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Sustainable Operation and Governance

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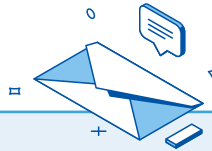




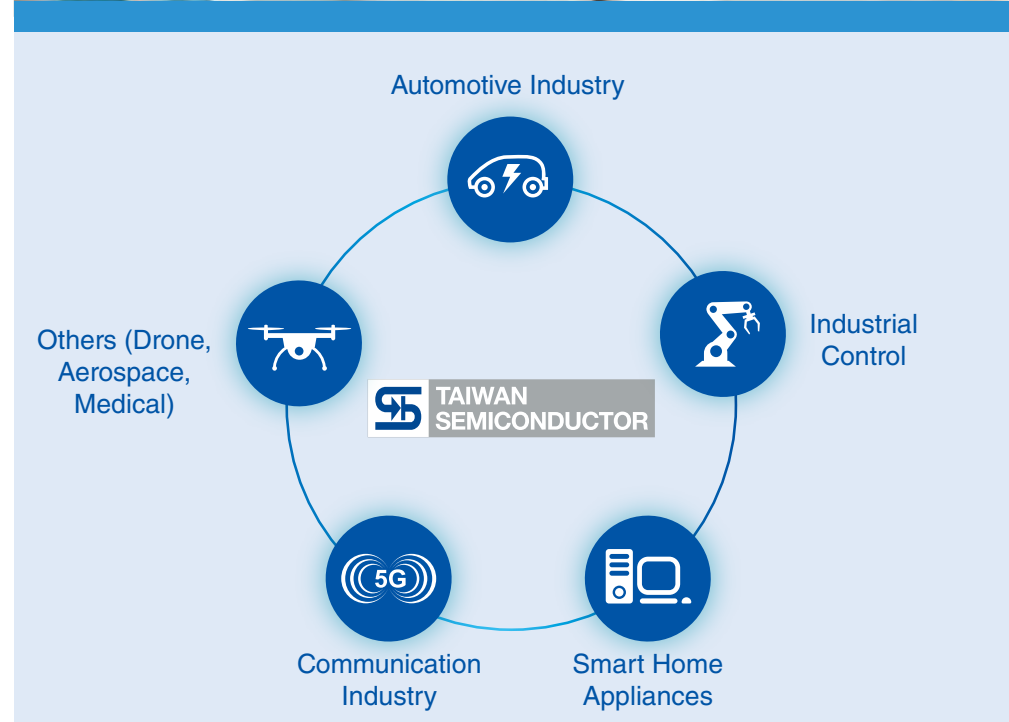
1.1 About TSC

Taiwan Semiconductor Co., Ltd. (TSC or the Company) was established in 1979 and is a leading manufacturer of power semiconductor devices worldwide. With over 40 years of experience, the Company provides a wide range of products, including power management ICs, rectifiers, ESD protection devices, bridge rectifiers, metal-oxide-semiconductor field-effect transistors (MOSFET), insulated gate bipolar transistors (IGBT), trigger diodes, and silicon controlled rectifiers. These products and solutions are widely applied to automotive electronics, power management systems, lighting, industrial equipment, portable products, communication devices, consumer electronics, and computer 3C products. TSC continuously enhances its competitive advantage through technological innovation, strengthens its sustainable supply chain to serve customers, and continues to develop its global market.

1.1.1 Introduction to TSC



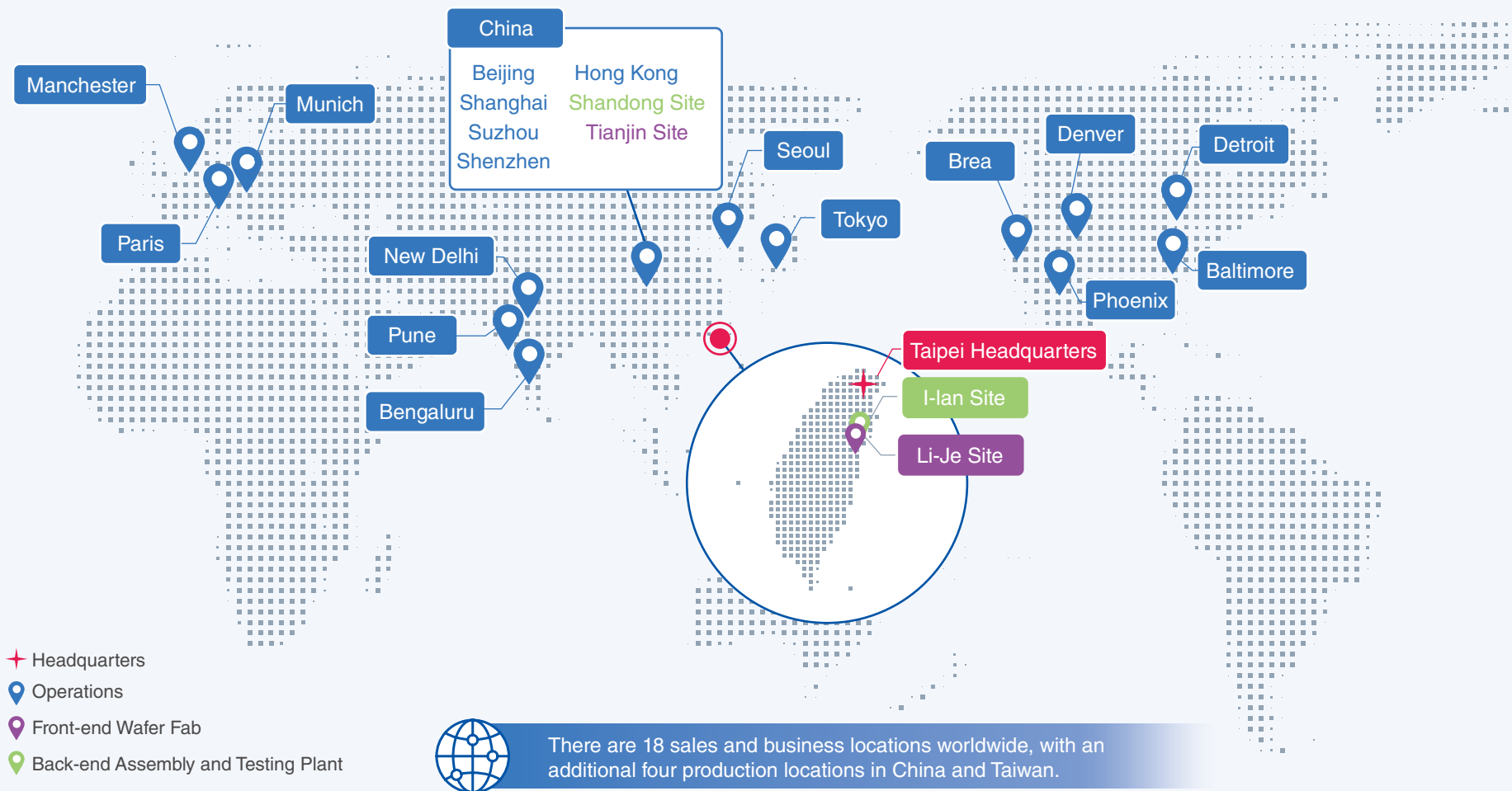
Date of Establishment	Established in accordance with the Company Act in January 1979
Headquarters	Address: 11F., No. 205, Sec. 3, Beishin Rd., Xindian Dist., New Taipei City, Taiwan (R.O.C.)
Capital	NT\$2.634 billion
Industry	Semi-conductor manufacture
Affiliates	The business operations of Company affiliates include electronics components manufacturing, office machines manufacturing, computer and peripheral equipment manufacturing, international trade, management consulting, restrained telecom radio frequency equipment and materials import, and controlled telecommunications radio-frequency devices and materials manufacturing.
Date of Listing	Listed for trading on the Taiwan Stock Exchange in February 2000.
Ticker Symbol	5425





Operations

The headquarters of the TSC Group is located in New Taipei City, Taiwan. There are four production sites, including wafer fabs and assembly sites, located in Taiwan and mainland China. Sales offices are located globally in mainland China, Hong Kong, Japan, South Korea, India, the United States, Germany, France, the United Kingdom, and other regions. The global employees are over 1600. The subsidiary TSC Auto ID Technology Co., Ltd.. (Ticker Symbol: 3611) is mainly engaged in the manufacturing and trading of bar-code printers. For more information about TSC Auto ID Technology, please refer to the Company's annual report.





Service Scope of TSC

The development and manufacturing of power semiconductor is the core competitiveness of TSC. From product design, technology research and development, wafer manufacturing, assembly and testing, to global marketing of its brand, TSC provides customers with a comprehensive power semiconductor solution. Our production sites are in I-lan and Li-Je (Wujie Township, I-lan), Tianjin Province and Shandong Province in mainland China. The Li-Je Site and Tianjin Site mainly produce six-inch and four-inch wafers, while the I-lan Site and Shandong Site mainly produce assembly and testing products such as MOSFET rectifiers, surface-mount devices (SMD), and bridge rectifiers. After producing wafers for self-use, the Li-Je Site and Tianjin Site will transfer them to the I-lan Site or Shandong Site for assembly, depending on the production schedule and assembly process requirements of each assembly site. TSC continues strengthening technological innovation and enhancing market competitiveness by integrating resources and collaborating with upstream and downstream supply chain partners.

Service Scope of Main Production Area



Li-Je Site (wafer fab)



I-lan Site (assembly and testing site)

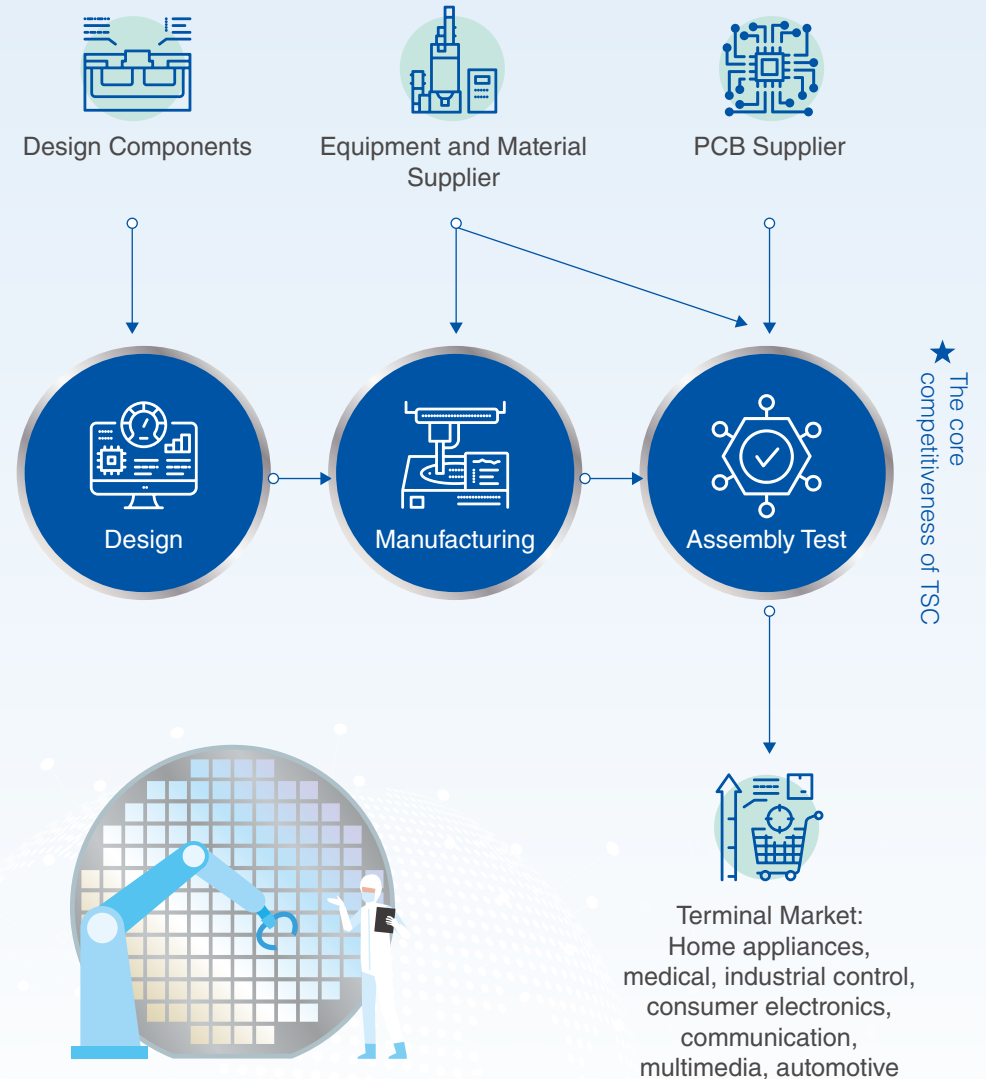


Tianjin Site
Tianjin Everwell (wafer fab)



Shandong Site
Yangxin Everwell (assembly and testing site)

Industry Value Chain





Business Philosophy

TSC strictly complies with the TSC Corporate Governance Best Practice Principles and deeply implements the concept of sustainable operation. As a significant member of the international semiconductor industry chain, TSC conducts comprehensive layout based on the development and demand of the global industry. TSC takes "Professionalization of Operation, Value Co-creation, Technological Innovation, Quality Commitment, and Brand Internationalization" as the five dimensions for its corporate sustainable development strategy. In response to industry trends, TSC effectively grasps social dynamics, deeply cultivates sustainable values and culture, implements corporate social responsibility, and promotes positive influence within the industry.

1 Professionalization of Operations

- In order to popularize capital, ownership and management rights are clearly divided.
- Professional managers are recruited to enhance operational performance.
- Management is systematized, with the goal of sustainable operation.

2 Value Co-creation

- Employees are encouraged to buy shares.
- The results of operational achievements are shared.

5 Brand Internationalization

- The scale of the industry is expanded and influence enhanced.
- The Company's products and brand strive to become leaders in the industry worldwide.

3 Technological Innovation

- Technology and R&D and innovation are deeply cultivated.
- Strategic partners are collaborated with to jointly develop new products.

4 Quality Commitment

- A zero-defect policy is implemented to ensure superior quality.
- Enthusiastic service responds promptly to customer needs.





Participation in Associations

TSC strives to play an essential role in the global market through continuous technological innovation and a complete deployment in the value chain, responding to changes in the international situation and industry with other companies. We also actively participate in trade organizations and external initiatives related to its industry and sustainable development, leading the industry towards mutual benefit.

List of Participation in Associations

Association Name	About the Association	Participation Methods and Objectives	TSC's Role in the Association
World Semiconductor Trade Statistics, WSTS	WSTS is an international semiconductor industry organization responsible for collecting and publishing statistical data on the global semiconductor market. It assists the industry in making strategic decisions through analysis and forecasting, and its findings are important reference indicators for the semiconductor industry.	TSC became a member in 2012 and provides shipment information to WSTS on a monthly, quarterly, and semi-annual basis. WSTS regularly releases statistical information (including product categories and applications) and market forecast data for members' reference.	Member
Chinese National Association of Industry and Commerce, CNAIC	The CNAIC is one of the representative organizations of Taiwan's business community, serving as a bridge for communication between the government and enterprises.	TSC participates in seminars and events organized by CNAIC on a regular basis to stay updated on the latest economic and trade situations and industry trends.	Member
CommonWealth Magazine Group - ESG committee	The CommonWealth Magazine Group - ESG committee regularly convenes members discussions on legal regulations, customer requirements, and ESG trends such as carbon tariffs being implemented in various countries.	TSC was invited to become a corporate member in 2023 and participate in the SDGs Workshop, actively exchanging ideas with peers and companies from different industries, sharing its own corporate social responsibility and energy-saving measures in the semiconductor industry with the goal of jointly guiding the sustainable development of Taiwanese companies with industry leaders.	Member

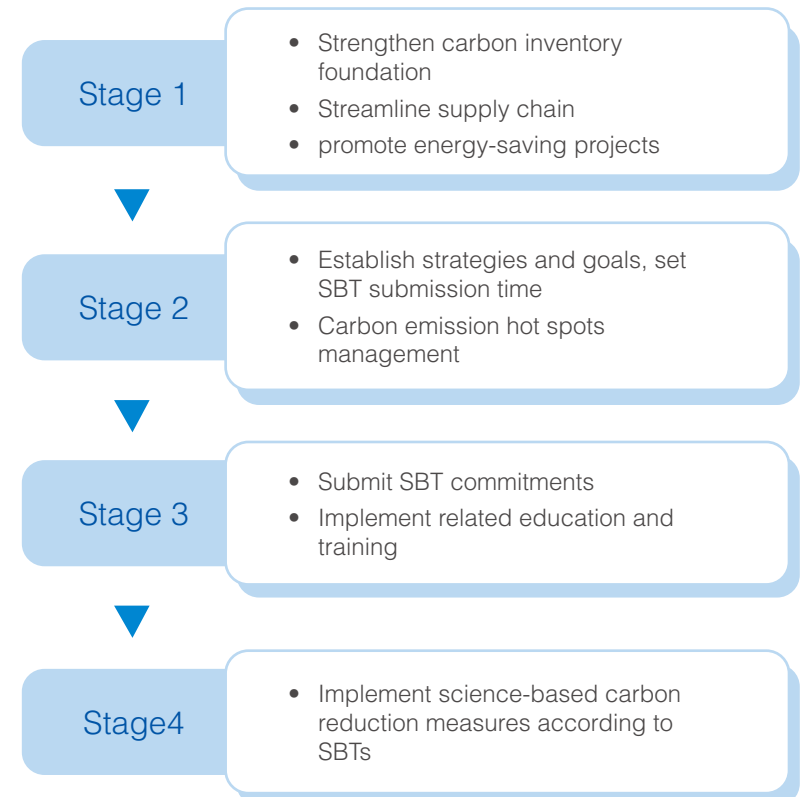
Responding to International Sustainability Initiatives

• TCFD (Task Force on Climate-related Financial Disclosures):

In response to the TCFD initiative, TSC implements climate change management based on the TCFD framework starting from 2022. We will follow the TCFD framework to identify climate risks and conduct risk and opportunity analysis through relevant responsible units based on transition and physical risks, and develop adaptation and mitigation strategies.

• SBT (Science Based Targets):

TSC is planning to develop a medium to long-term carbon management plan in the near future, with the following four-stage plan:





1.1.2 Financial Performance

TSC believes that good operational performance is the foundation for the sustainable development of a company. In recent years, TSC has been deeply involved in the development of new products such as automotive electronics, industrial control, servers, and analog integrated circuits (ICs). The overall synergy and effectiveness of these efforts have become increasingly evident year by year. TSC complies with the principle of information transparency. We continuously improve capital efficiency and push for communication with stakeholders to provide them with a comprehensive understanding of our operations and growth.

Through industry deployment and the joint efforts of all employees, we achieved a revenue of NT\$5.69 billion in 2022, a growth of about 19% compared to the previous year. The average gross profit margin increased to 29%, and net profit after tax reached approximately NT\$1.56 billion. Earnings per share (EPS) increased from NT\$3.55 to 6.28, and a cash dividend of NT\$4 per share was distributed for the year 2022. TSC's tax donations for the year reached NT\$260 million, demonstrating its sound, stable operational performance and continuous contribution to society. For more information on the Company's operational performance and financials, [please refer to TSC's 2022 financial report and annual report](#).

Revenue Proportion from the Government

Unit: NT\$ thousand

Type	2020	2021	2022
Tax Reductions and Deductions	9,416	7,354	28,110
Investment Subsidies, R&D Subsidies, and Other Related Subsidies	818	488	1,879
Other: Ministry of Economic Affairs' Return to Taiwan to Invest Interest Subsidy	1,025	1,823	3,458

*Note: The government has not held any shares in TSC in the past three years.

Overall Financial Performance

Unit: NT\$ thousand

Type	2020	2021	2022
Operating Revenue	3,642,461	4,803,477	5,699,155
Operating Costs	2,920,010	3,954,927	4,437,327
Employee Salary and Benefits	432,171	526,993	700,267
Dividend Distribution	395,228	658,714	1,053,942
Interest Paid	0	5,341	9,810
Payments made to the Government*	44,602	124,583	267,253

*Note: Payments made to the government include all the Company's tax payments and fines as reported.



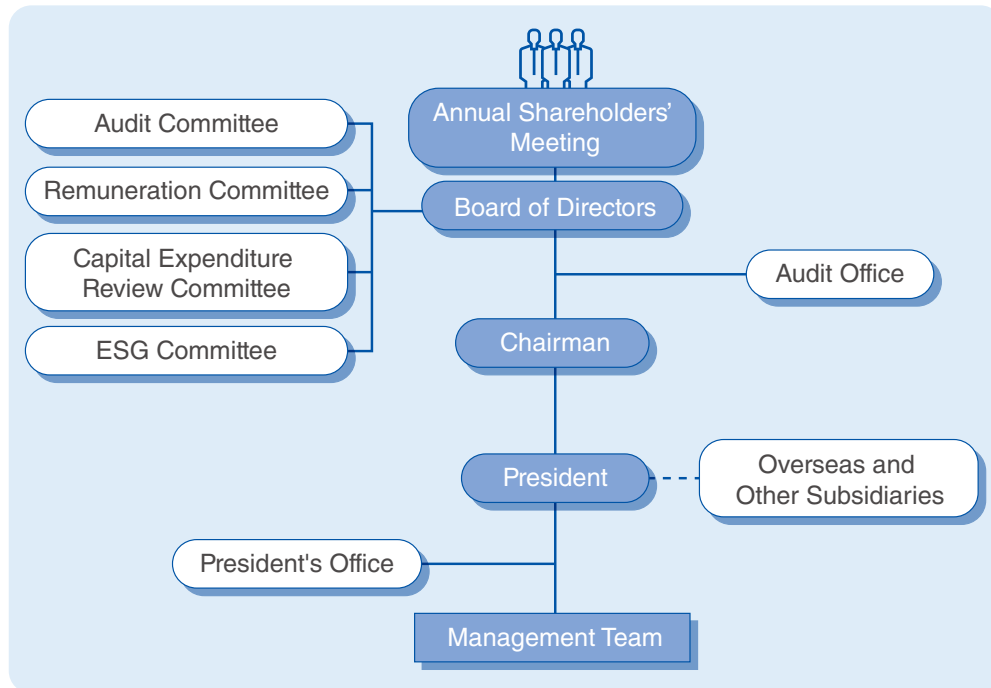


1.2 Corporate Governance

1.2.1 Sustainable Governance

To ensure sound corporate governance, TSC complies with the principle of integrity in carrying out various business operations, strictly prohibiting any form of corruption, bribery, and fraudulent activities for personal or others' gain through the abuse of power. We have also set up a dedicated section for investors on the official website, regularly disclosing financial and non-financial information such as annual Shareholders' Meeting reports and ESG Reports. By enhancing information transparency, TSC strengthens communication with stakeholders and safeguards their rights and interests. TSC's Corporate Governance Evaluation System result for 2022 rose one level compared to 2021, indicating a significant improvement in our overall corporate governance efforts over the past year.

Corporate Governance Structure



Composition and Operation of the Board of Directors

The Board of Directors is the highest governance body of TSC, responsible for guiding the Company's strategy, supervising management, and being accountable to shareholders. The Board of Directors of TSC exercises its powers in accordance with laws, Articles of Incorporation, or resolutions of Shareholders' Meetings in relation to various operations and arrangements of the corporate governance system. In order to strengthen supervision and enhance management functions, the Board of Directors has established multiple Functional Committees, including the Audit Committee, Remuneration Committee, and Capital Expenditure Review Committee, and has specified organizational regulations to assist the Board of Directors in fulfilling its supervisory responsibilities. The committees regularly report their activities and decisions to the corporate governance body. The Audit Office of TSC is responsible for regularly conducting internal audit operations, and its effectiveness and efficiency are supervised by the Audit Committee.

As of the end of 2022, the average term of office for all Directors is three years. According to Article 206 of the Company Act, attendance by the Board of Directors' should reach a majority. In the first half of 2022, the Board of Directors held seven meetings, with at least six Directors attending each meeting. The average attendance rate of Directors was 95.9%, indicating good attendance and compliance with regulations. The ratio of total Director remuneration to the Company's net profit after tax in 2022 was 3.92%.

Nomination and Selection of Directors

The Board of Directors establishes the election system for Directors in accordance with laws and the Articles of Incorporation. The selection process for all Directors is open and fair, in compliance with the "Articles of Incorporation of Taiwan Semiconductor Co., Ltd." Currently, the Board of Directors of TSC consists of seven Directors, including four Independent Directors and one External Director. Among them, two Directors also hold positions as employees or executives, which does not exceed the majority and complies with legal regulations.

In addition, according to the Rules for Election of Directors established by the Company, the method of selecting Directors and Independent Directors adopts a cumulative voting system and a candidate nomination system, allowing shareholders holding a certain number of shares or more to propose a list of candidates to promote shareholder participation and avoid the monopolization or excessive use of nomination rights, thereby maintaining independence. [For more details, please refer to the TSC's Rules for Election of Directors.](#)



Diversified Composition of the Board of Directors

According to the articles of the TSC Corporate Governance Best Practice Principles, the Company has established a policy of diversity and specific management objectives for the Board of Directors. The diversity of Board of Directors is achieved by taking gender, age, nationality, culture, professional background, and industry experience into consideration with regard to its composition. In this way, TSC can be guided by a diverse industry and international market perspective. Currently, all seven Directors of the Company are male R.O.C nationals, and each possess the necessary knowledge, skills, and education for fulfilling their duties. Each of them has a wealth of expertise in accounting, finance, business, law, marketing, or industry technology. [Please refer to the 2022 TSC Annual Report for the CVs of the Directors.](#)

Board of Directors

Name of Director	Functional Committee Members	Date First Elected	Attendance Rate
Wang Shiu-Ting (Chairman and President)	ESG Committee (Chairman)	1998.06.19	100%
TSC Auto ID Technology Co., Ltd. Representative: Wang Xing-Lei	Member of ESG Committee	2015.06.18	100%
UMC Capital Co., Ltd. Representative: Liu Chang-Yu	None	2021.07.26	85.71%
Jhan Cian-Long (Independent Director)	Audit Committee (Convener) Member of Remuneration Committee	2012.06.27	85.71%
Lin Bo-Sheng (Independent Director)	Member of Audit Committee Member of Remuneration Committee	2012.06.27	100%
Fan Hong-Shu (Independent Director)	Member of Audit Committee Member of Remuneration Committee (Convener)	2012.06.27	100%
Ma Shu-Zhuang (Independent Director)	Member of Audit Committee	2021.07.26	100%

Performance Evaluation of Board of Directors

To implement corporate governance and enhance the functioning and efficiency of the Board of Directors, we have established performance goals. In accordance with Rules for Performance Evaluations of the Board of Directors, TSC conducts performance evaluation annually. In 2022, the evaluation will be conducted online or through self-assessment forms. The evaluation will assess the overall operation of the board members, functional committees, and performance of each Director. The evaluation results and improvement plans will be submitted to the Board of Directors. The evaluation results for 2022 are rated as "excellent" to "outstanding" and will be disclosed in the [Company's Annual Report and official website](#)

Performance Evaluation Items of Board of Directors

- 
Participation Level in Company Operations
- 
Quality of Decision-Making by the Board of Directors
- 
Composition of the Board of Directors
- 
Selection and Continuing Education of Directors
- 
Internal Controls

Management of Conflicts of Interest in the Board of Directors

TSC follows relevant laws and regulations, with Independent Directors serving as members of the Audit Committee to ensure the independence of the Board and fulfill its supervisory function. TSC discloses positions of the Board of Directors' members in other companies in the Annual Report, indicating that there is no cross-shareholding with major suppliers or other stakeholders.



Functional Committee

Functional Committee	Responsibilities	Frequency of Meeting	Major Resolutions
Audit Committee	<p>The main purpose of the Audit Committee is to supervise the following matters:</p> <ul style="list-style-type: none"> The proper expression of the Company's financial statements. Selection, appointment, independence, and performance of Certified Public Accountants/CPAs Effective implementation of internal controls within the Company. Company compliance with relevant laws and regulations. The management of existing or potential risks to the Company. 	At least once per quarter; a total of 6 times in 2022.	<ul style="list-style-type: none"> Annual and Quarterly Financial Statements Report Internal Audit Activities Report Major Investment Projects of the Company
Capital Expenditure Review Committee	Tracking operational performance by reviewing capital expenditure budgets, long-term development strategies, implementing plans, and making cost-effectiveness adjustments.	At least once per quarter; a total of 3 times in 2022.	<ul style="list-style-type: none"> Discussion of capital expenditure budgeting, and implementation, revision, and addition of plans.
Remuneration Committee	The Committee is responsible for evaluating the remuneration policy and system for directors, supervisors, and managers of the Company in a professional and objective manner, and for submitting its suggestions to the Board of Directors as a reference in the decision-making process.	At least once per quarter; a total of 3 times in 2022.	<ul style="list-style-type: none"> Discuss and approve the performance evaluation of Directors and managers for 3Q22. Study and discuss the remuneration of Directors and managers for 2023. Discuss and approve the proposals of the Compensation Committee for 2023 Discuss and review the results of the performance evaluation of Directors and managers of the Company in 2022 and relevance and reasonableness of salary and compensation. Discuss and approve the review of the actual payment of various salaries and remuneration of Company's Directors and managers in 2022. Discuss and approve the review of the Company's 2022 remuneration of Directors and remuneration case of employees.
ESG Committee	<ul style="list-style-type: none"> Formulate the Company's sustainable development policy. The Company's sustainable development, including the establishment of goals, strategies, and implementation plans for sustainable governance, integrity in operational, environmental, and social aspects. Review, track, and revise the implementation and effectiveness of the Company's sustainable development, and regularly report to the Board of Directors. Pay attention to the concerns and supervisory communication plans of various stakeholders, including shareholders, customers, suppliers, employees, government, non-profit organizations, communities, and media. 	At least once per year; a total of one time in 2022.	<ul style="list-style-type: none"> Formulate TSC Sustainable Development Goals Establish the 2050 net zero goal Establish an ESG Office and set up various functional teams.

Note: The Capital Expenditure Review Committee was established in March 2022, and the ESG Committee was established in May 2022. Therefore, the number of meetings held by these two committees in the same year was lower than initially planned.



Audit Office



In accordance with the Regulations Governing Establishment of Internal Control Systems by Public Companies, an Audit Office directly subordinate to the Board of Directors has been established to set up a comprehensive internal risk control system and effectively implement it. An internal audit plan is conducted once a year between November and December, and the audit plan for the following year is reported to the Board of Directors in order to respond to changes in the internal and external environment of the group and ensure the continuous effectiveness of the system.

The main purpose and execution requirements of the Audit Office are to investigate and evaluate deficiencies in the internal control system and the efficiency of operations as well as providing timely improvement suggestions to assist the Board of Directors and management in fulfilling their responsibilities. The Audit Office adopts independent full-time internal auditing, conducting regular and irregular business audits and financial audits to effectively evaluate the soundness, reasonableness, and effectiveness of the internal control systems. When auditors engage in audit work, they will provide an audit report and a specified time limit for improvement to the inspected unit, so that they can provide explanations and implement improvement measures for abnormalities, and continuously track the progress of improvements.

Remuneration of Governance Body and Senior Managers

The remuneration provided TSC includes cash compensation, stock warrants, profit-sharing and stock ownership, retirement benefits or severance pay, various perks, and other substantial incentives. The scope of these measures is consistent with the guidelines for the disclosure of remuneration for directors, supervisors, and executives in the Company's Annual Report. In order to improve the remuneration system for directors, supervisors, and executives, the Company has also established a Remuneration Committee and formulated the Remuneration Committee Charter. The gender ratio of senior managers' remuneration has shown a continuous upward trend over the past three years.

Female to Male Remuneration Scale for Senior Managers

Year	2020	2021	2022
 :  Female : Male	23%	19%	41%

Note:

1. This table uses calculations based on basic salary plus additional remuneration.
2. "Senior managers" refers to people in positions at the level of vice president or above.

ESG Governance

The highest sustainable governance unit of TSC is the ESG Committee, established in May 2022. It serves as the decision-making and supervisory unit for our sustainable development efforts, dedicated to promoting environmental conservation and fulfilling social responsibilities. The committee has also formulated an [ESG Committee Charter](#) to ensure that the Company fulfills its responsibilities in safeguarding the rights and interests of the Company, employees, shareholders, and stakeholders.

Under the ESG Committee are the ESG Office and the Corporate Social Responsibility Functional Team that ensure the promotion and implementation of corporate sustainable development-related work. The ESG Committee is responsible for formulating the Company's sustainable development policies, strategies, and implementation plans for corporate sustainable governance, integrity operation, and environmental and social goals. It is also responsible for reviewing, tracking, and revising the implementation and effectiveness of the Company's sustainable development, and reporting to the chairman at least twice a year. Additionally, ESG Committee should pay attention to the concerns of various stakeholders, including shareholders, customers, suppliers, employees, government, non-profit organizations, communities, and the media, and supervise communication plans.

The ESG Office is composed of supervisors of the Administration Division, and supervisors and executive secretaries of each site. They are responsible for managing relevant policies and action plans for sustainability goals, coordinating and tracking the progress of various actions, and regularly reporting on the progress of sustainability projects and other significant issues to the ESG Committee.

Sustainable Governance Organizational Structure Chart





1.2.2 Integrity Management

Integrity management has been the cornerstone of our business strategy for nearly 40 years. In addition to complying with relevant regulations in Taiwan, the Company also establishes policies related to honesty and integrity management, as well as internal supervision and whistle-blower protection systems. We promote various training and advocacy programs to ensure that the behavior of all employees aligns with the moral values of TSC.

Policies and Norms of Ethical Conduct

TSC is committed to the soundness of integrity management, following relevant national laws and regulations, and has established the TSC Ethical Corporate Management Best Practice Principles, Work Rules, Codes of Ethical Conduct, and various ethical conduct management and guidelines as the ethical and behavior indicators for all employees (including managers), expecting to shape a corporate culture of integrity and moral values. The integrity operation policies and prevention plans are reviewed for their promotion and compliance by the ESG Committee, and a report is submitted to the Board of Directors at least once a year. Relevant policies and practices are disclosed on the Company's internal management platform and official website for all employees and other stakeholders to refer to. [For more details, please refer to the Corporate Governance Regulations on the official website.](#)

Internal Supervision of Integrity Management

The Audit Office of the Company continues to use effective accounting systems and internal control systems to regularly analyze and supervise business activities within the scope of operations that involve higher risks of integrity violations. Through this, we establish audit targets, scope, items, frequency, and other preventive measures, and regularly conduct audits to ensure effective supervision and control. In addition to establishing internal monitoring mechanisms, we also appoint CPAs to conduct audits or engage professional consultants for assistance. After producing audit reports based on the audit results, we report on the implementation status to the Board of Directors at least once a year. For specific responsibilities of the Audit Office, please refer to Section [1.2.1 Sustainable Governance](#).

Whistle-blowing and Protection Mechanism

For improper behavior that violates the policy on unethical conduct, TSC has established a grievance email address (Tsgrumble@ts.com.tw), through which employees and relevant stakeholders can file grievances with the Company. The handling of grievances is kept confidential throughout the process to protect the whistleblower from any improper retaliation. Subsequently, the supervisors of each site, the Audit Office, and the Legal Department will handle grievances according to their responsibilities. We plan to establish smoother communication and a more comprehensive grievance channel by completing the update of the official website by the end of 2023.

Violation of Integrity Grievance Reporting Procedure



Regulatory Compliance

Since the establishment of TSC, we have followed the standards and relevant regulations for public companies, established various internal operating procedures, and continuously paid attention to any domestic and international laws and regulatory policies that may affect its operations, making necessary adjustments at any time. In the TSC Ethical Corporate Management Best Practice Principles, it clearly stipulates that all employees should comply with the Company Act, Securities and Exchange Act, Political Donations Act, Government Procurement Act, and other regulations. It strictly prohibits bribery, accepting bribes, or giving or receiving political donations. It also adopts relevant preventive measures for business activities that pose a higher risk of dishonest behavior within the scope of Article 7, Paragraph 2 of the Ethical Corporate Management Best Practice Principles for TWSE/TPEX Listed Companies, or other business activities. We comply with the highest professional ethical standards to uphold the Company's reputation and maintain the trust of all stakeholders.

To avoid improper disclosure of information and ensure the consistency and accuracy of external information, TSC has established a sound internal system for processing and disclosing significant information. Additionally, in order to prevent insider trading, the Company has formulated and published the Internal Handling of Significant Information and Prevention of Insider Trading Management Measures on its website for compliance. [For more information, please refer to Internal Handling of Significant Information and Prevention of Insider Trading Management Measures on the official website.](#)

Regulatory Compliance Status

From 2020 to 2022, there have been no behaviors or significant incidents that relate to integrity violations, corruption, or any violations of integrity management, ethical business conduct, anti-competitive behavior regulations, or related fines and political donations, ensuring independent operation and a politically neutral position.

To avoid future incidents of corruption, we will conduct anti-corruption assessments for each site. Simultaneously, it has identified risks related to corporate image and social responsibility and proposed corresponding measures, as detailed in [1.3.1 Risk Management](#) in the ESG report.



Training and Information

When new employees join TSC, they are required to carefully read TSC Ethical Corporate Management Best Practice Principles, which includes topics such as anti-corruption, respect for intellectual property, and compliance with laws and regulations. In the future, we will continue to strengthen related education and training. Starting in the second half of 2023, the Legal Department plans to hold face to face education and training sessions on the Trade Secrets Act and intellectual property rights to ensure that our employees fully understand the relevant policies, content, and consequences of violating ethical behavior. In addition, TSC also promotes and requires its supply chain to sign the RBA Vendor Code of Conduct to ensure that business partners who engage in commercial activities with the Company have guidelines to follow. See Section [3.1.2 Sustainable Supply Chain Management](#) for more details.

In addition to conducting anti-corruption communication training with the governance body and employees, TSC promotes the RBA Vendor Code of Conduct to suppliers, communicating anti-corruption policies and procedures with business partners. In 2022, we successfully communicated with a total of 81 business partners, achieving a completion rate of 100%.

Communication Training for Anti-corruption Policies/Procedures

Communication Training Targets		2022
Governance Body	Number of Members (People)	7
	Number of People in Communication Training (People)	7
	Communication Rate (%)	100%
	Number of People who have Completed Training (People)	3
	Completion Rate (%)	43%
Employees	Number of Employees (People)	612
	Number of People in Communication Training (People)	280
	Communication Rate (%)	46%
	Number of People who have Completed Training (People)	280
	Completion Rate (%)	46%

Note:

1. Definition of business partner: suppliers, value chain partners.
2. The seven individuals in the governance body refer to Directors and Supervisors, excluding other governance body.

2022 Integrity Management Training Courses

Course Information	Total Number of People	Total Hours
TSC Code of Ethical Conduct and TSC Ethical Corporate Management Best Practice Principles	280	280
Prevention of Insider Trading Courses	7	111

Note: The total number of people and total hours in this table are for general employees (excluding 17 executives).

Senior Governance of Integrity Management

To maintain alignment with national and industrial standards and uphold professional ethics, the Board of Directors and senior managers regularly participate in relevant legal training. The course topics include corporate mergers and acquisitions, the Controlled Foreign Company (CFC) system, information security management, corporate governance, securities regulations, greenhouse gas inventory, and corporate sustainable development, among others. Through regular education and training for governance body and senior managers, we strive to implement honest and ethical business practices.

Participation of Directors and Supervisors in External Training Courses on Integrity Management from 2020 to 2022

	2020	2021	2022
Number of Participants	4	7	7*
Total Hours	30	49	44
Course Completion Rate	57%	100%	100%

*Note: Organizers of the course: Securities and Futures Institute, Taipei Exchange, Taiwan Academy of Banking and Finance, Financial Supervisory Commission R.O.C (Taiwan), Accounting Research and Development Foundation, Taiwan Corporate Governance Association, and Taiwan Institute of Directors.



1.3 Risk Management

1.3.1 Risk Management System

To identify and promptly grasp internal and external operational risks, safeguard the rights and interests of all internal and external stakeholders, as well as effectively control risks, TSC has constructed a sound risk management framework and policy, and included all stakeholders within the scope of management. Additionally, regular risk identification and risk testing plans are proposed to ensure that potential risks arising from various operations are strictly regulated within the control range.

Risk Management Framework

The Board of Directors is fully responsible for establishing and supervising TSC's risk management framework. The current supervisory department for risk control is the President's Office, which is responsible for risk assessment and auditing. The risk control implementing unit under the Office of the General Manager is the RBA Implementation Committee, established in accordance with the RBA Code of Conduct, with the President serving as the Chairman. The committee is responsible for implementing overall risk control and related policy issuance for the headquarters and each site, and submits the risk assessment form to President in December annually for further submission to the Board of Directors for resolution, ensuring that its management objectives reasonably reflect market and operational changes of the Company. The supervisors, assistant vice presidents, and vice presidents of each site are responsible for executing the risk policies assigned by the President's Office and the RBA Implementation Committee, and controlling and reviewing the risks identified by the responsible personnel for environmental safety and health in each site. [For more information on the four-level framework and responsibilities for risk control and review, please refer to the 2022 TSC Annual Report.](#)

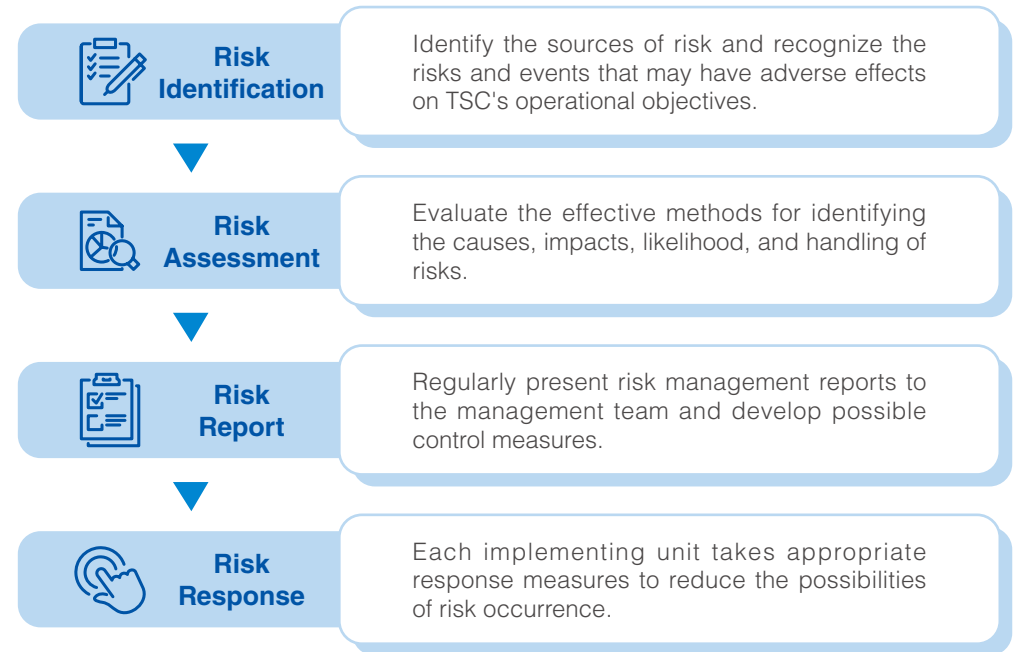
The Corporate Governance Team is scheduled to implement risk management and establish its policies in the second half of 2023. The organizational structure of this management will be divided from top to bottom into the Board of Directors, the ESG Committee, the ESG Office, and the Corporate Governance Team, aiming to effectively integrate the overall risk management capabilities and establish a more comprehensive risk management system.

Risk Management Policies

With reference to the RBA Code of Conduct, TSC has established relevant policies and management measures regarding professional ethics, social responsibility, safety and

health, environment, and risk possibilities. This includes the revision and control of the Professional Ethics Risk Assessment Management Measures, Social Responsibility Risk Assessment Management Measures, and Risk and Opportunity Management Procedures by the President's Office. Additionally, the environmental safety and health departments and personnel of each site implement the Safety and Health Hazard Identification and Risk Management Procedures and Environmental Consideration Identification and Management Procedures based on ISO 14001 guidelines. These serve as guiding and implementing principles for risk management, facilitating risk identification and the development of mitigation measures. We plan to establish the Risk Management Policy as the overarching risk control regulation in 2023, integrating the aforementioned measures and procedures as the basis for risk identification audits. Currently, our risk management process includes identification, assessment, reporting, and response, as shown in the diagram below.

Risk Management Procedures



For important matters such as investment and financial management, signing necessary contracts, and significant procurement cases, TSC conducts reviews and undergoes regular audits by the Audit Office. In terms of corporate sustainable development, TSC conducts risk assessments on major climate change issues and has developed corresponding risk management policies or strategies. Refer to chapter [1.3.3 Climate Risk Management](#) for more details.



Risk Identification Assessment and Response

In the face of external challenges such as climate change, we have evaluated the possibility of occurrence and the significant impact of four major risks in the short- and medium-term future, and divided them into four dimensions: strategy, finance, operations, and disaster prevention. The four major risks are as follows, and the remaining risks are related to information security, occupational health and safety, and climate change.

Identification of Four Risk Categories





Policy and Law Change Risk

Risk Description	Changes in national policies and laws may have a significant impact on the operation of TSC. For example, with the rise of global sustainability awareness, governments worldwide are strengthening measures to reduce carbon emissions, such as imposing carbon taxes or fees (CBAM). Taiwan also announced that it will implement provisions for large electricity consumers in 2025 to restrict the carbon emissions of high-energy-consuming enterprises and impose carbon fees. Mainland China also implements dual controls on energy consumption and power restrictions to force companies to undergo energy transition.
Potential Impact	The issue of global net zero carbon emissions has become prominent, and more stakeholders are concerned about our carbon reduction performance and the extent of renewable energy use. This may result in increased costs for companies. If we cannot meet this requirement, there may be compliance risks and an impact on customer recognition and corporate image.
Countermeasures	In order to respond to the risks of overall policy and regulatory changes, we established a ESG Committee in 2022 to closely monitor domestic and international trends and changes in policies and regulations to prepare and adjust for upcoming challenges beforehand. For example, establishing a cross-functional environmental and energy management team will be considered to develop plans for equipment replacement and the construction of solar panels on the site premises, seeking innovative opportunities and increasing sustainable competitiveness. Additionally, TSC will gradually promote a carbon management program in the future to reduce greenhouse gas emissions through scientific reduction methods.



Geopolitical Risk

Risk Description	Countries affect business activities by formulating or revising laws, including Export Administration Regulations (EAR) and tense cross-strait relations, which may affect Chinese customers or suppliers and result in the loss of potential business opportunities. Additionally, the Russian invasion of Ukraine has caused energy supply fluctuations and triggered geopolitical risks, intensifying the tension in the international regional situation.
Potential Impact	Geopolitical risks may have a significant impact on interest rates and exchange rates, affecting the development of economic globalization. They may also affect TSC's entry into new markets or face issues such as supply chain disruptions, which would have a significant impact on our operations.
Countermeasures	In order to respond to these risks, we have already implemented a regional diversification investment deployment for its manufacturing bases and established a diversified supply chain to reduce reliance on a single country or region. In the future, TSC will closely monitor changes in the international situation and strengthen its contingency plans to maintain industry competitiveness.



Disaster & Hazard Prevention Risk

Risk Description	Losses and casualties may be incurred through natural or man-made hazards. With the frequent occurrence of climate-related disaster events globally, only by actively facing and adopting various environmentally friendly and energy-saving activities can we mitigate the impact of environmental disasters and reduce the costs caused by environmental destruction.
Potential Impact	Extreme weather could lead to future energy and water resource crises, as well as an increased probability of various natural disasters occurring. TSC may be forced to increase operational costs.
Countermeasures	In order to mitigate the impact and influence of environmental hazards on operations, TSC is committed to producing and designing environmentally friendly products. We also implement measures such as planning for the reuse of recycled water and reducing energy consumption to cope with the impact of natural disasters.



Corporate Image and Social Responsibility Risk

Risk Description	Corporate image plays a significant role in risk management, covering our values, reputation, brand image, and corporate social responsibility (CSR), reflecting the overall impression and trustworthiness of TSC to the outside world.
Potential Impact	Damage to reputation can lead to investor uncertainty, customer loss, partner doubts, and even potential legal action.
Countermeasures	<ol style="list-style-type: none"> 1. Various departments jointly maintain the Company to ensure business practices comply with ethical and legal requirements, and uphold transparency and integrity principles. In 2022, we established a Public Relationship Department to enhance transparency in corporate information disclosure and improve communication with stakeholders. 2. In order to ensure the responsible operation towards society and the environment, the Company has proactively conducted an RBA and published the RBA Management Manual on the official website. Meanwhile, corresponding regulations have been communicated to employees, integrating the spirit of sustainability into daily business operations. 3. TSC also values human rights issues. Regardless of race, gender, religion, nationality, or other characteristics, everyone should enjoy equal rights. Through the establishment of a supply chain management policy that respects human rights and the promotion of employee training and education practices, we ensure that both itself and its suppliers comply with basic labor rights policies. Please refer 4.2.2 Labor Relations and Human Rights Management for more details.



Emergency Response Mechanisms and Measures

To reduce the risk and harm of emergencies, each site has established emergency response mechanisms and measures. Starting in 2023, we will follow the framework and principles of ISO 22301 for operational continuity management to continuously strengthen relevant management systems and eliminate the risk of operational disruptions. The sites will carry out regular drills and reviews regarding potential risk events such as supply interruptions, labor shortages, critical equipment failures, earthquakes, fires, and interruptions in water, gas, and electricity supply in accordance with relevant environmental, safety, and health regulations, reviewing systems to enhance rapid response and recovery after an event occurs.

Internal Control Systems

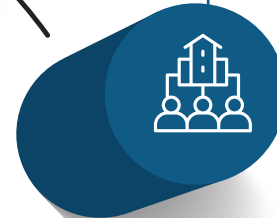
TSC cooperates with accounting firms annually to conduct listed company audits and assurance. During the auditing, the effectiveness of the internal control systems is also examined. The Company's internal control information cycle testing covers testing and evaluation of our internal control system to ensure proper risk management and business operations.

Risk Reporting Mechanism

In addition to risk management, we include all employees in the scope of overall risk management. Currently, employees can use the Company's internal network Employee Grievance Mailbox platform to proactively report potential risk items and assist in managing the impact of various internal and external risks. TSC did not receive any employee complaints in 2022.

Education and Training

The employee education and training in risk is conducted by members of the Corporate Governance Team, introducing the concept of risk management and collaborating with the Human Resources Department to develop relevant courses and activities. This is expected to be implemented in 2023 to strengthen the Company's operational risk culture awareness and understanding.

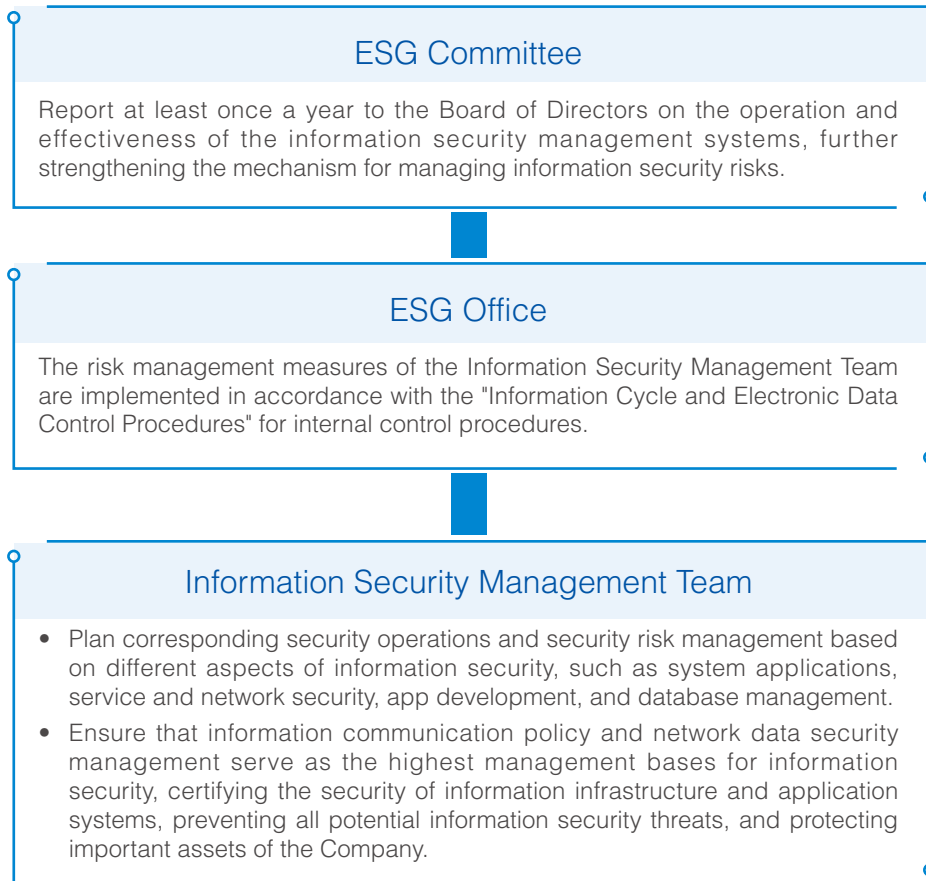




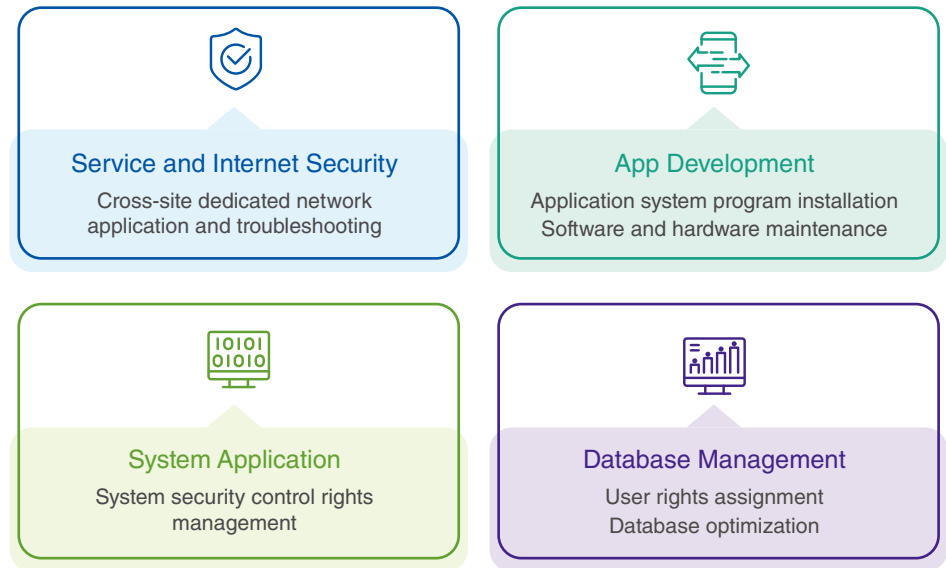
1.3.2 Information Security Management

To protect the security of company and customer information, TSC is committed to actively constructing a comprehensive level of information security management and policies. In the meantime, through periodic information security project testing, we examine whether there are vulnerabilities in the policies and management level, reducing the frequency and probability of information security incidents. We have also gradually introduced information security protection equipment and organized related education and training to establish a complete information security system.

Information Security Management Structure



Responsibilities of the Information Security Management Team

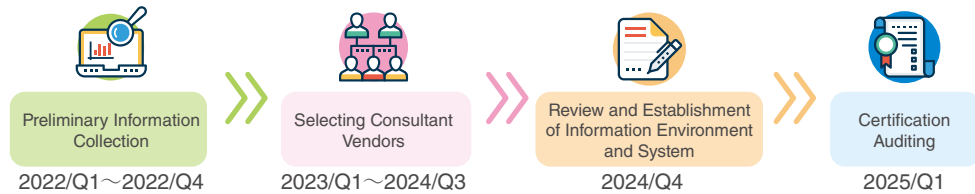




Information Security Management Policies

TSC has developed the Information Circulation and Electronic Data Control Procedures in accordance with the Guidelines for Information Security Management of Listed Companies and with reference to the suggestions of Taiwan Computer Emergency Response Team/Coordination Center (TWCERT/CC). The internal control system established by these procedures includes control operations for the eight major operational cycles. In addition, our Information Security Management Team has deployed management, analysis, and defense work for internet information security, and is expected to complete ISO 27001 Information Security Management System (ISMS) certification by 2025. To enhance network security, we have also procured advanced network security protection software and hardware, and implemented an automated endpoint security management platform to strengthen the absolute security of data and systems in response to ever-changing information security challenges.

Plans to Implement ISO 27001 ISMS Certification



Identification of Information Security Risks

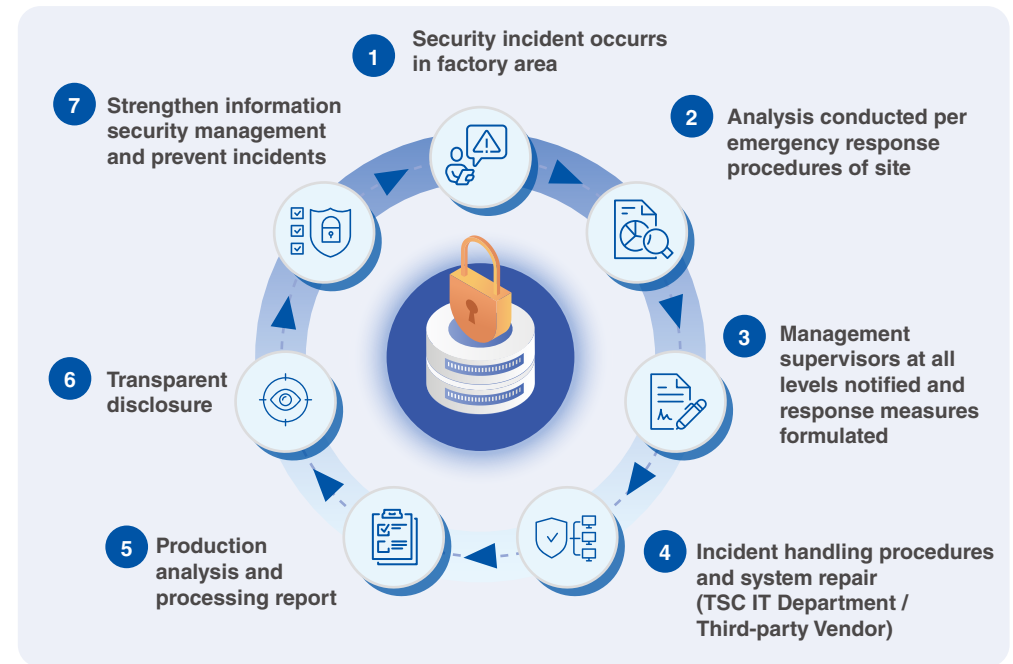
Considering the value and importance of information security to TSC, we conduct a preliminary analysis of potential threats and vulnerabilities, estimate the likelihood and impact of risks, evaluates the level of urgency and scope of impact, ranks risks, plans corresponding management measures, in order to reduce the potential negative impacts on our operations, reputation, financial status, competitiveness, and related aspects when information security incidents occur. In 2022, we identified Product Patents and Research and Development Technology as important key assets. After assessing the impact and likelihood of risks, the Information Security Management Team collaborates with the Research and Development Department to implement a Knowledge Management System to protect the Company's intellectual property, such as patent technology and research and development achievements. For more details, please refer to [2.1.2 Continuous Improvement and Innovation](#).

Investigation and Recovery Procedures

For the notification and handling of information security incidents, we have specifically established information security notification and handling procedures. When a security incident occurs, the information unit will report to various departments and determine the level of the incident. If it is a major security incident, it will immediately report to supervisors at all levels and the risk management organization, and activate corresponding measures and actions

according to the emergency response procedures and items at each site. After the incident is resolved, the information security management team will submit an analysis and handling report to the ESG Committee for evaluation, then provide explanations to our customers and trading partners as well as taking corrective measures to prevent the recurrence of incidents and maintain the trust of stakeholders.

Security Incident Response Process Diagram



Establishing a Protection Plan and Information Security Culture

To encourage employees to promptly absorb up-to-date information security knowledge, we became a member of Taiwan Computer Emergency Response Team/Coordination Center (TWCERT/CC) in 2022. We will regularly forward TWCERT/CC information security news, and we implement periodic information security testing to ensure the Company's information security defense and maintenance through collaboration with TWCERT/CC.

TSC also follows the internal training plan to schedule information security knowledge training in order to enhance employees' information defense capabilities and literacy. Each site also formulates annual emergency response plans and drills various information security situation handling procedures and guidelines to strengthen employees' ability to respond to information security incidents.



Implementation Status of Information Security Plans

Year	Measures	Hours	Number of Participants (people)	Participation Rate	Description
2022	Information Security Incident Drills	1	166	100%	<ol style="list-style-type: none"> Emergency contact and response in the event of a simulated information network outage. Simulate network outage and backup activation. Simulate dedicated network service restoration and notification.
2021	MOTP (Mobile One Time Password)	1	447	100%	Conduct MOTP training for the Li-Je Site and I-lan Site. MOTP is a mobile dynamic password system that allows for quick and secure account login, effectively preventing the risk of account password theft and safeguarding against corporate information theft.
2020	Internet Communication Security Training	1	106	100%	With regard to information security education and training at the TSC headquarters, in the wake of the COVID-19 pandemic, there have been cases of phishing URLs and fraudulent attacks impersonating the CECC and the WHO, exploiting popular news and current events to lure people to malicious websites. Through this training, we shared common methods of business email fraud, techniques for disguising emails, and ways to avoid online phishing during the COVID-19 outbreak.

Note: The participation rate is calculated by dividing the number of participants at a specific site by the total number of people at that site. The headquarters had a total of 106 people in 2020, and the two sites had a combined total of 447 people in 2021. The I-lan Site had a total of 166 people in 2020.

Introduction of ITA External Information Security Audit Mechanism

During the annual financial audit of the accounting firm, professional Information Technology Audit (ITA) personnel were simultaneously hired to conduct IT audits, including testing and evaluation of various aspects of the ITA system. This includes functional testing, security vulnerability testing, and data integrity testing to verify the system's reliability, security, and effectiveness. The goal is to ensure that our ITA system can meet business needs and provide reliable data support.



Information Security Risk Incidents

There were no data leakage incidents in TSC between 2020 and 2022. Nevertheless, a network attack incident occurred in 2022, which was discovered through an autonomous investigation by the endpoint information security platform and the main server of the I-lan Site in January 2022. The IT Department at headquarters identified abnormal connections and traffic from Tianjin site as a network attack incident, and the abnormal emergency handling procedures were immediately initiated.



Response and Improvement Measures

After reporting to the factory chief, Equipment, Manufacturing, Automation Development Department, and the highest management unit, the connection in the area was immediately interrupted, and repairs were carried out with the vendor. Meanwhile, the information unit of the Tianjin site was notified. The incident was confirmed to be a malicious program attack. Due to the real-time system alerts and a strict information security emergency response mechanism, the incident did not have any negative impact on operations, nor did it result in any significant data leakage. After the incident, TSC initiated a back-end investigation and strengthened information security management procedures and related operations. In addition to using the original endpoint information protection platform for defense, a USB information protection system and detection devices, as well as TXOne information security equipment, were also added. These devices can effectively provide appropriate information security protection to reduce the probability and scope of information security incidents.



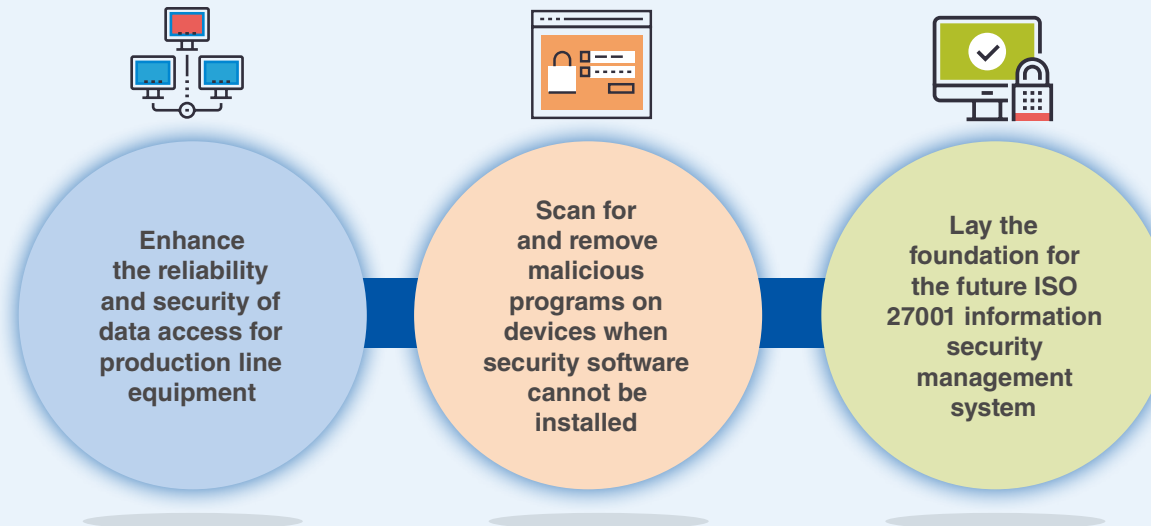
Highlights

Strengthening Industrial Control System Security with Zero Trust Management Mindset

As the degree of our involvement in smart factories increases, we are also enhancing the level of information security protection for factory equipment and machinery. In 2022, we will introduce TXOne Networks information security equipment, whose technology is based on the principle of "zero trust" proactive defense, leaving no possibility for any stage of potential attacks on software and hardware devices. In the past, the biggest challenge in the industry regarding information security was that to check whether the equipment had viruses, antivirus software had to be installed. After scanning and confirming the security, the antivirus software would then be removed. However, there are many devices and machines on the production line that cannot install security software due to default settings and commercial confidentiality factors. TSC actively sought a solution, and in 2022, with the introduction of TXOne, new technology can scan and remove malicious programs without the need to install software on the machines, which is a significant breakthrough in the application of information security.

In the future, during the process of digital transformation, there may be increasingly complex and severe information security challenges. We will continue to seek and integrate top-notch information security technologies to comprehensively enhance the overall security protection network in operating systems, network security, and endpoint protection areas.

The objectives of system implementation:





1.3.3 Climate Risk Management

TSC pays close attention to the risks and business opportunities that may arise from climate change, following the Rules Governing the Preparation and Filing of Sustainability Reports by the Taiwan Stock Exchange Corporation and referencing to the climate-related financial disclosure suggestions of the Task Force on Climate-related Financial Disclosures (TCFD). TSC integrates its climate risk and opportunity management mechanism with its corporate risk management process, continuously promoting low-carbon transformation and strengthening the Company's resilience to climate change through four main directions: governance, strategy, risk management, indicators, and goals.



Governance

ESG Committee is a functional committee at the Board level, chaired by the chairman and the highest-ranking executive. The committee oversees climate-related risks, opportunities, response strategies, goals, preventive measures, and concrete outcomes.

- In 2022, a report was submitted to the ESG Committee on the management mechanisms and actual implementation of climate change-related issues and risks in the office. A total of one meeting was held in 2022.

The ESG Office annually reviews and assesses climate change issues, planning response plans, promoting risk protection, reviewing performance execution, and regularly reporting to the ESG Committee.

- The ESG Office is responsible for formulating climate change-related guidance strategies. After formulating the main action plans, the Environmental and Energy Management Team of the Corporate Social Responsibility Functional Team implements climate-related actions.
- The Environmental and Energy Management Team of the Corporate Social Responsibility Functional Team reports on climate risks and opportunities to the ESG Office at least once every quarter, either in writing or face-to-face meetings. The ESG Office then reports to the ESG Committee at least twice a year, either in writing or through face-to-faces.



Strategy

In accordance with the TCFD framework, develop a methodology for assessing climate change risks and opportunities, identifying short, medium, and long-term climate risks and opportunities.

- Evaluate the climate risks faced by the TSC and the upstream and downstream value chains in terms of potential impact, possibility of occurrence, and potential vulnerability to develop and implement response measures. For more information, please refer to the tables below, Climate-related Risks and Impacts on TSC Value Chain and Climate-Related Risks and Response Measures for TSC.
- Identify climate-related opportunities according to the characteristics of the business and our low-carbon strategy planning. For details, please refer to [Climate Risk Impact Assessment and Scenario Analysis](#).

Analyze the potential operational and financial impacts on TSC brought by the significant climate risks and opportunities based on the TCFD framework.

- Complete the assessment of the impact of major climate risks under different scenarios of increased greenhouse gas emissions costs. For more details, please refer to the section [Climate Risk Impact Assessment and Scenario Analysis](#).

Analyze climate risks in different scenarios, and assess short, medium, and long-term carbon reduction strategies.

- In 2022, per the International Energy Agency's (IEA) Announced Pledges Scenario (APS) and Net Zero Emissions by 2050 Scenario (NZE), we aim to analyze the impact of increased greenhouse gas emission costs and develop climate change strategies and relevant mitigation measures.



Risk Management

Establish a climate change risk identification procedure based on the TCFD framework.

- Identify climate change risks with reference to climate change laws and regulations. [For more information on climate change risk identification procedures, please refer to the Climate Risks and Opportunities section.](#)

- Develop corresponding adaptation and mitigation strategies based on the results of climate risk identification and ranking.
- Integrate the climate risk identification procedure into the existing risk management procedure.
- The materiality of office risk identification is driven by the ESG Office. Based on the materiality of climate risk, strategies and measures are formulated by the ESG Office. After confirmation by ESG Committee, these measures are implemented in daily operations and integrated into the risk management process.



Indicators and Goals

Set climate change-related management indicators to facilitate annual performance tracking.

- Establish reducing greenhouse gas emissions, using renewable energy, improving energy efficiency, and reducing product carbon footprint as climate change performance indicators.

Conduct inspections and disclose Scope 1 and 2 greenhouse gas emissions annually to examine the impacts caused by the Company's operations.

- According to the results of various inspections and assessments, continue implementing carbon reduction measures to reduce organizational greenhouse gas emissions. For details, please refer to [5.1.1 Carbon Emission Management](#).

Review climate management goals achievement annually.

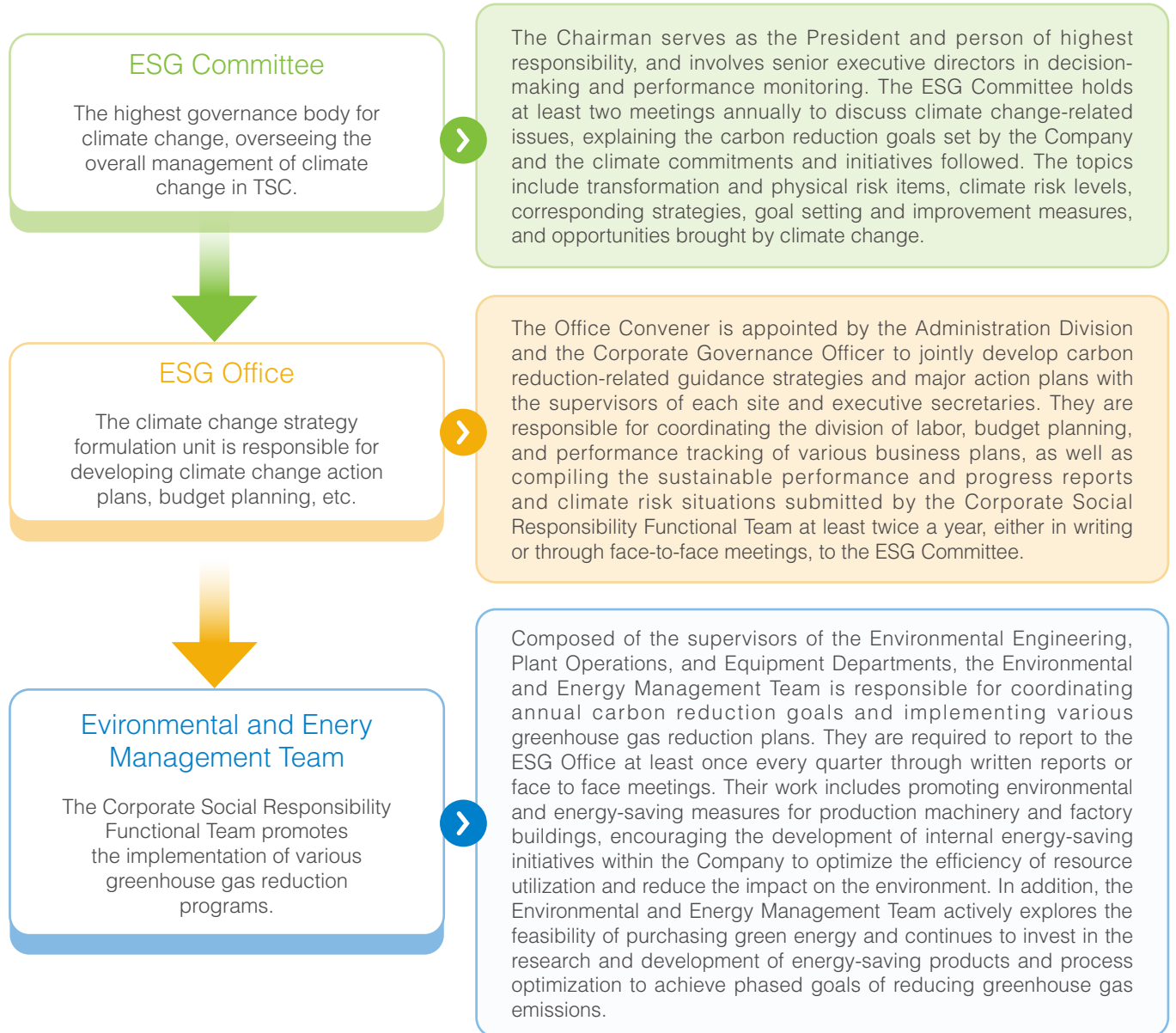
- The ESG Office regularly reviews the project performance of the Environmental and Energy Management Team of the Corporate Social Responsibility Function Group on climate change mitigation to confirm the progress of indicators and goals, compiles and reports to ESG Committee, and regularly monitors the implementation results.



Climate Governance

In 2022, TSC established the ESG Committee to oversee climate-related risks, opportunities, response strategies, goals, preventive measures, and specific outcomes. The ESG Office will hold at least two annual meetings to report on and discuss the implementation performance of climate change-related issues, risk response strategies, greenhouse gas reduction, renewable energy layout, and water resource utilization with the ESG Committee.

The ESG Committee has established the ESG Office. After formulating relevant sustainability policies and guidelines by ESG Office, the Corporate Social Responsibility Functional Team is responsible for executing these policies. The Environment and Energy Management Team is specifically in charge of climate change-related issues, including achieving annual carbon reduction targets, implementing greenhouse gas reduction plans, and promoting renewable energy development. The Corporate Social Responsibility Functional Team holds cross-site meetings once to twice a month to facilitate mutual learning and exchange among factories on sustainability and climate issues, discussing and discovering solutions to address the potential impacts of climate change on TSC. The organizational structure and division of responsibilities for climate risk management in TSC are as follows.





Climate Risks and Opportunities

To improve the climate-related risks and opportunities management mechanism, TSC follows the guidelines of the TCFD and has established a climate-related risk management procedure. This procedure consists of the following steps: (1) establishing a climate risk list, (2) analyzing the scope and duration of risk impacts, (3) prioritizing risks by materiality, (4) confirming and reporting, and (5) implementing strategies and disclosing to the public.

In 2022, TSC summarized 10 climate-related risks and three climate-related opportunities by considering the characteristics of operations and evaluating climate risks and opportunities based on potential impact, possibility of occurrence, and potential vulnerability, and referencing the TCFD recommendations, including risk and opportunity types, evaluation of international sustainability indicators, and climate risks that benchmark companies are concerned about. Transition risks include increased greenhouse gas emission costs, increased sustainability-related demands and regulations, and changes in customer behavior; physical risks include short-term risks such as typhoons and heavy rain, and long-term risks such as rising average temperatures. We plan to identify and assess climate-related risks and opportunities every three years, considering the frequency, characteristics, and timing of these risks. In the remaining years, we will review and confirm the current risks and ensure the adequacy of response measures.

Value Chain Impact Identification Procedure

In order to understand the impact of climate risks on the value chain of TSC, ESG Office reviewed the impact and scope of various risks on upstream suppliers (wafer materials and diffusion materials), its own operations, and downstream clients (information products, communication products, digital appliances, automotive electronics, etc.). The supervisors of each operation use a three-level scoring method to rank the impact of each risk within the three groups: upstream suppliers, internal operations, and downstream clients. The scores were arranged in percentile order, with the top 33.4% considered highly impactful, 33.4% to 66.7% considered moderately impactful, and the remaining 33.3% considered low impact. This process identified the degree of impact of climate risks on Taiwan's semiconductor value chain, serving as a reference for operational strategies.

Climate-related Risks and Impacts on TSC's Value Chain

Note : ● Low \ ● Medium \ ● High

Risk Type	Risk Aspect	Risk Name	Value Chain Impact		
			Upstream	TSC Itself	Downstream
Transition Risk	Laws and Policies	Increase in greenhouse gas emissions cost	●	●	●
		Increase in sustainability-related demands and regulations	●	●	●
	Market	Changes in Customer Behavior	●	●	●
		Increase in Raw Materials Cost	●	●	●
	Technology	Cost of low-carbon technology transition	●	●	●
	Reputation	Increase in negative feedback from stakeholders	●	●	●
Physical Risk	Extreme	Increase in Extreme Weather Events - Typhoons	●	●	●
		Increase in Extreme Weather Events - Heavy Rain	●	●	●
		Drought	●	●	●
	Long-term	Rise in Average Temperature	●	●	●



Procedure for Identifying Climate Risk Materiality

The ESG Office and supervisors from each site (I-lan, Li-Je, Shandong, Tianjin) reviewed the impact of various risks on TSC, so as to understand the impact of climate risks on TSC. Climate-related risks were evaluated based on three aspects: potential impact level, potential vulnerability, and possibility of occurrence. The materiality of climate risks to our operations was comprehensively assessed through the three aspects, and the impact levels of each risk were ranked in percentile order. The top 20% were considered high-risk, while the next 20 to 30% were considered low-risk. According to these results, the risks were examined and placed in matrix regions. If a risk met both of the following conditions - (1) it fell within the top 20% of risk values and (2) it landed in the high vulnerability and high impact region of the matrix (yellow area) - then it was classified as high-risk. Otherwise, it was classified as low-risk. If only one condition was met, it was classified as a risk at the next level. Using the above methodology, a climate-related risk matrix for TSC was completed, and the results were used as a reference for developing risk response and mitigation plans for TSC, as well as crisis management mechanisms.

1 Complete List of Climate Risks and Opportunities

With reference to the TCFD recommendations, including risk and opportunity types, international sustainability indicator evaluation, and climate risks that benchmark companies are concerned about, ESG Office convened a discussion to establish a list of TSC climate risks and opportunities.

5 Strategy and External Disclosure

The responsibility for climate risk and opportunity management is undertaken by the ESG Office, while the Environmental and Energy Management Team assists in implementing measures and managing operations related to climate risk and opportunity, planning the disclosure of the management of climate risk and opportunity to stakeholders annually in the ESG Report and on the Company's website.

4 Confirm and Report

The ESG Officer reports climate risks, corresponding opportunities, response strategies, and the risk matrix to the ESG Committee Member. This process should be confirmed with the ESG Committee.

Condition 1: Risk Value

- Ranking is done by multiplying the scores of all risk vulnerabilities, impact levels, and possibility of occurrence. The top 20 to 30% is considered high risk, while the bottom 20 to 30% is considered low risk.
- This logic is a comprehensive consideration of vulnerability, impact, and possibility of occurrence.

2 Analyze the Scope of Risk Impacts

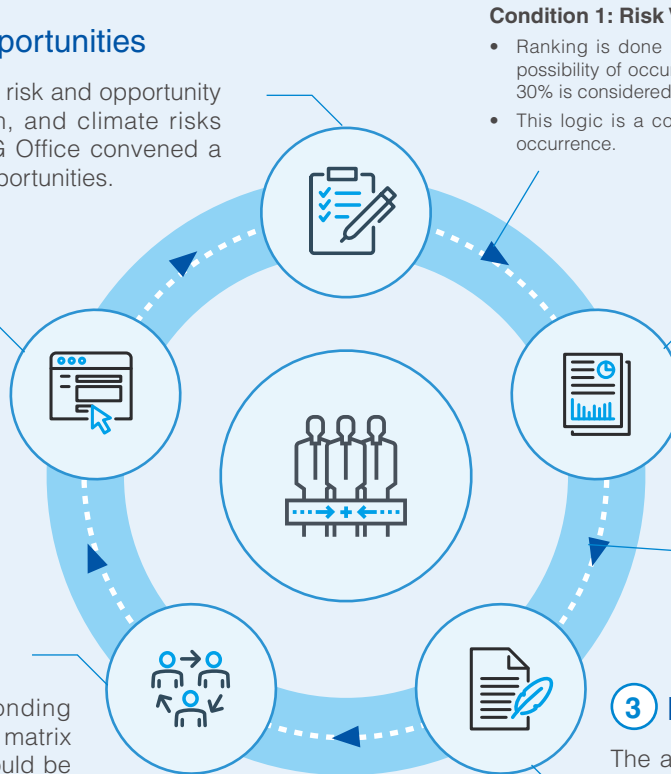
The ESG Office examines the extent and scope of various risks to our operations by distributing questionnaires to each site and the supervisors thereof. After that, the supervisors of departments evaluate the risks based on three aspects: potential impact level, potential vulnerability, and possibility of occurrence. The impact level of each risk is then ranked in percentile order.

Condition 2: Matrix Position

- The yellow area in the matrix is designated as high risk, in need of risk mitigation due to its relatively high fragility and impact level.
- The gray area in the matrix is designated as low risk, in need of resource reallocation due to its relatively low fragility and impact level.

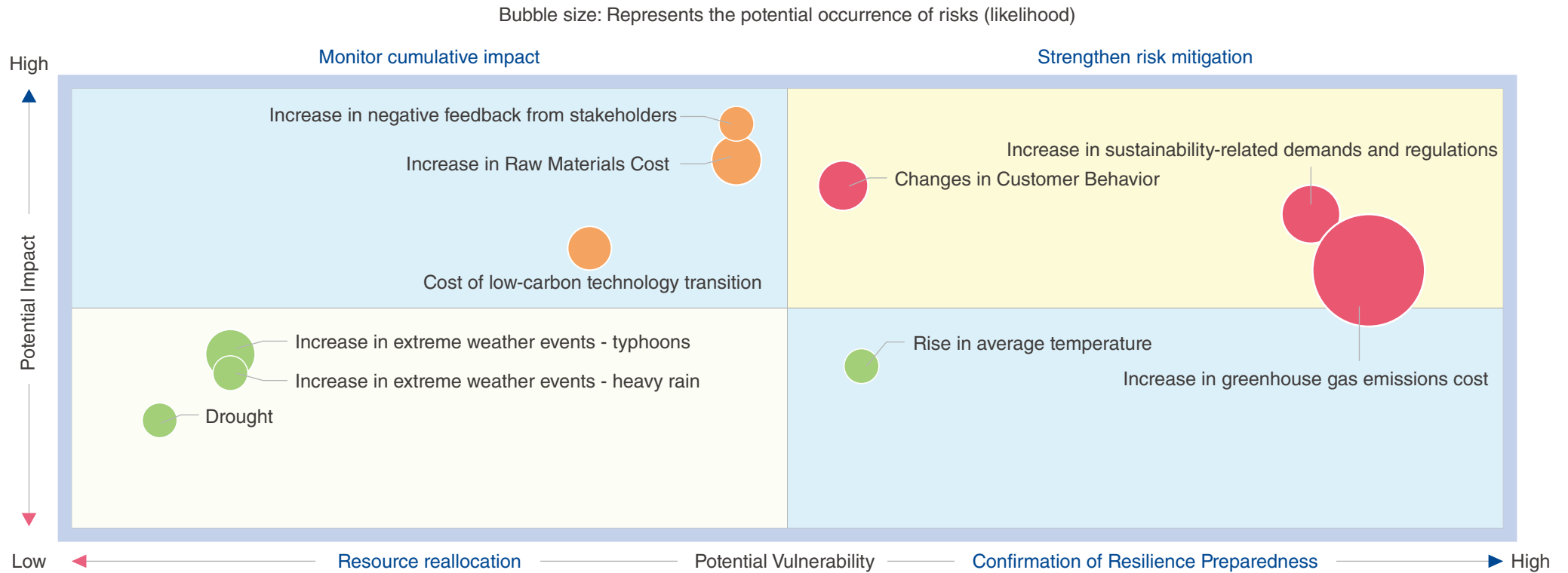
3 Prioritizing Risks by Materiality

The analysis results are cross referenced with the position of each risk on the matrix chart. If the risk satisfies both conditions - (1) it fell within the top 20% of risk values and (2) it landed in the high vulnerability and high impact region of the matrix (yellow area) - the risk is categorized as high risk; otherwise, it is low risk; if only one condition is met, it is classified as the next level of risk.





Climate Risk Matrix



Based on the analysis of the materiality of climate risks, an assessment was conducted on the potential impact of the identified 10 risks on operations and financial planning. The corresponding risk response measures are formulated in the Climate-related Risks and Response Measures table.

Based on the impact of climate risks on the operation and value chain of our business, and the materiality of those risks, the ESG Office assesses related solutions and business opportunities so as to formulate operational strategy adjustment directions and response measures and report to the President, who is responsible for risk management.

In consideration of the possible impact of climate-related risks and opportunities on various aspects of our operations, the Company actively develops related low-carbon products, green processes, promotes the rollout of renewable energy, and continues to closely monitor climate-related policies. After confirmation by the ESG Committee, TSC continues to promote the implementation in daily operational and risk management procedures.



Climate-related Risks and TSC's measures

Note : ● Low \ ● Medium \ ● High

Risk Type	Risk Aspect	Risk Name	Explanation of the Impact on TSC	Potential Financial Impact	Periods of Influence on TSC *	Risk Level	Corresponding Measures and Strategies
Transition Risk	Laws and Policies	Increase in greenhouse gas emissions cost	With the domestic Climate Change Response Act and climate-related policies and regulations in various countries (such as carbon tax/tariffs, emissions trading systems, carbon pricing/fees, etc.), TSC may need to pay carbon fees, carbon taxes, and carbon tariffs on products in the future. Also, the related regulations may become stricter year by year, and the costs and carbon taxes will thus also increase year by year.	Rise in Costs	Short	●	<ul style="list-style-type: none"> • Adopt Energy-saving Equipment • Develop Innovative Products • Adopt Low-carbon/Renewable Energy Sources • Raise Carbon Reduction Awareness of Employees • Optimize Transportation Routes to Reduce Carbon Emissions of Logistics
Transition Risk	Laws and Policies	Increase in sustainability-related demands and regulations	According to Taiwan's Pathway to Net-Zero Emissions in 2050, energy transition is listed as one of the main strategies, actively promoting the maximization of renewable energy. In addition, the "Renewable Energy Development Act" in Taiwan stipulates that users with an electricity contract capacity of 5000 watts or more must have a 10% renewable energy obligation by 2025, all of which promote TSC's accelerated climate action, such as increasing the proportion of renewable energy, reducing product carbon footprints, and enhancing climate-related management.	Rise in Costs	Short	●	<ul style="list-style-type: none"> • Improve Product Performance • Adopt Low-carbon/Renewable Energy Sources • Continuously Optimize Energy Management • Improve Employees' Knowledge and Skills in Carbon Management
Transition Risk	Market	Changes in Customer Behavior	Customers choose to use lower carbon and lower environmental impact products or request the Company to provide more transparent environmental information products/services to meet the global net zero emissions trend and reduce environmental impact. If we cannot meet these requirements, there may be a potential risk of losing customers.	Decrease in Revenue	Medium	●	<ul style="list-style-type: none"> • Develop products/services that reduce environmental impact. • Improve Product Performance • Reduce Packaging or Use Low-carbon Packaging Materials
Transition Risk	Market	Increase in Raw Materials Cost	In recent years, extreme climate changes have occurred frequently, causing instability in raw materials supply and increasing the difficulty of mining and transportation of raw materials. Factors such as natural disasters may block mining roads and high temperatures may reduce productivity, making it difficult to control the supply of raw materials, causing a shortage of raw material supply, increasing transportation and scheduling costs, and increasing operating costs.	Rise in Costs	Medium	●	<ul style="list-style-type: none"> • Continue to Demand Suppliers Undertake Climate Adaptation and Energy Transition, and Construct a Climate Resilient Supply Chain • Conduct Supplier Risk Assessment to Avoid or Reduce Purchasing from High-Risk Production Areas • Increase Local Vendor Storage Capacity in Response to Extreme Weather Disasters



Note : ● Low \ ● Medium \ ● High

Risk Type	Risk Aspect	Risk Name	Explanation of the Impact on TSC	Potential Financial Impact	Periods of Influence on TSC *	Risk Level	Corresponding Measures and Strategies
Transition Risk	Technology	Cost of low-carbon technology transition	Due to the growing international trend toward carbon reduction, many companies are requiring their supply chains to adopt sustainable and low-carbon actions. TSC is gradually planning its transition and promoting carbon reduction technologies and equipment, which will have an impact on our operating costs.	Rise in Costs	Medium	●	<ul style="list-style-type: none"> Invest in High-Performance Equipment and Low-Carbon Technology R&D Actively Cultivate Low-Carbon Transition Talents Evaluate Investment in Low-Carbon Technology Equipment
Transition Risk	Reputation	Increase in negative feedback from stakeholders	Since the importance of climate change issues continues to increase, stakeholders prefer low-carbon or environmentally friendly companies that contribute positively to humans and the environment. If TSC does not take proactive measures, we will not be able to meet stakeholder expectations and may damage the Company's reputation.	Decrease in Funds	Long	●	<ul style="list-style-type: none"> Strengthen Climate Change Response and Prevention Strengthen Appropriate Disclosure of Company Climate Action Information Strengthen Communication with Stakeholders
Physical Risk	Extreme	Increase in Extreme Weather Events - Typhoons	<p>The frequency and severity of typhoons have increased, which will cause the following impacts:</p> <ul style="list-style-type: none"> Typhoons may destroy the power system, causing partial regional power outages, leading to operational or service interruptions. Typhoons may cause supply chain disruption. Asset insurance premiums in high-risk areas have increased, increasing operating costs. 	Rise in Costs	Medium	●	<ul style="list-style-type: none"> Strengthen Production Site Flood Control and Drainage Equipment and Contingency Measures Strengthen the Implementation of the Business Continuity Plan (BCP) Strengthen the Emergency Supply Mechanism
Physical Risk	Extreme	Increase in Extreme Weather Events - Heavy Rain	As the frequency and amount of heavy rain increases, it may cause damage to production sites, production interruptions, and transportation disruptions that prevent employees from going to work.	Decrease in Revenue	Medium	●	<ul style="list-style-type: none"> Strengthen Production Site Flood Control and Drainage Equipment and Contingency Measures Strengthen the Implementation of the Business Continuity Plan (BCP) Strengthen the Emergency Supply Mechanism
Physical Risk	Extreme	Drought	Due to droughts, water shortages have led to water supply interruptions, increased water fees, and disruptions in the purchase of external water sources, affecting the water usage in factories. This may also result in interruptions to operational activities.	Rise in Costs	Medium	●	<ul style="list-style-type: none"> Implement Water-saving Measures Increase the use of recycled water. Build a large-scale reclaimed water plant in the factory area to extend and stabilize the supply of process water. Set up reservoirs to enhance water storage capacity and control flexibility.



Note : ● Low 、 ● Medium 、 ● High

Risk Type	Risk Aspect	Risk Name	Explanation of the Impact on TSC	Potential Financial Impact	Periods of Influence on TSC *	Risk Level	Corresponding Measures and Strategies
Physical Risk	Long-term	Rise in Average Temperature	Climate change has increased the duration of high temperatures, electricity demands, and rising energy costs globally. Moreover, droughts caused by high temperatures pose a risk of operational disruptions.	Rise in Costs	Long	●	<ul style="list-style-type: none"> • Implement Water-saving Measures • Strengthen the Implementation of the Business Continuity Plan (BCP) • Closely monitor electricity usage and adjust as needed in a timely manner.

Note: short-term (within 3 years), medium-term (3 to 5 years), long-term (above 5 years)

Climate-related Opportunities

TSC also depends on its operational strategy and planning, as well as industry-related reports, to evaluate the progress of the semiconductor industry value chain, identify potential business opportunities arising from climate change, and evaluate the financial impact on TSC.

Climate-related Opportunities

Opportunity Aspect	Opportunity Name	Implications of Opportunities for TSC	Potential Financial Impact	Periods of Influence on TSC
Products and Services	Improve product performance.	We are actively working to improve the energy efficiency of our products, aiming to assist customers and users in reducing energy consumption and greenhouse gas emissions during product use. In light of the rapid growth of the new energy vehicle chip market and the 5G industry, TSC will persist in optimizing product performance, expanding our market presence, and increasing profitability.	Increase in Revenue	Short
Resource Utilization Efficiency	Utilize more efficient production and distribution procedures	By enhancing the energy efficiency of production processes and transportation logistics, as well as bolstering material, energy resources, and waste management, it is feasible to decrease energy resource consumption and carbon emissions, thereby reducing operating costs.	Decrease in Cost	Medium
Resilience	Participate in Renewable Energy Source Project	To promote the utilization of low-carbon energy and establish a diversified power supply to enhance climate resilience, it will be feasible to sustain the transition towards low-carbon energy by constructing and procuring renewable energy sources.	Change in Cost	Medium

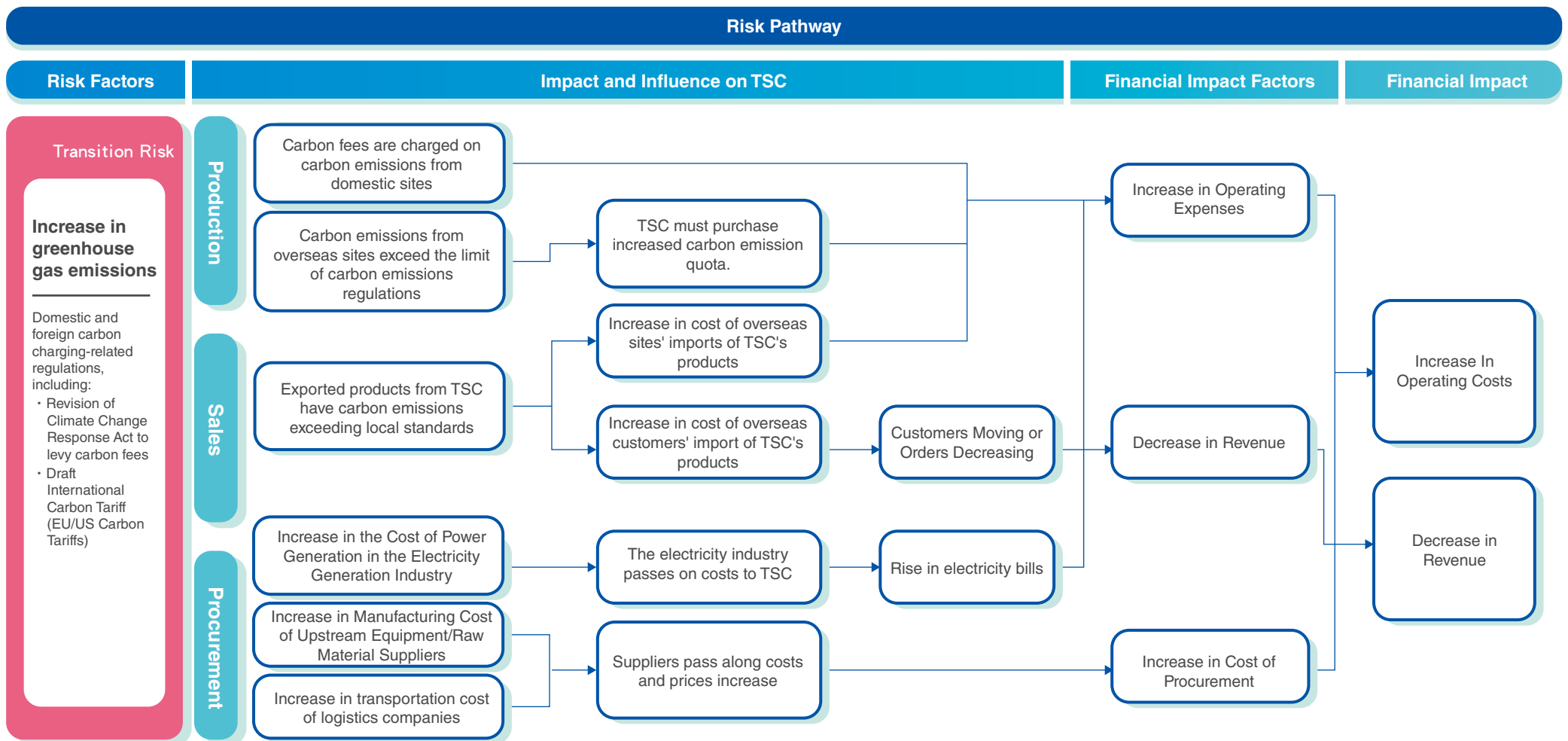
Note: short-term (within 3 years), medium-term (3 to 5 years), long-term (above 5 years).



Climate Risk Impact Assessment and Scenario Analysis

In 2022, we prioritized conducting a risk impact assessment analysis on the highly risky project of "Increase in Greenhouse Gas Emissions Cost". The purpose is to identify the impact pathways on TSC and consider the effects of carbon fees and carbon tariffs on our value chain and its operations in different scenarios. Additionally, future financial quantification assessments are expected to be conducted. The evaluation results will be applied to adjust the Company's operational strategy, reevaluate the Company's risk appetite and tolerance, and continuously revise relevant response measures.

Climate Risk Pathway - Increase in Greenhouse Gas Emissions Cost





To assess the potential effects of future climate change on TSC, we rely on the scenarios put forth by the International Energy Agency (IEA), specifically the Net Zero Emissions by 2050 Scenario (NZE) and the Announced Pledges Scenario (APS). As climate change escalates, countries are increasingly advocating for carbon pricing measures. For instance, the European Union is on the verge of implementing the Carbon Border Adjustment Mechanism (CBAM), while Taiwan intends to impose carbon fees, both of which could raise production costs. Furthermore, these policies and regulations not only impact TSC directly, but also have repercussions throughout the value chain. If suppliers become subject to these fees, the costs of relevant raw materials and equipment investments may gradually rise.

At the current stage, TSC evaluates three impacts based on the carbon fee scenarios set in the NZE and APS by the IEA: upstream cost increase, increase in operational costs, and customer orders moving.

1. Increase in upstream cost

In response to China's inclusion of the electricity department in the carbon trading market and the implementation of carbon tariffs by the European Union, electricity providers may increase electricity prices to pass on the cost of greenhouse gas emissions. As a result, there may be a certain proportion of price adjustments by 2030, which will pose operational expenses and cost increases for TSC and its suppliers. Additionally, in terms of procurement costs such as raw materials, machinery and equipment, and logistics, relevant suppliers may pass on carbon taxes, carbon fees, or the implementation of carbon trading markets/systems in their respective countries to TSC, leading to an increase in procurement costs.

In light of the anticipated ongoing rise in upstream costs, TSC is proactively advancing energy transition efforts and collaborating with the supply chain to develop plans for future carbon reduction. This includes building a climate-resilient supply chain and regularly reviewing upstream costs to mitigate associated financial risks.

2. Draft of Carbon Fee-related Policies

Based on regulations implemented in TSC, such as the Taiwan Climate Change Response Act passed in early 2023, the EU CBAM, China's national ETS, and the relevant emission quota schemes of the Interim Regulations on the Management of Carbon Emissions Trading, as well as suggestions from outsourced research reports of the Taiwan Environmental Protection Administration, it is estimated that the carbon fee will reach approximately US\$100 by 2030. Additionally, the regulatory impact of carbon will gradually strengthen in the short term. Considering domestic and international carbon fee regulations and the future reduction of greenhouse gas emissions, TSC will conduct a quantitative assessment of the additional carbon fees and related costs that each operation may incur, resulting in increased operating costs.

In addition to closely monitoring the development of domestic and international climate-related regulations, we dedicated to actively developing high-performance products and enhancing procedural efficiency. Furthermore, we intend to participate in renewable energy initiatives to mitigate the financial impact of climate-related policies.

3. Customer Orders Moving

The carbon-related policies of various countries will also have an impact on the downstream value chain. For instance, the EU's CBAM could potentially necessitate customers to bear extra carbon tariff expenses when importing our products. This, in turn, may affect their inclination to purchase TSC's products and prompt them to seek out competitors offering products with lower carbon content. Consequently, this presents a challenge to the sales market and results in a decline in revenue.

We will focus on low-carbon operations and improving product performance as the primary strategy. This will involve offering customers more competitive low-carbon products and services, while also consistently reducing the risk of customer order shifting due to rising greenhouse gas emission costs.

Risk Factors	Climate Scenario	Scenario Hypothetical Conditions	Carbon Fee Parameter (Unit: US\$/CO ₂ e)	Scenario Analysis Factor	Major Financial Impact
Transition Risk - Increase in Greenhouse Gas Emissions Cost	IEA - NZE	By 2050, the global energy departments are expected to achieve net-zero carbon emissions in the NZE scenario. Greenhouse gas emissions will decrease annually, and by 2100, the global average temperature rise will be below 1.5° C.	<ul style="list-style-type: none"> In 2030, it will be \$90. In 2040, it will be \$160. In 2050, it will be \$200 	<ul style="list-style-type: none"> Electricity expenses, procurement expenses, and carbon expenses at production sites The amount of carbon tariff paid on exported products 	<ul style="list-style-type: none"> Upstream costs: The rising electricity costs may result in higher expenses for suppliers of raw materials and logistics providers, thereby further affecting our procurement costs. Climate-related policy regulations: As a result of the proposed climate-related policy, there will be a requirement to pay additional local carbon fees and carbon taxes. Customer market challenges: As a result of CBAM and other international policies, importers are obligated to pay carbon taxes. Consequently, customers are opting for products with lower carbon emissions, leading to shifts in customer demand and a subsequent decline in revenue.
	IEA - APS	As per the APS, the global government's declared targets for greenhouse gas reduction and achieving net zero will be met within the specified timeframe. Greenhouse gas emissions are projected to reach their highest point in the mid-2020s, resulting in a global average temperature increase of 1.7° C by the year 2100.	<ul style="list-style-type: none"> In 2030, it will be \$40. In 2040, it will be \$110. In 2050, it will be \$160. 		



Indicators and Goals

In light of the impact and challenges posed by climate change, TSC acknowledges the importance of the Science Based Targets Initiative (SBTi) methodology for establishing reduction targets based on scientific evidence. Additionally, we have implemented ISO 14001, ISO 50001, and ISO 14064-1 management systems to address these challenges. We also committed to utilizing renewable energy and implementing energy-saving measures. To minimize product carbon footprint, we actively explores new markets and introduces low-carbon technology products, while also incorporating automation in production. The current goals and indicators are as follows:

1. Reduce Greenhouse Gas Emissions

We have established a net-zero objective for 2050, using 2022 as the reference year. The aim is to achieve an annual reduction of 4.2% in greenhouse gas emissions for both Scope 1 and Scope 2, relative to the baseline year.

2. Adopt Renewable Energy Source

The implementation of solar power generation facilities and a green energy procurement plan began in the factory area in 2022. In 2023, an assessment plan for solar self-use installation will be initiated at the I-lan Site.

3. Increased Resource Utilization Efficiency

We are actively promoting energy-saving initiatives in public systems and processes, aiming to reduce electricity consumption by 1% compared to the previous year. This effort is focused on enhancing the energy efficiency of its production operations. For more information on the specific energy-saving measures implemented at facilities, please refer to section [5.1.2 Energy Management](#).

Our production procedure is heavily dependent on water resources, and the drought resulting from climate change presents potential risks to our operations. TSC is actively promoting the recycling and reuse of wastewater, as well as enhancing the efficiency of water resource utilization. For more information on the energy-saving measures implemented at our sites, please refer to section [5.1.3 Water Resource Management](#).

4. Assist Customers in Reducing Carbon Emissions

In light of the rapid growth of the automotive chip market and the 5G industry in 2023, the upcoming generation of low-power chips will play a crucial role in the transition towards a low-carbon economy. TSC remains committed to enhancing product performance, increasing energy efficiency, and supporting customers in reducing greenhouse gas emissions throughout product usage. For details on our low-carbon product strategies, please see section [1.1.2 Financial Performance](#) and section [2.1.2 Continuous Improvement and Innovation in Quality](#).

