台橡股份有限公司
TSRC CORPORATION

2024
TSRC TCFD Report

Contents

TSRC Climate-Related Milestones

TSRC recognizes the impact of climate change on humanity and the environment, and the importance of climate issues on the Company's operations. Since 2021, TSRC has reviewed the Company's potential climate risks and opportunities based on the TFCD's climate-related financial disclosure framework, and we have implemented climate strategies and risk management measures to mitigate the impact of these risks. We hope that by seizing the opportunities presented by this climate transition, we can improve the Group's resource utilization rates and create new business opportunities.

TSRC has remained devoted to climate and carbon reduction efforts for many years, and has made significant progress since 2021. At the same time, TSRC has cooperated with the climate policies and roadmap laid out by the government to gradually mitigate the impact of climate change. We have continued to strengthen business resilience at each of our production locations, improving our ability to withstand climate disasters.

2021

- Established an ESG Sustainable Development Strategy Blueprint (including climate strategy) based on the UN SDGs
- In conjunction with TSRC's climate strategy, established short, medium, and long-term ESG goals (including climate goals) for the TSRC Group and implemented these goals after approval by the Board of Directors.

2022

- In response to the global climate crisis and in line with the government's Pathway to Net-Zero Emissions in 2050 initiative, we have jointly issued a 1.5°C Climate Declaration alongside fellow member companies of the Chinese National Association of Industry and Commerce, Taiwan in order to achieve the Paris Agreement goal of limiting temperature increases to 1.5°C.
- Disclose TSRC's climate risks and opportunities based on the TFCD framework and recommendations

2023

- The TSRC Kaohsiung Factory and Shanghai Industries gradually completed installing solar power generation equipment, allowing us to generate our own renewable electricity
- Nantong Industries procured renewable energy
- The Group's renewable energy usage rate reached 6.1%, exceeding our annual goal

2024

- The Group's renewable energy usage rate reached 7.55%, exceeding our annual goal
- Launch sustainable products made from renewable raw materials
- Achieved a wastewater recycling rate of 27%, exceeding our annual goal

2025

- Reduce total carbon emissions by 10% compared to base year
- Have renewable energy account for 10% of total electricity consumption
- Increase wastewater recycling to 36% of total volume of wastewater
- Increase reclaimed water utilization to 34% of total water consumption
- Develop products with lower environmental impact, have renewable raw materials account for 5% of total raw materials procurement

2030

- Reduce total carbon emissions by 22.5% compared to base year
- Renewables account for 30% of total electricity consumption
- Increase wastewater recycling to 40% of total volume of wastewater
- Increase reclaimed water utilization to 40% of total water consumption
- Have renewable raw materials account for at least 15% of total raw materials procurement

TSRC Climate Management Organization Structure

Board of Directors (including the Audit Committee)

The highest governance body for climate management, regularly reviews assessments of the Company's climate risks and opportunities, response strategies, goals, preventive measures, and implementation.

Supervision and Governance ↓ ↑ **Report**

Executive Leadership Team (ELT)

The Climate Management Team verifies the Company's climate risks and opportunities, climate strategies, and action plans for mitigating the impact of climate risks, regularly reporting to the Board of Directors on the status of implementation.

Formulate strategies and goals ↓ ↑ **Report**

ESG Work Team

The Climate Risk Project Team promotes various climate risk and opportunity projects, and regularly reports to the Executive Leadership Team on the status of implementation for projects.

	TSRC Management Strategies and Action Plans	Implementation in 2024
Governance	◆ The Board of Directors regularly monitors how the Group's climate strategies and risk management measures are being implemented	• Through receiving quarterly operations reports from the Executive Leadership Team (ELT), the Board is informed about the operations at each production location, as well as climate disasters caused by extreme weather events (such as flooding caused by typhoons) which affect business operations, production, or raw materials supply. The Board then provides recommendations to the ELT. • Received reports from the ELT in May and November 2024, which included information on climate transition and physical risk factors, the severity of climate risks, risk response strategies, established goals, improvement measures and action plans, and the actions taken in response to transition risks and opportunities.
	◆ The Executive Leadership Team regularly reviews how operations addressing climate-related risks and opportunities have been implemented	• Designated employees from the ESG Work Team and other related functional departments to conduct the annual climate risks and opportunities assessment, and confirmed the response plans and planned measures proposed by the ESG Work Team to be implemented. • Regularly remained updated on how Taiwan is expected to implement a carbon fee system, and on the carbon pricing developments, rates, and roadmaps for other countries. Determined an internal carbon price based on announced carbon fees and the IEA 2023 report, and used this carbon price to estimate the level of impact that carbon fees would have on the Group's operations and finance. • The ESG Work Team explained how important climate goals are being implemented to the Executive Leadership Team through ELT meetings each quarter. • Important climate risk goals are linked to the Company's annual organizational goals and the ELT's individual performance goals, encouraging the organization and team to implement climate measures. • Members of the ELT have often engaged in discussion with members of the ESG Work Team on important climate risk issues to determine response plans (such as on the carbon fees required for the Kaohsiung Factory, assessing the impact of flooding in Kaohsiung, the Group's carbon reduction plans, and assessing low-carbon processes). • In September 2024, the ESG Work Team reported the results of the 2024 Climate Risk and Opportunities Assessment to the Board of Directors, after the report results have been confirmed by the CEO.
Strategy	◆ Based on the TFCD, different departments discuss the Company's operations and determine short, medium, and long-term climate risks and opportunities	• Assess the severity of each climate risk based on its level of impact and likelihood of occurrence (occurrence schedule). For more details on specific response measures and actions, please refer to the section "Impact of and Response to Important Climate-Related Risks and Opportunities".
	◆ Analyze the potential operational and financial impact of material climate risks and opportunities for TSRC under the TCFD framework	• For more details on the financial impact of material climate-related risks and opportunities, please refer to the section "Financial Impact of Climate -Related Risks and Opportunities"
	◆ Analyze climate risks and assess carbon reduction goals and actions for different climate scenarios	**Transition risks** Established carbon fee scenarios based on the 2023 World Energy Outlook report published by the International Energy Agency and the information publicly announced by the Taiwan Ministry of Environment. • Net Zero Emissions by 2050 Scenario, NZE • Stated Policies Scenario, STEPS **Physical risks** Used the Shared Socioeconomic Pathways (SSP) scenario provided in the Sixth Assessment Report (AR6) published by the United Nations Intergovernmental Panel on Climate Change (IPCC) as a reference for establishing scenarios for flooding, drought, strong winds, and high temperatures. • AR6 SSP2 – 4.5 Low emissions scenario • AR6 SSP5 – 8.5 High Greenhouse Gas Emissions Scenario Note: Different sets of climate data is used to determine the physical risks facing each factory under each climate scenario (Taiwanese factories: TCCIP downscaled climate forecasts; Overseas factories: IPCC-AR6-CMIP6 climate model simulations.)
	◆ Encouraged suppliers to implement climate change mitigation plans and carbon reduction measures	• Collected and assessed data on the carbon emissions, product carbon footprints, and long-term carbon reduction plans of important suppliers, using this data as an important reference for helping TSRC to reduce Scope 3 emissions.
Risk Management	◆ Establish a climate-related risk identification process based on the TCFD framework	• For more details on the climate change risk identification process, please refer to the section "Climate-Related Risks and Opportunities Identification and Management Process".
	◆ Develop adaptation and mitigation strategies based on the identified climate-related risks	• The ELT assigned the ESG Work Team with assessing climate-related risks and opportunities and developing response strategies and actions, implemented after approval from the ELT.
	◆ Integrate the climate risk identification process into the existing risk management process	• Incorporated important climate risk factors into the Company's risk management processes.
Metrics and Targets	◆ Establish climate change management indicators	• Establish indicators for adapting to and mitigating climate change on topics such as reducing total carbon emissions, increasing the use of renewable energy, increasing wastewater recycling, increasing reclaimed water utilization, and developing eco-friendly products.
	◆ Conduct annual inventory of Scope 1, 2, and 3 greenhouse gas emissions and assess their impact on the Company's operations	• Continued to implement carbon reduction measures and increase the use of renewable energy based on the results of various inventories and assessments to effectively reduce greenhouse gas emissions. For more details on GHG inventory, please refer to Appendix "TSRC GHG Emissions Data Summary".
	◆ Review climate management goals annually	• The ELT regularly reviews how climate change indicators and goals have been implemented and whether goals have been achieved, providing recommendations to help better achieve these goals and indicators.

Climate-related Risks and Opportunities

Climate-related Risks and Opportunities Identification and Management Process

1 Propose list of risks and opportunities

- Taking into consideration the categories recommended by the TFCD, and the climate risks and opportunities that our industry peers are focusing on, and based on TSRC's operating characteristics and the location of our production sites, the ESG Work Team discusses and determines a list of risks and opportunities for TSRC

Results |

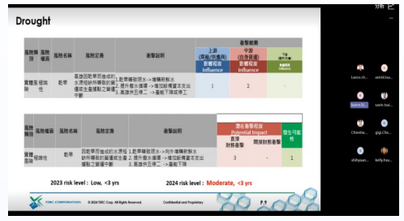
Listed 10 key climate risks and 6 climate opportunities based on the TFCD risk categories

2 Assess risk impact and determine materiality

- The ESG Work Team discusses the impact of each risk on TSRC's upstream suppliers, TSRC's own operations, or on downstream customers, and determines the materiality of each risk based on their impact (including level of impact and likelihood of occurrence) through workshops Note
- Create a risk and opportunity matrix, and establish various response plans and measures

Note: A Transition Risk Workshop and a Physical Risk Workshop were held in May 2024 to provide new knowledge and training on climate risk through the workshops. During the discussion process, the level of risk and impact were assessed and confirmed, taking into account the actual situation of the company's operations.

Transition Risk Workshop



Physical Risk Workshop

Results |

Created a risk and opportunity matrix based on the level of risk impact and likelihood of occurrence, and designated prioritized risks

3 Confirmation and approval of risks

- The ESG Work Team reports the results of the risk and opportunities assessment to the Executive Leadership Team (ELT)
- The ELT confirms and approves the important risks designated by the Group based on the assessment results, providing suggestions and implementing response plans to address these risks
- The ELT reports these assessment results to the Board of Directors (including the Audit Committee)

Results |

Climate risk and opportunity assessment results, climate action goals and indicators, response plans and measures

4 Disclosure and continuous management

- Prepare an explanation for these climate risks and opportunities based on the assessment results, and disclose this information to the public
- Regularly track the climate actions being implemented and report to the ELT on progress made towards achieving targets and metrics

Results |

Disclosed climate risks and opportunities in the Sustainability Report, on the TSRC website, and in the annual report. Receive regular updates on achievement of climate targets and metrics

Climate-related Risks and Opportunities Matrix

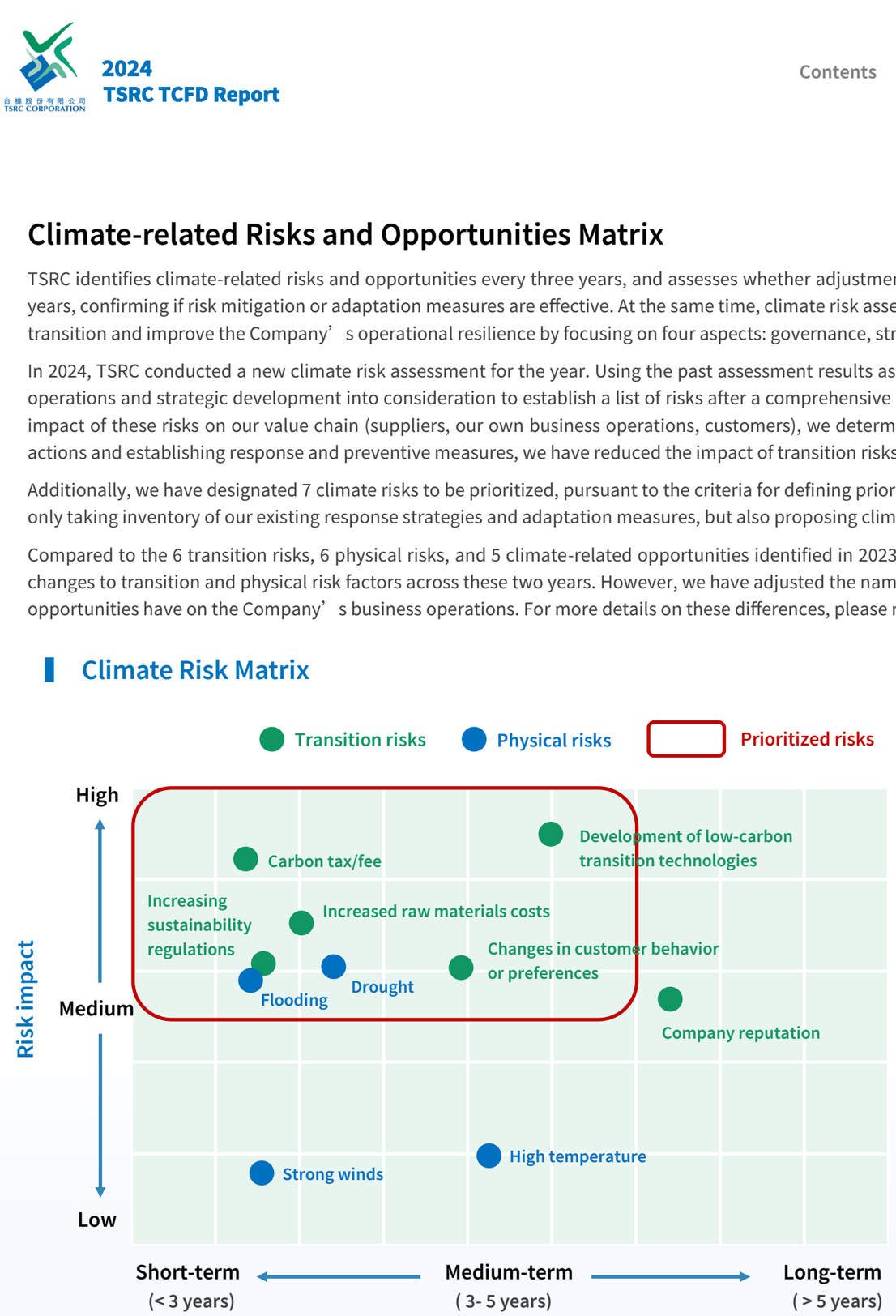
TSRC identifies climate-related risks and opportunities every three years, and assesses whether adjustments need to be made to the potential impact and likelihood of occurrence for the risks and opportunities identified in past years, confirming if risk mitigation or adaptation measures are effective. At the same time, climate risk assessment results are integrated into the Company’s existing risk management processes. We look to promote a low-carbon transition and improve the Company’s operational resilience by focusing on four aspects: governance, strategy, risk management, and metrics and targets.

In 2024, TSRC conducted a new climate risk assessment for the year. Using the past assessment results as a basis, we collected data on external environmental trends and changes, and also took the Company’s actual business operations and strategic development into consideration to establish a list of risks after a comprehensive review and assessment. The list identified 10 climate-related risks and 6 climate-related opportunities. After assessing the impact of these risks on our value chain (suppliers, our own business operations, customers), we determined the severity of each risk and when they are likely to occur (likelihood of occurrence). Through the Group’s climate actions and establishing response and preventive measures, we have reduced the impact of transition risks and mitigated the potential impact of climate disasters.

Additionally, we have designated 7 climate risks to be prioritized, pursuant to the criteria for defining prioritized risks in the TSRC Risk Management Operating Procedures. The actions we took to address climate issues include not only taking inventory of our existing response strategies and adaptation measures, but also proposing climate actions or measures to address risks based on the scope of their impact and their duration.

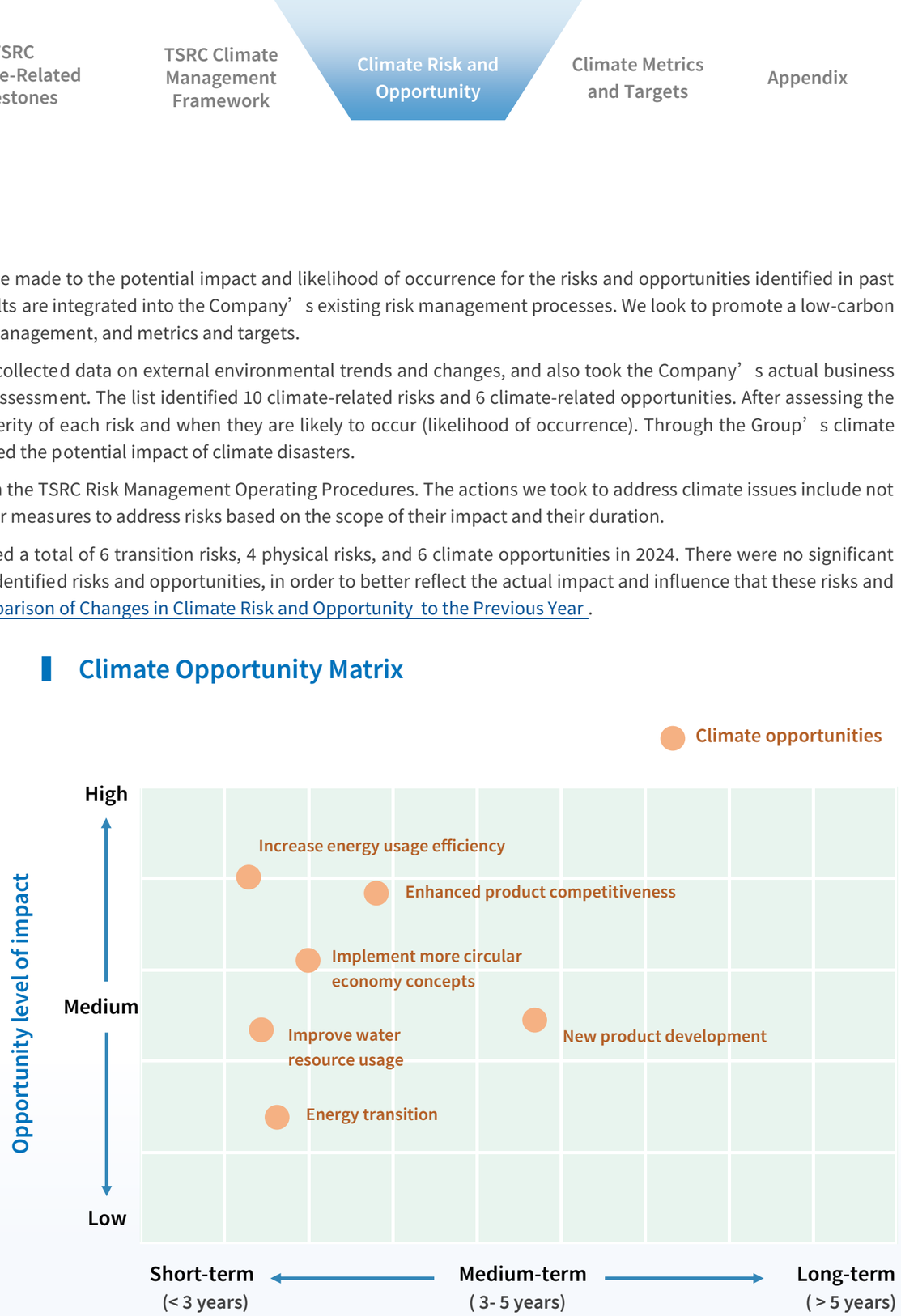
Compared to the 6 transition risks, 6 physical risks, and 5 climate-related opportunities identified in 2023, we identified a total of 6 transition risks, 4 physical risks, and 6 climate opportunities in 2024. There were no significant changes to transition and physical risk factors across these two years. However, we have adjusted the names of some identified risks and opportunities, in order to better reflect the actual impact and influence that these risks and opportunities have on the Company’s business operations. For more details on these differences, please refer to Comparison of Changes in Climate Risk and Opportunity to the Previous Year.

Climate Risk Matrix



Note: TSRC has integrated climate-related risks into our corporate risk management system, and has listed the climate-related risk factors be designated as prioritized risks (in the red boxes of the risk matrix) based on the criteria stated in the Risk Management Operating Procedures.

Climate Opportunity Matrix



Impact of and Responses to Important Climate-related Risks and Opportunities

	Climate risks	Potential impact	Climate opportunities	Potential influence	Responses, strategic goals, and key actions
Transition risks	• Carbon fee/tax	The government imposes a carbon fee, carbon tax, or carbon border adjustment mechanism to limit total greenhouse gas emissions, leading to an increase in the Company’s operating costs.	• Increase energy usage efficiency • Energy transition • Implement more circular economy concepts	Continue implementing carbon reduction plans and using renewable energy sources, reducing the amount of carbon fees paid in Taiwan and the rising electricity costs paid each year Increase recycling of waste heat and wastewater to reduce energy and resource consumption	〔Goals〕 • Reduce the Group’s GHG emissions (Scope 1 and 2) by 10% in 2025 and by 22.5% in 2030, compared to the baseline (2021) . • Achieve 10% renewable energy in the Group’s total energy consumption by 2025, and 30% by 2030. • Achieve 5% renewable raw materials in total procurement by 2025, and 15% by 2030. 〔Specific Actions Taken in 2024〕 • Continued purchasing energy-saving equipment to replace more energy-consuming equipment for our factories in Taiwan and Nantong China, improving energy efficiency. • Installed solar power generation facilities at our Kaohsiung Factory, and used cogeneration equipment to significantly reduce the amount of power purchased from external sources, reducing carbon emissions. • Optimized the TPE production process, reducing steam consumption per unit product and indirectly reducing carbon emissions from energy consumption. • Collected data on the carbon footprints of primary and auxiliary raw materials, using this data as an important reference when evaluating our low-carbon products portfolio. 〔Future years〕 • Continue optimizing processes to reduce steam consumption per unit product. • Increase procurement of renewable energy and low carbon steam. • Replace high energy consuming equipment and continue reducing energy consumption. • Evaluate feasible plans to reduce Scope 3 emissions, reducing product carbon footprints.
	• Increase in sustainability regulations - Renewable energy usage	In compliance with regulatory and local policy requirements, our Taiwan and Nantong subsidiaries increase their use of renewable energy, resulting in higher costs for energy procurement and equipment maintenance.	• Energy transition • Enhanced product competitiveness	Use renewable energy and reduce product carbon footprints to meet customer requirements for low carbon products	〔Goals〕 • Achieve 10% renewable energy in the Group’s total energy consumption by 2025, and 30% by 2030. 〔Specific Actions Taken in 2024〕 • Installed solar power generation equipment at the Kaohsiung Factory, and signed a letter of intent to purchase renewable energy from renewable energy suppliers, ensuring that future energy needs are met. • Nantong Industries procured renewable energy sources. 〔Future years〕 • Our three subsidiaries in Nantong, China will continue increasing procurement of renewable energy, and evaluate whether solar power generation equipment can be installed.
	• Changes in customer behavior or preferences	Raw material procurement costs increase due to providing low carbon products, products with smaller carbon footprints, or using renewable raw materials, in order to meet customer requirements.	• New product development • Enhanced product competitiveness	Sales of new products or low-carbon products can increase the Group’s revenues and market competitiveness.	〔Goals〕 • Achieve 15% of revenue from new products by 2025. • Achieve 20% of total sales from sustainable products by 2025, and 40% by 2030. • Achieve 5% of total raw materials procurement from renewable raw materials by 2025, and 15% by 2030. 〔Specific Actions Taken in 2024〕 • The Kaohsiung Factory has continued to obtain ISCC Plus certification, and has begun selling products made from renewable raw materials. • Nantong Industries optimized processes to reduce steam consumption per unit product and reduce the product carbon footprint. • Received the Ecovadis Silver medal, enhancing customer trust. 〔Future years〕 • Continue to develop renewable raw materials market. • Continue obtaining ISCC Plus certification for all production locations. • Continue evaluating supplier carbon reduction plans in order to effectively reduce TSRC’s Scope 3 carbon emissions. • Reduce product energy consumption through process optimizations .

	Climate risks	Potential impact	Climate opportunities	Potential influence	Responses, strategic goals, and key actions
Transition risks	• Raw material costs increase	Suppliers have to pay Taiwan carbon fees, leading to higher raw material procurement costs Procure renewable raw materials	• New product development • Enhanced product competitiveness	Increased revenue and market competitiveness from sales of new products	〔Goals〕 • Same as goals stated for “Changes in customer behavior or preferences” 〔Specific Actions Taken in 2024〕 • Focused on developing market for sustainable products, establishing product pricing strategies, and enhancing product competitiveness. 〔Future years〕 • Continue evaluating development of market for sustainable products, improving revenue and market competitiveness
	• Development of low-carbon transition technologies	Continue developing carbon reduction process technologies or energy-saving equipment alongside expanding production capacity Continue to enhance measures for developing and attracting talent in order to support the low-carbon transition	• Implement more circular economy concepts • New product development • Enhanced product competitiveness	Reduce carbon emissions through recycling wastewater from the production process, deriving increased benefits from implementing a circular economy and increasing product value	〔Goals〕 • Same as goals stated for the “Carbon fee/carbon tax”. 〔Specific Actions Taken in 2024〕 • Optimized the product manufacturing processes used by Shen Hua Chemical and Nantong Industries to reduce steam consumption per unit product. 〔Future years〕 • Continue optimizing processes and reduce product steam consumption. • Continue developing new carbon reduction technologies. • Evaluate opportunities for industry-academia collaboration. • Improve sustainability-related employee competencies and provide related education and training .
Physical risks	• Drought	To prevent production disruptions from water shortages, backup water sources are established, increasing annual pipe maintenance costs. Water outage policies in Kaohsiung require production adjustments, resulting in financial losses.	• Implement more circular economy concepts • Improve water resource usage	Use water resources more efficiently and reduce demand for fresh water through wastewater recycling Improve the wastewater circulation system to reduce amount of wastewater discharged.	〔Goals〕 • Increase proportion of wastewater recycled to 36% by 2025,and 40% by 2030. • Increase reclaimed water utilization to 34% of total water consumption by 2025, and 40% by 2030. 〔Specific Actions Taken in 2024〕 • Completed installing backup pipelines at the Kaohsiung Factory 〔Future years〕 • Continue improving wastewater recycling system equipment installed at the Kaohsiung Factory, Nantong Industries, and TSRC-UBE
	• Flooding	Flooding damages equipment and inventory, causing potential business interruptions and financial losses. Insurance premiums rise or payout conditions become stricter. Annual maintenance costs increase due to flood prevention and drainage upkeep.	• Mainly related to mitigating impact from risks and strengthening operations	Strengthen operational resilience	〔Goals〕 • Establish emergency response plans for unexpected emergencies in order to protect employee safety and mitigate potential losses 〔Specific Actions Taken in 2024〕 • Disaster prevention and response measures were adopted for the Kaohsiung Factory after experiencing the two typhoons, Typhoon Kraton and Typhoon Gaemi, reducing impact from climate disasters. 〔Future years〕 • Establish flood mitigation plans or equipment, and continue implementing disaster prevention and response measures

Financial Impact of Climate-related Risks and Opportunities

TSRC assesses the impact of identified risks and opportunities, and uses this information as an important reference when determining how to mitigate risks and capitalize on opportunities.

Potential financial impacts of transition risks mainly refer to the costs incurred by the Group's low-carbon transition (including costs related to reducing greenhouse gas emissions), such as costs resulting from Taiwanese carbon fees, capital expenditures on energy-saving and carbon reducing equipment and technological improvements, purchasing green power, and purchasing low-carbon raw materials.

Potential financial impacts of physical risks mainly refer to equipment maintenance and capital expenditures aimed at enhancing the Company’s climate resilience, such as drought and flood prevention. Drought-related spending includes investments in wastewater recycling systems and backup water sources, while flood-related spending covers maintenance of factory equipment and drainage systems. In 2024, environmental capital expenditures totaled NT$228,433,066, including NT$118,818,631 for energy conservation and carbon reduction, NT$99,756,543 for air pollution reduction, NT$537,067 for waste reduction, and NT$9,320,825 for water resource management.

Estimated financial benefits of climate opportunities include the amounts saved on lower electricity fees due to energy efficiency improvements made to factory facilities, lower wastewater treatment costs due to more efficient use of water resources, and increased revenues from sustainability products. In 2024, revenue from environmentally beneficial products amounted to NT$1,214,470,000.

Climate Risk Scenario Analysis

Considering that each different climate scenario would impact TSRC differently in the future, we have sought to understand and manage future climate risks through assessing each of the transition and physical risks posed by different climate scenarios. At the same time, we have established different climate response measures and actions based on these assessment results, reducing operational risks.

Risk Scenario Analysis

Risk category	Source	Risk definition	Risk analysis
Transition risks	**Baseline year** • Scope 1 and Scope 2 emissions for the Group in 2021 **Climate Scenarios** • The estimated future carbon fee rates publicly announced by the Taiwan Ministry of Environment • International Energy Agency (IEA) report	**Carbon fee/tax** • Considers the development, implementation schedule, and implementation method of carbon fees in other countries confirmed to be implementing carbon fees in the future and which have an impact on the TSRC Group’s operations • Currently, only Taiwan has announced concrete and specific carbon fee policies.	**Operating location: Kaohsiung Factory** • Climate scenarios: 2 scenarios (NZE and STEPS) • Time of occurrence: 2025-2030 (Short-, medium-, and long-term)
Physical risks	**Base period** • Historical climate simulation data from the Central Weather Agency and CMIP-6 **Climate Scenarios** • Observed data - Central Weather Agency (Taiwan), CMIP6 Historical run (areas outside Taiwan) • Estimated data - TCCIP (AR6) (Taiwan), IPCC-AR6 (areas outside Taiwan)	**Flooding, drought, strong winds, high temperature** • Considers information released by foreign and domestic government institutions and related literature, and TSRC’s past experience with disasters • Flooding: Flood alert threshold values set by the Taiwan Water Resources Agency, flood potential • Drought: SPI-3 precipitation index • High temperature: 36 degrees Celsius • Strong winds: Grade 8 wind speeds	**Operating location: All factories** • Climate scenarios: 2 scenarios (SSP 2-4.5, SSP5-8.5) • Time of occurrence: Short-term (<3 years), medium-term (3-5 years), long-term (>5 years)

Transition Risk

The main assessment item for the transition risks section is the risk posed by carbon fee/carbon tax, as it is the risk with the most significant impact on TSRC. We have taken into consideration the direction of greenhouse gas controls, and used the Stated Policies Scenario (STEPS) and the Net Zero Emissions scenario (NZE) defined by the International Energy Agency (IEA), and the future carbon fee rates announced by the Taiwan Ministry of Environment to assess the potential impact on our business operations.

Transition Risk — Carbon fee/carbon tax

Given the varying degrees of impact that carbon pricing systems have on businesses, TSRC not only continues to monitor policy developments across countries, but also evaluates the potential financial impacts of carbon prices under different climate scenarios, based on existing regulations or relatively well-defined carbon pricing mechanisms at its operating locations. TSRC has selected two climate scenarios—NZE and STEPS—and assessed two pathways: one without carbon reduction actions and the other aligned with the Group’s carbon reduction targets. The analysis evaluates the financial impact that different carbon prices under these scenarios may have. The results of the analysis indicate that that the financial impact on TSRC under the NZE scenario will be greater than that under the STEPS scenario. Using carbon prices under the NZE scenario as an example, if TSRC implements greenhouse gas reduction actions—including adopting low-carbon fuels in manufacturing operations, using renewable energy, and improving energy efficiency—it can reduce the financial impact from carbon costs compared to a scenario where no further carbon reduction measures are taken. By 2030, carbon costs could decrease from 1.2% of revenue to less than 1%.

Climate Scenarios / Analysis method	2025		2030	
	STEPS scenario	NZE scenario	STEPS scenario	NZE scenario
No carbon reduction actions	0.1%	— Note 2	0.5%	1.2%
Continue implementing the Group’s carbon reduction	≤ 0.1%	— Note 2	≤ 0.4%	≤ 1%

Note:

1. As of now, considering that only Taiwan has announced a relatively clear carbon policy out of all the regions where TSRC has established operating locations, TSRC has mainly focused on assessing the financial impact of Taiwan’s carbon fees, and we have not assumed preferential rates for scenario. As the carbon pricing policies and implementation for other production locations (such as those in China and the United States) still remain unclear. We shall continue monitoring these developments and incorporate updates accordingly.
2. Carbon fee rates for Taiwan are based on the NT$300 rate announced by the Ministry of Environment in 2024, and this rate has been incorporated into our analysis for the Taiwan STEPS scenario. Based on the implementation details, this fee shall begin to be collected from 2025 onwards, and the rate will be fixed for two years. This fee is expected to increase to NT$1,800 by 2030. Under the NZE scenario, there is no need to establish a separate NZE scenario for 2025 since we are already in the STEPS scenario for that year and carbon fee rates are fixed for 2 years. Based on the implementation details, and taking the IEA WEO 2023 report into consideration, we have estimated carbon fees to be NT$4,410 (approximately US$140) for 2030 based on estimates for fees in developed economies, and used this rate for our scenario analysis.
3. Currently, TSRC’s products are not subject to the EU’s Carbon Border Adjustment Mechanism (CBAM) in its first phase, meaning that the mechanism will have no effect on TSRC products in the short term. We will update our assessment of the financial impact on TSRC product exports to Europe after the EU has announced a timeline for implementing additional product restrictions.
4. The Group’s carbon reduction actions include utilizing low-carbon fuels for production, cogeneration equipment, and solar power generation installations to increase the use of renewable energy. TSRC will also continue expanding the use of energy saving equipment in order to improve energy efficiency.

Physical Risk

Climate change is increasing the frequency of extreme weather events, posing risks to TSRC’s operation. According to the Taiwan Climate Change Projection and Information Platform (TCCIP), Taiwan is expected to see higher annual rainfall under future warming scenarios, alongside longer dry spells—indicating more polarized precipitation patterns. During droughts, insufficient backup water may lead to additional costs for water truck procurement, and government-imposed water restrictions could disrupt operations. Heavy rainfall may cause flooding, damaging equipment, halting production, or affecting employee commutes. Rising temperatures and more frequent extreme heat events also elevate safety risks for on-site personnel, prompting TSRC to strengthen its focus on occupational health and safety. Additionally, strong winds from severe weather may damage facilities and increase maintenance costs.

In light of the increasing impact of climate-related disasters on TSRC’s operations, and in line with its commitment to resilient and responsible management, TSRC has identified four key physical risks: drought, flooding, high temperature, and strong winds. Through scientific analysis, the company has assessed how these risks may affect its facilities under different climate scenarios. This enables TSRC to develop corresponding risk management actions and adaptation measures to enhance operational resilience.

Considering that TSRC’s manufacturing sites are located across eight locations in Taiwan, Mainland China, Vietnam, and the United States, the company collaborated with professional teams to conduct a scientific and comprehensive assessment of physical climate risks at each site. This assessment utilized historical meteorological data and climate projection data from official domestic and international sources, and referenced definitions of disaster risk to analyze how these risks may evolve under future climate scenarios. For sites in Taiwan, TSRC used downscaled climate projection data from TCCIP. For sites outside Taiwan, climate simulation data from the IPCC AR6 CMIP6 models were applied. In selecting climate scenarios, TSRC referred to the IPCC AR6 Climate Change Assessment Report and adopted two representative scenarios: SSP2-4.5, which reflects a moderate emissions close to current trends, and SSP5-8.5, representing a high-emissions scenario. These were used as the basis for analyzing physical risks.

Physical Risk	Risk Category	Potential impacts on plant operations
Drought	Chronic	Water shortages may disrupt operations and increase procurement costs
Flooding	Acute	Operational and production disruptions, increased repair costs
High temperature	Chronic	Increased health and safety risks for outdoor workers
Strong winds	Acute	Damage to facility structures or equipment, increased repair costs

Note : TCCIP, Chen et al. 《Taiwan Climate Change Analysis Series Report 2023: Record- breaking Drought 2020-2021 and Future Projection of Drought Events in Taiwan》p24

Physical Risk — Drought

In 2021, central Taiwan faced its worst drought in a century. Less than two years later, southern Taiwan experienced another severe drought in 2023, highlighting a rapid increase in the frequency of extreme drought. These two droughts were mainly attributed to insufficient rainfall during the previous typhoon seasons and the following spring. To mitigate water shortage and operational risks, the Kaohsiung plant proactively built water pipelines and upgraded its wastewater recycling system in 2021, ensuring stable water supply and uninterrupted operations during the 2023 drought.

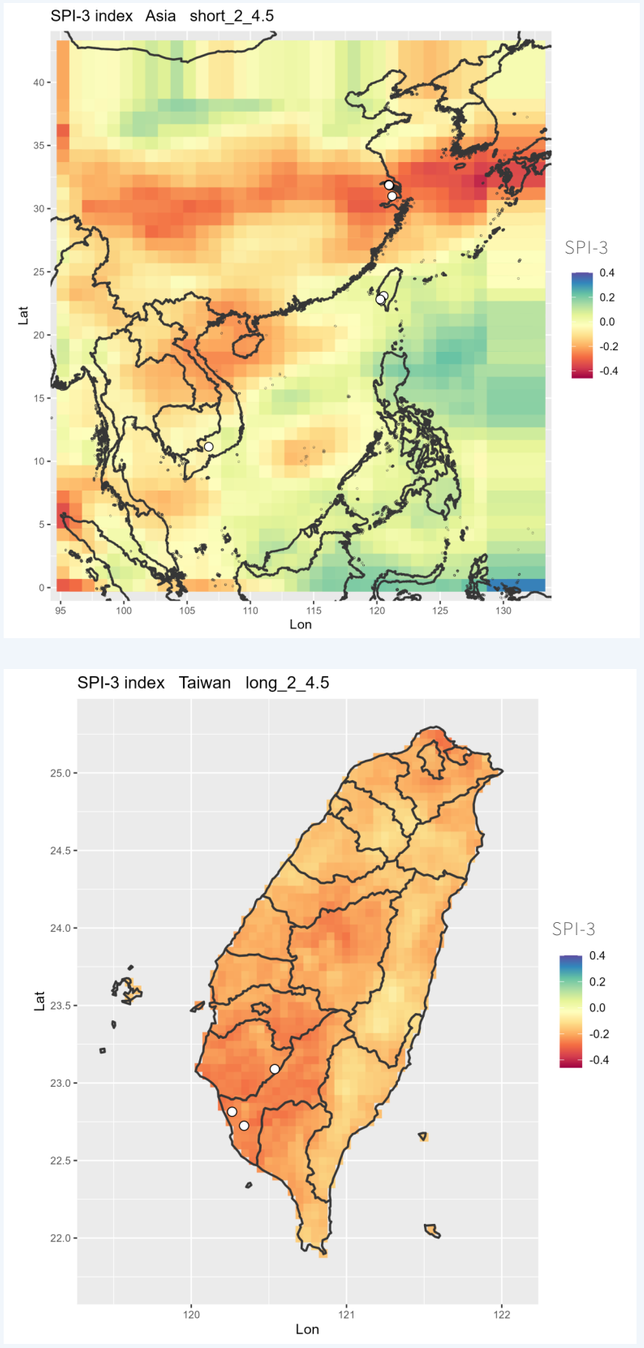
Under climate change scenarios, droughts are expected to become more frequent. Based on climate scenario data, TSRC assessed drought risks across its sites. Under the SSP2-4.5 scenario, short-term drought risk increases in Jiangsu Province, affecting the Shenhua, Nantong Industrial, and TSRC UBE. In the long term, the Kaohsiung and Gangshan plants in Taiwan face higher risks. Under the SSP5-8.5 scenario, the Kaohsiung, Gangshan, and Vietnam sites face severe mid- to long-term drought risks. Additionally, key reservoirs supplying southern Taiwan show a significant drying trend, highlighting Kaohsiung and Gangshan as priority sites for future drought adaptation.

To reduce drought-related operational risks, TSRC continues to optimize water use by increasing wastewater recycling and reclaimed water usage. TSRC also complies with Jiangsu’s environmental regulations, including reclaimed water use in new plants.

In response to water risks in Kaohsiung, the Kaohsiung plant collaborates with the Dashe Industrial Park on water sharing and works with key suppliers (e.g., CPC Corporation) to secure water through pipeline connections during water shortages.

Note: Drought risk was assessed using the SPI-3 precipitation index, which reflects deviations in three-month cumulative rainfall compared to historical averages. Negative values indicate below-average rainfall and higher drought risk; positive values indicate above-average rainfall and lower risk. The analysis considers only climate and precipitation factors; actual drought occurrence also depends on local reservoir levels and water management policies.

SSP2- 4.5 Scenario



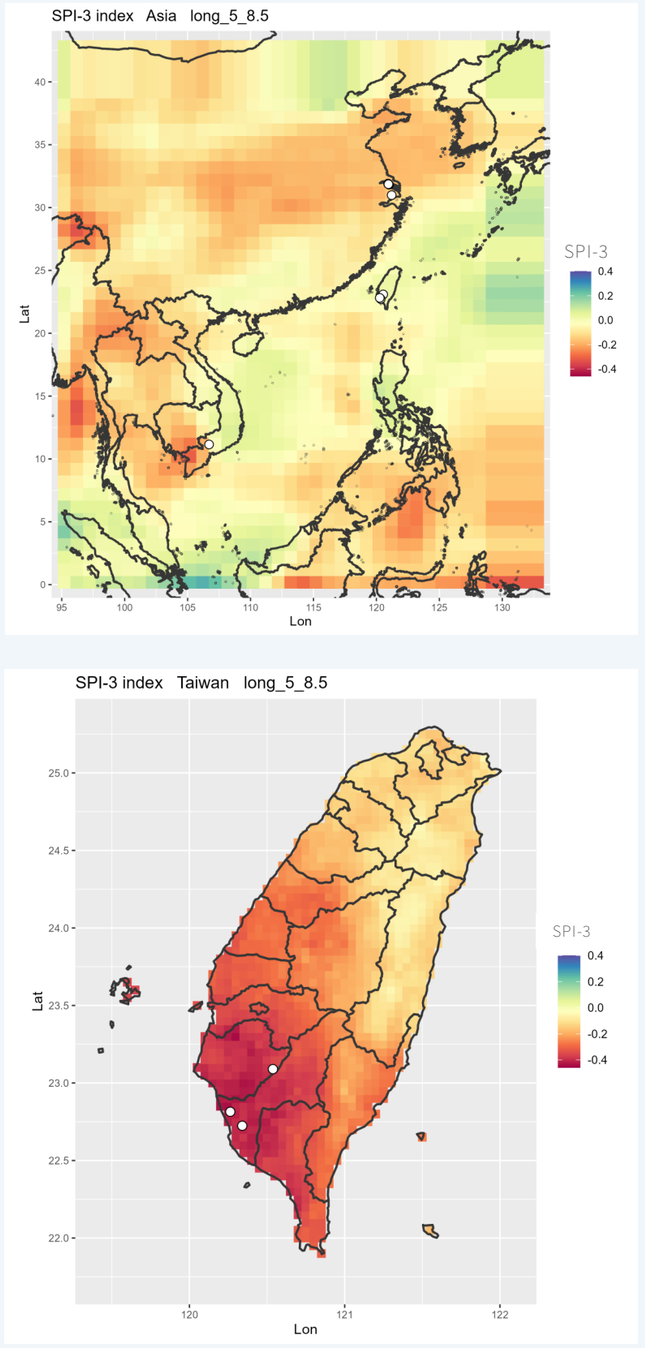
Short-term ：< 3 years

The likelihood of drought occurring in Jiangsu, Shanghai, and Vietnam has shown a slight upward trend

Long-term ：> 5 years

Southern Taiwan faces a long-term risk of drought, with continued potential for drought conditions in the Kaohsiung and Gangshan Plants.

SSP5- 8.5 Scenario



Long-term ：> 5 years

The likelihood of drought occurring in long-term in Jiangsu, Shanghai, and Vietnam has shown a slight upward trend

Long-term ：> 5 years

Southern Taiwan faces a long-term risk of drought, with the Kaohsiung and Gangshan Plants remaining susceptible to potential drought conditions

Note: A positive SPI-3 value indicates above-average rainfall and low drought risk; a negative value indicates below-average rainfall and high drought risk.

Physical Risk — Scenario Analysis for Flooding

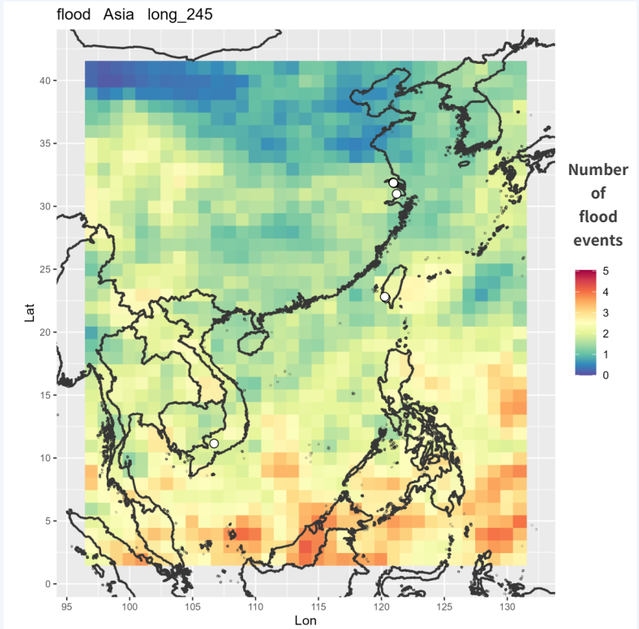
Typhoon Gaemi brought over 500 mm of rain to Kaohsiung in a single day in July 2024, exceeding local drainage capacity and, combined with astronomical tides, caused flooding across many areas in Kaohsiung. TSRC’s Kaohsiung Plant activated emergency measures. Due to its distance from major rivers, the site avoided serious flooding, experiencing only minor localized issues. Some employees faced commuting difficulties, but operations remained unaffected.

TSRC assessed flood risks at each site based on climate scenario data [Note]. Following Typhoon Gaemi, further analysis was conducted for the Kaohsiung and Gangshan Plants in Taiwan to evaluate the likelihood of severe flooding (depth ⩾ 0.5 m). Results show a slight increase in long-term flood events under both SSP2-4.5 and SSP5-8.5 scenarios.

To enhance urban disaster resilience, the government is actively developing water infrastructure and flood retention facilities. At the same time, TSRC is strengthening flood control and drainage systems at sites with rising flood risk. TSRC has also established emergency staffing mechanisms to minimize operational disruptions during extreme weather events.

Note: For the Kaohsiung and Gangshan plants, flood risk assessments are based on flood alert thresholds set by Taiwan’s Water Resources Agency. For global sites, analysis is based on the 1% extreme rainfall threshold commonly used in international standards

SSP2- 4.5 Scenario

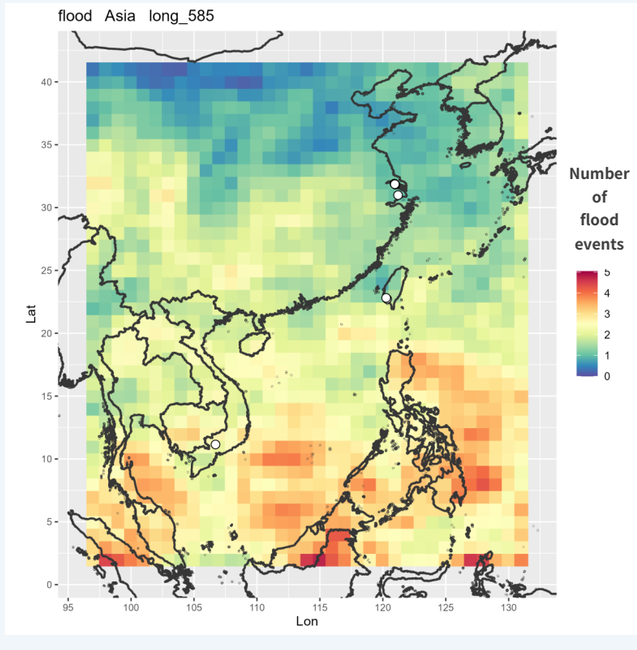


Long-term ：> 5 years

Plants in the Nantong area in China have shown a slight upward trend in the long-term likelihood of flooding

Note: Flood risk remains low across other plant areas, with no significant changes observed.

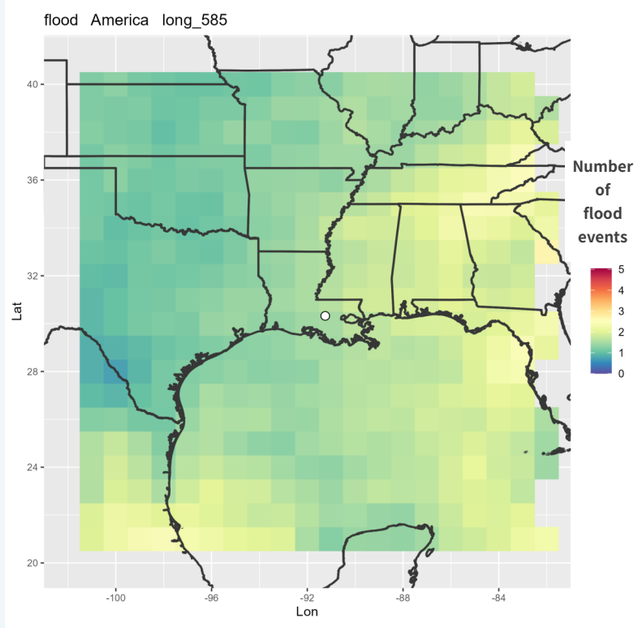
SSP5- 8.5 Scenario



Long-term ：> 5 years

Plant in Vietnam has shown a slight upward trend in the long-term likelihood of flooding

Note: No significant changes in flood risk have been observed in China and Taiwan; however, the frequency of flood occurrences has shown a slight increase.



Long-term ：> 5 years

Plant in USA has shown a slight upward trend in the long-term likelihood of flooding

Physical Risk — Scenario Analysis for High Temperature

The physical risk most directly affected by climate change is high temperature. TSRC defines the risk of high temperatures as 36 °C, using the Taiwan Central Weather Bureau's definition of temperatures that have a significant impact on the health and safety of workers. High temperatures not only increase the safety risk for outdoor workers in factories, but can also increase the frequency of damage to some equipment, resulting in catastrophic damage.

The results of the climate scenario analysis [Note] show that the high temperature risk to TSRC is more significant in the USA and Vietnam. The Louisiana plant in the USA shows a significant increase in the frequency of high temperatures under the SSP2-4.5 and SSP5-8.5 scenarios, with the annual average number of days with high temperatures increasing by more than 2 days under the SSP2-4.5 scenario compared to the baseline period. In Vietnam, there is a significant risk of high temperatures in the medium term and a slight decrease in the long term under the SSP5-8.5 scenario.

Many of TSRC's other factories are located in coastal areas and are subject to sea temperature regulation. Although extremely high ambient temperatures are less likely to occur, high humidity conditions often result in excessively high body temperatures and outdoor workers may be at risk of heat stroke and heat injury. In addition, due to the influence of terrain, environment and other factors, or the volatile organic compounds (VOCs) emitted from industrial areas, and even the concrete flooring material, the temperature may increase, so in summer we still need to check the actual temperature measured in each factory and activate the high temperature contingency measures immediately.

TSRC is committed to the safety and environment of employees. TSRC has formulated contingency measures for high temperatures at each plant and will comply with occupational health and safety regulations set by the relevant authorities at each plant, as well as conduct ongoing equipment maintenance and electricity monitoring to maintain stable electricity use in high temperature environment.

Note: An ambient temperature of 36 °C is defined as extreme high temperature.

Average annual number of days with high temperatures up to 36 °C at Louisiana plant in the USA

Scenario	Baseline period	Short-term	Medium-term	Long-term
SSP2- 4.5	15.2	16.3	18.4	17.9
SSP5- 8.5		13.3	15.7	15.5

Average annual number of days with high temperatures up to 36 °C at Vietnam plant

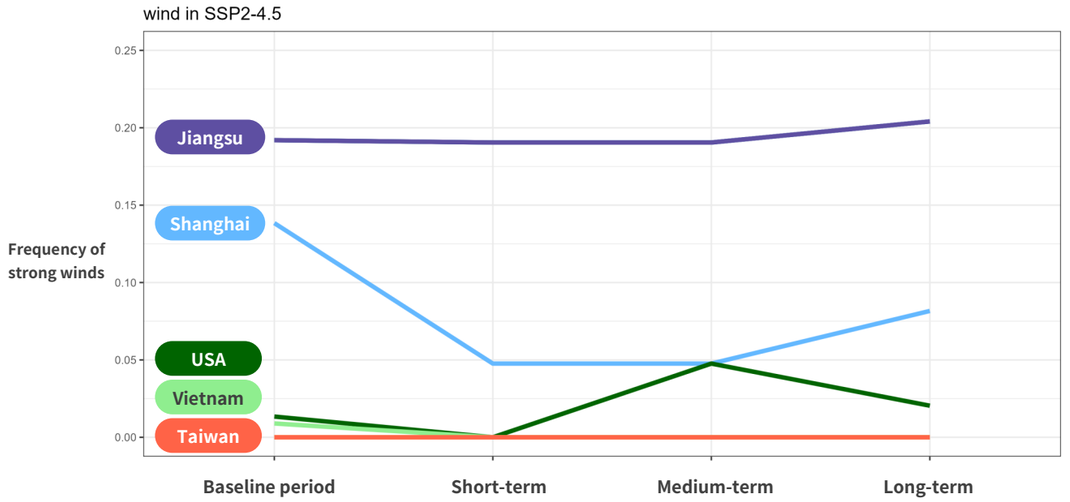
Scenario	Baseline period	Short-term	Medium-term	Long-term
SSP2- 4.5	15.6	14.8	13.7	13.5
SSP5- 8.5		16.4	18.4	11.4

Physical Risk — Scenario Analysis for Strong Winds

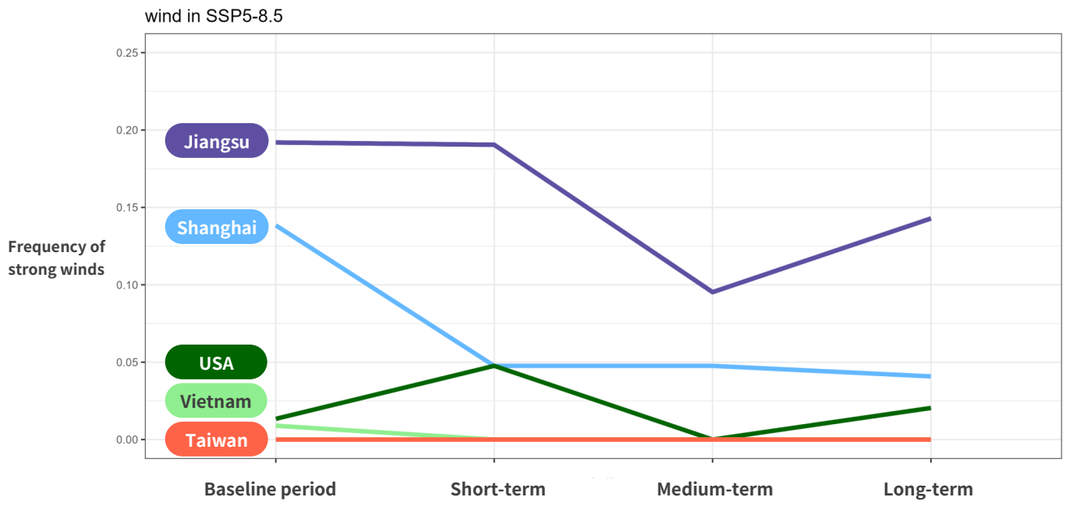
Based on past experience of typhoon damage, when strong winds with an average wind speed of level 8 hit the TSRC plant area, damage is likely to occur. The results of the climate scenario analysis [Note] show that there is no obvious upward trend in the frequency of strong winds at TSRC's various plants in the short, medium and long term, but there is a downward trend at the Kaohsiung, Vietnam and Shanghai plants. TSRC will continue to review the robustness of equipment at each plant in accordance with the Disaster Response Plan and strengthen damage prevention measures before a disaster occurs to reduce damage caused by strong winds.

Note: A maximum wind speed of level 8 or higher is defined as strong wind.

SSP2- 4.5 Scenario



SSP5- 8.5 Scenario



Climate Metrics and Targets

In response to the impacts and challenges of climate change, TSRC has formulated short- and medium-term goals related to climate risk mitigation. The climate risk objectives are combined with the annual work goals of the operational team and linked through annual performance appraisals to effectively achieve them, and performance is driven by regular oversight by the Board of Directors.

Indicators	Corresponding Climate Risks and Opportunities ▲ Risks 、● Opportunities		2024 Achievements	Milestones		
				2024	2025	2030
Reduce total carbon emissions (scope 1+2; base year: 2021)	▲ Caron Fee / Carbon Tax ▲ Development of Lower Emission Technologies	● Enhancement of energy use efficiency ● Transformation of energy use ● Development of circularity mode ● Development of new products ● Enhancement of product competitiveness	Total carbon emissions reduced by 9.44% from base year	Total carbon emissions reduced by 7.5% from base year	Total carbon emissions reduced by 10% from base year	Total carbon emissions reduced by 22.5% from base year
Increase the percentage of renewable energy	▲ Caron Fee / Carbon Tax ▲ Increased Regulation of Sustainability - Renewable energy use	● Enhancement of energy use efficiency ● Transformation of energy use ● Development of circularity mode ● Development of new products ● Enhancement of product competitiveness	Renewables accounted for 7.55% of total electricity consumption	Renewables accounted for 7.5% of total electricity consumption	Renewables account for 10% of total electricity consumption	Renewables account for 30% of total electricity consumption
Improve wastewater recycling	▲ Drought	● Development of circularity mode ● Enhancement of water use efficiency	Recycled wastewater accounted for 27% of the total wastewater	Recycled wastewater accounted for 26% of the total wastewater	Recycled wastewater accounts for 36% of the total wastewater	Recycled wastewater accounts for 40% of the total wastewater
Increase use of reclaimed water	▲ Drought	● Development of circularity mode ● Enhancement of water use efficiency	Reclaimed water accounts for 23% of total water consumption	Reclaimed water accounts for 23% of total water consumption	Reclaimed water accounts for 34% of total water consumption	Reclaimed water accounts for 40% of total water consumption
Develop products that reduce environmental Impact	▲ Caron Fee / Carbon Tax ▲ Changing Customer Behavior and Preferences ▲ Increased Cost of Raw Materials ▲ Development of Lower Emission Technologies	● Enhancement of energy use efficiency ● Transformation of energy use ● Development of circularity mode ● Development of new products ● Enhancement of product competitiveness	Developed a new generation of synthetic rubber for green tire/shoe materials, reducing environmental carbon emissions by 420,000 tons based on sales contribution	Develops a new generation of synthetic rubber for green and electric vehicle tires/shoes, reducing carbon emission by 350,000 tons based on sales contribution	Develops a new generation of synthetic rubber for green and electric vehicle tires/shoes, reducing carbon emission by 300,000 tons based on sales contribution	Develops a new generation of synthetic rubber for green and electric vehicle tires/ shoes, reducing carbon emission by 1.5 million tons based on sales contribution
			Complete the evaluation of feasible solutions for green foaming products, and develop multiple applications of products, such as slippers, shoe midsoles, chest pads, etc., and provide them to customers for evaluation and testing	Developed green foam products that reduce environmental impact	Develops green foam products with reduced environmental impact and recyclability	Develops green foam products using renewable resources to reduce environmental impact and increase recycling rates
			Specialty styrene block copolymers (SBCs) and recycled thermoplastic elastomers (rTPE) have been developed and successfully marketed for medical treatment, footwear materials, elastic films and plastic modification. The products have been successfully put on the market with sales reaching 1,300 tons.	Development of specialty styrene block copolymers (SBCs) and Recycled Thermoplastic Elastomer (rTPE)used in medical devices, footwear materials and plastic modification that are recyclable and reduce medical waste	Develops a new type of SBC to help customers reduce process energy consumption and eliminate the use of organic solvents	Develops TPE products for medical use and, depending on the sales contribution, reduce the amount of medical waste by 10% compared to the previous generation of products

Appendix

About the Report

This is the 2024 TCFD report of TSRC Corporation (hereinafter referred to as “TSRC”) . The report discloses climate-related risks and opportunities according to the framework recommended by the Task force on Climate-related Financial Disclosures (TCFD).

Reporting Period and Frequency

This report covers the period from January 1, 2024 to December 31, 2024, which is consistent with the reporting period of the Company's financial statements.

Scope of Reporting

This report covers TSRC Corporation (including the global headquarters, Kaohsiung Factory, and Gangshan Factory); six subsidiaries with substantial operations (Shen Hua Chemical Industrial Co., Ltd., TSRC (Nantong) Industries Ltd., TSRC-UBE (Nantong) Chemical Industry Co., Ltd., TSRC (Shanghai) Industries Ltd., TSRC (Vietnam) Co., Ltd., and TSRC Specialty Materials LLC); and two trading subsidiaries (Polybus Corporation Pte Ltd and TSRC (Lux.) Corporation S.à.r.l). The reporting boundary is consistent with all manufacturing and operational entities included in the consolidated financial statements. The information and material topics disclosed in this report do not vary from different entities and are not adjusted for minority shareholders’ interests. All entities report ESG data and information to headquarters on a regular basis. The global headquarters of TSRC is located in Taipei City, Taiwan. For readers to understand the titles of related organizations, explanations are provided below:

- Shen Hua Chemical: Refers to Shen Hua Chemical Industrial Co., Ltd.
- Nantong Industrial: Refers to TSRC (Nantong) Industries Ltd.
- TSRC-UBE: Refers to TSRC-UBE (Nantong) Chemical Industrial Co., Ltd.
- Shanghai Industrial: Refers to TSRC (Shanghai) Industries Ltd.
- TSRC Corporation: Refers to TSRC Corporation located in Taiwan, including the global headquarters located in Taipei, Kaohsiung Factory, and Gangshan Factory.
- TSRC: Refers to Shen Hua Chemical, Nantong Industries, TSRC-UBE, Shanghai Industries, TSRC (Vietnam) Co., Ltd., TSRC Specialty Materials LLC, global headquarters, Kaohsiung Factory, Gangshan Factory, Polybus Corporation Pte Ltd (hereinafter referred to as “Polybus”), and TSRC (Lux.) Corporation S.à.r.l (hereinafter referred to as “TSRC (Lux.)”) .The terms TSRC, TSRC Group, and the Group are used interchangeably in this Report.

Third-party verification and assurance

The data disclosed in this report is consistent with the 2024 Sustainability Report. The scope of the greenhouse gas inventory covers all factories and subsidiaries identical to the reporting scope in the financial statements. The operational control approach is adopted in accordance with ISO14064-1:2018. Verification conducted by DNV GL Business Assurance Co., Ltd. (DNV) . Please refer to the TSRC website for the Verification Statement. ◦ Water usage data has also been assured and verified by an independent third party. The assurance statement and the independent assurance statement by the certified public accountant can be found in the 2024 Sustainability Report.

Contact

Welcome any advice/suggestion or inquiries for TSRC ESG plans or implementations

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Telephone : +886 2 3701 6000

Email : esg.admin@tsrc-global.com

Official Website

Website : https://www.tsrc.com.tw/

TCFD Disclosure Index

Recommended Disclosures	Chapters in This Report
Governance	
Describe the board’ s oversight of climate-related risks and opportunities.	TSRC Climate Management Framework
Describe management’ s role in assessing and managing climate-related risks and opportunities.	TSRC Climate Management Framework
Strategy	
Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term	Climate Risk and Opportunity Matrix
Describe the impact of climate-related risks and opportunities on the organization’ s businesses, strategy, and financial planning.	Climate Risk and Opportunity Financial Impact
Describe the resilience of the organization’ s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	Climate Risk Scenario Analysis
Risk Management	
Describe the organization’ s processes for identifying and assessing climate-related risks	Climate Risk and Opportunity Identification and Management Process
Describe the organization’ s processes for managing climate-related risks.	Climate Risk and Opportunity Identification and Management Process
Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization’ s overall risk management.	Climate Risk and Opportunity Identification and Management Process
Metrics and Targets	
Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	Climate Metrics and Targets
Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risks.	Climate Risk and Opportunity Identification and Management Process Appendix TSRC GHG Emissions Data Summary
Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	Climate Metrics and Targets

Comparison of Changes in Climate Risk and Opportunity to the Previous Year

Climate Risk

	2023		2024		Differences
	Climate Risks	Prioritized Risks	Climate Risks	Prioritized Risks	
Transition Risks	Increased cost of GHG emissions	V	Caron Fee / Carbon Tax	V	In response to the development of policies and laws in each factory and sales country, the risk name has been revised to suit actual operating conditions.
	Increased Mandates and Regulation of Sustainability	V	Increased Regulation of Sustainability	V	
	Cost of Transition to Lower Emission Technologies	V	Development of Lower Emission Technologies	V	
	Increased Cost of Raw Materials	V	Increased Cost of Raw Materials	V	
	Changing Customer Behavior and Preferences	V	Changing Customer Behavior and Preferences	V	
	Stigmatization of Sector	V	Corporate Reputation	V	Stakeholders' focus has shifted from industry development to the individual reputation of enterprises, the risk name has been revised to suit actual operating conditions.
Physical Risks	Drought	V	Drought	V	
	Increased Extreme Weather Events – Torrential rains	V	Flooding	V	Operations are mainly affected by climate disasters. We re-evaluate the disasters caused by extreme climate types and set climate disasters as risk factors.
	Increased Extreme Weather Events – Typhoon				
	Rising Sea Levels				
	Rising Average Temperature		High Temperature		
	Increased Extreme Weather Events – Typhoon		Strong Winds		The impacts of typhoons are categorized into flooding and strong winds for climate hazard assessment.
	Increased Extreme Weather Events – Extreme Low Temperature		-		Deleted, the potential impact of extreme low temperature weather events is negligible on company's operations and employees within the next decade.

Climate Opportunity

	2023	2024	Differences
Climate Opportunity	Development of climate adaptation solutions	Development of new products	Revise the opportunity name to make the content more consistent with actual operations.
	Development and/or expansion of low emission goods and services	Enhancement of product competitiveness	Revise the opportunity name to make the content more consistent with actual operations.
	Use of more efficient production and distribution processes	Development of circularity mode	Subdivide and revise the opportunity name.
		Enhancement of energy use efficiency	Subdivide and revise the opportunity name.
	-	Transformation of energy use	To mitigate the impact of climate transition risks, increase the use of renewable energy and reuse of waste heat.
	-	Enhancement of water use efficiency	To mitigate the impact of climate change risks, increase wastewater recycling and use of recycled water.
	Increase sustainable financing	-	The opportunity created by this item is not obvious, so it is deleted.
	Positive reputation	-	Incorporate corporate reputation into transformation risk.

TSRC GHG Emissions Data Summary

Unit ： metric tons of CO_2e	2021	2022	2023	2024
Scope 1				
TSRC Group Total	129,576.00	138,447.00	139,249.78	151,362.26
Scope 2				
TSRC Group Total	431,109.00	408,181.00	374,918.70	356,420.45
Scope 3 Note 1				
TSRC Group Total	1,405,930.00	1,346,560.00	1,332,772.05	1,331,675.38

Note 1 ： Scope 3 GHG emission includes Category 3 (Indirect GHG emissions from transportation)– Emissions from upstream transportation and distribution (major raw materials) 及 Category 4 (Indirect GHG emissions from products used by an organization)– Emissions from the purchase of products (major raw materials) , Emissions from activities related to energy resources (excluding Categories 1 and 2) , Emissions from the removal and disposal of waste from operations .

Note 2 ： This table covers seven greenhouse gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride. The GWP value for 2021 is from the IPCC AR5, and the GWP value for 2022-2024 is from the IPCC AR6.

Note 3 ： The emission factors are from:

〔Taiwan〕 The global business headquarter, Kaohsiung Factory and Gangshan Factory: Use emission factors published by Taiwan Environmental Protection Agency (version 6.0.4).

〔China〕 2021-2023: Shen Hua Chemical, Nantong Industries, and TSRC-UBE uses China's provincial electricity emission factors, the United Nations Intergovernmental Panel on Climate Change (IPCC) assessment reports, and the Shanghai Bureau of Ecology and Environment [2022] No. 34 The notice of Shanghai Ecological Environment Bureau on the adjustment of emission factor values related to the city's greenhouse gas emission accounting guidelines.

2024: Based on the information announced by the competent authority in China and due to differences in operations between different factories, we have used the China average carbon dioxide emissions factor for electricity (not including electricity from market-traded non-fossil fuel energy) of 0.5856 kg CO_2/kWh for Nantong Industries, and the China average carbon dioxide emissions factor for electricity of 0.5366 kg CO_2/kWh, as well as data from the United Nations IPCC assessment report, for Shen Hua Chemical, TSRC-UBE, and Shanghai Industries.

〔Vietnam〕 TSRC (Vietnam) Company Limited: Uses the electricity emission factors published by Vietnam’s Ministry of Industry and Trade and Ministry of Natural Resources and Environment and the IPCC assessment reports.

〔USA〕 TSRC Specialty Materials LLC ： Uses the US Environmental Protection Agency database and the IPCC assessment reports.

Note 4 ： Pursuant to the ISO14064-1:2018 standards, the Greenhouse Gas Verification Statement disclosed that Shen Hua Chemical, Nantong Industries, TSRC-UBE, and Shanghai Industries all cited the China average carbon dioxide emissions factor for electricity (not including electricity from market-traded non-fossil fuel energy) of 0.5856kg CO2/kW, resulting in the TSRC Group having 360,432.32 metric tons CO2e of Scope 2 emissions for 2024.

Note 5 ： The 2021-2024 reporting boundary covers all factories and subsidiaries identical to the reporting scope in the financial statements. The operational control approach is adopted in accordance with ISO14064-1:2018. Verification conducted by DNV GL Business Assurance Co., Ltd. (DNV) in 2024. Data is rounded to the second decimal place.

TSRC Water Usage Data Summary

Unit ： 1,000 m³	2021	2022	2023	2024
Fresh water withdrawal	3,972	3,860.71	3,163.19	3,329.63
Groundwater withdrawal	–	–	6.77	0.04
Purchased steam	1,013	880.43	826.52	873.48
Wastewater recycled	850	809.24	918.76	1,040.18
Purchased reclaimed water	–	–	212.48	198.26
Water usage Note 1	5,835	5,550.38	5,127 .72	5,441.59
Water discharge	2,916	3,011.66	2,793.47	2,753.20
Wastewater Recycling Rate Note 2 **(%)**	23%	21%	25%	27%
Reclaimed Water Usage Rate Note 3 **(%)**	15%	15%	22%	23%

Note 1 ： Water usage = Tap water withdrawal + Groundwater withdrawal + Consumption of purchased steam + Wastewater recycled + Purchased reclaimed water. Data are rounded to the second decimal place starting in 2022.

Note 2 ： Wastewater Recycling Rate = Wastewater recycled volume / Total wastewater volume. Total wastewater volume = Wastewater recycled volume + Water discharge volume. The data is rounded to the nearest whole number.

Note 3 ： Reclaimed Water Usage Rate = Reclaimed water usage volume / total water usage volume. Reclaimed water usage volume = Wastewater recycled volume + Purchased reclaimed water volume. The data is rounded to the nearest whole number.

Note 4 ： Tap water withdrawal comes from fresh water (≤ 1,000 mg/L total dissolved solids) supplied by the local water company. Purchased steam is also used as one of the sources of process water after the purpose of heat exchange. The evaporation of purchased steam is not considered. TSRC Kaohsiung Factory also draws groundwater.

2024 TSRC TCFD Report