to 29.3 GJ
	• Replaced the steam pipes for SEBS and SIS production lines from rock wool to aluminum silicate wool to reduce thermal loss	• 8,790 GJ of thermal energy from steam Note: Saved 300 tons of standard coal per year, and calculated using one ton of standard coal equal to 29.3 GJ

3.1.4 Looking Forward

TSRC actively responses to the global trend of net-zero and plans to reduce group GHG emissions in 2025 by 10%, with the long-term target of reducing emissions in 2030 by 22.5% based on the baseline of 2021. TSRC not only continues to optimize processes and reduce energy intensity and carbon emission intensity per unit product but also uses renewable energy on a large scale. We aim the use of renewable energy by 10% of total electricity consumption in 2025 and 30% in 2030. We will accelerate the installation of solar power equipment in each factory, expand purchases of renewable energy certificates, and utilize energy storage systems to stabilize energy dispatching in factories. We implement innovative process technologies for SEBS products, comprehensively improve product production performance and reduce energy consumption. We will continue to reduce the product carbon footprint. TSRC will actively explore supply channels for renewable materials to aiming to increase the use of renewable materials by 5% of total raw material procurements in 2025 and reduce the carbon footprint. We will gradually achieve group carbon reduction targets at a steady pace.

3.2 Reduction of Product Carbon Footprint

3.2.1 Management Approach

TSRC strives to develop green various products and offers customers high performance, high quality, and differentiated solutions with environmental benefits. TSRC's sustainable products are based on the four core values—Reduce, Renewable, Recycle, and Replace. We adopt innovative R&D and energy conservation technologies in the production process with an emphasis on product safety, reducing the negative environmental impact of the product lifecycle while assisting customers to achieve energy-saving targets and reducing GHG emissions.

Core Values of TSRC Products (4R)

Reduce
- TSRC's products help customers reduce energy use, reduce GHG emissions, reduce the negative environmental impact, and make a positive contribution to the environment
- Strive to reduce carbon emission intensity per unit of production
- Continue to reduce product carbon footprint

Recycle
- Recycled or circular materials are used in the production and operation process
- Dedicate efforts to increase the recyclability and circularity of products

Renewable
- Renewable materials are used in the production

Replace
- Use eco-friendly chemicals that are harmless to the environment or human health to replace other hazardous substances in the production and operation process
- TSRC products can safely replace other products that have negative environmental impacts

3.2.2 Green Products

Product Stewardship

TSRC highly focuses on the impact of products on the environment, human health, and safety in each stage of its life cycle. In the raw materials procurement phase, we emphasize transportation safety by using underground pipelines, reducing chemical leakage and GHG emissions from vehicles. In the R&D phase, we use superior technologies with patents and strictly abide by international regulations regarding environmental and chemical substance safety management, reducing the potential environmental impact of the manufacturing process. In the manufacturing process, we use product safety management systems to assess and manage the effects on health and safety in each phase of the product life cycle. TSRC discloses the Certificate of Analysis (COA) and Safety Data Sheet (SDS) to customers and the public of our product, fully disclosing the components of chemicals, their physical and chemical properties, ecological toxicity, and waste disposal method. This helps customers and the public better understand TSRC products and ensures that products are reasonably and correctly used to minimizes the hazard to the environment and health.

TSRC strictly controls product quality to ensure that products not only meet international standards and specifications but also even exceed regulatory requirements, protecting the health and safety of users and stakeholders. TSRC complies with ISO 9001: 2015 Quality Management Systems. All products are required to pass quality testing and user safety assessment through quality management procedures. Experts at each site inspect raw materials according to standard procedures in the incoming raw materials phase. Professional personnel sample products in the manufacturing process, notifying sales personnel of the condition of products if any non-conforming products are found. The sales personnel can sell these products to customers that accept them after first notifying the customer of the quality situation. When a new production line begins, product quality testing is handled as a special case until quality stabilizes, and then quality control personnel of each production site review quality data on an annual basis to ensure the quality of products.

Product Quality Control Process

Raw materials enter factory	• Conduct sampling inspection according to principles of CNS-2779-Z4006 • If an abnormality is discovered, the supplier is immediately asked to provide an explanation and make improvements
Factory raw material preparation	• Monitor process • If an abnormality is discovered, components are adjusted on site until sample analysis meets the required preparation specifications
Polymerization, blending, and agglomeration	• Take samples at fixed times (continuous) or take samples by barrels (batch) • If a quality abnormality is found, re-blend until it reaches standards. • If the abnormality is too severe, then semi-finished products are isolated and independently output as abnormal finished products. The abnormal finished products are isolated and moved to the non-conforming products area.
Finished product inspection	• Samples are taken at fixed intervals every 2 or 4 hours by barrel or batch. • If an abnormality occurs and adjustments can be made, the finished products are physically separated, labeled, and moved to the recycling area. • If an abnormality occurs and adjustments cannot be made, the finished products are deemed non-conforming products and physically separated, labeled, and moved to the non-conforming area.

Chemical Substance Management

TSRC upholds the principles of abiding by the law and protecting customers and consumers' interests and complies with Hazardous Substances Free (HSF), ensuring that all raw materials and products are in compliance with the EU's Restriction of Hazardous Substances (RoHS) and provisions related to Substances of Very High Concern (SVHC) in the Registration, Evaluation, Authorization and restriction of Chemicals (REACH). Furthermore, TSRC follows the 12 Principles of Green Chemistry and reduces waste generation and environmental impact.

The Kaohsiung factory has implemented QC 080000 Hazardous Substance Management Systems in 2011 and received certificates from a third-party. The Gangshan factory, Shen Hua Chemical Industrial, TSRC (Nantong) Industrial, TSRC (Shanghai) Industries, TSRC-UBE, and TSRC Specialty Materials LLC follow the principle of QC 080000 to manage hazaroud substance. Kaohsiung factory, Gangshan factory, TSRC (Nantong) Industrial and Shen Hua Chemical Industrial use the Green Data Manager (GDM) System to assess and manage the chemical substance database of each product, ensuring that products meet requirements of international regulations.

TSRC's management for the GHS Category 1 and Category 2 Health and Environmental Hazardous substances (including toxicity, respiratory hazard, skin corrosion and environmental impact, etc.) used in the production is explained as follows.

- TSRC does not produce GHS Category 1 and Category 2 Health and Environmental Hazardous substances, including corrosive substances with strong acid or strong alkali that causes corrosion, skin irritation, and eye irritation, acute toxic substances such as cyanic acid that causes environmental hazards and health hazards such as respiratory hazards or allergies, carcinogenic or genetic mutations, etc. TSRC only store and use such substances.
- TSRC does not use acute toxic substances, but some of the substances used contain strong acids and strong bases. In addition, the use of some chemicals with high water solubility and not easy to decompose may cause harm to the water resource environment and human health. TSRC uses Chronic toxic chemicals of benzene and butadiene.
- In terms of management measures, all TSRC sites set priorities to effectively manage these substances that are harmful to health and the environment—elimination, replacement, engineering improvement, safety management and personal protective equipment (PPE). Management and prevention measures include the use of low-toxic chemicals (cyclohexane instead of benzene) by changing manufacturing process initiating by the R&D department, the protection of strong acid and alkali pipeline flanges and the anti-corrosion and anti-leakage of the pump area, the annual monitoring of soil and groundwater, process safety management, hazard analysis and control, secondary leakage prevention and control such as overflow dikes and actual diversion of rainwater and sewage, chemical handling, the analysis and actual wearing of personal protective equipment, respiratory protective equipment such as Class A protective clothing and air respirator SCBA wearing drills, firefighting facilities improvement and effective maintenance, emergency response drill planning implementation and review and improvement, etc.

TSRC Chemical Management Process

1. Evaluate the effect of RoHS, SVHC and REACH on products
2. Evaluate health, environmental, and physical hazards based on product composition
3. Manage risks that are identified, including new product development and the use of substitute materials
4. Regularly and irregularly monitor the compliance of products and their health, environmental, and physical hazards
5. Generate corresponding product compliance statements and product SDS for response to customers

Environmental Benefits of Products

In response to the rise of environmental protection awareness worldwide, TSRC focuses on the development of eco-friendly circular economy business models and formulates green strategies for each phase of the product lifecycle to effectively lower the carbon footprint, increase product value, and help customers reduce energy consumption and the use of organic solvents in their processes. This will further reduce GHG emissions and make us an important partner for our customers to achieve their carbon reduction goals. We demonstrate our concept of sustainability and brand value to customers through our products' the actual carbon reduction results.

• Synthetic Rubber Products

Major automakers around the world are gradually raising their requirements on rubber tire performance and energy conservation and carbon reduction, and have switched to green tires in response to global climate actions. Green tires use SiO_2 to replace carbon black in rubber to lower rolling friction and reduce GHG emissions. Since SiO_2 is used to replace carbon black, it is necessary to use SSBR to increase the force between rubber molecules and SiO_2.

TSRC led the industry to establish a solution polymerized styrene-butadiene rubber functionalization platform in 2018 and explored different types and technologies for functionalization to continue improving tire resistance and traction and develop eco-friendly rubber products for vehicles that can reduce GHG emissions. The new generation synthetic rubber series developed by TSRC will become an essential material in green tires and will effectively reduce rolling friction by 10% and above while reducing vehicle fuel consumption by 2-3%. We expect our new generation synthetic rubber products to reduce carbon emissions by approximately 300,000 tons annually by 2025 which make substantial contributions to global climate action.

• Advanced materials

TSRC is actively developing SBCs materials, which are not only recyclable but also help customers reduce their production procedures and energy consumption during processing. In the future, customers will not have to use organic solvents during production processes to reduce their negative environmental impact.

Plasticizers are added to conventional products that contain PVC materials in order to make medical materials soft and elastic such as medical bags and tubes. However, plasticizers have an environmental hormone, and long-term exposure to the environment may be hazardous to ecosystems and physical health. TSRC's medical SEBS products can effectively replace PVC medical materials containing plasticizers and effectively reduce the negative environmental impact of medical waste.

TSRC's Green Strategies for the Product Life Cycle

Acquisition of raw materials for product

- Develop suppliers of recyclable raw materials and evaluate the stability of supply
- Evaluate market demand and increase purchase of recyclable raw materials

Product development and design

- Form alliances or collaborate with upstream or downstream companies to jointly develop and use biomass materials/recyclable raw materials
- Product formula and process optimization
- Innovative products that can be recycled and reused or reduce procedures on the customer end
- Develop medical grade products and reduce the environmental impact and waste
- Develop durable and energy-saving synthetic rubber products to increase the service life of terminal products

Manufacture low carbon products

- Lower the carbon footprint of production locations and replace equipment with high energy consumption
- Evaluate the installation of solar panels and purchase renewable energy

Product transportation and delivery

- Promote local procurement and reduce carbon emissions from the transportation of products and raw materials

Product use and waste

- Develop durable rubber products to increase the service life of products
- Develop synthetic rubber for green tires, improve the fuel efficiency of vehicles and reduce carbon emissions
- Implement circular economy to achieve process waste recycling and reuse

Revenue from Products with Environmental Benefits in the Past Three Years

Unit: USD

New generation synthetic rubber products	2019	2020	2021
The application of new-generation synthetic rubber to tires can help reduce tire rolling resistance, increase wear resistance, and improve vehicle fuel efficiency. The application to shoe materials can increase wear resistance and prolongs the lifecycle of shoe materials. All of the above can achieve the purpose of reducing carbon emissions in the environment and extending the lifecycle of products	7,562,776	6,321,302	13,309,484

Note: According to data of the National Highway Traffic Safety Administration (NHTSA), when tire rolling resistance is reduced by 20%, it will reduce fuel consumption by 4%.

3.2.3 Looking Forward

In the next 1-3 years, TSRC will continue to uphold the core values of 4R (Reduce, Renewable, Recycle, and Replace) in developing sustainable products. The development of new generation synthetic rubber products will help customers reduce energy consumption and continue improving the fuel efficiency of vehicles, the durability of tires, and the service life of footwears. Highly liquid SBCs are recyclable and help customers reduce production procedures and their negative environmental impact. We will continue to use medical-grade SEBS products to replace PVC materials that contain plasticizers so as to reduce the negative impact of plasticizers on human beings and the environment. TSRC will continue to expand suppliers of recyclable raw materials and exert every effort to reduce the carbon footprint of products. We will consider the product life cycle in every aspect of development and continue to develop chemicals and solutions that are non-toxic and non-hazardous to the environment and human beings. We plan for sustainable products to account for 40% and above of all products in 2030 to show our foresight in eco-friendly innovation.

3.3 Develop Model of Circular Economy

3.3.1 Management Approach

TSRC's main production activities include the polymerization, hydrogenation, and synthesis of primary petrochemical materials (including ethylene, propylene, butadiene, and styrene) to make rubber and chemical materials. Additives are used in processing and polymerization to enhance product performance and generate processes involving organic compounds. TSRC implements the circular economy concepts to reduce waste generated along the value chain. In the product design and development phase, we consider replacing hazardous materials and additives with non-hazardous ones. TSRC has established smooth communication mechanisms with customers to help customers understand processing procedures and methods after our products are delivered. We facilitate customers to understand the recyclability of products. If products cannot be used due to customers' process errors, they can return to TSRC through reverse logistics, reducing unnecessary waste. TSRC and customers work together to recycle end products, making improvements and adjustments to product formulas to make materials more recyclable for the circular economy.

3.3.2 Waste Management

During the product design and development phase, TSRC considers the end of the product lifecycle. Thus, we continue to input our knowledge and technologies to develop recyclable foaming materials and related products. These efforts aim to reduce the environmental impact of waste generated from the end-product application.

For waste that cannot be avoided due to technological bottlenecks, TSRC properly and carefully manages each factory's industrial and general waste with our concern and responsibility to the environment. We clear, dispose, or reuse waste with high standards in comply with environmental protection regulations of the country or region where each factory is located. TSRC holds itself to strict standards and references the basic principles and framework of ISO 14001: 2015 Environmental Management Systems when formulating waste management plans and management goals. We regularly supervise and analyze the waste management results.

Industrial waste generated at each site of TSRC can be divided into two categories: General industrial waste and hazardous industrial waste. Hazardous industrial waste is identified based on regulations announced by the competent authority where each factory is located. Waste generated from Shen Hua Chemical, Nantong Industrial, TSRC-UBE, and Shanghai Industrial is applied to the definition in China's Directory of National Hazardous Wastes. Waste generated from sites in Taiwan is applied to the definition in the Standards for Defining Hazardous Industrial Waste. Among the hazardous industrial waste generated by each factory, only waste oil generated by Nantong Industrial and TSRC-UBE is recycled and reused by third parties. Waste oil generated by other sites is incinerated and not recycled.

Except for hazardous industrial waste, all other waste directly cleared and disposed of is general industrial waste. All TSRC sites have established reporting, tracking, and management regulations for industrial waste; all sites report industrial waste to the competent authority according to the regulations of their respective country or region. The clearance process of industrial waste has obtained waste clearance plans approved by the competent authority. We commission qualified clearance and disposal companies to handle and report waste, and we also require clearance companies to provide documentation that waste is properly disposed of. TSRC also generates recyclable materials, including rubber, metal, plastic, waste pallets, and paper/cardboard, in the operations and production process at all sites. The recyclable materials are sorted, collected, and recycled by local qualified recycling companies.

In recent years, TSRC's production has continued to increase, and each factory has strengthened waste management and increases recycling measures. The total weight of all waste generated by TSRC in 2021 was 3,937.77 metric tons, down 323.48 metric tons or approximately 7.7% compared with 2020. The total weight of recycled general industrial waste was 1,186.75, increasing 48.71% compared with the previous year. The result shows the significant effectiveness of TSRC recycling measures. This result comes from TSRC's active adoption of source reduction and pollution prevention measures to avoid waste generation, release, and discharge in the manufacturing process as much as possible, such as improving manufacturing equipment to reduce the amount of waste rubber, installation of heavy substance separation towers to concentrate the heavy substances and reduce the amount of cyclohexane waste liquid. In sum, TSRC's waste generated per unit of production in 2021 was 7 (metric tons/thousands of metric tons of production), a decrease of 14.32% compared with 2020. In the future, we will continue to strengthen waste management measures.

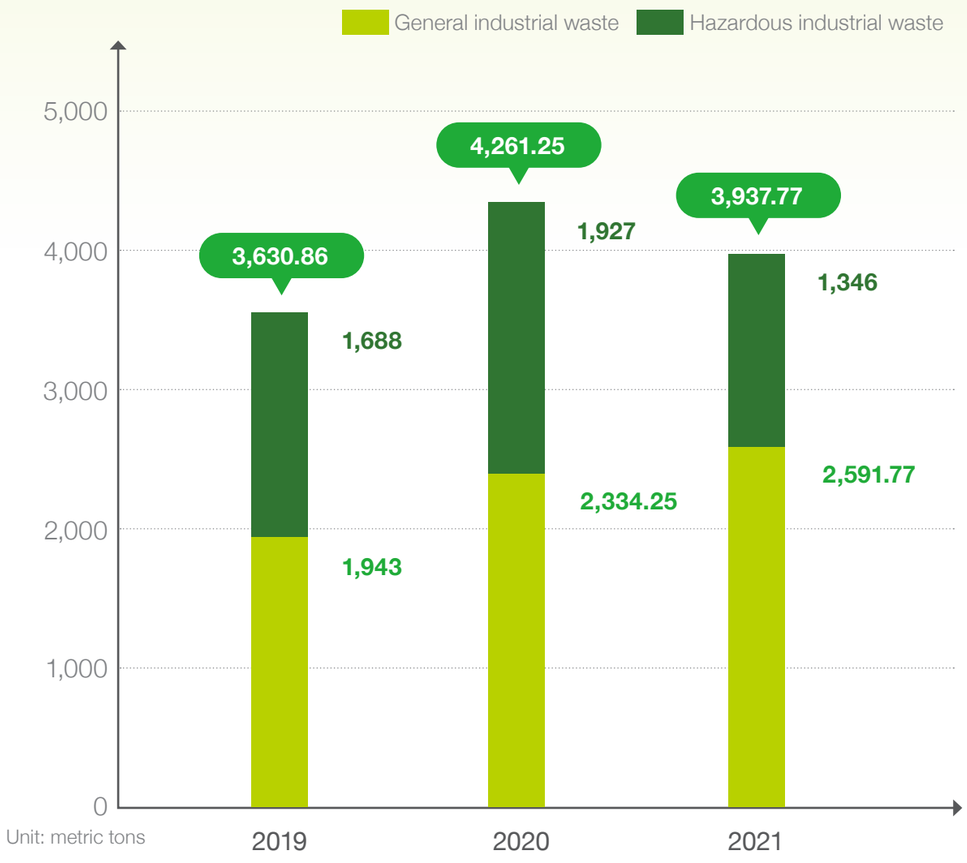
Weight of Waste Generated at Each Site in the Past Three Years

Unit: metric tons

Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory		TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC	Total
2019	General industrial waste (including general and recycled waste)	966	410	94	30.86	8	-	434	1,943
	Hazardous industrial waste	37	377	228	381	40	-	625	1,688
	Total weight of all waste	1,003	787	322	411.86	48	-	1059	3,630.86
	Production volume	169,455	151,831	57,519	54,956	12,785	-	50,308	496,854
	Waste generated per unit of production (Unit: metric tons/ thousands of metric tons)	5.92	5.18	5.6	7.49	3.75	-	21.05	7.31
2020	General industrial waste (including general and recycled waste)	1161	485.1	91	20.5	4.65	-	572	2,334.25
	Hazardous industrial waste	45	469	294	215	31	-	873	1,927
	Total weight of all waste	1,206	954.1	385	235.5	35.65	-	1,445	4,261.25
	Production volume	173,773	170,426	55,560	63,036	12,214	0	46,521	521,529
	Waste generated per unit of production (Unit: metric tons/ thousands of metric tons)	6.94	5.60	6.93	3.74	2.92	0	31.06	8.17
2021	General industrial waste (including general and recycled waste)	1283.31	466.20	65.60	16.98	21.50	8.99	729.19	2591.77
	Hazardous industrial waste	75.23	392.06	335.57	348.50	48.80	0.50	144.02	1344.68
	Total weight of all waste	1358.54	858.26	401.17	365.48	70.30	9.49	873.21	3,936.44
	Production volume	194,194	170,988	73,815	65,285	9,934	0	47,921	562,138
	Waste generated per unit of production (Unit: metric tons/ thousands of metric tons)	7.00	5.02	5.43	5.60	7.08	0.00	18.22	7.00

Note: 1. All source of data is from waste transfer record
2. TSRC Specialty Materials LLC ware originally named Dexco Polymers L.P., and was renamed TSRC Specialty Materials LLC in 2021.
3. TSRC (Vietnam) Company Limited provided OEM services to TSRC's Gangshan factory in 2021. It generated waste but the actual output volume was counted as part of TSRC Corporation.
4. The 2019 and 2020 data are restated due to changes in data and parameters.

Weight of Waste Generated of TSRC Group



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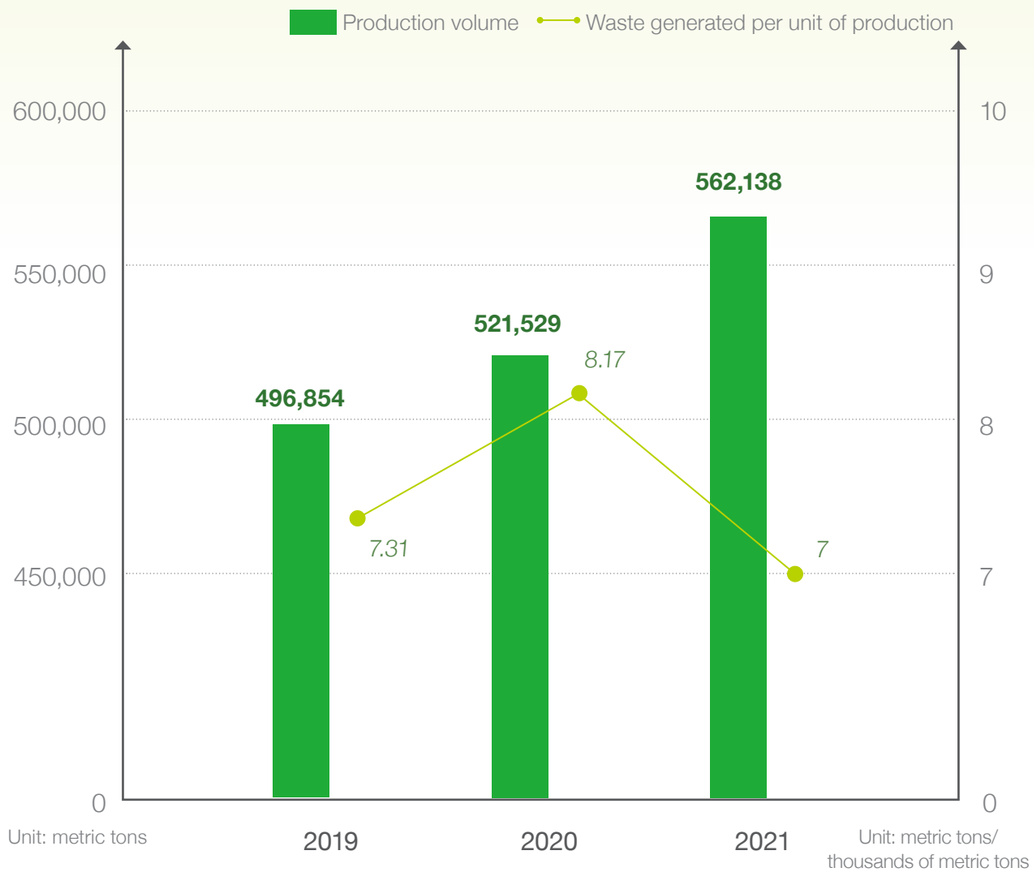
Waste Generated Per Unit of Production of TSRC Group



Note: 1. All source of data is from waste transfer record
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Weight of Recycled Waste at Each Site in the Past Three Years

Unit: metric tons

Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory		TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC	Total
2019	Recycled general industrial waste	469	280	24	0.86	6	-	0	779.86
	Production volume	169,455	151,831	57,519	54,956	12,785	-	50,308	496,854
	Waste recycled per unit of production (Unit: metric tons/ thousands of metric tons)	2.77	1.84	0.42	0.02	0.47	-	0.00	1.57
2020	Recycled general industrial waste	443	347	3.4	1.2	3	-	0	798
	Production volume	173,773	170,426	55,560	63,036	12,214	0	46,521	521,529
	Waste recycled per unit of production (Unit: metric tons/ thousands of metric tons)	2.55	2.04	0.06	0.02	0.25	-	0.00	1.53
2021	Recycled general industrial waste	465.84	326.80	7.91	3.81	8.50	2.90	370.99	1,186.75
	Production volume	194,194	170,988	73,815	65,285	9,934	0	47,921	562,138
	Waste recycled per unit of production (Unit: metric tons/ thousands of metric tons)	2.4	1.91	0.11	0.06	0.86	0	7.74	2.11

Note: 1. All source of data is from waste transfer record
2. TSRC Specialty Materials LLC ware originally named Dexco Polymers L.P., and was renamed TSRC Specialty Materials LLC in 2021.
3. TSRC (Vietnam) Company Limited provided OEM services to TSRC's Gangshan factory in 2021. It generated waste but the actual output volume was counted as part of TSRC Corporation.
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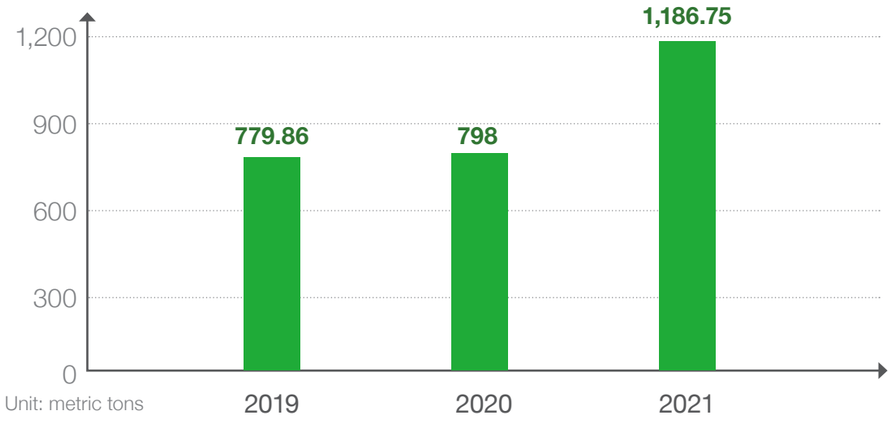
Weight of Recycled Waste of TSRC Group



Note: 1. All source of data is from waste transfer record
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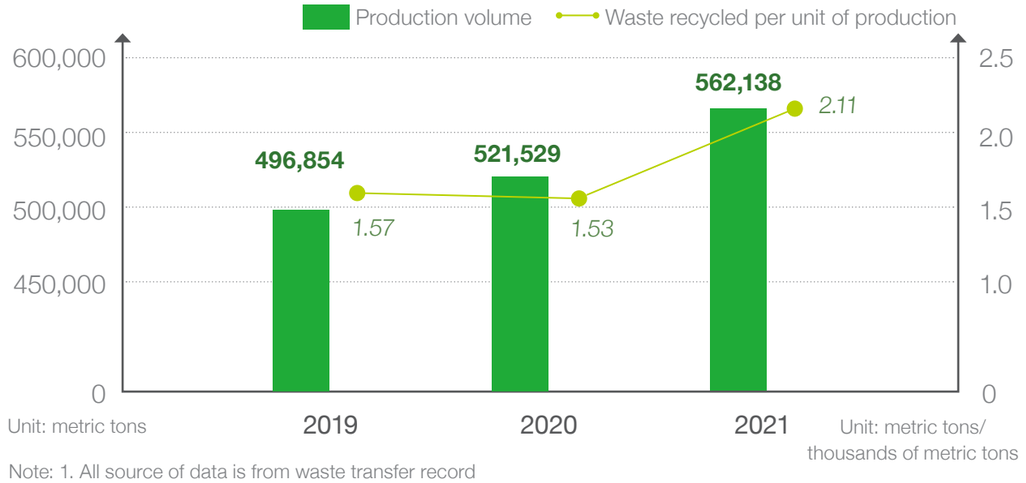
Waste Recycled Per Unit of Production of TSRC Group



Note: 1. All source of data is from waste transfer record
2. The 2019 and 2020 data are restated due to changes in data and parameters.

Weight and Percentage of Hazardous Waste Recycled in 2021

Unit: metric tons

Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory		TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC	Total
2021	Total weight of hazardous industrial waste	75.23	392.06	335.57	348.50	48.80	0.50	144.02	1,344.68
	Recycled	0	0	7.91	3.81	0	0	0	11.72
	Percentage of hazardous industrial waste recycled	0%	0%	2%	1%	0%	0%	0%	1%

Note: 1. Waste oil is the hazardous waste that was recycled and reused by third parties.
2. TSRC Specialty Materials LLC ware originally named Dexco Polymers L.P., and was renamed TSRC Specialty Materials LLC in 2021.

3.3.3 Looking Forward

TSRC will dedicate its efforts to carefully manage waste generated by all production sites in accordance with laws and regulations to achieve the short-term target of zero fines and zero pollution. Our mid-term target is to recycle, reuse, and reduce at least 50% of waste, and our long-term target is to achieve a complete circular economy with zero waste generated.

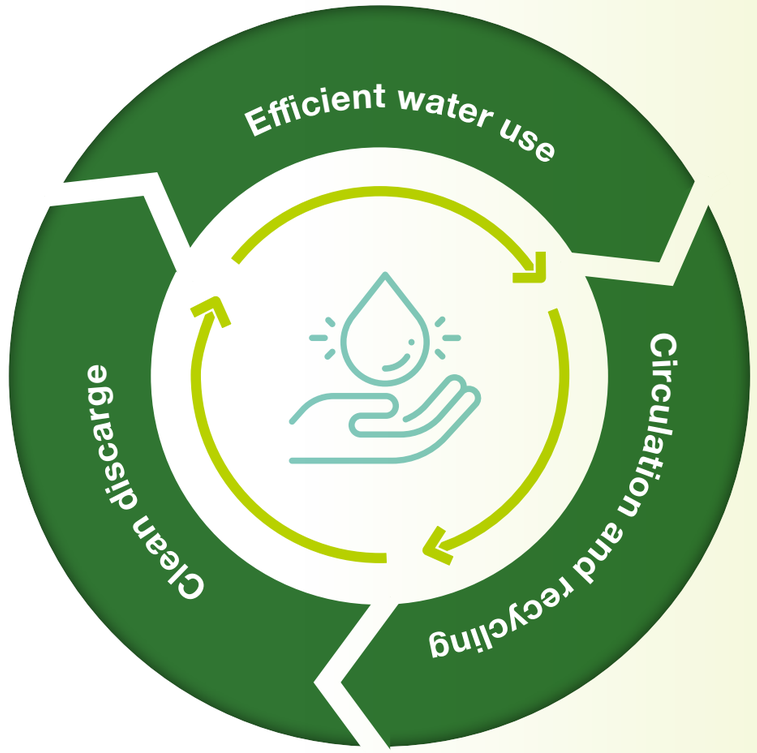
TSRC adopts innovative processes and chemical recycling technologies to help customers reduce unnecessary waste generated from processing. We are working with partners along the value chain in developing a circular economy model, starting from material changes and adjustments to increase the recyclability of the end products (e.g., athletic footwear, tires, medical bags, medical tubes, and diapers), making the world a better place through science-based solutions.

3.4 Water Resource Optimization

3.4.1 Management Approach

Disasters caused by rainfall pattern change are frequently occurring around the world due to growingly severe climate change in recent years. Taiwan suffered a drought in March 2021 due to insufficient rainfall, while persistent heavy rain in Henan, China, caused an extremely rare flood. This made TSRC fully aware that water is the key that connects the climate system with human society and the environment and the foundation for companies to achieve sustainable development. TSRC needs a large amount of water in the manufacturing process; thus, the importance of water quality and volume to TSRC goes without saying. We are highly concerned about the continued optimization of water resource use.

We have incorporated water resource risk into our overall risk management system, especially climate-related risk. We will assess the water resource risk of each site and review response measures on an annual basis. Our primary strategy for water resource management includes three principles: efficient water use, circulation and recycling, and clean discharge, which aim to effectively utilize water resources that enter our factories. We reuse wastewater generated in our processes and continue investing in and installing equipment for water recycling. Wastewater is carefully treated before being discharged according to regulations and standards, reducing energy and resource consumption at wastewater treatment factories and the potential negative impact on ecosystems.



3.4.2 Water Resource Management

Source of Water Resources

Water resource used in the manufacturing process of TSRC's production sites is mainly tap water provided by water companies. In recent years, we have gradually expanded process water recycling and reuse measures and equipment. We have enhanced water conservation measures and carefully use water resources to ensure that every drop of water that enters our factories can be repeatedly used. This will reduce our total water withdraw and lift the burden on local water resources. According to Aqueduct, which is a tool to measure water risks and developed by the World Resources Institute, among all sites and subsidiaries (including

mainland China, Taiwan, USA, and Vietnam) of TSRC, factories in mainland China are at the highest baseline water stress reaching "moderate to high risk (20-40%)"; factories in the USA is at "low to moderate risk (10-20%)," while factories in Vietnam and Taiwan are both at low risk[1]. However, if we zoom in to the province and county/city level, based on the drought risk map[2] drawn by Taiwan's National Science and Technology Center for Disaster Reduction with consideration of the impact of climate change, regardless of the dry season or wet season, TSRC's Kaohsiung factory will be at high risk of drought within the foreseeable future (2015-2039). According to the WRI Aqueduct, the water resource risk of Jiangsu Province, where Shen Hua Chemical Industrial, TSRC-UBE, and TSRC (Nantong) Industrial are located, the risk of Louisiana State, where the TSRC Specialty Materials LLC is located, and Binh Duong Province, where the TSRC (Vietnam) Company Limited is located are all at low to moderate risk (10-20%)[3].

The total water consumption of TSRC in 2021 was 5,835 million liters, and the consumption of Kaohsiung factory was 2,091 million liters. As the Kaohsiung factory is in an area with a high risk of drought, TSRC is actively implementing water conservation, condensed water recycling, and process wastewater recycling measures in the Kaohsiung factory. In addition, TSRC has set quantified water resource management targets for the usage of recycled water and the recycling of wastewater in our ESG strategy established in 2021. This is to respond to the environmental regulations of Jiangsu Province, China requiring new factories to use recycled water, as well as the decrease of freshwater withdrawal permitted by the local authorities. In 2021, the total tap water withdrawal of TSRC was 3,972 million liters, down 9.78% compared with 2020. The main reason is that TSRC (Nantong) Industrial and TSRC-UBE phased out coal-fired boilers in 2020, and the boiler water consumption has greatly reduced.

1. Source: Aqueduct 3.0 Country Rankings | World Resources Institute (wri.org)+
2. Source: National Science and Technology Center for Disaster Reduction, 2014, Disaster Risk Map Under the Impact of Climate Change
3. Source: Aqueduct 3.0 Country Rankings

Wastewater treatment and discharge

TSRC's main production sites are all located in local industrial parks and are subject to management and supervision by the competent authority of the industrial parks. Regarding wastewater generated during manufacturing and operations, TSRC primarily recycles and reuses as much water as possible and reduces wastewater discharge to lower water stress on the ecological environment. Wastewater that cannot be recycled and reused is pre-treated by facilities until it meets local effluent monitoring standards and then discharged into the industrial park's wastewater treatment systems.

Wastewater discharge standards of Gangshan factory meet the sewage system limits of Gangshan Benjhou Industrial Park, and the discharge standards of Kaohsiung factory comply with the regulations of Ren-Da Industrial Park. The Kaohsiung factory had 2 incidents of exceeding the effluent standard of the industrial park's wastewater treatment factory in 2021 and thus received fines from the competent authority. Besides being charged additional wastewater treatment fees, TSRC immediately improved water management when the violation was discovered. Shen Hua Chemical Industrial, TSRC (Nantong) Industrial, and TSRC-UBE are required to meet Level 3 of the local regulations, including wastewater PH value, chemical oxygen demand (COD), suspended solids (SS), and five-day biochemical oxygen demand (BOD). All factories have an online COD analyzer, ammonia nitrogen analyzer, pH meter, and flowmeter. TSRC also installs the rainwater detention pond in factories and online COD monitors to monitor the water quality of effluent in real-time.

Understanding how precious water resources are, TSRC innovates processes to lower water demand and reduce wastewater discharge. For example, Shen Hua Chemical Industrial uses heat insulation paint to reduce the use of tap water for cooling. This measure has significantly reduced wastewater by approximately 6,000 metric tons per year. Shen Hua Chemical Industrial took measures to separate rainwater from wastewater and reduce the amount of rainwater that enters the wastewater system, which has diminished inefficient waste of resources.

Water Withdrawal, Discharge, and Consumption of Each Site in the Past Three Years

In provincial- and country-level: Regions with high water stress | Regions with low and moderate water stress

Unit: Million liters = Thousand tons

Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory		TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC	Total
2019	Fresh water withdrawal (A)	1,493	945	640	409	11	0	557	4,055
	Consumption of purchased steam (B)	90	170	55	0	0	0	178	493
	Wastewater recycled (C)	563	89	71	179	0	0	0	902
	Water usage (D) = A+B+C	2,146	1,204	766	588	11	0	735	5,450
	Water discharge (E)	1,127	695	481	168	11	0	348	2,830
	Water consumption = D - E	1,019	509	285	420	0	0	387	2,620
2020	Fresh water withdrawal (A)	1,487	1,021	572	513	13	0	797	4,403
	Consumption of purchased steam (B)	49	193	176	23	0	0	179	620
	Wastewater recycled (C)	516	88	90	146	0	0	0	840
	Water usage (D) = A+B+C	2,052	1,302	838	682	13	0	976	5,863
	Water discharge (E)	797	825	462	325	13	0	348	2,770
	Water consumption = D - E	1,255	477	376	357	0	0	628	3,093
2021	Fresh water withdrawal (A)	1,458	1,058	438	363	9.228	11	635	3,972
	Consumption of purchased steam (B)	59	192	393	230	0	0	139	1,013
	Wastewater recycled (C)	574	87	122	67	0	0	0	850
	Water usage (D) = A+B+C	2,091	1,337	953	660	9.228	11	774	5,835
	Water discharge (E)	974	817	441	316	9.647	11	348	2,916
	Water consumption = D - E	1,117	520	512	344	-0.419	0	426	2,919

Note:

1. All water withdrawal is freshwater supplied by the local water company (≤1,000 mg/L TDS).
2. The purchased steam is also used as one of the sources of process water after the purpose of heat exchange has been achieved.
3. Except for the global business headquarter located in Taipei, all discharge is treated by wastewater treatment factories of industrial park.
4. TSRC does not have permanent water storage facilities but take measures according to the situation of each site during the water restriction period.
5. The TSRC Group's total tap water withdrawal from water companies in 2021 decreased 9.78% compared with the previous year. The main reason is that TSRC (Nantong) Industrial and TSRC-UBE phased out coal-fired boilers in 2020, and the boiler water consumption has greatly reduced.
6. TSRC Specialty Materials LLC ware originally named Dexco Polymers L.P. and was renamed TSRC Specialty Materials LLC in 2021.
7. The water discharge of TSRC (Shanghai) Industries higher than water usage in 2021 was due to surface runoff.
8. TSRC (Vietnam) Company Limited provided OEM services to TSRC's Gangshan factory in 2021, so it used water resources, but actual output volume was counted as part of TSRC Corporation.
9. The evaporation of purchased steam is not considered.
10. The water resource risk assessment results of the locations in mainland China, Vietnam, and the United States covered in this table are from WRI Aqueduct 3.0 provincial-level data, and the water resource risk assessment results of the Taiwan location are from the National Disaster Prevention and Rescue Science and Technology Center of Taiwan, published in 2014.
11. In 2021, the total water withdrawal in areas with high water stress risk is accounted for 36.7% of the group's total water withdrawal. The total water usage in areas with high water stress risk is accounted for 35.83% of the group's total water usage.
12. The 2019 and 2020 data are restated due to changes in data and parameters.

3.4.3 Water Resource Recycling and Reuse

Water resource is a material issue that must be considered as global warming occurs. After holistically considering the usage efficiency and discharge of water, TSRC has strengthened water recycling measures and increased the circulation of water resources in factories in recent years to lower the impact of water resources on operations and move forward to zero discharge. We have already obtained significant results.

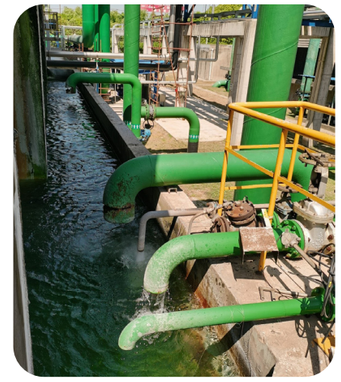
Condensed Water Recycling

Our Kaohsiung factory uses large amounts of steam for heating in BR and TPE processes. When latent heat of steam is released into the process, the steam is transformed into high-temperature condensed water. Besides recycling condensed water as much as possible, we also recycle heat to fully utilize resources. The recycled condensed water is stored in two tanks and used in the production of SBR, which requires large amounts of hot water for preparation. The subsidiaries TSRC (Nantong) Industrial and TSRC-UBE also recycle condensed water from steam equipment and channel condensed water into the cooling water circulation system by lowering its temperature and pressure. The excess condensed water is also sold to nearby companies, helping partners reasonably use thermal energy and reduce resource waste.

Wastewater Recycling in the Manufacturing Process

The BR process of TSRC's Kaohsiung factory mainly involves solvent reaction, and the factory recycles and reuses wastewater at the back-end of the process. Currently, 1,200 tons of wastewater are recycled each day. Process wastewater is recycled and supplied to the cooling water tower through pipelines, replacing tap water. Process wastewater recycling equipment was also installed in the new SEBS production line of subsidiary TSRC (Nantong) Industrial, increasing production without increasing pollution. Process wastewater is used to replenish water in the cooling water tower instead of using fresh water. Shen Hua Chemical Industrial recycles decanted water from its SBR manufacturing process and recycles approximately 8,000 tons of process wastewater each year. Shen Hua Chemical Industrial uses recycled water instead of clarified water in AS-402, reducing the withdrawal of clean freshwater resources while minimizing wastewater discharge.

As TSRC factories in Taiwan are located in high-risk drought area, we devote great efforts to recycling wastewater. In 2021, the wastewater recycling rate of factories in Taiwan was 27.45%, reaching the highest level among all TSRC factories. TSRC will continue enhancing and expanding the implementation of wastewater recycling measures; in addition to increasing the water use efficiency and reducing the potential impact on the high-risk area, we will further mitigate climate-related water risks to stabilize operations.



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1. Condensed water recycling in TSRC Kaohsiung factory
2. 3. Condensed water recycling in TSRC (Nantong) Industrial and TSRC-UBE
4. Wastewater recycling in TSRC Kaohsiung factory
5. Wastewater recycling in TSRC (Nantong) Industrial and TSRC-UBE

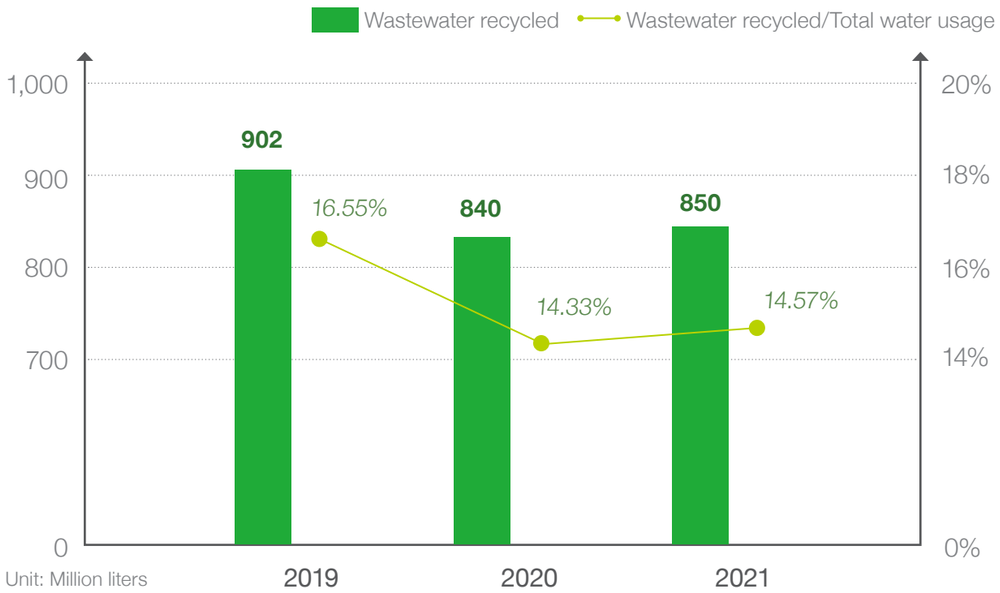
The Volume of Wastewater Recycling

Unit: Million liters. %

Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory		TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC	Total
2019	Wastewater recycled	563	89	71	179	0	0	0	902
	Wastewater recycled/ Total water usage	26.23%	7.39%	9.27%	30.44%	0.00%	0.00%	0.00%	16.55%
2020	Wastewater recycled	516	88	90	146	0	0	0	840
	Wastewater recycled/ Total water usage	25.15%	6.76%	10.74%	21.41%	0.00%	0.00%	0.00%	14.33%
2021	Wastewater recycled	574	87	122	67	0	0	0	850
	Wastewater recycled/ Total water usage	27.45%	6.51%	12.80%	10.15%	0.00%	0.00%	0.00%	14.57%

Note:
1. TSRC Specialty Materials LLC ware originally named Dexco Polymers L.P., and was renamed TSRC Specialty Materials LLC in 2021.
2. The 2019 and 2020 data are restated due to changes in data and parameters.

The Volume of Wastewater Recycled of TSRC Group



Note: The 2019 and 2020 data are restated due to changes in data and parameters.

3.4.4 Looking Forward

In the future, TSRC will significantly increase process wastewater recycling. We will use recycling water instead of clean water to replenish water in the equipment of production sites in Taiwan and mainland China, reducing water withdrawal from surrounding areas. We are also trying to reduce the amount of process wastewater that enters wastewater treatment of industrial parks as much as possible, reducing unnecessary energy and resource use and potential environmental impacts. We aim that the percentage of wastewater recycling will reach 25% in 2023, 36% in 2025, and 40% in 2030. Besides process wastewater recycling, we are also expanding condensed water recycling. We manage the quality of water discharged into the wastewater treatment factory of industrial parks. TSRC-UBE plans to build new treatment facilities to strengthen treatment before discharge, which will reduce the medicines used by wastewater treatment factories and lower the potential environmental impact. In addition to condensed water, process wastewater recycling, and water quality improvement for effluent, TSRC is fully aware of the effect of climate change and extreme weather events on water resource stability. We plan to build recycled water facilities or increase the purchase of recycled water at some sites. We aim to the group recycling water usage to reach 15% of total water consumption in 2023, 34% in 2025, and 40% in 2030.

3.5 Environmental Management

3.5.1 Management Approach

TSRC takes its environmental protection responsibility seriously, and all sites have adopted consistent high standards when managing the air pollution, waste, and soil and groundwater pollution generated by processes. We exert every effort to reduce the negative environmental impact of operations. TSRC continues to promote energy conservation and waste reduction, air pollution prevention, and wastewater reduction and recycling through ISO 14001 Environmental Management Systems. We periodically conduct comprehensive reviews, and use technology to monitor factories and surrounding areas to comply with regulations and reduce our environmental impact.

TSRC's environmental management strategy focuses on "process improvement" and "environment monitoring," in which the global business headquarters is responsible for environment management and supervision and for formulating related plans while factories are responsible for implementation.

Environmental Management Strategy

Process improvement

- Reduce fugitive VOCs and emissions through process improvement, tail gas recycling, and adding burning towers

Environment monitoring

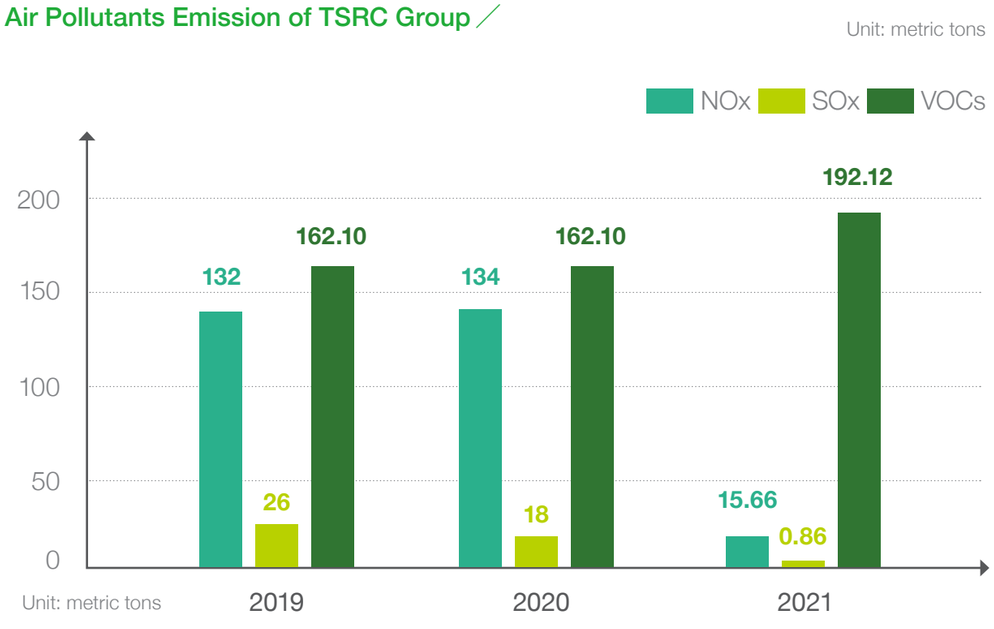
- Establish a digital monitoring system to monitor emissions at factories and surrounding areas, and set up a real-time connection with the industrial park monitoring system

3.5.2 Air Pollution Prevention and Management

TSRC continues to upgrade equipment and optimize processes, reduce air pollutants released in the production process, and minimize environmental and health hazards. The SOx emissions have continued to decrease in the past three years. After the phase-out of coal-fired boilers at TSRC (Nantong) Industrial in 2020, the TSRC Group no longer releases any VOCs generated by boilers.

In 2021, the Kaohsiung City Government Environmental Protection Bureau tested equipment parts in the TPE manufacturing procedures of the Kaohsiung factory. The value of one part exceeded the standard for VOCs and emissions regulations, and a fine of NT$450,000 was imposed for violating Article 20, Paragraph 1 of Taiwan's Air Pollution Control Act. In addition, due to the replacement of monitoring facilities in 2020, a weekly test was not conducted before the monitoring facility verification report was reviewed. The number of effective monitoring hours did not reach 85% in the third quarter and fourth quarter; thus, a fine of NT$200,000 was imposed for violating Article 22, Paragraph 2 of Taiwan's Air Pollution Control Act. TSRC immediately took response measures and purchased valves that can pass the VOCs leakage 100 ppm test to replace the original parts, improving process equipment parts. We began scheduling alternative tests starting in December 2021 and conducted weekly tests until the monitoring facility verification report was reviewed.

Air Pollutants Emission of TSRC Group



Note: The 2019 and 2020 data are restated due to changes in data and parameters.

Air Pollutants Emission

Unit: metric tons

Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory		TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC	Total
2019	NOx	7	0.5	59	49	0	0	16	132
	SOx	4	0	12	9	0	0	1	26
	VOCs	140.51	0.711	5.77	2.47	0	0	12.64	162.10
2020	NOx	6.22	0.94	45.58	70	0	0	11.63	134
	SOx	3.41	0	5.6	8	0	0	0.87	18
	VOCs	140.51	0.711	5.77	2.47	0	0	12.64	162.10
2021	NOx	5.02	0	0	0	0	0	10.64	15.66
	SOx	0.1344	0	0	0	0	0	0.73	0.86
	VOCs	169.77	3.25	2.41	2.46	0	0	14.23	192.12

Note:
1. Data of TSRC Corporation, Shen Hua Chemical Industrial, TSRC (Nantong) Industrial, and TSRC-UBE is from continuous measurement. Data of TSRC Specialty Materials LLC is calculated based on mass balance.
2. TSRC does not have HAPs data because it is not required by air pollution regulations.
3. The 2019 and 2020 data are restated due to changes in data and parameters.
4. Although the Chemical Sustainability Accounting Standard published by Sustainability Accounting Standards Board requires the data of nitrogen oxides (NOx) shall deduct N2O, TSRC conducts the data from CEMS monitoring in accordance with regulations for air pollution monitoring and has not monitored specific items. The N2O cannot be deducted yet.

Factory found in violation	Regulation violated	Reason for fine	Amount of fine	Solution or improvement plan
TSRC Corporation Kaohsiung Factory	Article 20, Paragraph 1 of the Air Pollution Control Act	• process equipment parts in TPE manufacturing procedures (M04) of the Kaohsiung factory, Kaohsiung City Government Environmental Protection Bureau found that the value of one part, in TPE manufacturing procedures (M04) of the Kaohsiung factory, exceeded the standard for VOCs and emissions regulations.	NT$450,000	• We replaced the plug cock valve (1 pc screwed end ball valve) in the butadiene system with a valve (3 pc screwed end ball valve) able to pass the VOCs leakage 100 ppm test.
	Article 22, Paragraph 3 of the Air Pollution Control Act	• Due to the replacement of monitoring facilities, a weekly test was not conducted before the review of the monitoring facility verification report was completed, and the number of effective monitoring hours did not reach 85% in the third quarter and fourth quarter.	NT$200,000	• We began scheduling alternative tests starting in December 2021 and conducted weekly tests until the monitoring facility verification report was reviewed.

TSRC continues to strengthen VOCs management at each site. TSRC (Nantong) Industrial implements RTO to purify waste gas containing VOCs from processes using high temperature and oxidation, thereby reducing VOCs emissions. Starting in 2020, we added two cyclohexane recycling devices in the storage tank area, channeling the factory's low concentration waste gas into the RTO. In the past, the VOCs emissions caused the odor. With RTOs, the tail gas was burned, and the odor was reduced. In the future, we will continue to increase RTO capacity to handle high concentration tail gas. Besides channeling waste gas into RTO, TSRC (Nantong) Industrial replaced its activated carbon facilities in 2021 to better absorb air pollutants. Shen Hua Chemical Industrial has focused on process improvement and equipment optimization in recent years and has adopted AI management, strictly managing VOCs emissions in coordination with the competent authority of the industrial park, irregularly conducting sampling inspections of eco-friendly cruisers, and sending personnel to conduct factory inspections.

3.5.3 Soil and Groundwater Pollution Prevention and Management

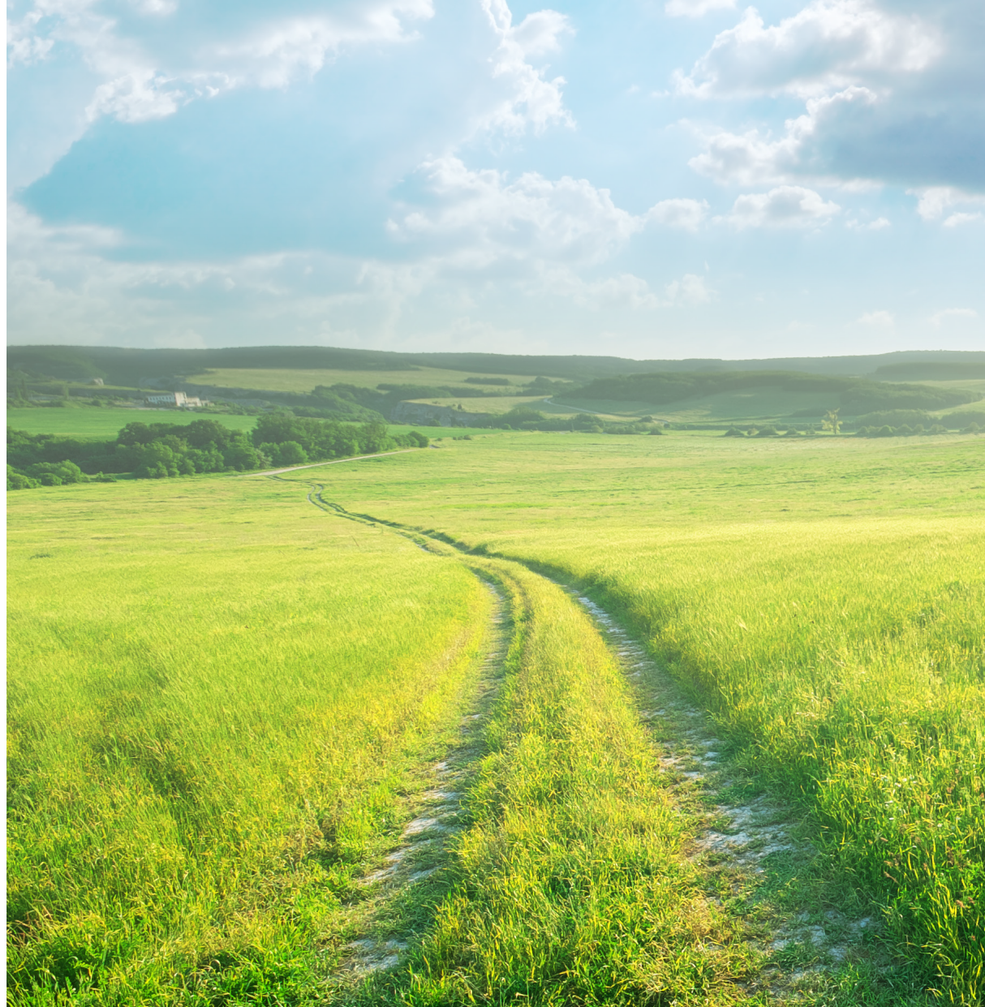
Shenhua Chemical Industrial, TSRC-UBE and TSRC (Nantong) Industrial conduct a regular soil and groundwater monitoring and inventory in accordance with the local regulations of "HJ 1209-2021 Technical Guidelines for Self-Monitoring of Soil and Groundwater for Industrial Enterprises" in mainland China. No leakage or contamination occurred in 2021.

3.5.4 Ecological Conservation

TSRC's production sites are neither located in the habitats that need protection or have been restored, nor in any of the 6 protected areas or biologically diverse areas or genetically diverse areas specified by the IUCN (International Union for Conservation of Nature). None of the species in the industrial park is listed in the "Red List" or "National List of Protected Species in Taiwan."

3.5.5 Looking Forward

The VOCs emission will be the key point of TSRC's future environmental management. We will improve manufacturing processes, add a tail gas recycling system, replace old equipment parts and use new leakage prevention parts, continue utilizing infrared VOCs detectors (FLIR), optimize the equipment part leakage map, properly monitor high-risk leakage points in factories, and accelerate equipment parts testing and monitoring. TSRC will also utilize digital technologies to periodically monitor the soil and groundwater pollution potential at factories and surrounding areas to prevent pollution.



4.1 Strengthen Organization’s Sustainability Capability

4.2 Improve Health, Safety & Wellbeing of Employees

4.3 Enhance Social Engagement

4. Social

In response to global ESG initiatives and sustainability, we will enhance the professional skills of our employees with respect to ESG and develop talent cultivation plans. We will expand competency development, knowledge learning, cooperation with industry, government, and academic institutions to enhance our competitiveness. Employee safety, health, and welfare are the key factors to TSRC's long-term development. TSRC will continuously optimize the work environment of all sites and care for employees' physical and mental health to uplift TSRC’s employees’ engagement. We will expand our positive influence on society by integrating the Company resources and employees' voluntary actions into chemical sustainable education and social welfare to benefit local education and community prosperity.

Female employees by 16.53% of total employees

Employee salary and benefits in 2021 increased 21% compared to 2020

Employee salary and benefits expenses increased 21%

Began promoting chemistry education in 2012 and benefit 1,000 students and more

Up to 1000+ students attend the chemistry activities

4. Social

4.1 Strengthen Organization's Sustainability Capability

4.1.1 Management Approach

Along with the global trend of carbon reduction and transformation of the chemical industry, cultivating talents are crucial for TSRC's sustainability and an indispensable key asset for low-carbon transformation. As the chemical industry is facing a decline in talent supply and difficulties in recruiting professionals, TSRC has transferred into a learning organization for talent cultivation, aiming to build a pool of sustainable talent to drive the Company's low-carbon transformation and seize opportunities for sustainability. With this vision, TSRC formulates four approaches for talent management—selection, recruitment, cultivation, and retention.

TSRC's Talent Management Approaches

Talent selection

- **Internships:** TSRC provides graduates or students with corporate internship opportunities. TSRC optimizes the recruitment process and the process of new employee training to recruit suitable talens.
- **Local recruitment:** With regard to the recruitment of new employees, when job applicants have the same professional skills and work experience required for a position, we give priority to local residents.

Talent cultivation

- **Professional learning:** We organize internal and external professional training courses for new and exising employees in response to future changes of the market and environment.
- **General education:** We offer general education courses (e.g. strategic thinking and innovation management) according to the Company's annual business strategies and market trends, in order to achieve lifelong learning.

Talent recruitment

- **Equality and transparency:** We adjust talent recruitment, evaluation, promotion, and salaries based on their individual abilities and annual performance evaluation results. We do not discriminate against age, gender, region, religion, marital status, and sexual orientation.
- **Fair evaluation:** All employees are subjected to performance evaluations twice a year according to the Employee Performance Evaluation Regulations.

Talent retention

- **Rewards and recognition:** For employees located in TSRC sites inTaiwa, we provide regular raises, promotions, bonuses, model employee commendations, and long service employee commendations, attracting and retaining outstanding talent.
- **Benefits:** For employees located in TSRC sites in mainland China, we retain outstanding talent through an employee benefits system that encourages work-life balance, including birthday parties, travel, experiences, special work hours, as well as a reasonable leave system.

4.1.2 Diversity, Inclusion, and Recruitment

TSRC creates a diverse and equal workplace and focus on labor rights and gender equality. We do not discriminate against age, gender, region, religion, marital status, and sexual orientation during talent recruitment. We attract outstanding talent to join TSRC through industry-academia collaboration and internships and create a culture of diversity and inclusion. We cherish the differences and uniqueness of employees for encouraging each other and supporting innovation.

The Composition of Employees

As of the end of 2021, TSRC had 1,604 full-time and non-fixed-term contract employees (also called full-time employees) based in all sites. As TSRC(Vietnam) was firstly included in the scope of Sustainability Report and increased recruitment in Taiwan factories in 2021, the total number of employees increased 2% compared with 2020.

TSRC does not treat employees differently or discriminate against gender and age during recruitment. In terms of the gender distribution of our employees, full-time male account for 80% and above of all full-time employees due to the nature of characteristics of the chemical industry. In terms of distribution by age, the highest percentage of employees are 30-50 years old by 67% of total employees. Their professional skills and experiences accumulated over the years are valuable assets for TSRC. In addition, TSRC hires underprivileged social groups and provides opportunities to workers with disabilities in a suitable workplace. We hired a total of 5 employees with disabilities in 2021 based in Taiwan factories, Shen Hua Chemical, and Shanghai Industrial.

Employees at Each Site of TSRC in 2021 (by Age, Region, and Type of Employment Contract)

Includes Global Business Headquarters, Gangshan factory, Kaohsiung factory		Taiwan		Mainland China						Vietnam		USA		Total	
		TSRC Corporation		Shen Hua Chemical		Nantong Industrial		TSRC-UBE		Shanghai Industrial		TSRC (Vietnam) Company Limited		TSRC Specialty Materials LLC			
		Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage
Full-time non-fixed-term contract employees	Male	578	83%	252	87%	280	90%	87	80%	58	75%	19	59%	65	72%	1339	84%
	Female	116	17%	38	13%	30	10%	22	20%	19	25%	13	41%	25	28%	263	16%
	Subtotal	694	100%	290	100%	310	100%	109	100%	77	100%	32	100%	90	100%	1602	100%
Full-time fixed-term contract employees	Male	0	--	0	0%	0	--	0	--	0	--	0	--	0	--	0	0%
	Female	0	--	2	100%	0	--	0	--	0	--	0	--	0	--	2	100%
	Subtotal	0	--	2	100%	0	--	0	--	0	--	0	--	0	--	2	100%
Total number of employees		694		292		310		109		77		32		90		1604	
Percentage accounted for by full-time non-fixed-term contract employees (%)		100%		99%		100%		100%		100%		100%		100%		100%	

Note: 1. For full-time fixed-term contract employees or contract employees, their employment contract is terminated when a specific period of time expires or when the work agreed upon is completed.
2. Full-time non-fixed-term contract employees or full-time employees have a continuous employment contract and carry out work during statutory work hours set forth in labor regulations.
3. This table only includes employees whose employer is TSRC on their employment contract and does not include contractors and dispatch workers stationed in factories of TSRC or provides services to TSRC.
4. The number of employees in this table is calculated as number of people employed on 31 December 2021.

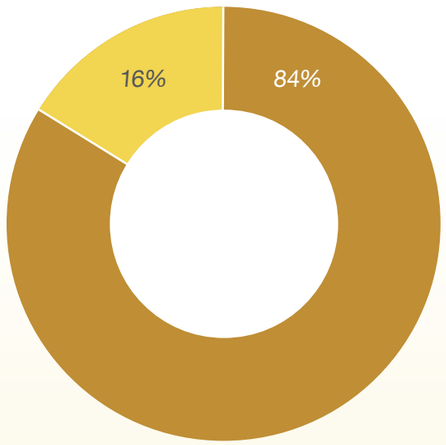
Employees at Each Sites of TSRC in 2021 (by Age and Diversity)

Includes Global Business Headquarters, Gangshan factory, Kaohsiung factory

		TSRC Corporation		Shen Hua Chemical		Nantong Industrial		TSRC-UBE		Shanghai Industrial		TSRC (Vietnam) Company Limited		TSRC Specialty Materials LLC		Total	
		Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage
Age	Age of 30 and younger	42	6%	47	16%	72	23%	22	20%	5	7%	11	34%	5	6%	204	13%
	Age between 30~50	455	66%	193	66%	221	71%	82	75%	65	84%	18	56%	45	50%	1,079	67%
	Age of 50 and older	197	28%	52	18%	17	6%	5	5%	7	9%	3	9%	40	44%	321	20%
The total number of full-time non-fixed-term contract employees and full-time fixed-term contract employees		694	100%	292	100%	310	100%	109	100%	77	100%	32	100%	90	100%	1,604	100%
Diversity	Recruitment of persons with disabilities	3	0.4%	1	0.3%	0	0.0%	0	0.0%	1	1.3%	0	0.0%	0	0.0%	5	0.2%

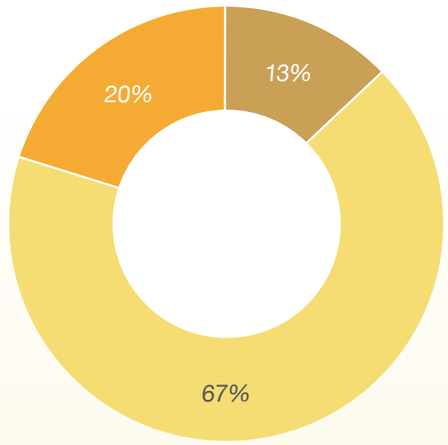
Note: 1. Ratio of employees with disabilities = Number of persons with disabilities hired / (Number of full-time non-fixed-term contract employees and full-time fixed-term contract employees).
2. For full-time fixed-term contract employees or contract employees, their employment contract is terminated when a specific period of time expires or when the work agreed upon is completed.
3. Full-time non-fixed-term contract employees or full-time employees have a continuous employment contract and carry out work during statutory work hours set forth in labor regulations.

Full-Time Non-Fixed Term Contract Employees of TSRC Group (by Gender)



Note:
1. Full-time non-fixed-term contract employees or full-time employees have a continuous employment contract and carry out work during statutory work hours set forth in labor regulations.
2. This table only includes employees whose employer is TSRC on their employment contract and does not include contractors and dispatch workers stationed in factories of TSRC or provides services to TSRC.
3. The number of employees in this table is calculated as number of people employed on 31 December 2021.

Full-Time Non-Fixed Term Contract Employees of TSRC Group (by Age)



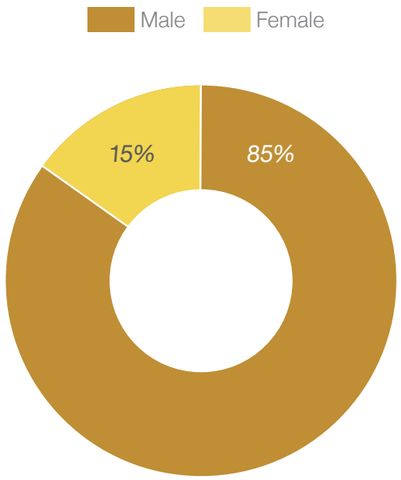
Note:
1. Full-time non-fixed-term contract employees or full-time employees have a continuous employment contract and carry out work during statutory work hours set forth in labor regulations.
2. This table only includes employees whose employer is TSRC on their employment contract and does not include contractors and dispatch workers stationed in factories of TSRC or provides services to TSRC.
3. The number of employees in this table is calculated as number of people employed on 31 December 2021.

Talent Recruitment

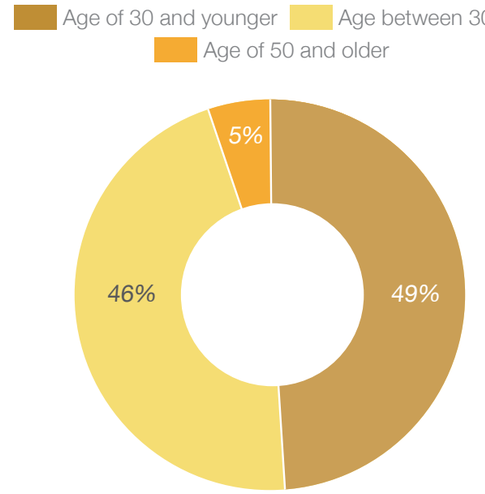
TSRC upholds the principle of equal opportunity. We hire new employees based on the professional competencies and work experience needed for the position. Outstanding talent is selected through a public process, and recruitment and selection decisions are not affected by age, gender, region, religion, marital status, sexual orientation, and other factors unrelated to candidates' ability. When applicants have the same qualifications, TSRC gives priority to residents to promote local development and employment. TSRC provides good salaries and benefits, people-centered management, and a sound system for promotion and development to retain outstanding talent.

A total of 166 full-time employees joined TSRC in 2021. New employees accounted for 10% of all full-time employees. As TSRC (Vietnam) Company Limited was firstly included in the Sustainability Report and recruited employees in Taiwan factories in 2021, the number of new employees increased by 46.8% compared with 2020. New employees are mainly male due to the industry's characteristics, but new employees in TSRC Specialty Materials LLC were predominantly female in 2021 as we continue to uphold the principle of equal opportunity. In terms of distribution by age, employees in Taiwan and USA are mainly at the age of 30-50 due to the need for experienced talent in critical fields for local and organizational business development. New employees of the USA factory and Vietnam factory are mainly under 30.

New Recruitment of TSRC Group (by Gender)



New Recruitment of TSRC Group (by Age)



New Recruitment at Each Site of TSRC in 2021 (by Age and Gender)

Includes Global Business Headquarters, Gangshan factory, Kaohsiung factory

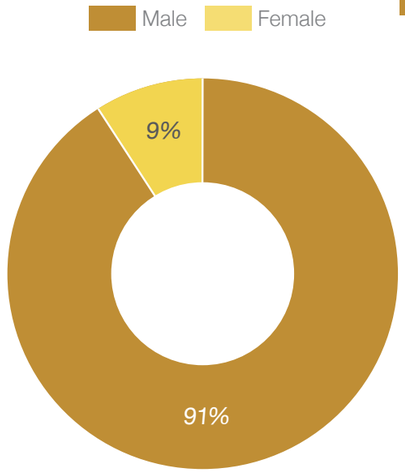
		TSRC Corporation		Shen Hua Chemical		Nantong Industrial		TSRC-UBE		Shanghai Industrial		TSRC (Vietnam) Company Limited		TSRC Specialty Materials LLC		Total	
		Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage
Gender	Male	47	84%	26	90%	31	91%	16	89%	2	100%	17	88%	2	29%	141	85%
	Female	9	16%	3	10%	3	9%	2	11%	0	-	3	12%	5	71%	25	15%
Total number of new hires		56	100%	29	100%	34	100%	18	100%	2	100%	20	100%	7	100%	166	100%
Age	Age of 30 and younger	7	12%	17	59%	25	74%	12	67%	1	50%	17	85%	2	29%	81	49%
	Age between 30~50	44	79%	10	34%	9	26%	6	33%	1	50%	3	15%	3	43%	76	46%
	Age of 50 and older	5	9%	2	7%	0	0%	0	0%	0	0%	0	0%	2	29%	9	5%
Total number of new hires		56	100%	29	100%	34	100%	18	100%	2	100%	20	100%	7	100%	166	100%
Total number of full-time employees		694		290		310		109		77		32		90		1602	
New hire ratio		8%		10%		11%		17%		3%		63%		8%		10%	

Note: New hire ratio = Total number of new employees / Total number of full-time employees.

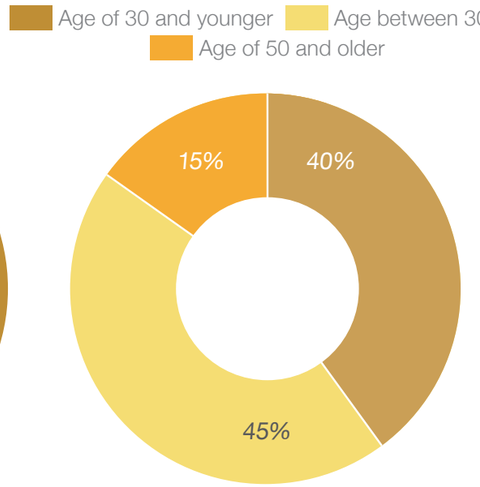
TSRC had 151 employees' resignment in 2021, and the turnover rate is about 10%. As Vietnam factory was firstly included in the Sustainability Report and the COVID-19 pandemic impacted the stability of employees in 2021, the turnover rate increased by 1.5% compared with 2020. The Vietnam factory had a higher turnover rate because new technicians were under high stress to adapt to the impact of the pandemic, there was a high level of manufacturing automation, and there was low employment stability. Factories in mainland China were impacted by the COVID-19 pandemic and result in difficulty in talent recruitment. In addition, the shortage of chemical talent also has impacts on personnel changes. In this regard, the turnover rate in these two regions was relatively high. In terms of distribution by age, the average age of employees who resigned from factories in mainland China and Vietnam was under 30.

The turnover rate and new recruitment ratio were about the same level at each site in 2021. We make improvements and review for factories with a high turnover rate, such as Vietnam (44%) and TSRC-UBE (16%). Besides examining local labor regulations and salary levels, we also analyze the reasons for employees' resignations based on the opinions of employees and supervisors. We also make timely adjustments to the salary and benefits system to lower the turnover rate. For example, we adjusted the recruitment process of our Vietnam factory by inviting applicants to visit the factory, which will reduce their cognitive gap and help them get familiar with the workplace. We also provide comprehensive training and help new employees adapt to their work and environment. For factories in mainland China, we plan to adjust the titles of employees to respond to their needs and make a structural salary adjustment to enhance the overall competitiveness of salaries and benefits. We will dedicate our efforts to delivering more diverse and sound opportunities for employees' career development, continuing to attract and retain excellent talent creating significant momentum for TSRC innovation.

Resigned Employees of TSRC Group (by Gender)



Resigned Employees of TSRC Group (by Age)



Resigned Employees and Turnover Rate at Each Site of TSRC in 2021 (by Age and Gender)

Includes Global Business Headquarters, Gangshan factory, Kaohsiung factory		TSRC Corporation		Shen Hua Chemical		Nantong Industrial		TSRC-UBE		Shanghai Industrial		TSRC (Vietnam) Company Limited		TSRC Specialty Materials LLC		Total	
		Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage
Gender	Male	46	88%	25	96%	31	97%	18	95%	1	100%	12	86%	4	57%	137	91%
	Female	6	12%	1	4%	1	3%	1	5%	0	0%	2	14%	3	43%	14	9%
Number of employees resigned		52	100%	26	100%	32	100%	19	100%	1	100%	14	100%	7	100%	151	100%
Age	Age of 30 and younger	2	4%	16	62%	19	59%	11	58%	0	0%	12	86%	1	14%	61	40%
	Age between 30~50	32	62%	9	35%	13	41%	8	42%	1	100%	2	14%	3	43%	68	45%
	Age of 50 and older	18	35%	1	3%	0	0%	0	0%	0	0%	0	0%	3	43%	22	15%
Number of employees resigned		52	100%	26	100%	32	100%	19	100%	1	100%	14	100%	7	100%	151	100%
Total number of full-time employees		694		290		310		109		77		32		90		1602	
Turnover rate		7%		9%		10%		17%		1%		44%		8%		9%	

Note: Turnover rate = Total employee resigned / Total number of full-time employees.

4.1.3 Talent Development

TSRC has built a comprehensive learning roadmap for employees, which is divided into two categories "general education" and "technical specialty (also referred to as on-the-job learning)". We develop courses for employees at different job levels. As of the end of 2021, TSRC has offered general education courses for managers at each level of the TSRC Group. The topics include performance management, innovation management, and strategic thinking. As for technical specialty, each function unit and department organize relevant competency training, including manufacturing and production, R&D, warehouse management and logistics. We also encourage employees to participate in external professional courses and technical forums.

TSRC irregularly conducts surveys to understand each function unit and department's needs for education and training. The result helps our headquarters to design talent development courses. For example, in mainland China, we arranged new employee training courses, successor training projects, and on-the-job training and evaluation. We also provide sessions about organizational management and professional and general training per the annual training plan. We publicly reward employees for their learning results and participation with approaches including participation rate ranking, quiz contests, ranking on lecturers, and after-class activities. In the future, TSRC will strengthen new employee training courses. Besides providing diverse general education courses on industrial safety, corporate governance, and compliance, we will establish a self-learning platform and increase opportunities to cultivate the corporate culture of continuous learning.

Training and Learning

The core concept of TSRC's talent development is to "improve the quality of human resources." We invest resources into the education and training of employees in response to rapid changes in the market and environment. All training is organized to respond to the work requirements and follows the principle of gender equality and equality of opportunity. Starting in 2019, the total training hours for TSRC employees have gradually increased, and the average training hours per employee also shows an upward trend compared with 2020. In 2021, the total amount invested reached NT$6.9 million.

The Training Hours of TSRC Employee and Resources Invested

Includes Global Business Headquarters, Gangshan factory, Kaohsiung factory		TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC	Total
2019	Total training hours	18,185	14,500	6,565	2,632	764	17	4,527	47,190
	Total number of employees	714	280	312	109	77	17	90	1,599
	Average training hours (Hours)	25	52	21	24	10	1	50	30
	Total Amount Invested (in thousands of NTD)	8,035	1,633	1,318	563	143	4	2,018	13,714
2020	Total training hours	16,464	16,702	13,657	5,567	388	494	2,794	56,066
	Total number of employees	687	289	309	109	76	26	90	1,586
	Average training hours (Hours)	24	58	44	51	5	19	31	35
	Total Amount Invested (in thousands of NTD)	3,032	731	712	250	96	62	1,355	6,238
2021	Total training hours	31,884	17,270	16,768	7,334	424	310	2,242	76,232
	Total number of employees	694	292	310	109	77	32	90	1,604
	Average training hours (Hours)	46	59	54	67	6	10	25	48
	Total Amount Invested (in thousands of NTD)	2,951	1,619	1,014	592	64	25	635	6,900

Note: The amount invested by each factory is converted from the local currency into NTD using the following exchange rates: CNY: TWD = 1:4.5322; VND: TWD = 1:0.001259; USD: TWD = 1:28.8224.

Average Hours of Training Per TSRC Employee (by Gender and Employee Category)

Includes Global Business Headquarters, Gangshan factory, Kaohsiung factory

			TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC
2019	Rank	Senior Management	14	86	48	48	0	0	8
		Mid/Entry Level	25	58	38	82	11	0	23
		Indirect Employees	26	57	18	16	24	17	35
		Direct Employees	26	48	20	20	8	0	65
	Gender	Male	25	53	22	26	20	10	62
		Female	27	42	16	14	18	7	17
2020	Rank	Senior Management	19	77	74	58	0	1	12
		Mid/Entry Level	32	57	68	70	15	5	39
		Indirect Employees	27	57	38	42	20	19	22
		Direct Employees	20	58	44	53	9	1	38
	Gender	Male	23	59	45	57	13	14	32
		Female	29	49	35	27	19	12	20
2021	Rank	Senior Management	21	43	54	134	0	1	2
		Mid/Entry Level	38	67	87	124	15	5	22
		Indirect Employees	38	64	46	47	18	20	18
		Direct Employees	57	57	55	68	13	6	35
	Gender	Male	48	61	56	76	15	19	28
		Female	37	47	39	34	18	13	14

Note: 1. Senior managers refer to G19 and above managers, mid/entry level managers refer to deputy managers and managers.
2. Direct employee refers to personnel directly responsible for production lines, including operators, technicians, shift leaders, and analysts. Indirect employees are all employees that are not direct employees.

Career Development

TSRC conducts investigation on talent development every March. We review talents in key positions and formulate development plans. Starting from 2021, we organized a series of "TSRC Sharing and Exchange Panels" in Taiwan and invited internal experts from each field to share their professional experiences and insights. The online sharing events facilitate interactions among colleagues and remove barriers between departments and allowing knowledge and skills to be shared between different function units to break the silo. We organized 16 selected topics with 24 internal experts to share their experiences in 2021. The sharing panels received positive feedback and had a total of 1,800 participants. The feedback showed that the satisfaction rate reached to 93%. In the future, we will gradually expand the sharing activities to other sites and connect the contents with employees' career development paths to leverage infinite potential and possibilities. TSRC also invests resources to increase employee engagement and has organized panels in the USA and mainland China to strengthen employee engagement and uplift TSRC employees' engagement.

Performance Management

TSRC's employee performance includes goal setting, authorization, communication and guidance, the connection between performance and rewards, and career development, aiming to improve the overall performance of individuals, departments, and the organizations. According to the Employee Performance Management Regulations, all employees, regardless of gender and employee category, are subjected to the biannual performance evaluation. The majority of TSRC employees are direct employees. Managers periodically conduct performance interviews with all employees regardless of employee category and provide feedback to support employees' career development.

TSRC cares about employees' career development. We not only arrange face-to-face communication between managers and individual employees, which facilitates discussion and implementation of an individual's career plan but also provide guidance for employees who are underperformance in the evaluation. We provide timely resources or opportunities for employees to shift to a suitable position.

In USA

We began promoting "Grow Together" in 2021 to increase employee engagement, which includes activities in four aspects:

1. **TSRC Summit:**
   Senior managers at the headquarters share annual development plans and engage in exchanges with employees.
2. **Manager Kit:**
   We provide short videos to communicate concepts on managerial competencies and shared 2 short videos in 2021.
3. **T-Talk (TSRC-Talk):**
   Regardless of employees or managers, all employees share knowledge, experience, and trends on topics they are in charge of, but the activity was postponed to 2022 due to the pandemic.
4. **Engagement Team:**
   Internal employees voluntarily serve as members of the Engagement Team and jointly plan internal team activities with supervisors and the Human Resources Department, increasing employee exchanges while strengthening their engagement. The Engagement Team was formally established at the end of 2021 and will begin organizing team building activities in 2022.

In Mainland China

Shen Hua Chemical develop mentor activities for new employees and transferred employees to obtain suitable skills and meet the requirements of their position. Completion of the mentor plan reached 100% in China in 2021. We also completed two batches of "performance management and employee development" training. We finished the update of numerous training manuals, including audiovisual materials which are incorporated into the online video learning system.

Number of Employees Periodically Subjected to Performance Evaluations (by Rank and Gender)

Includes Global Business Headquarters, Gangshan factory, Kaohsiung factory

			TSRC Corporation		Shen Hua Chemical		Nantong Industrial		TSRC-UBE		Shanghai Industrial		TSRC (Vietnam) Company Limited		TSRC Specialty Materials LLC		Total	
			Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage	Number of people	Percentage
2019	Rank	Senior Management	23	3%	1	0.40%	1	0.32%	1	0.92%	0	0%	1	5%	2	2%	29	2%
		Mid/Entry Level	76	11%	26	9.40%	20	6.41%	9	8.26%	15	19%	3	14%	9	10%	158	10%
		Indirect Employees	263	37%	80	29%	68	21.79%	33	30.28%	40	52%	18	82%	46	51%	548	35%
		Direct Employees	352	49%	169	61.20%	209	66.99%	63	57.80%	22	29%	0	0%	33	37%	848	54%
	Gender	Male	603	84%	238	86%	274	87.82%	88	80.73%	56	73%	11	50%	67	74%	1337	84%
		Female	111	16%	38	14%	24	7.69%	18	16.51%	21	27%	11	50%	23	26%	246	16%
2020	Rank	Senior Management	22	3%	2	0.70%	1	0.32%	1	0.92%	0	0%	1	4%	2	2%	29	2%
		Mid/Entry Level	79	11%	26	9.20%	22	7.12%	9	8.26%	16	21%	5	19%	11	12%	168	11%
		Indirect Employees	258	38%	81	28.60%	71	22.98%	32	29.36%	37	49%	20	74%	47	52%	546	35%
		Direct Employees	329	48%	174	61.50%	205	66.34%	66	60.55%	22	30%	1	4%	30	33%	827	53%
	Gender	Male	577	84%	245	87%	271	87.70%	89	81.65%	56	75%	14	52%	67	74%	1319	84%
		Female	111	16%	38	13%	28	9.06%	19	17.43%	19	25%	13	48%	23	26%	251	16%
2021	Rank	Senior Management	29	4%	1	0.40%	1	0.32%	1	0.92%	0	0%	1	3%	1	1%	34	2%
		Mid/Entry Level	75	11%	27	9.50%	20	6.45%	9	8.26%	16	21%	5	16%	12	13%	164	10%
		Indirect Employees	260	38%	82	28.80%	74	23.87%	29	26.61%	37	49%	20	63%	48	53%	550	35%
		Direct Employees	330	47%	175	61.40%	209	67.42%	65	59.63%	23	30%	6	19%	29	32%	837	53%
	Gender	Male	578	83%	248	87%	275	88.71%	82	75.23%	57	75%	19	59%	65	72%	1324	84%
		Female	116	17%	37	13%	29	9.35%	22	20.18%	19	25%	13	41%	25	28%	261	16%

Note: 1. Senior managers refer to G19 and above managers, mid/entry level managers refer to deputy managers and managers.
2. Direct employee refers to personnel directly responsible for production lines, including operators, technicians, shift leaders, and analysts. Indirect employees are all employees that are not direct employees.

4.1.4 Looking Forward

TSRC continues to strengthen talent cultivation. We not only pursue excellent performance but also help colleagues have a fruitful life and gain a sense of belonging to the organization. Looking towards the future, TSRC will focus on two main aspects of human resources development—the employee competency development plan for sustainable transformation and the promotion of collaboration among industry, government, and academia on sustainability topics. Our short-term goal (2023) is for 30% of employees to receive ESG-related training. With regard to industry-academia collaboration on sustainability topics, we aim that our sharing activities will reach 300 people. Our mid-term goal (3-4 years) is to increase the percentage of employees who receive ESG-related training to 60%. We will continue to implement industry-government-academia collaboration projects to create a mutually beneficial ecosystem and expect to reach 1,000 people. In the long term, we aim to have at least 80% of employees receive ESG-related training and cultivate sustainability talent through industry-government-academia collaboration to create shared values, with 5,000 people being reached.

4.2 Improve Health, Safety & Wellbeing of Employees

4.2.1 Management Approach

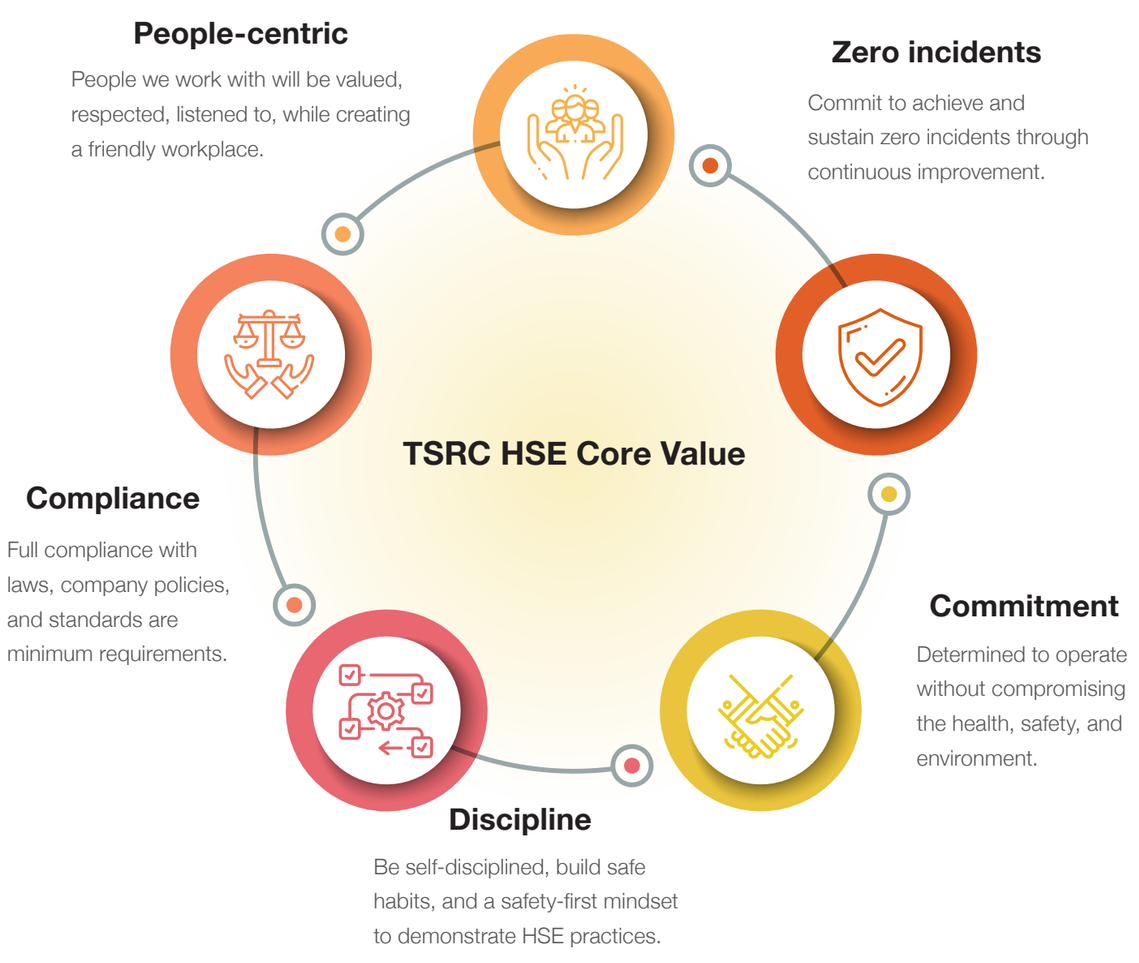
TSRC believes that the safety of the workplace, the cohesiveness among employees, and the harmony between employees and employers are the backbones of corporate sustainability. As employees are key factor to the TSRC's competitiveness, TSRC focuses on building a harmonious workplace for sustainable development. In recent years, TSRC has continued to improve its occupational safety and health through providing employees rewards and training opportunities and developing transparent employee communication channels. These three measures support TSRC in attracting and retaining talent as well as pursuing the mutual prosperity of employees and the management.

4.2.2 A Healthy and Safe Workplace

The core value and policies of the health and safe environment

TSRC has been promoting the "TSRC safety culture" since April 2021 for personnel at each level to better understand and attach greater importance to workplace health and safety. By establishing behavioral safety observations (BSO) scheme, hand protection devices, and the head-to-toe 100% PPE utilization, TSRC strengthens the core value of health and safe environment (HSE). The five core elements of the TSRC HSE core value are people-centric, zero incidents, commitment, discipline, and compliance.

Core Elements of the TSRC HSE Core Value



We further formulated the "TSRC safety and health policies and principles" in accordance with the TSRC safety culture. We pursue zero accidents and zero injuries with a people-centric approach through technology, safety culture, responsibility, and communication.

In pursuing employee workplace safety and health and maintaining zero accidents and injuries among stakeholders, Taiwan and mainland China factories have implemented ISO 45001 Standard. Taiwan factories also adopt CNS45001 Occupational Safety and Health Management Systems and obtain certifications. We establish a Responsible Care Committee at our headquarters in Taiwan. Subsidiaries in different regions set up a dedicated committee or department responsible for labor safety and health matters in accordance with the Occupational Safety laws and regulations. The person in charge of the business operation or his/her designated representative holds labor safety and health meetings on a regular basis.

The Responsible Care Committee is formed by the Product Specification and Distribution Safety Sub-committee, Process Safety and Energy-saving Management Sub-committee, Regulation and Contractor Safety Management Sub-committee, and Emergency Response Sub-committee. It is responsible for the management and review of the ISO 45001 Occupational Safety and Health Management System. The Responsible Care Committee convenes quarterly meetings and is chaired by the vice president of the Production Operations Division. The Committee members include labor representatives, who participate in discussions on the planning and implementation of occupational safety and health policies. Duties of the committee are as follows:

1. Implement and integrate the Company's environmental protection, safety and health policies, and management system, and carry out safety, health, environmental protection, and greening work.
2. Incorporate and meet the six management requirements of TRCA[4], in order to comply with industry regulations and meet the expectations from communities/society.
3. Implement the core values of our people-centric safety culture through operations of the permanent sub-committees and aim to be an enterprise benchmarking model for sustainable development.

4. Taiwan Responsible Care Association (TRCA) promotes the responsible care system and established 6 standard management guidelines, including process safety management, emergency response safety management, distribution safety management, contractor safety management, waste management and reduction management, and product safety management guidelines.

Elements of TSRC's Safety and Health Policies and Principles

The structure of TSRC Responsible Care Committee

The Coverages of Occupational Safety and Health Management System Audits

			TSRC Corporation Gangshan Factory、Kaohsiung Factory		Shen Hua Chemical		Nantong Industrial		TSRC-UBE		Shanghai Industrial		TSRC (Vietnam) Company Limited		TSRC Specialty Materials LLC	
			Number of people	As a percentage of all employees based in the site	Number of people	As a percentage of all employees based in the site	Number of people	As a percentage of all employees based in the site	Number of people	As a percentage of all employees based in the site	Number of people	As a percentage of all employees based in the site	Number of people	As a percentage of all employees based in the site	Number of people	As a percentage of all employees based in the site
2019	Number of people being internally audited	TSRC Employee	584	93%	281	100%	312	100%	109	100%	-	-	-	-	-	-
		Non-employee*	22	15%	70	100%	113	100%	41	100%	-	-	-	-	-	-
	Number of people being externally audited	TSRC Employee	589	94%	281	100%	312	100%	109	100%	-	-	16	73%	-	-
		Non-employee*	22	15%	70	100%	0	0%	0	0%	-	-	0	0%	-	-
2020	Number of people being internally audited	TSRC Employee	579	92%	291	100%	309	100%	109	100%	76	100%	23	88%	-	-
		Non-employee*	7	7%	70	100%	105	100%	41	100%	12	100%	0	0%	-	-
	Number of people being externally audited	TSRC Employee	573	94%	291	100%	309	100%	109	100%	76	100%	23	88%	-	-
		Non-employee*	10	9%	70	100%	0	0%	0	0%	12	100%	0	0%	-	-
2021	Number of people being internally audited	TSRC Employee	565	93%	299	100%	310	100%	109	100%	73	95%	29	91%	-	-
		Non-employee*	5	5%	70	100%	105	100%	41	100%	4	100%	0	0%	-	-
	Number of people being externally audited	TSRC Employee	579	94%	299	100%	310	100%	109	100%	59	77%	29	91%	-	-
		Non-employee*	10	9%	70	100%	0	0%	41	0%	4	100%	0	0%	-	-

Note: 1. Non-employee means that the person is not an employee of the TSRC Group. The person is neither a full-time non-fixed-term contract employee nor a full-time fixed-term contract employees, but the person's work and/or workplace is managed by TSRC, such as personnel stationed by vendors or interns from industry-academia collaboration projects.
2. TSRC employee refers to full time non-fixed-term employees and fixed-term contract employees whose employer is TSRC on their employment contract.
3. TSRC's Shanghai Industrial system was established in 2020, so there is no data on the system in 2019.
4. TSRC (Vietnam) did conduct external audit in 2019 during the time of site construction but did not conduct internal audit.
5. TSRC Specialty Materials LLC has yet to establish ISO 45001 Occupational Health and Safety Management Systems.

Occupational Injury Prevention and Improvement

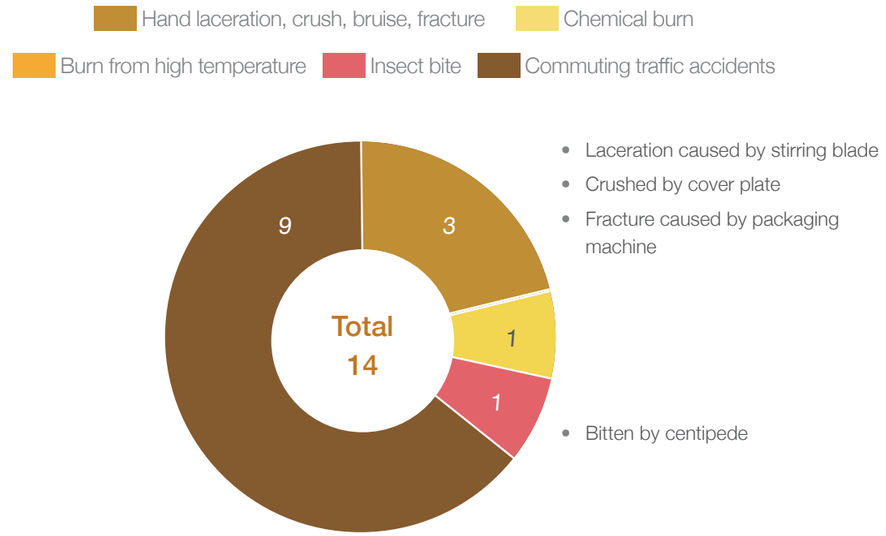
Through ISO 45001 Occupational Health and Safety Management Systems and self-safety management, TSRC schedules health examinations for personnel working with occupational hazards at each site. All sites have identified occupational hazard factors and carried out preparations to reduce the probability of hazards via management, process changes, improvement methods, work hours adjustment, separation, and personal protection. TSRC particularly manages five occupational hazard factors: noise, carbon disulfide, benzene, dust, and butadiene. Employees that engage in the five special operations above are divided into four levels and are periodically examined by a doctor to determine if they have any abnormal health conditions. As all sites have noise as an occupational hazard factor, TSRC requires related personnel to properly use PPE to effectively manage the health of personnel in operating areas with noise. In addition, TSRC does not utilize hepatotoxins, nephrotoxins, neurotoxins, and sensitizers. Regarding corrosives and suspected carcinogens, we conduct biannual monitoring of the workplace to identify the risk. We further improve the workplace and facilitate employees' behavior change when operating, aiming to reduce the exposure to chemicals. TSRC also conveys special health examinations to scrutinize the potential negative impacts of chemicals on employees. We invite occupational health medical doctors to factories once a month, providing consultation services to employees. We also analyze employees' health examination data to monitor potential negative impacts on colleagues for reducing occupation diseases.

To provide better care for employees' health, TSRC continuously organizes health promotion activities, such as health examinations, health education promotions, and sports activities. We invite occupational medicine specialists to provide on-site services, improving employee health management performance.

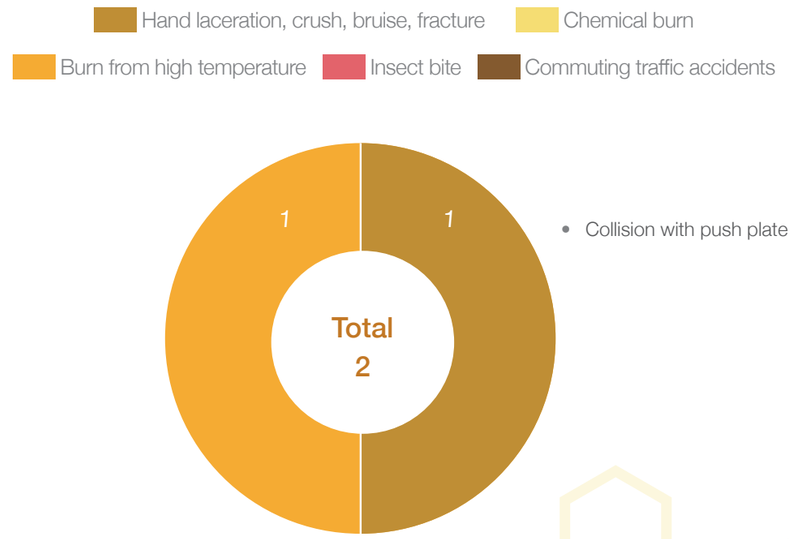
Occupational Hazard Factors of TSRC Sites

Group locations	Occupational hazard factors
TSRC Corporation (includes Global Business Headquarters, Gangshan factory, Kaohsiung factory)	Noise, dust, chemicals
Shen Hua Chemical	Noise, chemicals
Nantong Industrial	Noise, dust, chemicals
TSRC-UBE	Noise, chemicals
Shanghai Industrial	Noise, dust
TSRC (Vietnam) Company Limited	Noise, dust
TSRC Specialty Materials LLC	Noise, dust, chemicals

Types of Injuries Suffered by TSRC Employees in 2021



Types of Injuries Suffered by TSRC Non-Employees in 2021



Occupational Injuries Suffered by Employees of TSRC Group

		TSRC Corporation Gangshan factory、Kaohsiung factory	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC
2019	Total recordable incidence rate (TRIR)	0.33	0.93	0	0.84	0	0	0
	Occupational disease rate (ODR)	0	0	0	0	0	0	0
	Lost day rate (LDR)	2.17	3.73	0	25.18	0	0	0
	Absent rate (AR)	0.43%	0.9%	0.80%	1.10%	0.50%	0	1.80%
	Number of work-related fatalities	0	0	0	0	0	0	0
2020	Total recordable incidence rate (TRIR)	0.83	0.61	0.62	0.87	0	0	0
	Occupational disease rate (ODR)	0	0	0	0	0	0	0
	Lost day rate (LDR)	5.83	19.18	0	0	0	0	0
	Absent rate (AR)	0.48%	1.00%	0.70%	0.80%	1.20%	0	0.90%
	Number of work-related fatalities	0	0	0	0	0	0	0
2021	Total recordable incidence rate (TRIR)	0.51	0.29	0.28	0	0	0	0
	Occupational disease rate (ODR)	0	0	0	0	0	0	0
	Lost day rate (LDR)	9.88	0	15.3	0	0	0	0
	Absent rate (AR)	0.48%	1.03%	1.10%	0.68%	0.88%	0	1.70%
	Number of work-related fatalities	0	0	0	0	0	0	0

Note: 1. The TSRC Group established a unified calculation method for TRIR and LDR in August 2020. In the past, the scope of calculation varied with factories due to different definitions of occupational injury incidents according to local regulations. The figures for 2019 and 2020 disclosed in this report are different from previous reports because they were recalculated after the calculation method was unified.
2. The data presented in this table does not include information of the global business headquarters.
3. Total recordable incidence rate (TRIR) calculation method: TRIR/Total work hours X 200,000
4. Occupational disease rate (ODR) calculation method: Number of occupational disease cases/total work hours) X 200,000
5. Lost day rate (LDR) calculation method: Number of lost work days/total work hours) X 200,000
6. Absent rate (AR) calculation method: Total hours absent/Total work hours X 100%
7. TSRC Specialty Materials LLC ware originally named Dexco Polymers, and was renamed TSRC Specialty Materials LLC in 2021.

Employee Health Promotion Activities at Each Site of TSRC Group

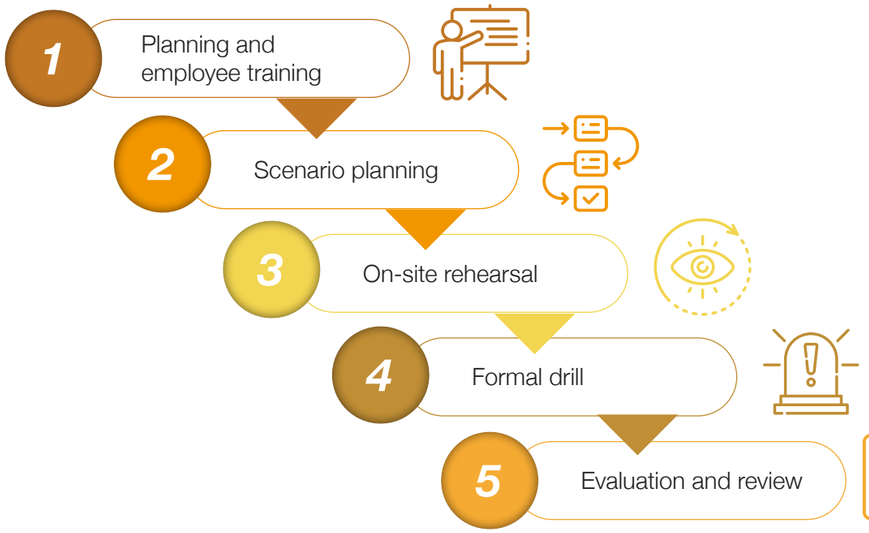
Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory

		TSRC Corporation		Shen Hua Chemical		Nantong Industrial		TSRC-UBE		Shanghai Industrial		TSRC (Vietnam) Company Limited		TSRC Specialty Materials LLC	
		Number of participants	Number of sessions	Number of participants	Number of sessions	Number of participants	Number of sessions	Number of participants	Number of sessions	Number of participants	Number of sessions	Number of participants	Number of sessions	Number of participants	Number of sessions
2019	Health examination	539	4	201	1	262	2	102	2	88	1	18	18	91	1
	Health education promotion	194	7	281	14	262	12	102	12	81	1	0	0	0	0
	Sports activities	41	1	0	0	0	0	0	0	0	0	0	0	0	0
	On-site service by occupational medicine specialist	106	12	36	4	0	0	0	0	0	0	0	0	0	0
2020	Health examination	472	2	206	1	298	2	107	2	0	0	23	6	90	1
	Health education promotion	87	3	286	22	298	12	107	12	80	1	26	14	0	0
	Sports activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	On-site service by occupational medicine specialist	112	12	38	4	0	0	0	0	0	0	0	0	0	0
2021	Health examination	536	4	205	1	287	2	107	2	78	1	6	6	90	1
	Health education promotion	191	5	295	16	287	12	107	12	77	1	32	25	0	0
	Sports activities	38	2	0	0	0	0	0	0	0	0	0	0	0	0
	On-site service by occupational medicine specialist	127	12	32	4	0	0	0	0	0	0	0	0	0	0

Emergency Response Drills

TSRC has established emergency response procedures for potential raw material leaks, industrial pipeline leaks, fire accidents, and process safety incidents that may result from operating activities. We conduct annual drills and labor safety education and training. Furthermore, we explicitly specify the rights and obligations in the guidelines for employees and contractors about safety standards, training, health guidance, first aid and emergency rescue, and reporting accidents.

The Emergency Response Process of TSRC



Number of Drills in 2021

	Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory	TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC	Total
2021	Raw materials leaking response	9	6	13	8	1	0	1	38
	Industrial pipelines leaking response	2	2	12	2	0	0	0	18
	Fire accidents response	4	5	50	4	1	2	0	66
	Production process safety response	2	3	8	4	0	0	0	17
	Others	1	8	111	22	1	0	2	145
	Total number of drills	18	24	194	40	3	2	3	284

COVID-19 pandemic prevention measures at TSRC group

Facing the COVID-19 outbreak in 2021, TSRC adopted three main measures to care for employees and their family members, including managing the work environment, providing subsidies and supplies, and encouraging vaccination. The following table demonstrates details of the measures.

Pandemic Prevention Measures of the TSRC Group

Sites	Environmental prevention measures at workplace	Subsidies or supplies provision	Vaccination promotion	Number of people that benefited from pandemic prevention measures
TSRC Corporation (includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory)	• The contact person reports employees' health conditions via the network service every day (including employees and family members living in the same household are quarantined) • Employees with a body temperature over 37° C are prohibited from entering workplace (only employees who are diagnosed by a doctor as not having COVID-19 may enter the factory after their fever relieved) • Prepare lists related to the workplace for inspection • Strengthen the cleaning and disinfection of the workplace • Establish a mechanism for employees to take rapid test kits • All non-employees, visitors, or contractors are required to use the SMS contact tracing system and verify that they have received 2 doses of vaccine or have a negative rapid test result within a week before entering factories.	• A total amount of NTD 1.92 million subsidies is provided to expatriates who remained in their position during the pandemic for rewarding their contribution to maintain the Company's continuous production • A spending of approximately NTD 660,000 on thermal imaging cameras, automatic disinfectants, forehead thermometers, ear thermometers, medical masks, 75% alcohol spray, hand sanitizer, rapid test kits, PVC/latex gloves, protective hat screens, protective clothing, and protective face masks	• Provided 8 hours of paid leave, which is better than required by law, to encourage employees to be vaccinated	• 694 employees and 200 contractors
Shen Hua Chemical	• The contact person reports employees' health conditions every day via the cloud service • Employees with a body temperature over 37° C are prohibited from entering the work environment • Provide and disseminate information about the pandemic • Strengthen the cleaning and disinfection of the work environment • Provide pandemic prevention childcare leave • Assist employees in applying for government subsidies	• Employees who could not go home during Chinese New Year were given paid family visit leave or transportation subsidies • Provide hand sanitizer and disinfectant, with investment of approximately RMB 80,000 in infrared forehead thermometers and every-day masks for employees	• Promote vaccination-related information	• 9 employees took paid family visit leave • 1 employee received transportation subsidies • 300 employees and contractors received care packs • 20 employees received government subsidies
Nantong Industrial		• Employees who could not go home during Chinese New Year were given paid family visit leave or transportation subsidies • Provide hand sanitizer and disinfectant, with investment of approximately RMB 83,000 in infrared forehead thermometers and every-day masks for employees		• 16 employees took paid family visit leave • 1 employee received transportation subsidies in the amount of RMB 800 • 310 employees and 110 contractors received care packs • 25 employees received government subsidies
TSRC-UBE		• Employees who could not go home during Chinese New Year were given paid family visit leave or transportation subsidies • Provide hand sanitizer and disinfectant, with investment of approximately RMB 32,000 in infrared forehead thermometers and every-day masks for employees		• 4 employees took paid family visit leave (3 days of leave per person) • 1 employee received transportation subsidies (RMB 800 for 1 person) • 110 employees and 40 contractors received care packs

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Pandemic Prevention Measures of the TSRC Group

(continued from previous page)

Sites	Environmental prevention measures at workplace	Subsidies or supplies provision	Vaccination promotion	Number of people that benefited from pandemic prevention measures
Shanghai Industrial	• Divide employees into groups to adopt work-from-home • Employees are divided into groups for lunch break to prevent the possibility of cross infection • Strengthen the cleaning and disinfection of the work environment	• Spent approximately RMB 9,000 on medical masks, disinfectant, 75% alcohol spray, hand sanitizer, and infrared thermometers	• Promote vaccination-related information	• 84 employees and contractors received care packs • 12 employees took paid family visit leave • 14 employee received transportation subsidies • Front line workers at Xiaokunshan Community Hospital received Chinese New Year gifts worth RMB 3,000
TSRC (Vietnam) Company Limited	• Provide every employee with one free-of-charge mask a day • Divide employees into groups to adopt work-from-home; administrative personnel worked from home when the pandemic first began • Manufacturing and technical units were stationed in factories in advance so that factories were able to continue production • Provide free rapid test kits for all employees to be tested each week to ensure that the factory is safe • Have medical personnel be trained at a medical institution to obtain government certification to conduct rapid tests	• Provide subsidies of VND 3 million per employee • Provide healthcare supplies: Alcohol spray, masks, face shields, protective clothing, gloves, rapid test kits, PCR expenses, pandemic prevention vehicles, oximeters, NRICM 101 medicine, and blood pressure meters • Daily life related (supplies required for being stationed in factories): Mattresses, pillows, blankets, toiletries, and food • A total cost is VND 867,149,713	• Promote vaccination-related information	• All 32 employees in the factory
TSRC Specialty Materials LLC	• 2021 was the second year of the COVID-19 outbreak in the United States, and the outbreak was gradually controlled after vaccination began. Employees not working in the production lines (such as engineers, procurement, and logistics personnel) were gradually allowed to enter the factory and improved operational efficiency • The Houston office adopts work-from-home measures. Necessary equipment is provided to employees (e.g., monitors and headsets) • Promote pandemic prevention measures in the factory, including maintaining social distancing and wearing masks. • Regularly disinfect public areas	• Provide paid leave per laws to employees diagnosed with COVID-19 or requested to be quarantined. Employees can apply for the Company's group insurance benefits to maintain their income once the leave days exceed the statutory number of paid leave days. • Provide alcohol spray for disinfection and medical masks	• Promoted vaccination-related information and collect records of employees' vaccination	• 50 employees who continued to work in the factory during the pandemic had a total of 1,044 hours of honorary leave

4.2.3 Remuneration and Benefits

Employee remuneration

TSRC provides reasonable salaries to attract and retain chemistry and chemical engineering talent. In addition to proper compensations, we attempt to boost morale at appropriate timing with the consideration of different employees' needs. TSRC abides by labor laws and regulations at each site and does not discriminate against employees with different salaries and benefits whatever their race, skin color, age, religion, nationality, marital status, gender, sexual orientation, gender identity, military service, or political position, which are unrelated to their ability. Due to the nature of work and characteristics of the chemistry and chemical engineering industry, a significant salary difference between genders occurs.

The employee remuneration and benefits of the TSRC Group reached NT$2.2 billion in 2021, increasing 22% compared with 2020. The average remuneration and benefits expenses significantly increased to NT$1.39 million, increasing 21% compared with 2020. TSRC continues to provide competitive remuneration and benefits connecting with profits to attract and retain outstanding talent to contribute to the prosperities of the chemistry industry.

Ratio of Basic Salary and Remuneration of Women to Men at TSRC Group

Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory		TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC
2021	The management	77%	105%	66%	70%	103%	No male	88%
	Indirect employees	96%	75%	72%	68%	84%	100%	76%
	Direct employees	No female	85%	No female	67%	No female	No female	73%

Note: 1. Direct employees refer to personnel directly responsible for production lines, including operators, technicians, shift leaders, and analysts.
2. The management refers to high-, medium-, and basic managers. 3. Indirect employees refer to non-managerial employees and non-direct employees.

Number of Non-Managerial Staff and Remuneration and Benefits Expenses of TSRC in 2019-2021

Unit: NTD

	Number of employees	Number of non-managerial staff	Average salary of non-managerial staff	Median salary of non-managerial staff	Salary and benefits expenses of the group's employees	Average salary and benefits expenses of the group's employees
2019	1,608	1,577	917,622	675,490	1,944,457,000	1,209,239
2020	1,587	1,557	950,624	708,234	1,828,747,000	1,152,330
2021	1,604	1,571	1,064,601	815,555	2,230,365,000	1,390,502

Note: 1. Fluctuations in employee compensation and benefits expenses were due to government subsidies for salaries and insurance premium reductions and waivers due to the impact of COVID-19 in 2020, as well as the different percentage of profits allocated as bonuses and directors' remuneration in 2017-2019 due to the business performance each year.
2. The average salary of non-managerial staff and the median salary of non-managerial staff are calculated according to the "Salary Information Reporting for Full-time Employees Who Are Not in Supervisory Positions" Guideline published by Taiwan Stock Exchange.
3. The salary and benefits expenses of the group's employees and the average salary and benefits expenses of the group's employees are based on the financial report, including food expenses, employee benefits, training expenses, employee remuneration and the director's remuneration in Taiwan.
4. 4 The exchange rate used in the table is from data at the end of each year, using the Company's cumulative average exchange rate.

Employee Benefits

To encourage colleagues to enjoy work, TSRC provides employees with benefits and insurance which are better than local laws while considering the business performance and market competitiveness. The Company offers group insurance including family members, meal allowance, year-end parties, health examination subsidies, travel subsidies, wedding gift money, childbirth gift money, and consolation money for injury and illness. We provide awards for senior employees and model employees in recognition of their years of outstanding contribution and efforts for the Company. All factories of TSRC have a recreation room with table tennis, pool table, fitness equipment, and other sports and exercise equipment, allowing employees to relax and expand their interpersonal relationships after work.

Employee Benefits Expenses at Each Site of TSRC Group

Unit: NTD

Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory	TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC
2019	25,697,000	22,710,854	23,241,122	7,899,625	6,843,622	378,033	403,514
2020	18,358,000	28,135,898	23,372,555	8,955,627	6,848,154	895,814	288,224
2021	24,567,000	24,043,321	26,921,268	10,573,623	7,682,079	1,270,710	345,869

Note: 1. Benefits include holiday bonuses, cash gifts on birthday, other subsidies, and lucky draw during year-end party.
2. The amount by each factory is converted from the local currency into NTD using the following exchange rates: CNY: TWD = 1:4.5322; VND: TWD = 1:0.001259; USD: TWD = 1:28.8224.






Retirement Plans

TSRC provides employees with insurance and pension in accordance with relevant laws and regulations. Per the regulations specified in the Labor Standards Act, the Labor Pension Act and its Enforcement Rules, and the Pension Fund Accounting Guidelines, a monthly pension is set up by TSRC to a personal account of the Taiwan Bank and the staff of the Labor Insurance Bureau. The Labor Pension Reserve Supervisory Board holds regular meetings to review the pension fund utilization status to protect employees' retirement benefits. For subsidiaries in mainland China, per relevant provisions of China's Social Security Act, both the Company and employees contribute at a set percentage to basic retirement insurance, basic medical insurance, work injury insurance, unemployment insurance, maternity insurance, and the housing provident fund. When retiring, the employee shall receive the pension uniformly distributed by the National Labor and Social Security Departments in accordance with the laws and regulations. The subsidiary in the USA provides insurance in accordance with the local Social Security Act and 401(k) Retirement Savings Plan.

4.2.4 Employee Rights and Communication

Human Rights Protection

TSRC exerts every effort to protect employees' human rights and respects their fundamental freedoms. We reference internationally recognized standards for human rights, such as the United Nations Universal Declaration of Human Rights, and prohibit all forms of discrimination, forced labor, and child labor. We also do not obstruct employees' freedom of association. In order to create a safe and healthy workplace and provide channels for employees to freely express their opinions, we establish the "Sexual Harassment Prevention Measures, Grievance Appeal and Punishment Regulations," which meet the SA8000 Code of Conduct and ensure that the investigation process of employee grievances is kept confidential to protect the privacy of the parties involved. We also establish the "Employee Grievance Management Regulations," set up employee opinion boxes, and provide training courses to promote and protect employee rights and interests. We received 1 sexual harassment complaint from a subsidiary in 2021. The case was handled based on the grievance process and Employee Handbook, which is conducted an investigation, interviewed employees while maintaining confidentiality, reported investigation results, and then imposed a penalty by the Human Resources Division.

Training Course about the Promotion and Protection of Employees' Rights and Interests

Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory	TSRC Corporation		Shen Hua Chemical		Nantong Industrial		TSRC-UBE		Shanghai Industrial		TSRC (Vietnam) Company Limited		TSRC Specialty Materials LLC	
	Total number of participants	Total training hours	Total number of participants	Total training hours	Total number of participants	Total training hours	Total number of participants	Total training hours	Total number of participants	Total training hours	Total number of participants	Total training hours	Total number of participants	Total training hours
Sexual harassment and prevention of workplace violence	313	466	0	0	311	233	109	81	0	0	0	0	91	106
Internal audit training (e.g., ISO45001 Standards)	8	1	51	14	2	24	0	0	0	0	0	0	0	0
Occupational safety training series	1,735	6,995	54	2	4,944	9,270	1,728	3,240	77	3	32	46	0	0
Mental and physical health and work-life balance	120	240	0	0	3,444	3,444	1,284	1,284	0	0	0	0	0	0
Total	2,176	7,702	105	16	8,701	12,971	3,121	4,605	77	3	32	46	91	106

Note: 1. The number of participants is the number of people that participated in physical and online trainings. 2. The unit of total training hours is hours.

Communication with Labors

Parts of TSRC factories have a labor union and regularly hold labor/management meetings. Labor rights and interests are communicated and coordinated through formal meetings on specific topics about labor practices are discussed to reach a consensus. The labor union in Taiwan entered into a collective agreement in 2005, with the scope extending to shift employees in the Kaohsiung factory. The collective agreement covers 37.4% of total employees. In addition, the annual Labor Union Representatives Conference invites the directors and members of the labor unions every year. Subsidiaries in mainland China organize different communication meetings for employees to express their opinions or suggestions about the work and living to the Human Resources Department. Relevant departments and supervisors shall answer their questions and propose improvement solutions.

4.2.5 Looking Forward

Employees' health and welfare are a crucial path to the cultivation of sustainable talent. TSRC will focus on the following three aspects to continue enhancing our caring for employees including (1) improving the safety of the work environment of all sites around the world, (2) providing employees with mental and physical care, and (3) enhancing employee engagement. Our short-term goal (1-2 years) is to decrease TRIR to 0.36 and below to create a safer and healthier workplace. We will conduct physical and mental health activities or lectures with 500 participants to improve employees' health and welfare. We target to enhance employee engagement of at least 70% satisfaction rate in the near future.

Our mid-term goal (3-4 years) is to decrease TRIR to 0.3 and below. We will provide mental and physical consultation services in the workplace to support employees' welfare, and the cover at least 50% of all sites. We aim to increase employee engagement to have a 72% satisfaction rate.

Our long-term goal (5-10 years) is to decrease TRIR to 0.3 and below and a achieve one or more years of zero recordable injuries. Mental and physical consultation services will be available at all sites and employee engagement will be up to 75% satisfaction rate.

TSRC's Labor Union Data at Each Site

Includes Global Business Headquarters, Gangshan factory, and Kaohsiung factory	TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC
Year established	1988	2007	2011	2011	2017	2020	None
Labor union members (number of people)	500	292	310	109	76	24	None
Ratio of labor union members	72%	100%	100%	100%	99%	100%	None
Is there a collective bargaining agreement	Yes	No	No	No	Yes	Yes	None
Does the collective bargaining agreement include a shortest notice period for material changes to work	90 days	N/A	N/A	N/A	60 days	3 days	None

Note: 1. TSRC Corporation (includes Global Business Headquarters, Gangshan factory, and Kaohsiung factory) follows the organization regulations of the union in Taiwan. Only employees with a grade of 14 (inclusive) or below are eligible to be labor union members, and employees with a grade of over 14 are not eligible to join the union.
2. New employees of Shanghai Industrial will be eligible to join the union only after passing the probationary period.

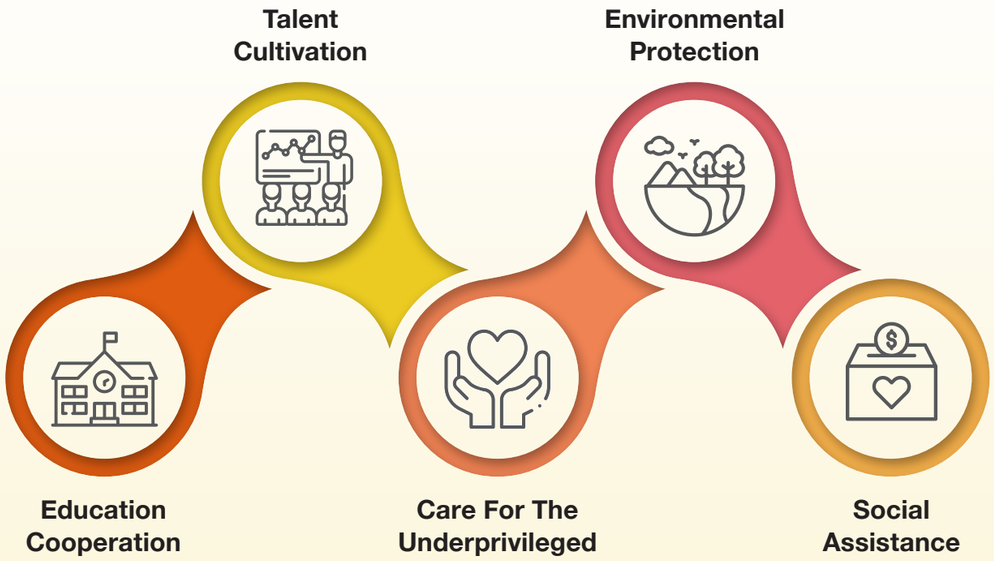
4.3 Enhance Social Engagement

4.3.1 Management Approach

TSRC upholds the spirit of "investing resources and making contributions for the society to create mutual prosperity" and dedicates long-term efforts to engage with communities. Ensuring industrial safety and environmental protection is TSRC's primary mission in the product manufacturing process. Facilitating factories and communities to mutually prosper and jointly create value is the foundation for TSRC's sustainability. To achieve the vision, we keep close relationship with communities and actively respond to the needs of communities. Since chemistry and chemical engineering applications cover the many aspects of daily life, we have dedicated effort to promoting chemistry education and attach importance to cultivating chemistry talent. We work with employees and related organizations to jointly invest resources for sustainable development and leverage our positive impact.

TSRC has 5 main principles for community engagement—education cooperation, talent cultivation, care for the underprivileged, environmental protection, and social assistance. We strengthen communication with stakeholders based on these five principles. Over the years, we continued to develop chemistry education through our community volunteering program, fulfilling our corporate social responsibility while gradually achieving the vision of mutual prosperity for industry and communities.

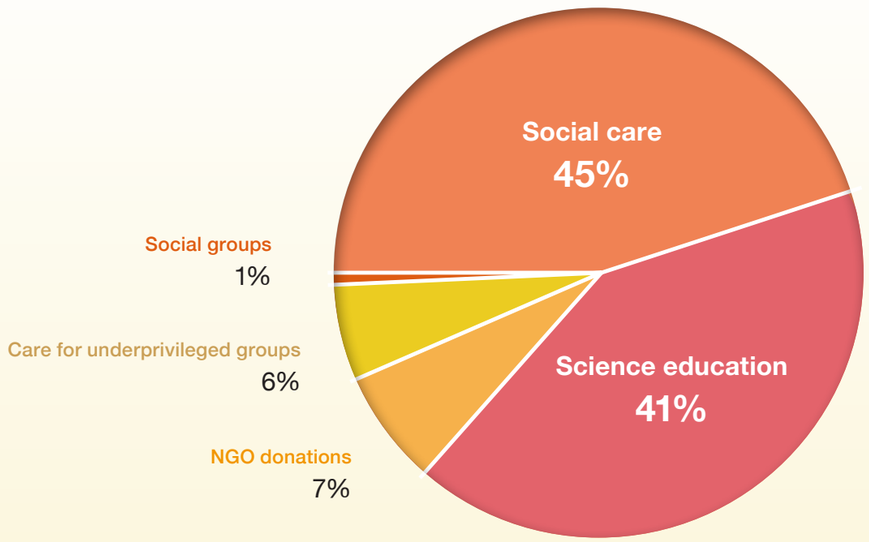
Five Principles for Community Engagement



4.3.2 Implementation Framework and Resources

TSRC established a Social Care Committee in 2011 to guide employees of each department to participate in charity events, fulfilling its corporate social responsibility while giving back to communities. We adjusted the units responsible for community involvement in 2021 from the Social Care Committee to the social task force, which is subordinate to the ESG Taskforce, in order to more systematically roll out community engagement activities and expand the implementation. The task force oversees activities related to social care, science education, NGO donations, care for underprivileged groups, and social groups. The social task force is divided into four sub-groups according to topics, including social care, science education, employee benefits, and environment maintenance. TSRC invested a total of approximately NT$1 million in community engagement in 2021, in which activities related to social care mainly focus on charity projects held where factories are located, while activities about science education focus on chemistry education projects for rural areas. Resources invested in these two categories account for 86% of the total resources invested. Resources invested in NGO donations accounted for 7%, activities about underprivileged groups accounted for 6%, and activities related to social groups accounted for 1%.

Statistics of Resources Invested by TSRC in Community Involvement in 2021 by Category



4.3.3 Social Care

TSRC attaches importance to the risks and opportunities brought by operations to local communities. With companies located in the same industrial park and the Industrial Park Manufacturers Association and Service Center, we hold regular meetings to communicate with local residents and understand the potential impacts or opportunities our operations bringing to residents' daily life. We also conducted interview with the chiefs of villages when preparing the Sustainability Report to understand material topics that communities are concerned about. The interview in 2021 shows that residents pay attention to TSRC's talent recruitment and development and attach importance to how TSRC can bring greater development and prosperity to communities. To respond to local expectations, TSRC dedicates its efforts to mutual prosperity with society and actively creates value together with communities. We facilitate community development with our activities and provide substantial assistance to underprivileged social groups, such as farmers, students, and low-income households.

In Taiwan

1. Meal allowance and after-school tutoring

TSRC cherishes the potential and development of every child. We support underprivileged children to intake sufficient nutrition through donations. Starting in February 2012, TSRC allocates NT$440,000 every year to sponsor the lunch fees of underprivileged students in three elementary schools (Dashe Elementary School, Guanyin Elementary School, Jiacheng Elementary School) located around our Kaohsiung factory. TSRC has expanded its sponsorship to emergency aid and after-school tutoring since 2011, aiming to better meet the actual needs of local students. An average of over 100 students each year is benefitted. As of the end of 2021, the cumulative sponsorship amount is NT$4.4 million, and over 700 students are benefited.

Annual budget for donations

Recipient elementary school	Amount of donation
Dashe Elementary School	200,000
Guanyin Elementary School	200,000
Jiacheng Elementary School	40,000
Total amount	440,000

2. Organizing activities with communities

TSRC's Kaohsiung factory and nearby factories in the same industrial park form the Industrial Park Manufacturers Association. TSRC served as the director in 2021 and called on other factories to participate in neighbor activities, giving back to residents of nearby communities. For example, migrant workers in Ren Da Industrial Park (Dashe and Renwu District) were tested for COVID-19 a total of 580 times in 2021; we commissioned National Cheng Kung University to organize a presentation on the "Ren Da Industrial Park Pollution Reduction and Risk Improvement Project," building mutual trust with residents through events. These activities provide an opportunity for residents to directly communicate with TSRC, helping TSRC understand their recommendations and opinions about the relationship between community development and our operations.

3. Assisting local farmers

TSRC's Kaohsiung factory is located in Dashe District. Except for areas designated as an industrial zone, agriculture is the main economic activity in the district. We actively work with communities to jointly create value and support farmers' local production and local sales. The Employee Welfare Committee purchases agricultural products from local communities each year. In 2021, we bought camellia oil from farmers and sent it to every employee. The cafeteria of factories uses vegetables and fruit from local farmers, taking action to give back to local agriculture.

4. Supplies and scholarships donated

TSRC is aware of the adverse effects of the urban-rural development gap and the difference between the rich and poor. As more and more community residents cannot receive decent education due to poor economic conditions, it will deteriorate the community's human capital and prevent it from creating value, and it may even affect the community's safety and stability. We, therefore, attach great importance to supporting low-income households and actively provide supplies and scholarships to underprivileged social groups to drive community development.

5. Supplies donated and consolation money for health workers

Noticing the hardships endured by medical workers during the pandemic, TSRC donated versatile pillows (also used as the souvenir of TSRC's 2021 shareholders' meeting) made with our advanced materials to medical workers at Cardinal Tien Hospital, in the attempt to support medical workers and family members of patients in gaining sufficient and good rest.

Factories overseas

1. Supplies and scholarships donated

TSRC subsidiaries Shen Hua Chemical, Nantong Industrial, and TSRC-UBE have made donations to the Taiwanese Enterprises Association and Nantong Old Liberated Areas Foundation for Poverty Alleviation since 1999. The donations have been used to provide scholarships, help families in straitened circumstances, and support underprivileged groups. Over the past 20 years, the subsidiaries have invested an average of approximately RMB120,000 each year. During special holidays, such as Chinese New Year, Mid-autumn Festival, and Double Ninth Festival, daily commodities are provided to impoverished students, elderly people living alone, and orphanages. Scholarships are also provided to students with excellent grades.

2 . Consolation money for medical workers

At the peak of the pandemic in January 2021, TSRC Shanghai Industrial donated supplies of RMB3,000 to front line medical workers at Xiaokunshan Community Hospital to support the community's pandemic prevention.

3. Supporting local charity initiatives

TSRC's subsidiaries in mainland China, including Shen Hua Chemical, Nantong Industrial, and TSRC-UBE, actively support the charity initiative brought by Nantong City, Jiangsu Province, and the proposal to construct a city of charity in Nantong Development Zone. These three subsidiaries made a commitment to jointly establish a "TSRC-Nantong Charity Foundation" in January 2022, making an annual donation of RMB 150,000 to the Nantong Development Zone Charity Foundation for 5 consecutive years. The Foundation will use the funds for those in straitened circumstances, health workers, students, elderly people, persons with disabilities, and people living alone. The funds can also be used to support TSRC employees who face financial difficulties or other TSRC charities. TSRC exerts its social influence by participating in local charity initiatives and has assisted underprivileged social groups for years to achieve mutual prosperity.

4.3.4 Science Education

Chemistry and chemical engineering are the foundation of consumption goods. Students who received chemistry education will have more options in their future careers. This will also help TSRC recruit outstanding talent from local communities and further facilitate the prosperity of communities to creating a win-win situation for enterprises, schools, and local communities.

TSRC began allocating an annual budget of NT$400,000 in 2012 for sponsoring the plan--"Chemistry On The Go" hosted by Tamkang University. It utilizes a retrofitted 3.5-ton truck to create a mobile chemistry venue, which tours schools to popularize chemistry education. TSRC has provided teaching supplies to support more than 10 events of the plan--"Chemistry On The Go" in Kaohsiung and adopted activities held in schools where the factory is located. TSRC employees served as volunteers when assisting in chemistry education promotion events. TSRC participated in almost 20 events over the past decade, and more than 170 TSRC volunteers contributed to nearly a thousand hours of services. The events attracted a thousand students. Due to the pandemic prevention controls in 2021, offline events were limited, but TSRC employees still participated in the only offline event and played the role of chemistry teacher at Longdu Elementary School in Meinong District, Kaohsiung City, guiding students to conduct simple chemistry experiments.

The plan--"Chemistry On The Go" uses experiments to support students to experience intriguing chemical reactions and explains the diverse applications of rubber products in daily life, helping students understand why TSRC's rubber products are indispensable and better understand TSRC's business strategies and values. TSRC employees engage in in-depth exchanges with students through volunteer services, which bring out their passion for chemistry and create greater momentum for innovation and R&D.

R&D Division Rubber Polymerization Technology Group

I-Ting Shen

After participating in the plan--" Chemistry On The Go" for two consecutive years, I found that the event not only allows students to better understand our company but also gives us an opportunity to share our work experience with them, so that they will know that they can shine in any field as long as they persevere!

I am honored to participate in the plan--"Chemistry On The Go" and see firsthand how junior high school students gain knowledge of chemistry through interesting experiments. Doing experiments with children allowed me to once again experience the fun of absorbing new knowledge!

R&D Division Process Verification Division

Hung Hsien-Chang

Besides primary chemistry education, TSRC works with the chemical engineering industry-academia collaboration program and sets up specialty courses on the petrochemical industry in Renwu High School, Kaohsiung City. The course covers carbon management in factories, air pollution reduction, soil and groundwater pollution remediation, and on-site visits. TSRC colleagues also offer off-site practical courses in colleges. We not only provide 30 scholarship slots but also connect outstanding students with our partners. Students who participate in the special course but decide to pursue higher-level education will also be offered priority if they have an interest in joining TSRC when they graduate.

4.3.5 Looking Forward

Even though TSRC postponed several community engagement activities and educational exchange programs in 2021 in coordination with the COVID-19 pandemic prevention controls, we have used this opportunity to re-examine the influence of resources invested in community engagement projects and the actual impacts on local communities to gain a better understanding of what local communities need. In the future, TSRC will continue to focus on activities related to "social care" and "science education", formulate action plans with the consideration of local conditions, and increase the benefits of participation and sponsorships. We will continue to organize new forms of volunteer activities to give back to society and encourage employees to dedicate their expertise to public services while increasing the number of participants in volunteer activities. We aim for our chemistry education exchange activities to reach 150 participants and volunteer activities to reach 300 participants within the short-term (1-2 years). We plan that the chemistry education exchange activities to reach at least 300 participants and volunteer activities to reach 600 participants in the mid-term (3-4 years), with our provision and donation of toolkits and resources. Our goal for the long-term is for the chemical education exchange activities to reach 300 participants and volunteer activities to reach 1,000 participants in order to expand our influence on society.

Supplementary Data for the Social Aspect

Fatality of occupational injury incidents

	Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory	TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC
2019	Fatality for direct employees	0	0	0	0	0	0	0
	Fatality for contract employees	0	0	0	0	0	0	0
2020	Fatality for direct employees	0	0	0	0	0	0	0
	Fatality for contract employees	0	0	0	0	0	0	0
2021	Fatality for direct employees	0	0	0	0	0	0	0
	Fatality for contract employees	0	0	0	0	0	0	0

Note:
1. Direct employees are non-fixed-term and fixed-term contract employees whose employer is TSRC on their employment contract.
2. Contract employees are employees who employer is not TSRC on their employment contract but supervised by TSRC, including contractors and personnel stationed by vendors.

Physical examination statistics of personnel with special position in each site of the TSRC Group

	Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory	TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC
2019	Number of employees requiring examination	219	201	222	77	30	22	47
	Actual number of examined employees	216	201	222	77	30	18	47
	Implementation results (%)	99%	100%	100%	100%	100%	81%	100%
2020	Number of employees requiring examination	294	207	251	83	31	26	53
	Actual number of examined employees	292	207	251	83	31	23	16
	Implementation results (%)	99%	100%	100%	100%	100%	88.50%	30%
2021	Number of employees requiring examination	330	206	231	80	30	32	49
	Actual number of examined employees	329	206	231	80	30	6	42
	Implementation results (%)	99.70%	100%	100%	100%	100%	18.75%	85.71%

Process safety incidents count, process safety total incident rate, process safety incident severity rate, and number of transport incident of the TSRC Group in 2021

Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory	TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC
Process safety incidents count (PSIC)	0	0	0	0	0	0	0
Process safety total incident rate (PSTIR)	0	0	0	0	0	0	0
Process safety incident severity rate (PSISR)	0	0	0	0	0	0	0
Number of transport incident	0	0	0	0	0	0	0

Note: 1. Process safety incidents count (PSIC) is defined as the total (annual) count of all incidents that meet the definition of a Tier 1 PSI per ANSI/API RP 754.
2. Process safety total incident rate (PSTIR) is defined as the cumulative (annual) count of incidents normalized by man hours, is calculated as the PSIC multiplied by 200,000 and divided by the total annual hours worked by employees, contractors, and subcontractors.
3. Process safety incident severity rate (PSISR) is defined as the cumulative (annual) severity-weighted rate of process safety incidents, is calculated as the Total Severity Score for all Process Safety Incidents multiplied by 200,000 and divided by the total annual hours worked by employees, contractors, and subcontractors.
4. Number of transport incident is defined as a death or injury leading to intensive medical treatment, a stay in hospital of at least one day, or an absence from work of more than three days.

Supplementary Data for the Environmental Aspect

TSRC energy usage status in 2021

Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory	TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC	Total
Consumption of purchased electricity (Million Joule)	389,181,600	194,583,600	217,846,800	76,816,800	15,012,000	8,244,000	73,486,800	975,172,680
Total electricity generated (Million Joule)	22951620	0	0	0	0	0	0	22,951,620
Total electricity consumption (Million Joule)	412,133,220	194,583,600	217,846,800	76,816,800	15,012,000	8,244,000	73,486,800	998,124,300
Renewable energy use	0	0	0	0	0	0	0	0
Percentage of renewable energy use	0%	0%	0%	0%	0%	0%	0%	0%

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

The sale of products that contain Globally Harmonized System of Classification and Labeling of Chemicals (GHS) substances

	2019	2020	2021
Total sales of products containing GHS Category 1 and Category 2 substances (in thousands of NTD) (A)	27,108,301	23,173,891	31,440,852
Total sales of all company products (B)	28,910,723	24,024,443	32,533,238
Total sales of products containing GHS Category 1 and Category 2 substances as a percentage of total sales of all company products (%) (A/B)	93.77%	96.46%	96.64%
Total sales of products containing GHS Category 1 and Category 2 substances that have been through the Company's hazard evaluation (in thousands of NTD) (C)	27,108,301	23,173,891	31,440,852
Total sales of products containing GHS Category 1 and Category 2 substances that have completed the Company's hazard evaluation as a percentage of total sales of products containing GHS Category 1 and Category 2 substances (%) (C/A)	100%	100%	100%

The production in the past three years

Unit: metric tons

Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory	TSRC Corporation	Shen Hua Chemical	Nantong Industrial	TSRC-UBE	Shanghai Industrial	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC	Total
The amount of production in 2019	169,431	151,831	57,519	54,956	12,785	0	50,308	496,854
The amount of production in 2020	173,773	170,426	55,560	63,036	12,214	0	46,521	521,529
The amount of production in 2021	194,194	170,988	73,815	65,285	9,934	0	47,921	562,138

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RT-CH-530a.1.	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	--	2.1.3 Risk Management 3.1.2 Reduce Carbon Emissions 3.2.2 Green Products 3.3.2 Waste Management 3.4.2 Water Resource Management	Risk category 7 Risks that Require Immediate Action and Response Strategies Climate-Related Risk	41 42 44-53 73 82-83 85 90-91
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RT-CH-540a.1.	Process Safety Incidents Count (PSIC), Process Safety Total Incident Rate (PSTIR), and Process Safety Incident Severity Rate (PSISR)	Number, Rate	Supplementary Data for the Social Aspect		126
RT-CH-540a.2.	Number of transport incidents	Number	Supplementary Data for the Social Aspect		126
RT-CH-000.A	Production by reportable segment	Cubic meters (m^3) and/or metric tons (t)	Supplementary Data for the Environmental Aspect		127

Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies Article 4 Subparagraph 2

Item Number	Item	Corresponding Chapter	Page
A	Total energy consumption	3.1.3 Energy Management	77
B	Total amount of water withdrawn, and volume of effluent required to be disclosed under the law or to be disclosed voluntarily	3.4.2 Water Resource Management	92
C	Total quantity of hazardous wastes generated during the production process of products required to be disclosed under the law or to be disclosed voluntarily	3.3.2 Waste Management	86
D	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	4.2.2 A Healthy and Safe Workplace	111-112
E	Operations with significant actual and potential negative impacts on local communities	4.3.3 Social Care	122
F	Negative environmental or social impacts in the company itself and its supply chain and actions taken	2.4.2 Supply Chain Management	64-67
		2.4.3 Green Procurement and Local Procurement	67
		3.1.2 Reduce Carbon Emissions	73-74
		3.1.3 Energy Management	77-80
		3.2.2 Green Products	82-84
		3.3.2 Waste Management	85
		3.4.3 Water Resource Recycling and Reuse	90-91, 93
		3.5.2 Air pollution prevention and management	95, 97
		4.2.2 A Healthy and Safe Workplace	108-109, 111-115

Third Party Verification and Assurance

SGS

ASSURANCE STATEMENT

SGS TAIWAN LTD.'S REPORT ON SUSTAINABILITY ACTIVITIES IN THE TSRC CORPORATION'S SUSTAINABILITY REPORT FOR 2021

NATURE AND SCOPE OF THE ASSURANCE/VERIFICATION
SGS Taiwan Ltd. (hereinafter referred to as SGS) was commissioned by TSRC CORPORATION (hereinafter referred to as TSRC) to conduct an independent assurance of the Sustainability Report for 2021. The scope of the assurance, based on the SGS Sustainability Report Assurance methodology, included the sampled text, and data in accompanying tables, contained in the report presented during verification in the period of 26 April 2022 to 4 June 2022. SGS reserves the right to update the assurance statement from time to time depending on the level of report content discrepancy of the published version from the agreed standards requirements.

INTENDED USERS OF THIS ASSURANCE STATEMENT
This Assurance Statement is provided with the intention of informing all TSRC's Stakeholders.

RESPONSIBILITIES
The information in the TSRC's Sustainability Report of 2021 and its presentation are the responsibility of the directors or governing body (as applicable) and the management of TSRC. SGS has not been involved in the preparation of any of the material included in the Report

Our responsibility is to express an opinion on the text, data, graphs and statements within the scope of verification with the intention to inform all TSRC's stakeholders.

ASSURANCE STANDARDS, TYPE AND LEVEL OF ASSURANCE

The SGS ESG & Sustainability Report Assurance protocols used to conduct assurance are based upon internationally recognized assurance guidance, including the Principles contained within the Global Reporting Initiative Sustainability Reporting Standards (GRI Standards) 101: Foundation 2016 for report quality, and the guidance on levels of assurance contained within the AA1000 series of standards and guidance for Assurance Providers.

The assurance of this report has been conducted according to the following Assurance Standards:

Assurance Standard Options and Level of Assurance	
A.	SGS ESG & SRA Assurance Protocols (based on GRI Principles and guidance in AA1000)
B.	AA1000ASv3 Type 2 Moderate Level (AA1000AP Evaluation plus evaluation of Specified Performance Information)

TWLPP5008 Issue 2201

SCOPE OF ASSURANCE AND REPORTING CRITERIA
The scope of the assurance included evaluation of quality, accuracy and reliability of specified performance information as detailed below and evaluation of adherence to the following reporting criteria:

Reporting Criteria Options	
1.	GRI Standards (Core)
2.	AA1000 Accountability Principles (2018)
3.	SASB

- evaluation of content veracity of the sustainability performance information based on the materiality determination at a moderate level of scrutiny for TSRC and applicable aspect boundaries outside of the organization covered by this report;
- AA1000 Assurance Standard v3 Type 2 evaluation of the report content and supporting management systems against the AA1000 Accountability Principles (2018);
- evaluation of the report against the requirements of Global Reporting Initiative Sustainability Reporting Standards (100, 200, 300 and 400 series) claimed in the GRI content index as material and in accordance with; and
- evaluate of the report against the SASB Disclosures and Metrics included in the CHEMICALS Sustainability Accounting Standard (VERSION 2018-10) and conducted alongside an evaluation of accuracy assurance at moderate level of scrutiny.

ASSURANCE METHODOLOGY
The assurance comprised a combination of pre-assurance research, interviews with relevant employees, superintendents, CSR Steering Committee members and the senior management in Taiwan; documentation and record review and validation with external bodies and/or stakeholders where relevant. In response to COVID-19 pandemic situation the assurance process was conducted via Teams remote assurance.

LIMITATIONS AND MITIGATION
Financial data drawn directly from independently audited financial accounts has not been checked back to source as part of this assurance process.

STATEMENT OF INDEPENDENCE AND COMPETENCE
The SGS Group of companies is the world leader in inspection, testing and verification, operating in more than 140 countries and providing services including management systems and service certification; quality, environmental, social and ethical auditing and training; environmental, social and sustainability report assurance. SGS affirm our independence from TSRC, being free from bias and conflicts of interest with the organisation, its subsidiaries and stakeholders.

The assurance team was assembled based on their knowledge, experience and qualifications for this assignment, and comprised auditors registered with ISO 26000, ISO 20121, ISO 50001, SA8000, QMS, EMS, SMS, GPMS, CFP, WFP, GHG Verification and GHG Validation Lead Auditors and experience on the SRA Assurance service provisions.

FINDINGS AND CONCLUSIONS

VERIFICATION/ ASSURANCE OPINION
On the basis of the methodology described and the verification work performed, we are satisfied that the specified performance information included in the scope of assurance is accurate, reliable, has been fairly stated and has been prepared, in all material respects, in accordance with the reporting criteria.

We believe that the organisation has chosen an appropriate level of assurance for this stage in their reporting.

TWLPP5008 Issue 2201

AA1000 ACCOUNTABILITY PRINCIPLES (2018) CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

Inclusivity
TSRC has demonstrated a good commitment to stakeholder inclusivity and stakeholder engagement. A variety of engagement efforts such as survey and communication to employees, customers, investors, shareholder, suppliers, communities, NGO and other stakeholders are implemented to underpin the organization's understanding of stakeholder concerns. For future reporting, TSRC may proactively consider having more direct two-ways involvement of stakeholders during future engagement.
Materiality
TSRC has established effective processes for determining issues that are material to the business. Formal review has identified stakeholders and those issues that are material to each group and the report addresses these at an appropriate level to reflect their importance and priority to these stakeholders.
Responsiveness
The report includes coverage given to stakeholder engagement and channels for stakeholder feedback.
Impact
TSRC has demonstrated a process on identify and fairly represented impacts that encompass a range of environmental, social and governance topics from wide range of sources, such as activities, policies, programs, decisions and products and services, as well as any related performance. Measurement and evaluation of its impacts related to material topic were in place at target setting with combination of qualitative and quantitative measurements.

GLOBAL REPORTING INITIATIVE REPORTING STANDARDS CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

The report, TSRC's Sustainability Report of 2021, is adequately in line with the GRI Standards in accordance with Core Option. The material topics and their boundaries within and outside of the organization are properly defined in accordance with GRI's Reporting Principles for Defining Report Content. Disclosures of identified material topics and boundaries, and stakeholder engagement, GRI 102-40 to GRI 102-47, are correctly located in content index and report. For future reporting, it is recommended to have more descriptions of TSRC's involvement with the impacts for each material topic (103-1), and how efforts were given to mitigate the impacts. When reporting on goals and targets for each material topic, the expected results are suggested to be set and reference previous year results, if applicable, with quantitative objectives.

SASB CONCLUSIONS, FINDINGS AND RECOMMENDATIONS
TSRC has referenced with SASB's Standard, CHEMICALS, VERSION 2018-10 to disclose information of material topics that are vital for enterprise value creation. The reporting boundaries of the disclosed information correspond to the financial data reported in TSRC's audited consolidated financial statements. TSRC used SASB accounting and activity metrics to assess and manage the topic-related risks and opportunities, where relevant quantitative information was assessed for its accuracy and completeness to support the comparability of the data reported. Process to identify, assess, and manage topic-related risks and opportunities were integrated into TSRC's overall management process. It is recommended to identify the risk related to chemical safety and process safety to enhance continuous improvement.

Signed:
For and on behalf of SGS Taiwan Ltd.

AA1000
Licensed Report
000-8/V3-MZXLD

David Huang
Senior Director
Taipei, Taiwan
20 June, 2022
WWW.SGS.COM

TWLPP5008 Issue 2201

SGS

TCFD Performance Assessment Statement

The process and procedures of

TSRC Corporation

No.2 Singgong Rd., Dashe Dist.,
Kaohsiung City 815, Taiwan R.O.C.

have been assessed from 13 May 2022 to 18 May 2022 and demonstrated the implementation status against the

Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures (29 June 2017)

The organization has incorporated climate-related governance organization.
The actual and potential impacts of climate-related risks and opportunities has been considered and identified.
The resilience of the organization's strategy was taking into consideration with different climate-related scenarios.
The methodology of organization's climate-related risk management process has been implemented as well as integrated into organization's overall risk management.
The scope1 and scope 2 greenhouses gas (GHG) emissions inventory of main sites has been conducted and verified annually, with climate-related metrics and targets established.

For the following activities

Governance, Strategy, Risk Management, Metrics and Targets

And cover the following operational locations:
TSRC Corporation (Global Headquarter and Kaohsiung Factory),
Shen Hua Chemical Industrial Co., Ltd.,
TSRC (Nantong) Industries Ltd.,
TSRC-UBE (Nantong) Chemical Industrial Co., Ltd.,
TSRC (Shanghai) Industries Ltd.,
TSRC Specialty Materials LLC& Plaquemine Factory,
and TSRC (Vietnam) Co. Ltd.
TSRC meets SGS TCFD performance assessment at disclosure level

Authorised by

David Huang
Senior Director
Issue Date: 30 May 2022
Valid Date: 29 May 2023

SGS Taiwan Ltd.
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New Taipei City 24803, Taiwan
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SGS

NATURE AND SCOPE OF THE ASSESSMENT

SGS Taiwan Ltd. (hereinafter referred to as SGS) was commissioned by TSRC Corporation. (hereinafter referred to as TSRC) to conduct an independent performance assessment of the Task Force on Climate-related Financial Disclosures, (hereinafter referred to as TCFD).

The information in the TSRC's TCFD disclosure framework and its presentation are the responsibility of the management of TSRC. SGS has not been involved in the preparation of any of the material included in TSRC's TCFD disclosure framework.

Our responsibility is to express an opinion on the report content within the scope of performance assessment with the intention to inform all TSRC's stakeholders.

The SGS protocols are based upon the Fundamental Principles for Effective Disclosure contained within the TCFD and SGS Management System Manual and Global System procedures.

The performance assessment comprised a combination of pre-assessment research, interviews with relevant employees and superintendents in TSRC's Headquarter; documentation and record review and validation with external bodies and/or stakeholders where relevant.

SCOPE OF PERFORMANCE ASSESSMENT AND DISCLOSURE CRITERIA

The scope of the performance assessment included evaluation of quality, reliability of TCFD disclosure and performance information and evaluation of adherence to the four core elements as well as seven principles for effective disclosures for the information to be disclosed.

PERFORMANCE ASSESSMENT METHODOLOGY

The assurance comprised a combination of pre-assurance research, interviews with relevant employees via Teams; documentation and record review and validation with external bodies and/or stakeholders where relevant.

STATEMENT OF INDEPENDENCE AND COMPETENCE

The SGS Group of companies is the world leader in inspection, testing and verification, operating in more than 140 countries and providing services including management systems and service certification; quality, environmental, social and ethical auditing and training; environmental, social and sustainability report assurance. SGS affirm our independence from TSRC, being free from bias and conflicts of interest with the organisation, its subsidiaries and stakeholders.

The assessment team was assembled based on their knowledge, experience and qualifications for this assignment, and comprised auditors registered with SRA, EMS, CFP, GHG Verification and GHG Validation Lead Auditors and experience on the TCFD performance assessment service provisions.

ASSESSMENT OPINION

On the basis of the methodology described and the verification work performed, we are satisfied that the information demonstrated by TSRC within the TCFD performance assessment evaluated is reasonable, reliable and provides a sufficient and balanced representation of TSRC climate related risks and opportunities management activities and meets SGS TCFD performance assessment at disclosure level.

KPMG
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Independent Limited Assurance Report

To TSRC Corporation:

We were engaged by TSRC Corporation ("TSRC") to provide limited assurance over the selected information attached as Appendix I ("the Underlying Subject Matter") on the 2021 Sustainability Report of TSRC ("the Report") for the year ended December 31, 2021.

Reporting Criteria of the Underlying Subject Matter

TSRC shall prepare the Underlying Subject Matter and reporting criteria in accordance with the Subparagraph 2, Paragraph 1, Article 4 of Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies ("the Regulation") as set forth in Appendix I.

Management's Responsibility for the Report

TSRC is responsible for determining its objectives with respect to sustainable development performance and reporting, including the identification of stakeholders and material aspects, and using the reporting criteria to fairly prepare and present the Underlying Subject Matter. TSRC is also responsible for establishing and maintaining internal controls relevant to the preparation and presentation of the Underlying Subject Matter that is free from material misstatement, whether due to fraud or error.

Our Responsibilities

We performed our work in accordance with the Standard on Assurance Engagements No. 1 – "Assurance Engagements Other than Audits or Reviews of Historical Financial Information" issued by the Accounting Research and Development Foundation and to issue a limited assurance conclusion on whether the Underlying Subject Matter is free from material misstatement. Also, we have considered appropriate limited assurance procedures according to the understanding of relevant internal controls in the circumstances, but not for the purposes of expressing a conclusion as to the effectiveness of the internal control over the design or implementation of the Report.

Independence, Professional Standards and Quality Control

We have complied with the independence and other ethical requirements of the Code of Professional Ethics for Certified Public Accountant in the Republic of China, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. In addition, we applied Statements of Auditing Standard No. 46 – "Quality Control for Public Accounting Firms" in the Republic of China. Accordingly, we maintained a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements and professional standards as well as applicable legal and regulatory requirements.

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Summary of Work Performed

As stated in reporting criteria of the Underlying Subject Matter paragraph, our main work on the selected information included:

- Reading the Report of TSRC;
- Inquiries with responsible management level and non-management level personnel to understand the operational processes and information systems used to collect and process the Underlying Subject Matter.
- On the basis of the understanding obtained listed above, perform analytical procedures on the Underlying Subject Matter and if necessary, inspect related documents to gather sufficient and appropriate evidence in a limited assurance engagement.

The work described above based on professional judgment and consideration of the level of assurance and our assessment of the risk of material misstatement of the Underlying Subject Matter, whether due to fraud or error. We believe that the work performed and evidence we have obtained are sufficient and appropriate to provide a basis of our conclusion. However, the work performed in a limited assurance engagement varies in nature and timing from, and is less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained has a reasonable assurance engagement been performed.

Inherent limitations

The Report for the year ended December 31, 2021 includes the disclosures of non-financial information that involved significant judgments, assumptions and interpretations by the management of TSRC. Therefore, the different stakeholders may have different interpretations of such information.

Conclusion

Based on the work we have performed and the evidence we have obtained, as described above, nothing has come to our attention that causes us to believe that the Underlying Subject Matter has not been properly prepared, in all material aspects, in accordance with the reporting criteria.

Other Matters

The management of TSRC is responsible for the maintenance of its website where includes the Limited Assurance Report, we shall not be responsible for any further changes on the Underlying Subject Matter or its applicable reporting criteria, nor be responsible for reconducting any assurance work after the issuance date of the Limited Assurance Report.

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Taipei, Taiwan (Republic of China)
June 22, 2022

Notes to reader

The limited assurance report and the accompanying selected information are the English translation of the Chinese version prepared and used in the Republic of China. If there is any conflict between, or any difference in the interpretation of, the English and Chinese language limited assurance report and the selected information, the Chinese version shall prevail.

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Appendix I： Summary of the Selected Information

No.	Corresponding Section	Reference Page	Selected Information	Reporting Criteria	The Regulation/ GRI Standards
1	3.1.3 Energy Management	77	■ Direct Energy Consumption in 2021(Non-renewable energy) (Unit：Million Joule) • Black coal：0 • Fuel oil：0 • Diesel in factory area：5,283,020 • Natural gas：1,822,886,213 • Liquefied petroleum gas：1,824,435 • Gasoline：1,415,941 • Recycled butadiene：59,917,153 • Subtotal：1,891,326,762 ■ Indirect Energy Consumption in 2021 (Unit：Million Joule) • Purchased electricity：975,171,600 • Purchased steam：2,290,025,727 • Subtotal：3,265,197,327 ■ Note： 1. Total energy consumption of the organization is calculated as Direct energy (non-renewable energy) consumption + Consumption of purchased electricity and steam. 2. Calorific value conversion factor used for each type of energy：Black coal 5,600 kcal/kg, fuel oil 9,600 kcal/L, diesel 8,400 kcal/L, natural gas 8,000 kcal/m3, liquefied petroleum gas 6,635 kcal/kg, gasoline 7,800 kcal/L, and recycled butadiene 7,800 kcal/L. 3. All factories of the TSRC no longer use coals and fuel oil from 2021. 4. The data is calculated with higher heating values (HHV).	■ Details on Energy usage by TSRC	Items 1, Subparagraph 2, Article 4 Total energy consumption
2	3.4.2 Water Resource Management	92	■ Fresh water withdrawal in 2021：(Unit：Million liters = Thousand tons) • TSRC Corporation(Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory)：1,458 • Shen Hua Chemical：1,058 • Nantong Industrial：438 • TSRC-UBE：363 • Shanghai Industrial：9.228	■ Details on Water Consumption by TSRC	Items 2, Subparagraph 2, Article 4 Total amount of water withdrawn, and volume of effluent

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No.	Corresponding Section	Reference Page	Selected Information	Reporting Criteria	The Regulation/ GRI Standards
			• TSRC (Vietnam) Company Limited：11 • TSRC Specialty Materials LLC：635 • Total：3,972 ■ Consumption of purchased steam in 2021：(Unit：Million liters = Thousand tons) • TSRC Corporation(Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory)：59 • Shen Hua Chemical：192 • Nantong Industrial：393 • TSRC-UBE：230 • Shanghai Industrial：0 • TSRC (Vietnam) Company Limited：0 • TSRC Specialty Materials LLC：139 • Total：1,013 ■ Wastewater recycled in 2021：(Unit：Million liters = Thousand tons) • TSRC Corporation(Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory)：574 • Shen Hua Chemical：87 • Nantong Industrial：122 • TSRC-UBE：67 • Shanghai Industrial：0 • TSRC (Vietnam) Company Limited：0 • TSRC Specialty Materials LLC：0 • Total：850 ■ Water usage in 2021：(Unit：Million liters = Thousand tons) • TSRC Corporation(Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory)：2,091 • Shen Hua Chemical：1,337 • Nantong Industrial：953 • TSRC-UBE：660 • Shanghai Industrial：9.228 • TSRC (Vietnam) Company Limited：11 • TSRC Specialty Materials LLC：774 • Total：5,835 ■ Water discharge in 2021：(Unit：Million liters = Thousand tons) • TSRC Corporation(Includes Global		required to be disclosed under the law or to be disclosed voluntarily

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No.	Corresponding Section	Reference Page	Selected Information	Reporting Criteria	The Regulation/ GRI Standards
			Business Headquarter, Gangshan factory, and Kaohsiung factory)：974 • Shen Hua Chemical：817 • Nantong Industrial：441 • TSRC-UBE：316 • Shanghai Industrial：9.647 • TSRC (Vietnam) Company Limited：11 • TSRC Specialty Materials LLC：348 • Total：2,916 ■ Water consumption in 2021：(Unit：Million liters = Thousand tons) • TSRC Corporation(Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory)：1,117 • Shen Hua Chemical：520 • Nantong Industrial：512 • TSRC-UBE：344 • Shanghai Industrial：-0.419 • TSRC (Vietnam) Company Limited：0 • TSRC Specialty Materials LLC：426 • Total：2,919 ■ Note： 1. The purchased steam is also used as one of the sources of process water after the purpose of heat exchange has been achieved. 2. TSRC Specialty Materials LLC ware originally named Dexco Polymers L.P. and was renamed TSRC Specialty Materials LLC in 2021. 3. The water discharge of TSRC (Shanghai) Industries higher than water usage in 2021 was due to surface runoff. 4. TSRC (Vietnam) Company Limited provided OEM services to TSRC's Gangshan factory in 2021, so it used water resources, but actual output volume was counted as part of TSRC Corporation. 5. The evaporation of purchased steam is not considered.		

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No.	Corresponding Section	Reference Page	Selected Information	Reporting Criteria	The Regulation/ GRI Standards
3	3.3.2 Waste Management	86	■ General industrial waste in 2021(including general and recycled waste) (Unit：metric tons) • TSRC Corporation(Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory)：1,283.31 • Shen Hua Chemical：466.20 • Nantong Industrial：65.60 • TSRC-UBE：16.98 • Shanghai Industrial：21.50 • TSRC (Vietnam) Company Limited：8.99 • TSRC Specialty Materials LLC：729.19 • Total：2,591.77 ■ Hazardous industrial waste in 2021(Unit：metric tons) • TSRC Corporation(Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory)：75.23 • Shen Hua Chemical：392.06 • Nantong Industrial：335.57 • TSRC-UBE：348.50 • Shanghai Industrial：48.80 • TSRC (Vietnam) Company Limited：0.50 • TSRC Specialty Materials LLC：144.02 • Total：1,344.68 ■ Total weight of all waste in 2021(Unit：metric tons) • TSRC Corporation(Includes Global Business Headquarter, Gangshan factory, and Kaohsiung factory)：1,358.54 • Shen Hua Chemical：858.26 • Nantong Industrial：401.17 • TSRC-UBE：365.48 • Shanghai Industrial：70.30 • TSRC (Vietnam) Company Limited：9.49 • TSRC Specialty Materials LLC：873.21 • Total：3,936.44 ■ Note： 1. All source of data is from waste	■ Details on Waste Disposal and Waste Produced by TSRC	Items 3, Subparagraph 2, Article 4 Total quantity of hazardous wastes generated during the production process of products required to be disclosed under the law or to be disclosed voluntarily

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No.	Corresponding Section	Reference Page	Selected Information	Reporting Criteria	The Regulation/ GRI Standards
			transfer record 2. TSRC Specialty Materials LLC ware originally named Dexco Polymers L.P., and was renamed TSRC Specialty Materials LLC in 2021. 3. TSRC (Vietnam) Company Limited provided OEM services to TSRC's Gangshan factory in 2021. It generated waste but the actual output volume was counted as part of TSRC Corporation.		
4	4.2.2 A Healthy and Safe Workplace	111	■ Statistics of types of injuries suffered by TSRC employees in 2021 • Hand laceration, crush, bruise, fracture：3(Laceration caused by stirring blade；Crushed by cover plate；Fracture caused by packaging machine) • Chemical burn：1 • Burn from high temperature：0 • Insect bite：1(Bitten by centipede) • Commuting traffic accidents：9 • Total：14 ■ Statistics of types of injuries suffered by TSRC non-employees in 2021 • Hand laceration, crush, bruise, fracture：1(Collision with push plate) • Chemical burn：0 • Burn from high temperature：1 • Insect bite：0 • Commuting traffic accidents：0 • Total：2	■ Details on Performance of Occupational Safety and Health by TSRC	Items 4, Subparagraph 2, Article 4 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities
		112	■ Total recordable incidence rate in 2021(TRIR) • TSRC Corporation Gangshan factory、Kaohsiung factory：0.51 • Shen Hua Chemical：0.29 • Nantong Industrial：0.28 • TSRC-UBE：0 • Shanghai Industrial：0 • TSRC (Vietnam) Company Limited：0 • TSRC Specialty Materials LLC：0 ■ Occupational disease rate in 2021 (ODR) • TSRC Corporation Gangshan factory、Kaohsiung factory：0 • Shen Hua Chemical：0	■ Details on Performance of Occupational Safety and Health by TSRC	

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No.	Corresponding Section	Reference Page	Selected Information	Reporting Criteria	The Regulation/ GRI Standards
			• Nantong Industrial：0 • TSRC-UBE：0 • Shanghai Industrial：0 • TSRC (Vietnam) Company Limited：0 • TSRC Specialty Materials LLC：0 ■ Lost day rate in 2021(LDR) • TSRC Corporation Gangshan factory、Kaohsiung factory：9.88 • Shen Hua Chemical：0 • Nantong Industrial：15.3 • TSRC-UBE：0 • Shanghai Industrial：0 • TSRC (Vietnam) Company Limited：0 • TSRC Specialty Materials LLC：0 ■ Absent rate in 2021(AR) • TSRC Corporation Gangshan factory、Kaohsiung factory：0.48% • Shen Hua Chemical：1.03% • Nantong Industrial：1.10% • TSRC-UBE：0.68% • Shanghai Industrial：0.88% • TSRC (Vietnam) Company Limited：0 • TSRC Specialty Materials LLC：1.70% ■ Number of work-related fatalities in 2021 • TSRC Corporation Gangshan factory、Kaohsiung factory：0 • Shen Hua Chemical：0 • Nantong Industrial：0 • TSRC-UBE：0 • Shanghai Industrial：0 • TSRC (Vietnam) Company Limited：0 • TSRC Specialty Materials LLC：0 ■ Note： 1. The data presented in this table does not include information of the global business headquarters. 2. Total recordable incidence rate (TRIR) calculation method: TRIR/Total work hours x 200,000 3. Occupational disease rate (ODR) calculation method: Number of		

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No.	Corresponding Section	Reference Page	Selected Information	Reporting Criteria	The Regulation/ GRI Standards
			occupational disease cases/total work hours) x 200,000 4. Lost day rate (LDR) calculation method: Number of lost work days/total work hours) x 200,000 5. Absent rate (AR) calculation method: Total hours absent/Total work hours x 100% 6. TSRC Specialty Materials LLC ware originally named Dexco Polymers, and was renamed TSRC Specialty Materials LLC in 2021.		