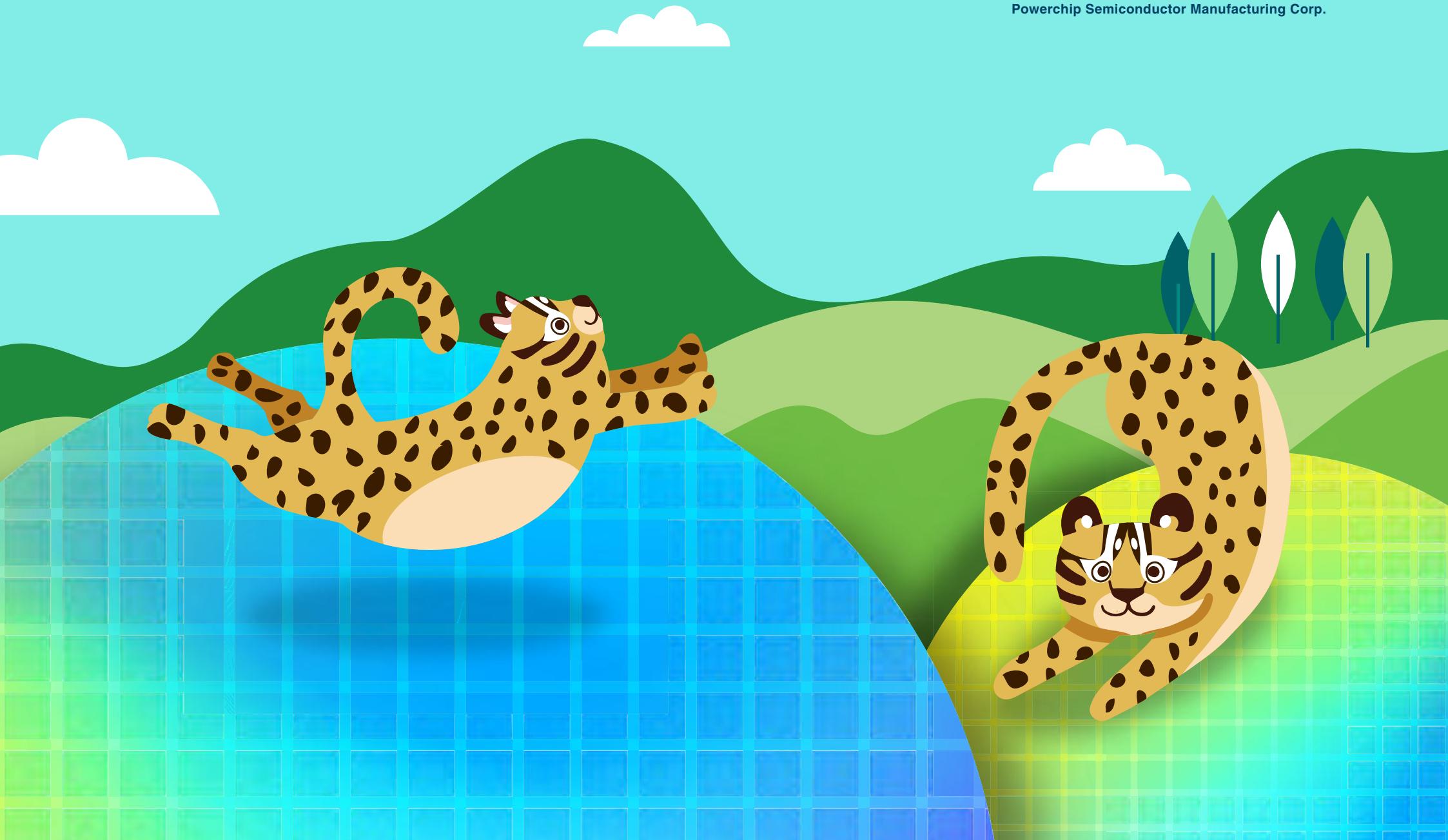


PSMC

2022 Sustainability Report

ENVIRONMENT, SOCIAL AND GOVERNANCE

Powerchip Semiconductor Manufacturing Corp.



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Message from the Chairman and President

In the past three years, the world has experienced the ravages of the Coronavirus (Covid-19) pandemic, disrupting the order of the supply chain and causing serious impacts. In the second half of 2022, the dawn of the quarantine being lifted was finally being ushered in. Everyday life and business activities are also once again back on track, under the international consensus of “living with the virus”. However, the crisis awareness of supply chain risks continues to be strained by the increasing number of extreme climate events and geopolitical risks. As a key member of the international semiconductor industry, Powerchip Semiconductor Manufacturing Corporation (hereinafter referred to as PSMC) has the responsibility to work together with its partners to strive for sustainable development, exert a positive influence, and set a model for sustainable development with its corporate culture of integrity, service, quality, innovation, in addition to its own operational experience.

Conforming to the international trend of sustainability and reflecting on the impact of geopolitical risks on the semiconductor industry in recent years, with “Environmental Sustainability, Social Co-prosperity and Corporate Perpetuity” as our sustainability mission, PSMC has established a Sustainability Development Committee to provide strategic guidance and an ESG Committee to conduct strategic evaluation, with the management team serving as committee members to supervise all functional departments. Under the three major implementation guidelines of “Low Carbon Operation - Innovation and Development”, “Employee Involvement - Community Building”, and “Diverse Values - Friendly Workplace”, we are demonstrating our momentum and capacity for sustainable development, and steadily moving toward our sustainable vision of “creating a cycle of mutual benefit between the enterprise, the environment, and the society”.

Carbon Operations - Innovation and Development

Under the international consensus of “Net Zero by 2050”, low-carbon operation and green energy use have become important goals of our operation. In 2022, we have taken out an ESG-linked loan to demonstrate our determination to reduce “energy saving rate”, “waste reuse rate” and “production process water recycling rate”. In order to develop low-carbon operations, we have reviewed our emissions from both the operational and the production sides, and developed specific carbon reduction plans for the different aspects. In addition to completing the procurement of 10.5MW of green power certificates in 2023, we have incorporated climate change strategies into our systematic management, using the “Task Force on Climate-related Financial Disclosures (TCFD)” framework as our reference. Furthermore, the ongoing operation of the Pre-employment Student Program and the Semiconductor Academy Program has enabled us to accelerate the close collaboration between industry, government, and academia, thereby attracting professional talent and introducing innovative technologies, in order for us to actively pursue a low-carbon and sustainable business model. To achieve our long-term goal of net zero emissions, we are working with our supply chain partners to find ways to reduce carbon emissions and share carbon reduction resources, insights and experiences, thereby enhancing the overall supply chain resilience by driving low carbon transformations within the supply chain.

Employee Involvement - Community Building

For many years, PSMC has been concerned with the development of environmental conservation, local communities, and the arts and

Chairman
黃崇仁



culture industry domestically. The Public Welfare Committee, together with the Powerchip Environmental Protection Foundation and the Powerchip Cultural Foundation, have integrated the organization's internal and external resources to develop the three strategic pillars of “environmental conservation,” “public welfare investment,” and “arts and culture celebration” for the common prosperity of the community. We are committed to protecting the ecological environment of the land and sea by personally participating in campaigns such as coastal cleanup, mountain cleanup, and community park restroom adoption. We also hope to increase the awareness amongst young people on the conservation of Taiwan's animals, by publicizing precious and endangered species such as the leopard cat, the eastern grass owl, and the Taiwan blue magpie, as well as by strengthening community ties to build environmental education. In addition, we are also involved in community building. In 2022, we partnered with Yiheyuan Organic Farm to promote the

“Eat good rice • Do good deeds • Gift good shoes” program, in which our colleagues were invited to join the circle of kindness and promote seven public welfare investment projects to invest resources in education and improve the lives of the communities in rural areas. Our vision is to “build a performance stage for performing artists that is rooted in arts and culture education”. The “Powerchip Arts and Cultural Festival 2022”, the “Powerchip Century Sound Series”, and the “Music Festival Education Series” continue PSMC's 18 years of support for the arts and culture. It is also in line with the Ministry of Culture's “Enterprise for Cultural Development” to achieve the new objective of sustainable development. In the future, we hope to call on more colleagues and the public to join the ranks of public welfare and charity, to strengthen the ties between sustainable corporate management and long-term social development.

Diverse Values - Friendly Workplace

Our employees are the key drivers of our sustainable management and the pillars of our sustainable transformation and development. We value the voices of our employees and respect individual differences, and actively integrate the spirit of multiculturalism into the nature of our operations, and place emphasis on “promoting women at all management levels” and “building a diverse, inclusive and non-discriminatory workplace culture and environment”. Through our Labor and Human Rights Policy, we promise to create a diversified, open, equal and non-infringing human rights environment, to provide a safe and healthy workplace and environment, to comply with labor safety and health-related laws and regulations, to prohibit illegal recruitment of labor and forced labor, to conduct regular human rights risk assessments and system reviews, to treat employees in a lawful, fair and kind manner, and to require suppliers and partners to comply with these policies as well. Under the Group's plan for global expansion, we will continue to recruit semiconductor industry talents from all over the world in the future, hoping to build cultural and professional exchanges among diverse ethnic groups, so that all employees can realize their full potential in their jobs, demonstrate their diverse values, achieving the long-term goal of attracting and retaining talent.

For PSMC, culture is a legacy and asset that we can pass onto the next generation, and sustainability is our promise to the next generation to create a common prosperity between the environment and society, which is also a vision we pursue. Looking ahead, we will continue to leverage our advanced technology and product innovation competitive edge, integrate SDGs into our business and corporate culture, and work with partners and stakeholders with an open mind to create a positive force to achieve our corporate objective of sustainable management and development.

President
謝再居



About Powerchip Semiconductor Manufacturing Corporation

► Company Profile

History and Development

Year	Important Milestones
2008	Maxchip Electronics Corporation was founded.
2009	Mass production of 0.18 μm LCD display driver ICs
2010	Mass production of 0.18 μm microprocessor control ICs
2011	Mass production of 0.18 μm power management ICs
2012	Mass production of 0.18 μm Power MOSFETs
2014	Received 500V HV MOSFET order from IDM Japan
2015	Mass production of 42V e-label ICs Fab 8AD started mass production
2016	Acquisition of a plant from United Renewable Energy Co., Ltd. in the Zhunan Science Park and named it Fab 8B.
2018	Maxchip Electronics changed its name to Powerchip Semiconductor Manufacturing Corporation (PSMC)
2019	Fab 8B started mass production
2019	Powerchip Technology Corporation transferred three 12-inch wafer fabs (P1, P2 and P3) and related operations as well as net assets to Powerchip Semiconductor Manufacturing Corporation
2020	Awarded the Hsinchu Science Park Outstanding Enterprise Award for Waste Reduction and Recycling Economy
2021	Listed on the Taiwan Stock Exchange (stock code TW6770) AI-in-Memory (AIM) Chip Development Project Passes Review for the AI on Chip R&D Grant Program by the Department of Industrial Technology, Ministry of Economic Affairs
2022	Collaboration with National Taiwan University, National Tsing Hua University, National Yang Ming Chiao Tung University and National Cheng Kung University to establish a semiconductor research institute

The Company has undergone operational restructuring and organizational reengineering to become the sixth largest professional foundry in the world. It currently has two 8-inch and three 12-inch fabs and is investing nearly NT\$300 billion in a new 12-inch fab in Tongluo, Miaoli, with approximately 8,150 employees at the end of 2022.

With our corporate culture of integrity, quality, service, and innovation, we insist on technological refinement, stringent quality control, and efficient manufacturing, combined with our development strategy of independent R&D and international cooperation, we are committed to providing professional foundry services and creating a win-win situation with our customers, while following the highest international Environmental, Social, and Governance (ESG) criteria to make PSMC a sustainably profitable and responsible corporate citizen

Company Overview

Company Name	Powerchip Semiconductor Manufacturing Corporation
Year of Establishment	2008
Listing Date / Stock Code	December 6, 2021 / Stock Code TW6770
Main Products	Wafer Fabrication
Chairman	Huang Chongren (Frank Huang)
Number of employees	8,150
Capital	NT\$39.99 billion
Operating Income	About NT\$76.08 billion
Business Location	The headquarter is located at No. 18, Li-Hsing 1st Road, Hsinchu Science Park, consisting of two 8-inch and three 12-inch wafer fabs, which are located in the Hsinchu Science Park and the Zhunan Science Park.

Hsinchu Science Park

8AD



P3



8A



P1

P2

Zhunan Science Park

8B



Focus on Wafer Foundry

With the three major foundry services of advanced memory, custom logic ICs, and discrete components as the main pillars, PSMC continues its Open Foundry business model, from wafer design and manufacturing services to equipment and capacity sharing, and works together with our clients to establish a close and flexible cooperation mechanism according to different customers' attributes and needs. With our continuous focus on technology refinement, strict quality control, and efficient manufacturing, the Company is committed to providing professional foundry services and creating a win-win situation with our customers, accumulating competitive advantages in the fast-changing high-tech industry, and becoming a stable and profitable world-class semiconductor company by continuously promoting international cooperation strategies, introducing cutting-edge technologies, developing our proprietary capabilities, and expanding into new markets.

External Public Association Participation

In the fast-changing semiconductor industry, in addition to continuously upgrading production technologies, PSMC also needs to proactively grasp first-hand industry trends. Therefore, we are actively involved in various industry guilds and associations, and serve as board chairman, directors and supervisors to promote the optimization of the industry environment and policies together with our peers. In order to enhance and integrate the international competitiveness of Taiwan's various industries, PSMC has also taken the initiative to call for the establishment of associations in various professional fields to promote cross-industry exchanges and development. The topics of concern that are of interest to the guilds and associations that PSMC participates in include corporate sustainability, technological innovation, environmental sustainability, and climate change. PSMC is also actively involved in proposing policies to the government that cover land, water, electricity, and human resources that are relevant to industrial competitiveness and support environmental sustainability.

Public Affairs Governance

In terms of participation in public affairs and public policy, the relevant departments will first examine the reasonableness of the public association or public activity and whether it is consistent with the position of PSMC. After obtaining the approval of the unit manager, the President will give his final approval before participating. If, in the course of participation, the Company finds that a public association or activity is inconsistent with the original intent of the Company's participation or its position, the Company will hold an internal meeting to discuss the matter and communicate with the relevant entity to clarify the issue and express its position. If it is determined that the issue at hand is inconsistent with the Company's position, the Company will choose to withdraw from the relevant association or activity.

In 2022, the domestic and international associations related to the development of the industry in which PSMC is involved are mainly the following:

Domestic Associations - Industry Development and Technology Innovation		
Organization Name	Sustainability Action	Role
Taiwan Internet of Things Technology and Industry Association	By joining the Taiwan Internet of Things Technology and Industry Association and taking on a management role, the company will be able to exercise decision-making influence on the development of standards and applications in the IoT industry. This will ensure that the company's existing technologies can be widely applied in various fields related to the IoT industry, and to further continue to provide core competitiveness in the area of technological research and development for application in the emerging industries.	Chairman, executive director, director, director and supervisor
Taiwan AI Communication and Information Association	To promote the exchange and cooperation between the software, hardware design and system integration industries in Taiwan; to interact closely with the academia and government authorities to promote the innovation and application of artificial intelligence and Internet of Things technologies, and to help the industry grasp new business opportunities that are flourishing.	Chairman, Director, Supervisor
Taiwan Advanced Automotive Technology Development Association	Through the participation in the Taiwan Advanced Automotive Technology Development Association (TAATDA), the company will be able to communicate with the automotive industry and integrate their knowledge areas, which will enable the company's technology development to connect to the considerable EV and smart car business opportunities in the future. In the face of the automotive industry's carbon reduction regulations, the expanded development of electric vehicles, including the need for a large number of semiconductors and automotive electronic modules, are increasing. PSMC's participation in the association will enable the electronics industry and automotive industry to move into the advanced automotive field together and transform the automotive industry into a smart one, deepening the cooperation between the two industries and establishing a complete supply chain for the electric vehicle industry in line with the country's future goal of net zero sustainability.	Chairman, Executive Director, Director, Supervisor
Taiwan Semiconductor Industry Association	PSMC participates in the Taiwan Semiconductor Industry Association (TSIA) in order to remain on top of the development of the industry and to reach a consensus with industry peers through the association's activities, in an effort to promote cooperation in the midst of competition, to jointly promote the sound development of the industry as a whole, and to strengthen the overall competitiveness of the industry, in hopes that the company can maintain an advantage in the ever-changing international environment.	Executive Director
The Allied Association for Science Park Industries	PSMC participates in the The Allied Association for Science Park Industries to broaden the communication with those in the industry and manufacturers of other industries in the Park, to establish an effective communication mechanism with the government and to protect the common rights and interests of the manufacturers through the organization of the Association. Through the clustering effect of our industry peers, we are able to build up the international status and reputation of the industry, and further enhance the competitiveness of our company.	Director

Domestic Associations - ESG Interactive Exchange			
Organization Name	Role	Organization Name	Role
Taipei Computer Association	Executive Director	Computer Audit Association	Member
Taiwan IC Industry & Academia Research Alliance	Executive Director	Taiwan Chemical Engineering Association	Member
Friends of the Police Association of R.O.C.	Director	Taiwan Stock Affairs Association	Member
The Third Wednesday Club (San San Fe)	Member	The General Assembly of Chinese Culture	Member
Cross-Strait CEO Summit	Member	Taiwan Association of Occupational Health Nurses	Member
Taiwan Environmental Management Association	Member	Miaoli County Nurses Association	Member
PM2.5 Control Association	Member	Public Health Bureau, Hsinchu City	Member
RISC-V Taiwan Alliance	Member	Hsinchu City Nurses Association	Member
Taiwan India Business Association	Member	Internal Audit Association of the Republic of China	Member

International Associations - Mastering International Trends	
Organization Name	Role
Global Semiconductor Alliance	Member
JEDEC Solid State Technology Association (JC-42)	Committee Member
UCle (Universal Chiplet Interconnect Express)	Adopter Member

Climate related events: Semiconductor Equipment and Materials International - “SEMI Semiconductor Industry ESG Sustainability Initiative”

In 2021, the Semiconductor Equipment and Materials International (SEMI) established the Global Sustainability Committee with the goal of establishing a sustainability strategy blueprint for the semiconductor industry to help the global semiconductor industry move toward sustainable development. PSMC participated in the “SEMI Semiconductor Industry ESG Sustainability Initiative” ceremony to declare our commitment to sustainability alongside our peers in the face of the challenges posed by climate change, and to share our experience in energy saving, carbon reduction and water recycling in hopes of creating a green industry chain.



► Economic Performance

In December 2021, Powerchip Semiconductor Manufacturing Corporation completed its IPO and achieved a combined revenue of NT\$76.1 billion and an after-tax profit of NT\$21.6 billion in the fiscal year of 2022, representing a 16% and a 34% increase over the previous year, respectively; earnings per share even reached NT\$5.8, setting a new record high after the successful restructuring. Continuing the success of 2021, the first half of 2022 has seen a strong upward trend in both foundry demand and pricing, and PSMC's revenue and profitability reached a record high in the second quarter of last year. However, due to adverse factors such as inflation, rising interest rates, the prolonged stalemate in the war between Russia and Ukraine, and China's epidemic prevention and control policies, the overall economic climate took a turn for the worse starting in the third quarter of 2022, and the semiconductor industry was clearly feeling the pressure of surging inventories, declining capacity utilization, and diminishing revenue month after month.

Although there are many uncertainties in the external environment, PSMC remains focused on the industry in the new year and continues to build on its well established manufacturing process technologies. To meet the diverse needs of our customers, our logic foundry focuses on PMICs (power management ICs) to capture the future growth opportunities of IoT, AI, high-speed computing systems and electric vehicles, and investment in BCD processes and equipment required for PMICs has also been a major focus of our development in recent years. On the memory foundry side, we are targeting the niche and special application markets for DRAM and Flash with small but diverse volumes, and we continue to develop the market with our customers by being the only memory foundry service provider in the industry. In terms of power components foundry services, PSMC continues to expand its MOSFET and IGBT production capacity, and is also actively promoting the development of new processes such as the use of GaN (Gallium Nitride).

Looking ahead to 2023, PSMC expects that the negative impacts of war, inflation and the pandemic lockdown will gradually subside, and with the inventory of the semiconductor supply chain returning to normal levels, operations will return to normal in the second half of this year. Another challenge in the new year is the operation of the new plant in Tongluo. It is expected that the production line of 8,500 12-inch wafers per month will be completed by the end of this year, and the trial production and customer verification operations will commence. The new fab is also the development and production base of advanced logic processes and Wafer on Wafer stack integration technology. Although the new Fab will not contribute much to the revenue of PSMC this year, many new product lines will be introduced in the future and become the main engine of PSMC's growth.

Regardless of the ups and downs of the external political and economic situation, all of the employees at PSMC are committed to striving for operational performance, while upholding the belief of making the environment friendly and giving back to the society, pursuing the balanced interests of stakeholders through sound corporate governance, fulfilling the company's commitment to sustainable development, and adhering to the corporate culture of integrity, service, quality, and innovation to achieve co-prosperity with our customers, society, and the environment, in order to achieve stable profitability and set the ESG sustainability benchmark.

**For a detailed financial data, please refer to the Company's financial report:
https://www.powerchip.com/en-global/financials/quarterly?target=target_title**

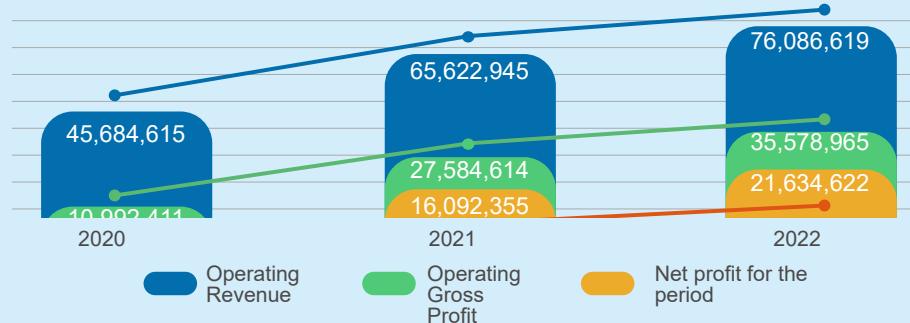
Unit: NT\$ (in thousands)

Category	Item	2020	2021	2022
Economic Value Generated	Operating income	45,684,615	65,622,945	76,086,619
	Operating Costs	34,692,204	38,038,331	40,507,654
	Employee Salaries and Benefits (Operating Expenses)	3,112,257	5,253,129	6,058,260
	Distribution of dividends to shareholders	600,000	3,739,245	7,124,836
	Interest on Loans	479,135	454,720	415,151
	Payments to the government	992,596	3,122,441	5,538,058
	Total	39,876,192	50,607,866	59,443,959

Note 1: The total amount of social investments in 2022 was NT\$149,294,000 (see [5.1.1 Social Co-Prosperity](#)).

Note 2: The total amount of economic value plus social investment allocated in 2022 was NT\$59,593,253,000. Therefore, the economic value retained after subtracting the aforementioned total amount from the economic value generated was NT\$16,493,366,000.

Company Profitability



► Performance on Sustainability Priorities



6,401 tons of CO₂e

Reduced carbon emissions by 6,401 tons of CO₂e; implemented over 80 energy saving measures and reduced energy consumption by 56,391.54 gigajoules.

87.78%

The average process water recovery rate for the whole plant reached 87.78%; expanded fab P3's water recovery system to 26,919.15 million liters.

4.5%

Total waste volume was 17,066 metric tons, a 4.5% reduction from last year.

97.43%

The average removal rate of volatile organic compounds (VOCs) reached 97.43%, and there were three air pollution improvement projects.

5.58%

Total emissions of 671,688 metric tons of CO₂e in Scope 1 and Scope 2, a 5.58% reduction from last year.

0

There were no significant cases of disciplinary action by the environmental protection authorities during the year.



18,162 people

A total of 18,162 people participated in training related to human rights policies, and the overall training participation rate for employees reached 100%.

NT\$1.57 million

Training-related subsidies amounted to nearly NT\$1.57 million, assisted 7 employees to obtain higher education and 555 to obtain licenses required for jobs.

549 people

A total of 549 people participated in special health checkups, and no occupational illness cases occurred.

25,149 people

The number of trainees reached 25,149, with 125 sessions of environmental health education training.

27 people

"Pre-employment Program" provided 27 new graduates with pre-employment offers.

2,727 hours

751 volunteers and 2,727 hours spent on public service activities.



► Performance on Sustainability Priorities



Score of 97

The self-assessment score of the Board of Directors' performance evaluation was 97.

>50%

The total number of independent directorships exceeds 50% of the total number of directorships.

100%

Implemented the Responsible Business Alliance (RBA) Sustainability Management Self-Assessment Questionnaire for the first time in 2022, with a 100% completion rate by key suppliers.

Score of 94

Average customer satisfaction survey score was 94.

19%

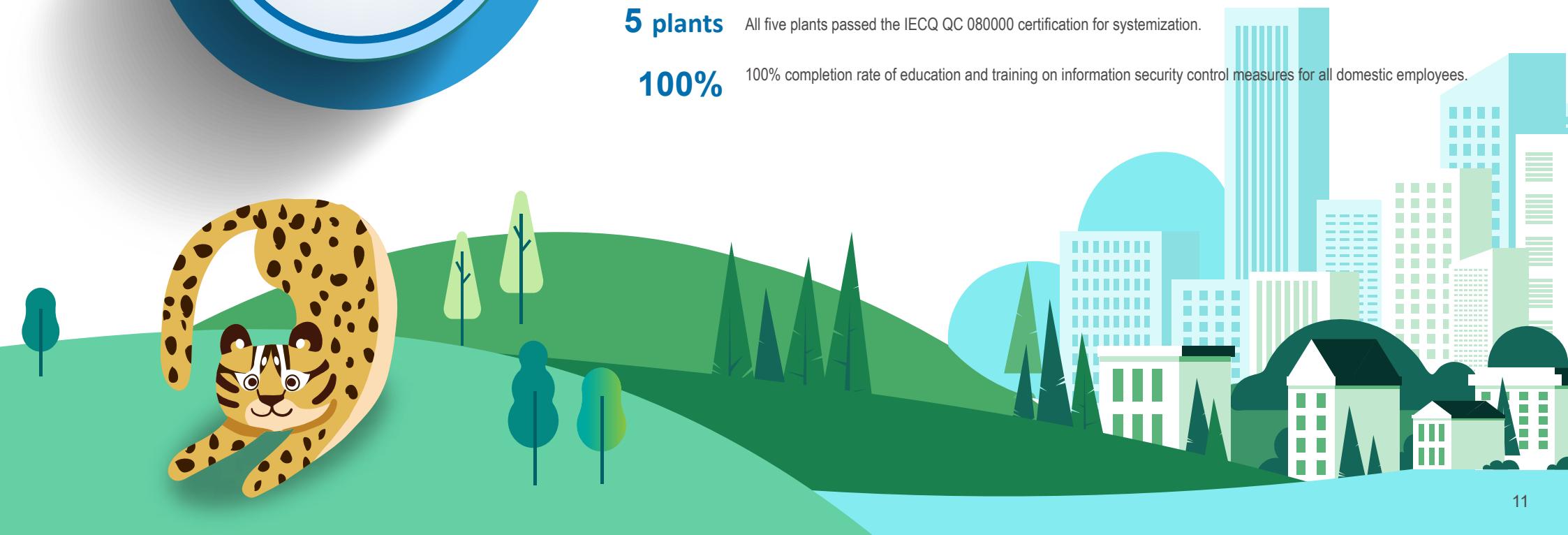
The hazardous substance substitution program successfully reduced hazardous substance use by 19%.

5 plants

All five plants passed the IECQ QC 080000 certification for systemization.

100%

100% completion rate of education and training on information security control measures for all domestic employees.



► Awards Recognition and Honors

the TCSA Taiwan Corporate
Sustainability Awards

1111 Job Bank

the Environmental
Protection Administra-
tion, Executive Yuan

the Environmental Protec-
tion Administration,
Executive Yuan

National Taipei
University

"Sustainability
Report Award"

"2022 Happiest
Employees"

"Chemical Substances
Management Category"

"Promotion of Green
Procurement
by Civilian Enterprises
and Organizations"

"Taiwan Sustainability
Assessment"

Silver Award

Gold Award

The 3rd Green
Chemistry Appli-
cation and Innova-
tion Award

Merit award
for an enterprise

Awarded an
AA rating



the Environmental Protection
Administration, Executive Yuan



Hsinchu Science Park



Hsinchu Science Park



Hsinchu Science Park



Hsinchu City Government

Bronze Award

Awarded a
merit recognition

Special merit
award

Awarded the
Special Award and
Honorable Mention

Merit award
for an enterprise

Commitment to Sustainability Management

► Organizational Structure for Sustainable Development

In order for PSMC to achieve sustainable corporate development and contribute to economic, environmental and social progress, the Board of Directors approved the establishment of the "ESG Steering Committee" (now renamed as the Sustainable Development Committee) and the "ESG Committee" as a dedicated unit to promote sustainable development after the IPO in February 2022.

The "Sustainable Development Committee" is the center of ESG decision making and is chaired by Mr. Frank Huang, the Chief Executive Officer of the Company, with Mr. Brian Shieh, the President, as the Vice Chairman, and Mr. Zhang Jialin, an independent director, as the advisor. The Committee reports to the Board of Directors on a regular basis each year on the effectiveness of sustainable development implementation and key milestones. The Sustainability Development Committee held two meetings in 2022 and reported to the Board of Directors on October 31, 2022 and December 20, 2022, respectively. The report includes the following: communication with stakeholders, the effectiveness of sustainable development implementation in 2022, PSMC's sustainable development policy, short-, medium- and long-term goals for sustainable development (including the identification of sustainable development material topics, the formulation of future implementation strategies, and ESG initiative targets for 2023), and organizational changes in ESG governance.

To effectively achieve the goal of sustainable development, an ESG Committee was established under the Sustainable Development Committee to implement programs related to business governance, environmental sustainability and social engagement, and is chaired by the president and meets quarterly. These meetings are held at least once a year and the implementation results are reported to the Board of Directors. In 2022, four meetings have already been convened. The ESG Committee is composed of the heads of departments, as appointed by the President, related to the implementation of business governance, environmental sustainability, and social participation, and is an executive unit in accordance with the proposed plan. Please refer to the following chart for the organizational structure of the ESG Committee.

PSMC Sustainability Governance Framework

Top Level of Management



Strategic
Guidance



Strategic
Assessment



Consult with
Independent
Directors

Meeting frequency: Regularly held every year
Work Items:

1. Review the effectiveness of risk management and propose necessary improvements
2. Regularly report to the Board of Directors on the effectiveness of the implementation

Meeting Frequency: Quarterly
Work Items:

1. Formulate countermeasures and review
2. Assist/Guide various departments
3. Regularly report to the Sustainable Development Committee



► Sustainable Development Strategy

Sustainable Development Commitment

The “Code of Practice for Sustainable Development” is the highest guiding principle for sustainable development within the company, and with the vision of “Innovation in Technology and Service to Society”, we expect to serve society with innovative technologies. The company has ingrained the four pillars of its corporate culture into the core of its business philosophy, striving for sound corporate governance, pursuing balanced stakeholder interests, promoting environmental protection and energy conservation, and contributing to society. 2022 saw the Sustainable Development Committee redefine three major implementation guidelines, namely: 1) Aim for low carbon, green energy and net zero emissions; 2) Encourage employees to participate in community building; 3) Recognize diversified values. We are committed to achieving the corresponding SDGs.



Vision
Innovation in Technology
and Service to Society



Mission
Environmental Sustainability,
Social Co-Prosperity,
Corporate Perpetuity



Corporate Culture



Implementation Guidelines

With the goal of low carbon, green energy and net zero emissions, we will continue to cooperate with industry, government and academia, explore new knowledge and new technologies, refine green operations, and share experiences and results with the supply chain through mutual encouragement.

Encourage employees to participate and make good use of corporate resources to support education in remote areas, sponsor cultural activities, assist the weak and vulnerable, and participate in community building.

Recognize diversified values, build a friendly workplace, and create a win-win situation with stakeholders by being fair, open, and law-abiding.

Corresponding SDGs

SUSTAINABLE DEVELOPMENT GOALS



Sustainable Development Goals

Goals	Corresponding Chapters	PSMC's Practices and Benefits
Goal 3 	Commitment to Sustainability: Environment	<ul style="list-style-type: none"> The Company has introduced the ISO 14001 management system for effective management of air pollution emissions, with the goal of continuously reducing pollutant emissions and refining the best available technology. (SDG 3.d. achieved) All of our fabs are located within the jurisdiction of the Hsinchu Science Park Bureau, NSTC, and the related environmental impact assessment and environmental monitoring are conducted under the thorough supervision of the Bureau, there were no significant cases of disciplinary actions by the environmental protection authorities in fiscal year 2022. (SDG 3.9 achieved)
Goal 4 	Collaborative Sustainability: Talent	<ul style="list-style-type: none"> In April 2022, we launched the "Pre-employment Internship Program" to provide internship opportunities during the semesters and summers to college students who have a desire to join the company. This program provides students with early exposure to the workplace, familiarization with the working environment and team atmosphere, understanding of fab operations, and related practical training to enhance the adaptability of new graduates in the workplace, as well as to minimize the transition period and recruitment costs. As of the end of 2022, the total number of pre-employment hires was 30, of which 5 have already started working prior to the end of the year. (SDG 4.4 achieved)
Goal 5 	Collaborative Sustainability: Talent	<ul style="list-style-type: none"> The compensation system of PSMC is based on the principles of fairness and reasonableness, and provides competitive compensation packages and incentive bonus plans based on a combination of factors such as performance and job responsibilities, without regard to race, class, language, religion, political affiliation, marital status, nationality, place of birth, gender, sexual orientation, age, or group affiliation. 100% of all employees who have served at least three months during the company's performance evaluation period are subject to periodic evaluations. (SDG 5.5 achieved)

Goals	Corresponding Chapters	PSMC's Practices and Benefits
Goal 6 	Commitment to Sustainability: Environment	<ul style="list-style-type: none"> In recent years, climate change may have affected the normal water supply to the plant, the company has continued to improve the water recovery rate and process water efficiency through technology improvement and equipment investment, and has become the first semiconductor fabrication plant in the park to commit to a process water recovery rate of 85% or higher, with a process water recovery rate of 87.78% achieved in 2022 across all plants. (SDG 6.4 achieved) After the establishment of the park water reclamation plant, the whole company will use 750 CMD of reclaimed water (P1/2: 500 CMD, P3: 250 CMD) to respond to the government's policy of actively promoting the recycling of reclaimed water. (SDG 6.b. achieved) After the installation and operation of the Hsinchu desalination plant, the fabrication plants in the Hsinchu Science Park will purchase the desalination water to replace 10% of the tap water usage and reduce the water load on the reservoirs in Hsinchu. (SDG 6.6 achieved)
	Commitment to Sustainability: Environment	<ul style="list-style-type: none"> Our manufacturing process wastewater is pre-treated in our wastewater treatment plant and then discharged to the wastewater treatment plant in the park for subsequent treatment and discharge. In order to grasp the treatment effectiveness of different components, we divide the discharge from the manufacturing process into a total of 20 different drainage water systems, such as recyclable and non-recyclable, according to their different characteristics, such as type, concentration, and conductivity. In addition to increasing the recovery rate of water, some waste acids and organic waste liquids still have economic value for recycling, so separate diversion will not only reduce the amount of treatment dosage in wastewater plants, but also reduce the difficulty and environmental burden of waste treatment at the back end. (SDG 6.4 achieved)



Goals	Corresponding Chapters	PSMC's Practices and Benefits
Goal 7	Dedicated to Sustainability: Innovation, Quality and Customers	<ul style="list-style-type: none"> The number of electronic components that can be accommodated in an 80 nanometer grain is about twice that of a 110 nanometer grain, and the power consumption in standby mode is only about 70% of that of a 110 nanometer grain, which is equivalent to a 2.8 fold increase in performance per unit area. (SDG 7.3 achieved) We drove the passage of the IECQ QC 080000 certification for systematization across all five fabrication plants and followed the Hazardous Substance Free (HSF) initiative. PSMC is committed to complying with international environmental regulations in all production processes and upholding the principle of using less or no hazardous substances in order to implement green initiatives. (SDG 7.3 achieved)
	Commitment to Sustainability: Environment	<ul style="list-style-type: none"> We have fully implemented the ISO 50001 energy management system in 2021 to analyze the efficiency of energy consumption, seek effective use of energy and improve energy efficiency through energy management. (SDG 7.3 achieved) The Company has implemented various power saving programs, initiatives such as reviewing and improving energy efficiency, planning the replacement of old equipment and developing renewable energy, and has set the goal of saving more than 1% of energy each year. (SDG 7.3 achieved)
Goal 8	Dedicated to Sustainability: Innovation, Quality and Customers	<ul style="list-style-type: none"> The company's compatible logic manufacturing process and memory manufacturing foundry capacity allocation will enable the company to flexibly deploy its production capacity, improve capacity utilization and maintain stable profitability during fluctuations in the economy. (SDG 8.2 achieved)
	Collaborative Sustainability: Talent	<ul style="list-style-type: none"> The Company has completed the revision of the environmental safety and health management system and continues to maintain the validity of the certification, and has formulated the "Environmental Safety and Health Management Manual" to effectively control the activities, products, services, and internal and external issues of environmental safety and health operations at the plant site, the scope of which covers the stakeholders related to the Company's operations, including all employees, customers, suppliers/contractors, and competent authorities. (SDG 8.8 achieved)

Goals	Corresponding Chapters	PSMC's Practices and Benefits
Goal 9	Dedicated to Sustainability: Innovation, Quality and Customers	<ul style="list-style-type: none"> The fourth-generation IGZO (Indium Gallium Zinc Oxide) semiconductor material that we have developed in cooperation with another plant is capable of producing metaverse display driver chips with a resolution of more than 3200 PPI, which are small-sized OLED displays with low power consumption and low noise. In the future, we will continue to advance new manufacturing process technologies to reduce chip power consumption and save resources to produce advanced, energy-saving and environmentally friendly products for our customers. (SDG 9.4 achieved)
Goal 11	Commitment to Sustainability: Environment	<ul style="list-style-type: none"> Regarding the management philosophy of introducing waste management into the lifecycle, we will continue to promote the following objectives: (1) source reduction, (2) end point waste reduction, (3) enhancing the value of waste reuse, and (4) proper disposal and the tracking of waste flow. (SDG 11.6 achieved) Our Company strictly controls the emission of pollutants and carries out pollution prevention through "the best available technology of a multi-phase treatment system". The Volatile Organic Compounds (VOC) removal efficiency of each plant is better than the 90% reduction rate standard specified in the "Air Pollution Control and Emission Standards for Semiconductor Manufacturing Industry", with each achieving over 95%. (SDG 11.6 achieved)



Goals	Corresponding Chapters	PSMC's Practices and Benefits
Goal 12	Commitment to Sustainability: Environment	<ul style="list-style-type: none"> In recent years, climate change may have had an impact on the normal water supply of the plant. We have continued to improve the water recovery rate and process water efficiency through technological improvements and investment in equipment, and have become the first semiconductor plant in the park to promise a process water recovery rate of 85% or higher. (SDG 12.2 achieved) Regarding the management philosophy of introducing waste management into the lifecycle, we will continue to promote the following objectives: (1) source reduction, (2) end point waste reduction, (3) enhancing the value of waste reuse, and (4) proper disposal and the tracking of waste flow. (SDG 12.5 achieved) The Company attaches great importance to environmental protection. The waste generated is classified by type and disposal method, and is cleaned up and reused by qualified waste vendors; waste cleaning is strictly required to comply with waste cleaning laws and international regulations, and waste generated on site is attended to at all times and evaluated for the appropriateness in the waste cleaning market. (SDG 12.5 achieved)
	Synergized Sustainability: Supply Chain	<ul style="list-style-type: none"> The Company's key suppliers have signed 100% of the Responsible Business Alliance's RBA pledge to not accept metals from conflict mined areas and to require raw material suppliers to fulfill their social and environmental responsibilities. (SDG 12.7 achieved) PSMC has incorporated the concept of environmental friendliness into its procurement principles in order to implement green procurement. In 2022, the total amount of PSMC's green procurement was approximately NT\$160 million, which includes domestic and international environmental/energy saving labels and certifications. In addition, we focused on procuring locally in the categories of property and labor, and achieved a local procurement ratio of over 90% in both categories in 2022. (SDG 12.b achieved) According to the "Raw Materials, Parts and Suppliers Management Regulations", new suppliers of raw materials and critical parts are required to fill out a preliminary survey form and are evaluated annually in accordance with the management regulations. A supplier code of conduct statement is established to require suppliers to comply with business practices in the areas of labor, health and safety, environment, business ethics, and management systems. (SDG 12.4 achieved)

Goals	Corresponding Chapters	PSMC's Practices and Benefits
Goal 13	Commitment to Sustainability: Environment	<ul style="list-style-type: none"> PSMC's management plan for dealing with related crisis events in a systematic fashion ensures that normal operations can be resumed within the shortest possible time in the event of a major accident or crisis. PSMC addresses specific crisis events such as prolonged power supply interruptions, the effects of climate change, and raw material supply disruptions. (SDG 13.1 achieved)
Goal 16	Competent Sustainability: Corporate Governance	<ul style="list-style-type: none"> The Company has established the "Code of Conduct for Credible Management" and the "Procedures and Conduct Guidelines for Credible Management", which explicitly provide for the recusal of conflicts of interest, and the regulations for the Board of Directors' meetings also stipulate the recusal of interests. For matters regarding the meetings, those who have a vested interest in those matters are not allowed to join the discussion or vote, and the relevant recusal is recorded in the minutes of the meetings. (SDG 16.5 achieved) The highest corporate governance unit of the Company is the Board of Directors, which is elected by a vote of all shareholders. (SDG 16.6 achieved) In order to comply with RBA regulations, the Company has established "Whistleblower Protection and Retaliation Management Procedures" to protect employees, suppliers and other internal and external whistleblowers from exercising their whistleblower rights in accordance with the law. (SDG 16.6 achieved)
Goal 17	Integrating Sustainability: Society	<ul style="list-style-type: none"> With the aim of promoting arts and cultural activities, PSMC invests resources in supporting the arts and cultural industry through donations, sponsorships and strategic partnerships to promote cultural development. (SDG 17.17 achieved)



Stakeholder Communication

In accordance with the five principles of the AA1000SES Stakeholder Engagement Standard, and after internal discussions and reference to the industry's stakeholder identification and engagement methods, six internal and external stakeholder groups were identified, including: employees, customers, investors/shareholders, suppliers/contractors, government/authorities, and society/local communities. To further understand each stakeholder and assess the impact of each sustainability issue, the Company designed questionnaires to be completed by internal and external stakeholder groups, and the results of stakeholder negotiations and impact assessments of significant issues are reviewed by the President and presented to the Board of Directors.

Stakeholders	Importance of Stakeholder	Top five impact issues (Total positive and negative impacts)	Communication channel and frequency	Effectiveness of communication in 2022
Employees	Employees are the most valuable assets of PSMC, and they are also the most solid elite forces driving our production and operation. We will dedicate ourselves to improving the benefits system and promoting workplace protection, seeking and retaining talents, creating a friendly workplace and a win-win situation for both labor and management.	<ul style="list-style-type: none"> • Integrity Management • Information Security • Economic Performance • Product Liability and Quality • Regulatory Compliance 	<ul style="list-style-type: none"> • Announcements and inquiries on the PSMC official website (real-time) • Partner's Words/employees care network (at anytime) • Quarterly Meeting (Quarterly) • Grievance hotline (at any time): Assist and handle issues raised by and received from employees • Labor-management meetings (quarterly), welfare committee meetings (quarterly): to make suggestions and negotiate with the company • Employee feedback (at any time) and setting up suggestion boxes • Occupational Safety, Health and Environment Committee Meetings (Quarterly) • Health Consultation with Health Service Physicians and Occupational Specialists (Weekly) • Human Resources Recruiting Line on the PSMC official website (anytime) (https://www.powerchip.com/en-global/join/activityinfo/process_technology) • Human Resources Interviewer Phone/e-mail (anytime) 	 Human Resources Recruiting Line on the PSMC official website <ul style="list-style-type: none"> • A total of 637 "Feedback Corner" cases were received, and the response rate was 100%
Customers	The satisfaction of our customers and their feedback on our services are the driving force for our continuous efforts and growth.	<ul style="list-style-type: none"> • Risk Management • Product Liability and Quality • Regulatory Compliance • Integrity Management • Customer Relationship Management 	<ul style="list-style-type: none"> • Customer service telephone/mailbox (anytime) • Customer Satisfaction Survey (Annually) • Participate in relevant product exhibitions to gain first-hand knowledge of our customers and the direction of market development (anytime) • Marketing and sales colleagues visit customers (anytime) 	<ul style="list-style-type: none"> • Customer satisfaction score of 94
Investor/ Shareholders	All of the capital of PSMC is funded by shareholders and investors, and it is the basic responsibility of the company to protect the interests of the shareholders.	<ul style="list-style-type: none"> • Information Security • Product Liability and Quality • Integrity Management • Economic Performance • Regulatory Compliance 	<ul style="list-style-type: none"> • Regular publication of operational information (monthly) and financial reports (quarterly) • Shareholders' meetings (annually): Annual financial report prepared in accordance with regulations (https://www.powerchip.com/en-global/financials/index/monthly-revenues-2023) • Financial information, stock information, and annual reports. • Set up dedicated contact window and mailbox for shareholders (anytime) • A spokesperson contact window is available (anytime) 	 A special area for investors is set up on the official website <ul style="list-style-type: none"> • Completion of the regular shareholders' meeting on April 26, 2022 and the provisional shareholders' meeting on June 17, 2022 respectively • No incidents of corruption occurred

Stakeholders	Importance of Stakeholder	Top five impact issues (Total positive and negative impacts)	Communication channel and frequency	Effectiveness of communication in 2022
Suppliers/ Contractors	As a global team of professionals, we maintain the quality of our supply chain through the evaluation of our supplier management system. The contractors are co-operative partners of PSMC, and share the prosperity with PSMC in terms of business promotion and work quality.	<ul style="list-style-type: none"> Regulatory Compliance Product Liability and Quality Integrity Management Occupational Safety and Health Responsible Taxation 	<ul style="list-style-type: none"> Supplier Conferences (irregularly) Supplier evaluations (semiannually) E-Supplier system (at any time) Contractor Appraisal (Annually) Contractor Agreement Meeting (Quarterly) Toolbox meeting (daily) Sustainability Management Self-Assessment Questionnaire (first implementation this year) 	<ul style="list-style-type: none"> 100% completion of raw material supplier appraisal 100% completion of preliminary survey and audit of new suppliers 100% use of conflict-free minerals 100% of key suppliers signed the Responsible Business Alliance (RBA) pledge
Government/ Authorities	The competent authorities are the supervisors of the regulations related to the company's operation, and the primary responsibility of the company's operational governance is to abide by the law.	<ul style="list-style-type: none"> Regulatory Compliance Occupational Safety and Health Human Rights Economic Performance Customer Relationship Management 	<ul style="list-style-type: none"> Maintain good interaction with the competent authorities and actively participate in seminars and workshops organized by the competent authorities (at anytime) Management System Regulations Identification (at anytime) Correspondence, project meetings, public information (at anytime) Participate in the operation of the functional organizations of the Hsinchu Science Park and the Hsinchu Science Park Administration(at anytime) 	<ul style="list-style-type: none"> Won many awards from the competent authorities for environmental safety and health No major violations occurred Participate in conferences sponsored by the competent authorities (e.g., Talent Base Program, Semiconductor Industry-Academia-Research Co-Education Talent Practical Ability Improvement Program)
Social/Local Communities	The operational sites in the Science Park are located in close proximity to each other and maintain good communication and contact with the neighboring plants to collectively maintain the safety and environment of the Science Park.	<ul style="list-style-type: none"> Risk Management Remaining issues, excluding biodiversity (20 issues scored equally) 	<ul style="list-style-type: none"> Weekday visits and telephone communication (anytime) Official Company Website (at anytime) Participate in association group activities or symposiums (at anytime) Participate in external guild/association functions (at anytime) 	<ul style="list-style-type: none"> Participate in monthly meetings of relevant committees of external public associations Participation in TSIA Conference and TWIOTA Annual Members Meeting



Materiality Analysis

PSMC regularly performs a materiality analysis every year. This year, for the first time, we adopted the “Double Materiality” principle proposed by the European Union to conduct a materiality analysis of sustainability issues, and followed the four-stage materiality assessment process in the new GRI Standards (2021), inviting internal senior management to assess the actual and potential positive and negative impacts of sustainability issues. The statistical analysis method of the questionnaire survey was changed from the previous method of understanding the “level of concern” of the stakeholders to the “level of impact” this year as the principle of evaluation. After a comprehensive assessment of the impacts on “corporate values” as well as on the “economy, environment, people and human rights”, a total of 12 major material topics were identified this year.

1. Understanding the Organizational Context

22 Items of Sustainability Issues

With reference to international sustainability criteria and standards (GRI standards, SASB, TCFD), sustainable investment ratings (DJSI, CDP), industry characteristics, and the domestic and international semiconductor industry, the Sustainable Development Committee has compiled a total of 22 sustainability issues through discussions and feedback

2. Identify the Actual and Potential Impacts

269 external questionnaires

The internal managers of the company filled out the impact questionnaire according to the impact of each sustainability issue on the value of the company and the sustainable development of the company.

Internal discussions on the impact of sustainability issues and the questionnaires were distributed to stakeholders to assess their concerns on the issues.

3. Assessing the Significance of Impact

37 internal questionnaires

The Company's internal management team evaluated the impact of each sustainability issue in terms of its impact on the Company's value and sustainable corporate development.

Assessment of the level of concern and impact of sustainability issues by each stakeholder

4. Sort and Prioritize the Most Significant Impacts

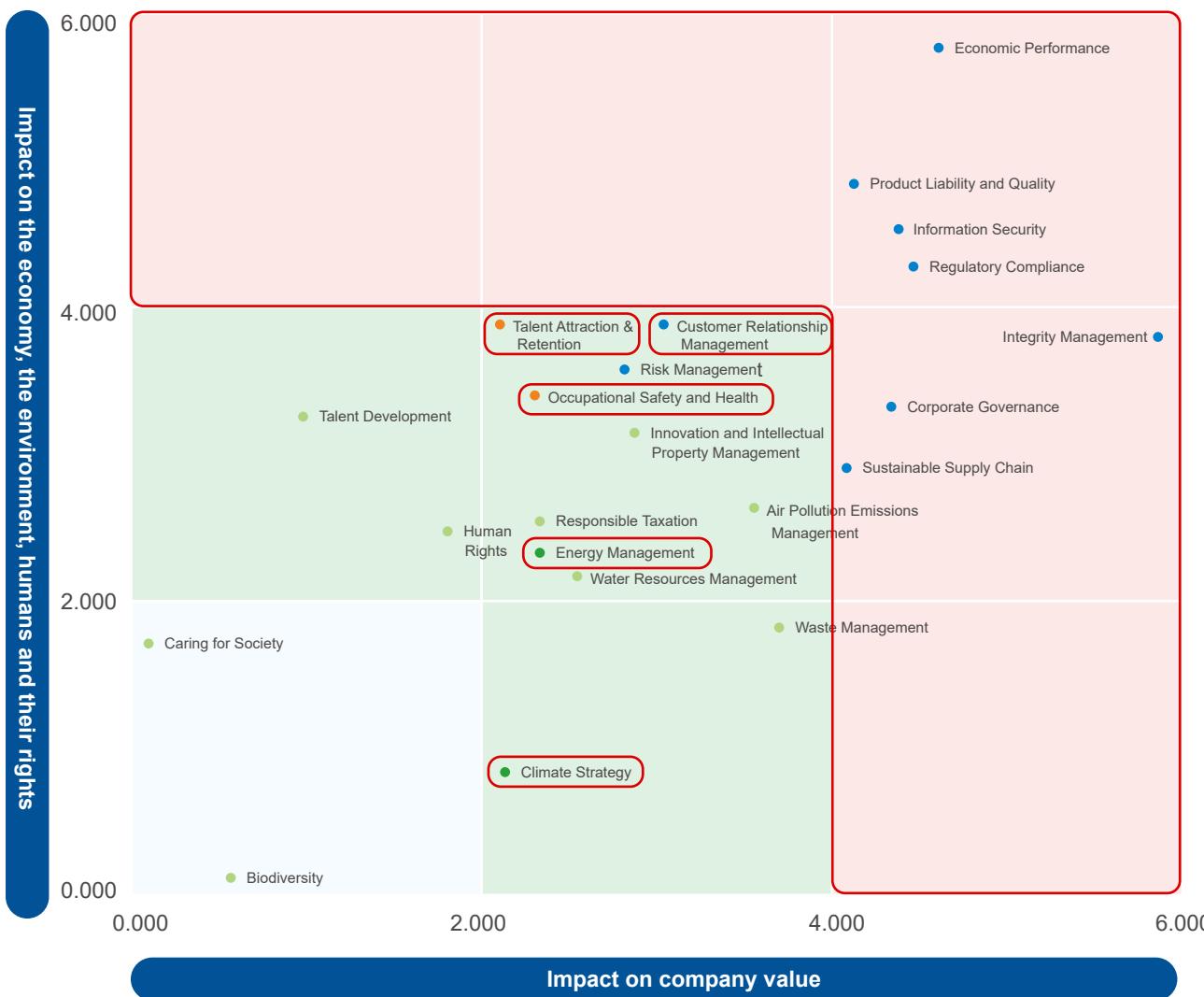
12 Items of Material Topics

We compiled the impact of each sustainability issue evaluated by the company's internal managers on the company's operations and sustainable development, and the top five issues evaluated by stakeholders in terms of impact. We identified 12 material topics by comprehensively evaluating their impacts on corporate values, the economy, the environment, and on people and human rights.



Major Sustainability Topics for 2022

Major Sustainability Topics for 2022



Based on the results of this year's consolidated stakeholder and internal management assessment of material topics, the number of material topics was reduced from 20 in the previous year to 12, and the changes in topics and related descriptions can be found in the following table:

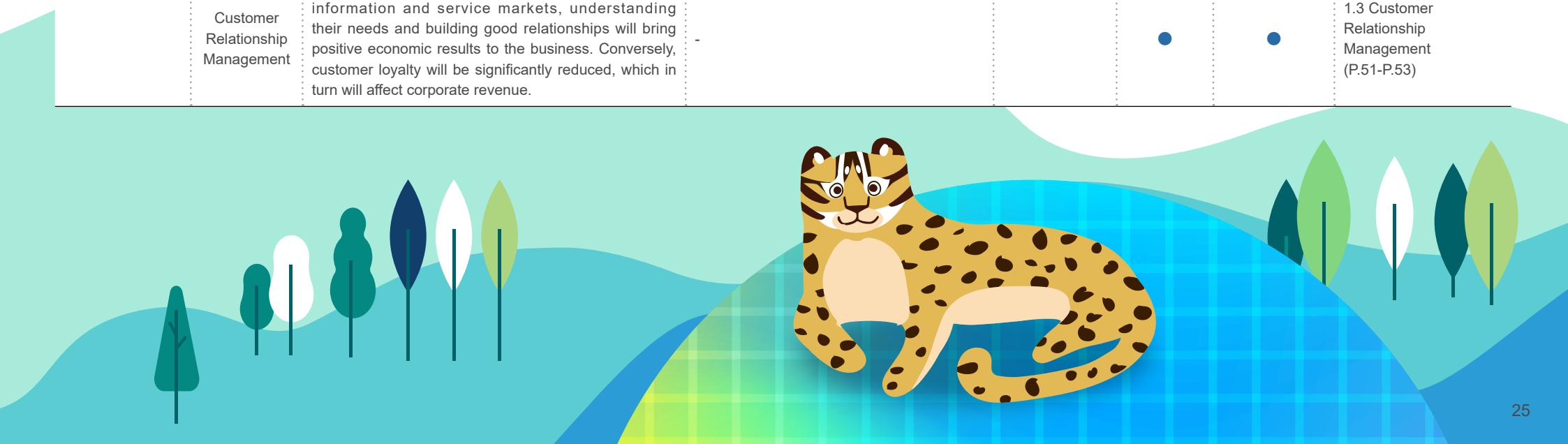
Topics	Year over Year Differences	Adjustment Explanation
Information Security		Since "Information Security" includes upstream and downstream information as well as the organization's own information, in order to fully reveal the scope of information security rights and responsibilities of PSMC, the previous name of "Customer Privacy" is changed to "Information Security".
Energy Management		Adjusted the original "Energy" to "Energy Management" with reference to the issues used by others in the industry and rating agencies.
Sustainable Supply Chain	Topic Name Change	In order to show that not only do we value the quality of our suppliers, but we also expect to achieve environmental sustainability through a sustainable supply chain, we have changed the original name of "Supplier Management" to "Sustainable Supply Chain".
Customer Relationship Management	Topic Name Change	"Customer Relationship Management" is inclusive of the former "Customer Health and Safety" topic, so the former was renamed to be more comprehensive for the sake of communicating with the customers.
Climate Strategy		Due to the topic related to climate change being disclosed as a strategy-oriented topic, the original name of "Greenhouse Gas Management" was modified to "Climate Strategy".
Talent Attraction and Retention		Revised the former topic name of "Labor-Employment Relationship" to "Talent Attraction and Retention", in reference to the topics used by others in the industry and rating agencies.
Product Liability and Quality	Consolidation of Topics	The former "Quality Management in Production Operations" and "Product Service and R&D Innovation (Non-Sustainable Issue)" were merged into "Product Liability and Quality", mainly because both issues were related to product manufacturing and quality, so as to better present the relevant contents to meet the expectations of the stakeholders.
Integrity Management	Consolidation of Topics	Since the original three topics of "Integrity in Governance", "Anti-Corruption" and "Anti-Competitive Behavior" all represent the company's integrity in management, the topics were combined into "Integrity Management".
Corporate Governance	Newly Added Material Topics	This topic is a material topic this year because the establishment of an effective corporate governance structure can effectively enhance the competitiveness of a company.
Innovation and Intellectual Property Management		This topic was an amended combination of the former "Product Service Research and Development" and "Innovative Intellectual Property", and is no longer a material topic this year, probably because stakeholders are more interested in product quality and customer relationship management.
Waste Management		This topic was formerly "Waste", but this year it is no longer a material topic, probably because stakeholders are more interested in the Company's overall strategy and related actions in the environmental area.
Air Pollution Emissions Management	Material Topics Removed	This topic is no longer a material topic this year likely because the stakeholders are more interested in the Company's overall strategy and related actions in the environmental area.
Human Rights		This issue is no longer a material topic this year because stakeholders are likely more interested in the Company's policies and practices related to recruitment and retention of employees and occupational safety and health.
Water and Effluent		This topic is no longer a material topic this year likely because the stakeholders are more interested in the Company's overall strategy and related actions in the environmental area.

Material Topic Impact Management

Material Topic Categories	Material Topics	Positive, Negative Impacts Statement and Materiality Description	Corresponding GRI, SASB Standards, Topic-Specific Items, and TCFD Framework	Value Chain Impact Hotspots			Content Corresponding Chapters and Pages
				Upstream	PSMC Operation	Downstream	
				Suppliers / Contractors	Customers		
Environmental Sustainability	Energy Management	Examine corporate energy policies, management practices, goals and achievements. Effective energy management will help companies reduce their carbon footprint; however, on the other hand, they may face high electricity and carbon costs, which in turn may affect their investment and customer base.	GRI 302-Energy				3.2 Energy Management (P.80-P.83)
			TC-SC-130a.1 (1) Total energy consumed (2) Percentage grid electricity (3) Percentage renewable				
	Climate Strategy	Companies should establish a climate change governance framework and carbon reduction-related strategies, assess climate related risks and opportunities, and develop strategies to address them. This reduces the impact of climate change on the business, while exploring new business opportunities.	GRI 201- Economic Performance GRI 305- Emissions				3.1 Climate Strategy (P.67-P.76)
			TC-SC-110a.1 (1) Gross global Scope 1 emissions and (2) amount of total emissions from perfluorinated compounds. TC-SC-110a.2 Discussion of long- and short-term strategy or plan to manage scope 1 emissions, emissions reduction targets and an analysis of performance against those targets.				
	Talent Attraction and Retention	In response to changes in the employment environment, continuous adjustments in talent recruitment and employee salaries will attract more talent to join the company and increase retention rates. Failing to do so will result in companies not being able to recruit talented people and will have lower retention rates.	GRI 401 - Employment GRI 403 - Occupational Safety and Health GRI 405 - Diversity and Equal Opportunity				4.1 Talent Attraction and Retention (P.102-P.112) 4.4 Occupational Health and Safety (P.122-P.133)
			TC-SC-330a.1 Description: Percentage of employees who are (1) foreign nationals and (2) located offshore.				
Social Co-Prosperity	Occupational Safety and Health	Healthy and safe working conditions can prevent physical and mental injuries, promote the health of workers and maintain the health and safety of colleagues. Conversely, there would be a lack of physical and mental health care and related services for employees.	GRI 403 - Occupational Health and Safety				4.4 Occupational Health and Safety (P.122-P.133)
			TC-SC-320a.1 Description of efforts to assess, monitor and reduce exposure of employees to human health hazards. TC-SC-320a.2 Total amount of monetary losses as a result of legal proceedings associated with employee health and safety violations				

Material Topic Categories	Material Topics	Positive, Negative Impacts Statement and Materiality Description	Corresponding GRI, SASB Standards, Topic-Specific Items, and TCFD Framework	Value Chain Impact Hotspots			Content Corresponding Chapters and Pages
				Upstream	PSMC Operation	Downstream	
				Suppliers / Contractors	Customers		
Corporate Posterity	Economic Performance	Good economic performance steadily creates value for the company through growth in revenue and continued improvement in profitability. Conversely, the company will face financial difficulties, leading to business interruptions.	GRI 201 - Economic Performance	●	●	●	About PSMC (P.9)
	Integrity Management	Companies demonstrate their commitment to integrity and responsible governance management strategies. Illegal acts of dishonesty are subject to penalties and can affect a company's reputation.	GRI 205 - Anti-Corruption GRI 206 - Anti-Competitive Behavior TC-SC-520a.1 Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations.	●	●	●	6.2 Integrity Management (P.155-P.160)
	Regulatory Compliance	Compliance with government regulations, policies and procedures, and the requirement for all employees to comply with all business-related laws and regulations. Non-compliance can lead to penalties and affect the reputation of the company.	-	●	●	●	6.3 Regulatory Compliance (P.161)
	Product Liability and Quality	Companies should manage and monitor the quality of their products to ensure that customers receive the best quality products. Conversely, poor product quality will affect the company's reputation, reduce customer loyalty and lead to the risk of business interruption.	GRI 416 - Customer Health and Safety GRI 417 - Marketing and Labeling TC-SC-410a.1 Percentage of products by revenue that contain International Electrotechnical Commission (IEC) 62474 declarable substances.	●	●	●	1.2 Product Liability and Quality (P.44-P.48)
	Information Security	Establish information security mechanisms, protective measures and emergency response processes to ensure the security of operational information and the protection of assets. Conversely, the information security of enterprises, customers or suppliers will not be protected and the possibility of information leakage will be increased.	GRI 418 - Customer Privacy TC-SC-410a.2 Processor energy efficiency at a system level for (1) servers, (2) desktops, and (3) laptops.	●	●	●	6.6 Information Security (P.170-P.172)

Material Topic Categories	Material Topics	Positive, Negative Impacts Statement and Materiality Description	Corresponding GRI, SASB Standards, Topic-Specific Items, and TCFD Framework	Value Chain Impact Hotspots			Content Corresponding Chapters and Pages
				Upstream	PSMC Operation	Downstream	
				Suppliers / Contractors	Customers	Customers	
Corporate Posterity	Corporate Governance	The establishment of an effective corporate governance structure and the effective operation of the board of directors and functional committees will strengthen corporate governance and protect shareholders' rights and interests. If not, the rights and interests of shareholders, investors and stakeholders will not be protected, and the competitiveness of the company will be reduced.	GRI 205 - Anti-Corruption GRI 206- Anti-Competitive Behavior			●	6.1 Corporate Governance (P.151-P.154) 6.2 Integrity Management (P.155-P.160)
	Sustainable Supply Chain	The establishment of supplier and procurement policies and mechanisms, complete supply chain policies and audits will effectively protect the quality of products. If not, it will affect the quality of products and the reputation of the company, and lead to financial losses.	GRI 308 - Supplier Environmental Assessment GRI 414 - Supplier Social Assessment TC-SC-440a.1 Description of the management of risks associated with the use of critical materials.	●	●	●	2.1 Sustainable Supply Chain (P.56-P.64)
	Customer Relationship Management	Communicating with customers about services, product information and service markets, understanding their needs and building good relationships will bring positive economic results to the business. Conversely, customer loyalty will be significantly reduced, which in turn will affect corporate revenue.	-			●	1.3 Customer Relationship Management (P.51-P.53)



Material Topics Development Objectives

✓ Indicates that the 2022 target has been achieved

Aspect	Material Topic	Policy and Management	2022 Target and Implementation Results	2023 Short-Term Objectives	2025 Mid-Term Objectives	2030 Long-Term Objectives
Environmental Sustainability	Energy Management	Introduce ISO management system, improve energy efficiency through PDCA model, and set up a green energy team to plan the introduction of renewable energy.	<ul style="list-style-type: none"> ✓ The 8-inch fab has already implemented the ISO 50001 energy management system ✓ Achieved 1% power saving target 	<ul style="list-style-type: none"> • 13% reduction in power consumption per wafer area (base year 2015) • 100% completion of the construction of own solar power plant • Average annual power saving rate of more than 1% 	<ul style="list-style-type: none"> • 15% reduction in power consumption per wafer area (base year 2015) • Install renewable energy facilities/procure green power by over 8% 	<ul style="list-style-type: none"> • 20% reduction in electricity consumption per wafer area or cumulative energy savings of 160 million kWh by 2030 (base year 2015) • RE30 (renewable energy use of 30%)
	Climate Strategy	<p>Establish an “ESG Committee” that is responsible for formulating climate change strategies and reviewing the compliance and appropriateness of the strategies and objectives.</p> <p>Establish a “Risk Management Committee” that is responsible for identifying and analyzing the organization's climate related risks, and effectively managing the potential risks faced by the organization in the face of climate change.</p>	<ul style="list-style-type: none"> ✓ Greenhouse gas reduction of 1.20% ✓ Completed 2023 Green Power Certificate procurement of 10.5MW ✓ P1/2, 8A fab 0.5MW solar photovoltaic system setup 	<ul style="list-style-type: none"> • Promote energy saving/carbon reduction programs with an average annual GHG reduction of 1% (YOY) • 10% reduction in direct greenhouse gas emissions per unit of product (base year 2015) • 85% reduction of total fluoride emissions from the manufacturing process • After the approval of the Tonglu Environmental Impact Assessment, the new plant requires 25% green power 	<ul style="list-style-type: none"> • Promote energy saving/carbon reduction programs with an average annual GHG reduction of 1% (YOY) • 30% reduction in greenhouse gas emissions per unit of product (base year 2015) • 20% reduction in direct greenhouse gas emissions per unit of product (base year 2015) • 90% reduction of total fluoride emissions from the manufacturing process • RE30 (520GWh) 	
Social Co-Prosperity	Talent Attraction and Retention	Establish a perfect communication channel, formulate an education and training plan that meets the development needs of employees, listen to the employees' needs and suggestions, and use them as the basis of reference for system revisions to create a friendly workplace where employees can work with peace of mind.	<ul style="list-style-type: none"> ✓ Staffing rate of 95.1% ✓ Completion rate of 94% for training programs ✓ 100% response rate on “Feedback Corner” employee communication platform 	<ul style="list-style-type: none"> • Completion rate of $\geq 90\%$ for the training programs • $\geq 95\%$ response rate on “Feedback Corner” employee communication platform 	<ul style="list-style-type: none"> • Compensation and employee performance correlation $\geq 95\%$ • Completion rate of common mandatory management courses for supervisors $\geq 90\%$ • $\geq 95\%$ response rate on “Feedback Corner” employee communication platform 	<ul style="list-style-type: none"> • Compensation and employee performance correlation $\geq 95\%$ • Completion rate of common mandatory management courses for supervisors $\geq 92\%$ • $\geq 96\%$ response rate on “Feedback Corner” employee communication platform
	Occupational Safety and Health	Carry out daily operation according to the occupational safety and health management system, and review and adjust the overall system operation through regular audits in order to achieve the purpose of continuous improvement.	<ul style="list-style-type: none"> ✓ The number of effective improvement proposals has reached 50 ✓ Zero cases of occupational illnesses caused by chemical exposure ✓ Total health improvement achievement rate of 55% for key groups 	<ul style="list-style-type: none"> • Improve the effective number of health proposals by 10% (baseline of 50) • Zero cases of occupational illnesses caused by chemical exposure • Total health improvement achievement rate of $\geq 55\%$ for key groups 	<ul style="list-style-type: none"> • Improve the effective number of health proposals by 20% (baseline of 60) • Zero cases of occupational illnesses caused by chemical exposure • Total health improvement achievement rate of $\geq 56\%$ for key groups 	<ul style="list-style-type: none"> • Improve the effective number of health proposals by 50% (baseline of 75) • Zero cases of occupational illnesses caused by chemical exposure • Total health improvement achievement rate of $\geq 60\%$ for key groups

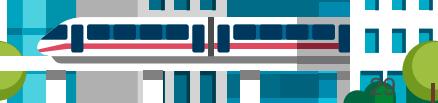
Aspect	Material Topic	Policy and Management	2022 Target and Implementation Results	2023 Short-Term Objectives	2025 Mid-Term Objectives	2030 Long-Term Objectives
Corporate Posterity	Economic Performance	Continuously improve corporate governance scores and participate in international competitions to enhance corporate visibility and economic performance.	<ul style="list-style-type: none"> ✓ Development of 3D Interchip samples ✓ Received a rating of 62 from DJSI ✓ Awarded Category 1 Silver Grade in the TCSA competition for the Electronic Information Manufacturing Industry 	<ul style="list-style-type: none"> • Over 110 patent applications per year • The completion of the construction of Tongluo P5 fab • Evaluation score target of 90 points or higher, evaluation score in the top 6% ~ 20% 	<ul style="list-style-type: none"> • Develop niche products within the market and technology to give back to the society and become a world-class technology company • Top 5% in Corporate Governance Rating 	<ul style="list-style-type: none"> • Monthly production capacity of Tongluo P5 fab to reach 100,000 pieces by 2030 • Top 5% in Corporate Governance Rating
	Integrity Management	With the belief of “integrity, service, quality, and innovation”, we have established the “Integrity Management Code”, “Integrity Management Procedures and Behavior Guidelines” and related regulations, and are committed to building a corporate culture of integrity management.	<ul style="list-style-type: none"> ✓ Zero corruption incidents ✓ Zero anti-competitive behavior incidents 	<ul style="list-style-type: none"> • Maintain a record of zero corruption cases for the entire year and a zero tolerance attitude towards dishonest management practices • Perform company-wide integrity management compliance checks • Plans for P1/2, P3, 8A, 8B fabs to pass RBA verification simultaneously 	<ul style="list-style-type: none"> • Obtain ISO 37001 certification for bribery prevention management system in accordance with company policy 	<ul style="list-style-type: none"> • Adhering to the law and business ethics to build up the company's image of integrity and fulfillment of social responsibility
	Regulatory Compliance	Establish a clear regulatory compliance and internal audit system to strictly comply with legal requirements in order to avoid potential financial losses that could have an impact on the company's operations.	<ul style="list-style-type: none"> ✓ There were no major incidents that were in violation of laws and regulations 	<ul style="list-style-type: none"> • Continue to conduct compliance courses and raise awareness, with a 100% participation rate by employees 	<ul style="list-style-type: none"> • Continue to conduct compliance courses and raise awareness, with a 100% participation rate by employees 	<ul style="list-style-type: none"> • Continue to conduct compliance courses and raise awareness, with a 100% participation rate by employees
	Product Liability and Quality	Regularly manage and monitor product quality to ensure customers receive the best quality products.	<ul style="list-style-type: none"> ✓ Zero recalls have occurred ✓ The number of certified Six Sigma students increased by 5 to a total of 98 ✓ CIP competition yearly proposals increased by 68 to a total of 234 	<ul style="list-style-type: none"> • Achievement rate for improvement measures is 100%. • The number of people who passed the Six Sigma Certification is 103 • The total number of entries for the CIP competition is 250 	<ul style="list-style-type: none"> • Achievement rate for improvement measures is 100% • The number of people who passed the Six Sigma Certification is 125 • The total number of entries for the CIP competition is 275 	<ul style="list-style-type: none"> • Achievement rate for improvement measures is 100% • The number of people who passed the Six Sigma Certification is 150 • The total number of entries for the CIP competition is 320

Aspect	Material Topic	Policy and Management	2022 Target and Implementation Results	2023 Short-Term Objectives	2025 Mid-Term Objectives	2030 Long-Term Objectives
Corporate Posternity	Information Security	Regularly conduct information security campaigns, purchase additional information security analysis software, and develop communication checking systems to ensure information security is implemented.	✓ There were no information security incidents	<ul style="list-style-type: none"> No major information security and data leakage incidents Critical information systems must establish a backup recovery mechanism and implement backup recovery exercises Obtain ISO 27001 certification 	<ul style="list-style-type: none"> Introduction of red team drills to refine hacker attack defense capabilities Development of trade secret registration system 	<ul style="list-style-type: none"> Cultivate red drill team to continuously strengthen defense capabilities
	Corporate Governance	Establish a sound corporate governance structure and culture in accordance with the Code of Corporate Governance Practices to strengthen the functions of the Board of Directors and enhance operational effectiveness.	✓ Completed the annual performance evaluation of the Board of Directors and functional committees to strengthen the functions of the directors	<ul style="list-style-type: none"> Develop action plans in response to the first ESG assessment indicators and the latest international sustainability trends Ongoing annual performance evaluation of the Board of Directors and functional committees to strengthen the functions of the Directors 	<ul style="list-style-type: none"> Continuously pay attention to the domestic ESG evaluation indicators, international trends and keep abreast of the changes in regulations, and draw up further training programs for directors and governance staff to enhance their governance capabilities Ongoing annual performance evaluation of the Board of Directors and functional committees to strengthen the functions of the Directors 	<ul style="list-style-type: none"> Rolling revision of corporate governance-related regulations and management systems in accordance with ESG evaluation indicators Ongoing annual performance evaluation of the Board of Directors and functional committees to strengthen the functions of the Directors
	Sustainable Supply Chain	Comply with PSMC's procurement policy to ensure seamless supply from suppliers.	<ul style="list-style-type: none"> ✓ Signed Responsible Business Alliance (RBA) pledge and completed all of the semi-annual periodic evaluations by first-tier key suppliers ✓ 14 first-tier suppliers were selected each year for the "Sustainability Management Self-Assessment Questionnaire", and the completion rate reached 100%. 	<ul style="list-style-type: none"> Have first-tier suppliers sign the Responsible Business Alliance (RBA) pledge and achieve a 100% completion rate for semi-annual periodic reviews Completion rate of "Sustainability Management Self-Assessment Questionnaire" and "Sustainability Management Field Audit" to reach 100% for 14 first-tier suppliers selected every year 	<ul style="list-style-type: none"> Expand to all second-tier suppliers signing 100 the Responsible Business Alliance (RBA) pledge 	<ul style="list-style-type: none"> Expand to the second-tier suppliers to sign the "Sustainability Management Self-Assessment Questionnaire" with a 100% completion rate
	Customer Relationship Management	Communicate with customers about services, product information and service markets to understand their needs, in order to maintain customer relationships and enhance customer satisfaction.	✓ Customer satisfaction score of 94	<ul style="list-style-type: none"> Maintain an overall average customer satisfaction score of 88 	<ul style="list-style-type: none"> Maintain an overall average customer satisfaction score of 90 	<ul style="list-style-type: none"> Maintain an overall average customer satisfaction score of 92

1. Dedicated to Sustainability

Innovation, Quality and Customers

- 1.1 Innovation and Intellectual Property Management
- 1.2 Product Liability and Quality
- 1.3 Customer Relationship Management



► Dedicated to Sustainability - Innovation, Quality and Customers

PSMC continues to provide a wide range of professional wafer solutions that meet market trends and customer needs. Through the continuous introduction of innovative technologies and smart manufacturing, we are strengthening our core competencies. Together with our customers, we use our mutual competitive advantages as the key foundation for long-term management, and through our continuous efforts to reduce the environmental impacts of our products and services, we are able to make a sustainable impact on human life and the natural environment. Through our internal incentive structure, we encourage the continuous accumulation of innovative capabilities in order to promote industrial development and to fulfill the corporate goals of sustainable development and technological innovation, which ultimately leads to the maximization of human well-being.



Innovation and Intellectual Property Management



Product Liability and Quality

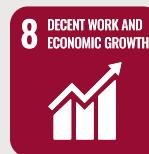


Customer Relationship Management

Corresponding United Nations Sustainable Development Goals (SDGs)



7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Corresponding Material Topics



Product Liability and Quality



Customer Relationship Management

Material Topics GRI Standards

GRI 416 : Customer Health and Safety

GRI 417 : Marketing and Labeling

Stakeholders who have priority reading

Customers, Investors/Shareholders, Suppliers

► 1.1 Innovation and Intellectual Property Management

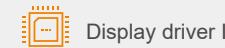
In addition to investing in production capacity, innovation is also the way to enhance the value of the wafer fabrication industry. As the world's only professional foundry with both memory and logic process technologies, PSMC is committed to integrating memory R&D and production experience to pursue the highest competitive advantage in foundry services. In addition, we will continue to develop various logic and memory foundry process technology platforms to provide the best foundry services to our customers. We will strive to be on par with the world's best in logic and memory foundry technology and create a more brilliant future.

► 1.1.1 Innovative Research and Development Breakthroughs

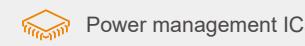
Since 2012, our 12-inch fab has successfully transitioned into a foundry business for a wide range of applications, including computers, wireless communications, consumer electronics and automotive electronics. In addition to providing advanced niche memory manufacturing processes to assist domestic and international customers in the production of related products, PSMC is the only 12-inch foundry in the world to offer a full range of memory product lines. Additionally, PSMC also provides customized logic and special application foundry services, making it the best partner for world-class manufacturers. In order to provide customers with a complete product line and better service quality, the resources of the 12-inch fab and 8-inch fab are integrated. Through technological innovation and product line improvement, PSMC is committed to providing more competitive solutions to our customers. We are also expanding our collaboration with global industry, government, and academic research institutions to develop relevant process technologies, in order to grasp early on the cutting-edge technologies, effectively shorten the R&D timeline, and minimize patent and technology transfer costs.

With the rapid rise of the Internet of Things and Artificial Intelligence, the semiconductor market is becoming increasingly diverse in demand. PSMC's professional team is committed to technology development and innovation to provide customers with diverse solutions from the cloud to the end-user to meet the different needs. In addition to our complete memory design services and manufacturing capabilities, including process platforms for Dynamic Random Access Memory (DRAM), Flash Memory (NAND Flash) and Code Flash Memory (NOR Flash), we are able to provide customers with a wide range of memory products. In order to maintain a competitive cost advantage, we will continue to develop next-generation memory processes. The compatibility of PSMC's logic process and memory process foundry capacity allocation will enable the Company to flexibly deploy its production capacity, improve capacity utilization and maintain stable profitability during fluctuations in the economy.

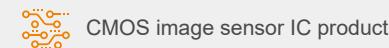
Significant Innovative Results



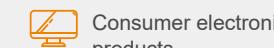
Display driver ICs



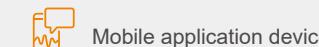
Power management ICs



CMOS image sensor IC products



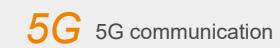
Consumer electronic products



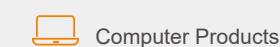
Mobile application devices



Artificial Intelligence



5G 5G communication



Computer Products

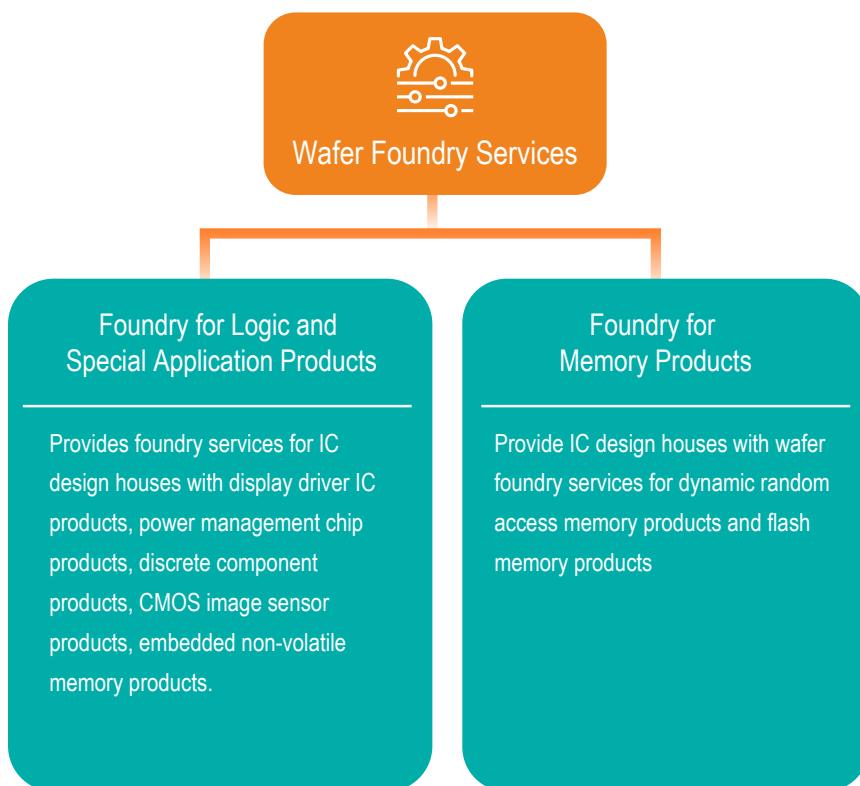


Network communication

Process Technology	Product Applications	Breakthroughs	Future Goals
80 nano crystallite	 	Increased the number of accommodating electronic components by a factor of 2 and reduced power consumption by 30%; increased efficiency per unit area by a factor of 2.8 (Compared to the 110nm crystallite)	Continuous improvement of 55nm, 40nm, and 25nm efficiencies
21nm DRAM Yield Improvement	 	Successfully improved by 65.6%	1 X nm DRAM process development to increase the number of DDR4 (4th generation Double Data Rate Synchronous Dynamic Random Access Memory) chips by 30% per wafer
24nm NAND Flash Technology Platform Development	 	Reduced the mask count by 16%, the total process count by 9%, and increased the output per unit area by 14%	Continuously improve 24nm yield and capacity, and assist customers to expand into the 5G cellular base station and related applications
3D Interchip Wafer on Wafer Technology		10 times faster and 50% lower power consumption compared to 2.5D packaging technology	We will continue with product technical development and improve efficiency and yield in order to expand into more AI-related applications in the future
Fourth Generation Oxide Semiconductor Material IGZO (Indium Gallium Zinc Oxide)	 	Metaverse display driver chip with resolution over 3,200 ppi	1. AR/VR metaverse display driver chip market 2. New memory chip that is extremely energy efficient and with computing in memory functionality (Analog in Memory)
0.18 micron Discrete Metal-Oxide-Semiconductor Field-Effect Transistor Technology	 	Discrete Metal-Oxide-Semiconductor Field-Effect Transistor with reduced R _{sp} values (16% reduction for 60V Double Gate MOSFET; 18% reduction for 12V Single Gate MOSFET)	Continue development of components for higher operating voltages such as 150V, 200V, 250V

PSMC Primary Services

We provide 12" and 8" wafer foundry services, including the provision of logic and special application products and memory products foundry services:



(1) Foundry Services - Logic and Special Application Products Foundry

wBusiness

The slowdown of the rate of improvement of Moore's Law after the 28nm node indicates that advanced logic processes are not the only direction of the market, and that we should abandon the endlessly expensive advanced processes and shift to the more profitable market of special applications, providing a variety of customized special application processes (for display driver ICs, power management chips, discrete components, CMOS image sensors, embedded non-volatile memory manufacturing) with excellent logic processes and technologies, and diversified foundry cooperation models. The Company's competitive strategy is to shorten the production process and enhance the competitive advantage of our customers. The market for sophisticated processes above 28nm is still quite large, including 5G cellular networks, industrial and automotive electronics applications.

In contrast to the prevailing copper-based process for 12-inch standard logic foundries in the market, we are able to provide a low-cost 12-inch aluminum process platform. Compared to the 8-inch aluminum process with the same technology node, our 12-inch aluminum process can significantly reduce die cost by 30%, which greatly enhances the competitiveness of our customers' products.

Main Logic & Special Application Products

Thin Film Transistor LCD Driver IC (TFT-LCD Driver IC)

Power Management IC

Discrete Devices

Flash Memory

Image Sensor IC

Integrated Memory Chip

RF Chip and Bio-tech Chip

Specialty Logic Foundry Main Product Lines

- MCU (OTP, MTP, eflash)
- RFID/NFC
- OIS
- RF/BlueTooth/Wifi
- MRAM

MCU-based
Logic IC

Display IC

Four main areas
50 Technology Categories
216 Foundry Platforms

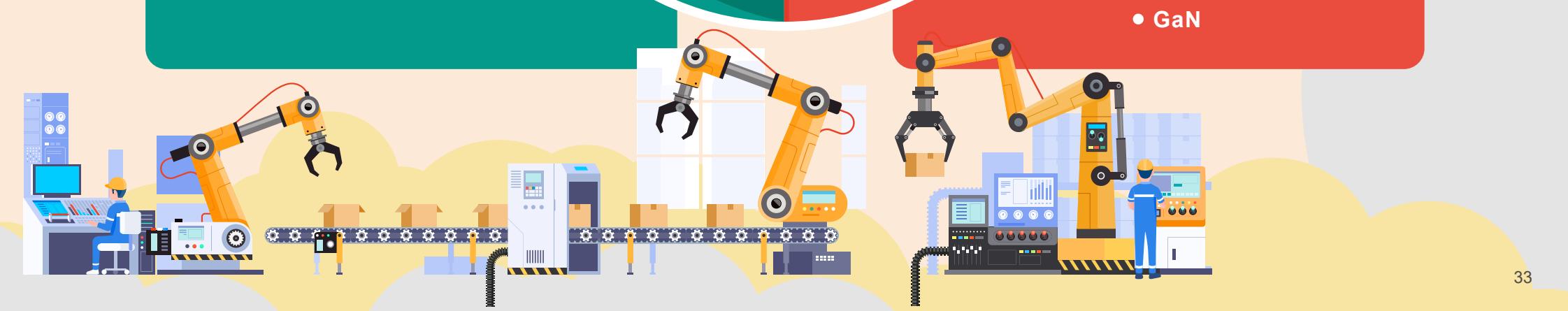
- CIS(FSIV/BSI)
- a-Si
- FoD

Image Sensors

Power Management IC
Power Discrete

- STN
- a-Si TFT
- OLED
- e-paper/e-tag

- DC/DC
- AC/DC
- BCD
- MOSFET
- IGBT
- GaN



We provide professional foundry services for customized logic and special application products with advanced technology. Our main products include TFT-LCD Driver ICs, Power Management ICs, Discrete Devices, Flash Memory, Image Sensor ICs, Integrated Memory Chips, RF Chips and Bio-tech Chips.

We have successfully mass produced a 55nm LCD driver IC high-voltage process and collaborated with several customers on a 40nm AMOLED panel driver IC process, demonstrating that our technology and production capability have reached world-class level. In the future, we are aiming further for high performance and competitiveness, especially in the research and development areas for power semiconductor components, CMOS image sensors

and 55nm RF product lines, and plan to invest more resources in research and development. At the same time, PSMC is also actively collaborating with international companies to develop more diversified products, thereby expanding its influence in the global semiconductor foundry market. In the long term, we plan to establish a professional logic foundry platform to develop semiconductor intellectual property core (SIP), and to further expand our product line by securing world-class manufacturers to import their proprietary technologies for production and manufacturing in our company. We will provide the concept of Open Foundry for operation management to meet the different needs of our customers and provide seamless product planning from 8" to 12".

Current Status

- Successful mass production of 55nm LCD driver IC high-voltage process
- Collaborated with several customers on 40nm AMOLED panel driver IC process

Short Term Goals

- Introduce Power Semiconductor Components High Efficiency Terminal Power Application Process
- The development of back side irradiation (BSI) process for CMOS image sensor products
- Continuous import of 55nm RF product line (WiFi, Bluetooth low power)
- Active cooperation with international manufacturers to develop more diversified products, such as: power management IC 130nm, 90/80nm, 55nm BCD process

Long Term Goals

- Establishment of a professional logic foundry platform and development of silicon intellectual property
- Strive for world-class manufacturers to import their proprietary technologies for production and manufacturing in our company
- Provide the concept of Open Foundry for operation management
- Provide customers with seamless product planning from 8" to 12"
- Deployment of GaN power components for use in the 5G cellular network and electric vehicles markets
- Provide a full range of modular power management IC products to choose from
- Provide a wide range of embedded systems for industrial automotive products

Note: Open Foundry is a wafer foundry model.

▲ Foundry ● Customer ◆ Cooperation

Product	Product design	Process develop	Equipment	Operation Mgt.
Generic Foundry	●	▲	▲	▲
Open Foundry	▲ / ●	▲ / ● / ◆	▲ / ●	▲

● Fourth Generation Oxide Semiconductor Material IGZO (Indium Gallium Zinc Oxide)

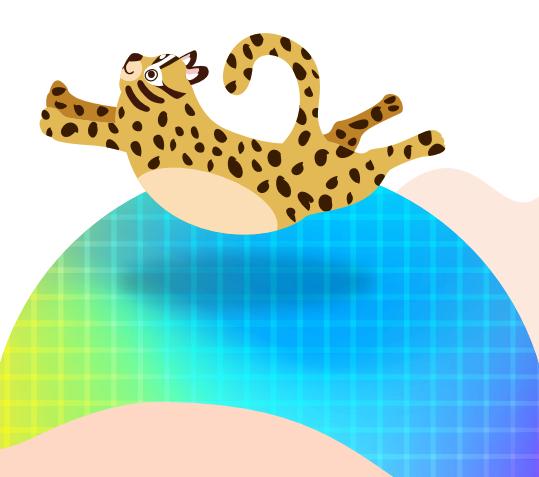
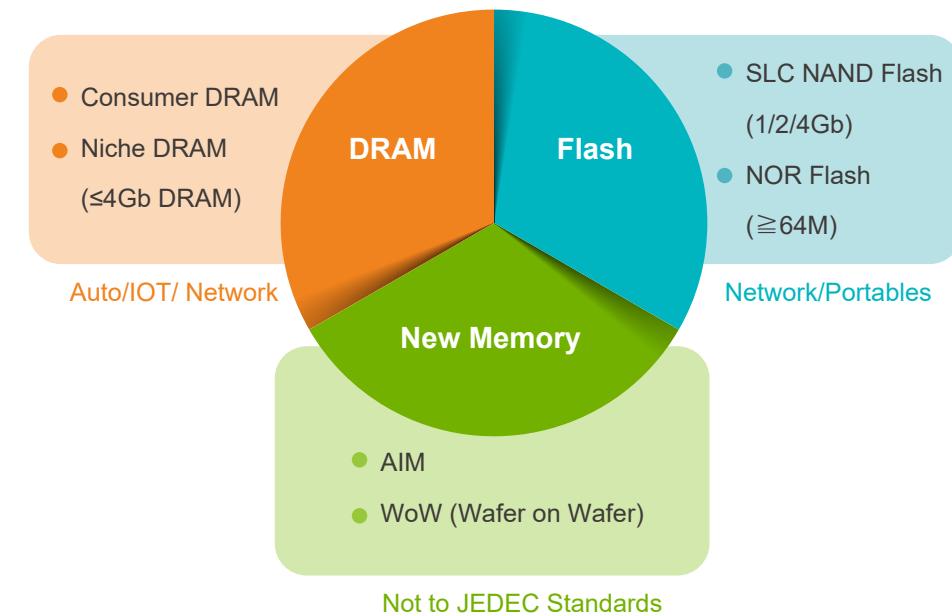
With the explosion of artificial intelligence applications, the shortcomings of existing computer architectures are becoming apparent. The best way to solve this problem is to integrate data storage and computing into one chip, reducing data transport and increasing computing performance. In collaboration with Japan's Semiconductor Energy Laboratory (SEL), PSMC has developed a high-performance indium gallium zinc oxide (IGZO) Computing in Memory chip, which has been quoted in international electrical and electronic magazines. The fourth-generation oxide semiconductor material is capable of producing metaverse display driver chips with a resolution of over 3,200 ppi and can be used in virtual reality (AR/VR) products to significantly increase display resolution. The IGZO Computing in Memory chip can effectively handle the large amount of data required for machine learning, neural-like networks, and biological systems. The IGZO Computing in Memory processor developed by PSMC has a computational power that can process 143.95 tera operations per second per watt (TOPS/W), which is an impressive record in the industry and is important to the current trend of artificial intelligence computing and is an important breakthrough in PSMC's technology innovation.

Indium Gallium Zinc Oxide (IGZO) Technology Features:

1. Metaverse display driver chip with a resolution of over 5,000 ppi
2. Extremely low cutoff leakage current, a new type of Computing in Memory chip with ultra-low power consumption (Analog in Memory)
3. The processor's computational power is 143.9 tera operations per second per watt (TOPS/W)
4. The analog memory can be divided into 64 states

(2) Foundry Services - Memory Wafer Foundry

Memory Foundry Main Product Lines



● Dynamic Random Access Memory Process Technology

In view of the demand for higher performance, slimmer and more energy-efficient end-user electronic products, chip design requires a high degree of functional integration, and higher-end process memory products are needed to support the demand for high performance and low power consumption. At present, our niche DRAM foundry has moved to a 25 nm process and is accelerating the development of a new sub-25 nm process platform. We are also developing AI Memory (In-Memory Computing; IMC) for artificial intelligence (AI) neural network computing systems and a new type of memory that can be joined with logic wafers (WOW-Wafer On Wafer) to meet our customers' different custom memory needs. All of these highlight our position as the only company that offers superior memory products for OEM. We are currently working closely with our customers or other major suppliers to penetrate the artificial intelligence (AI) space, where market demand is growing exponentially.

● NOR and NAND Flash Memory Process Technology

Our Flash products are targeted at mobile applications, consumer electronics and industrial applications, providing low-power, energy-efficient and highly reliable products. Low-capacity NAND Flash with low-power DRAM is the main memory solution for entry-level wireless communication products. In addition, low-capacity NAND Flash is also commonly used in consumer electronics, communication products, and automotive networking or industrial applications. Currently, the 28 nm NAND Flash process can now successfully mass produce.

Many emerging applications have created more demand for NOR Flash memory in recent

years, such as AMOLED panels, true wireless Bluetooth earbuds (True Wireless Stereo or TWS), and 5G cellular base station facilities, all have a demand for NOR Flash. In response to the demand for these emerging applications, the global NOR Flash market has bottomed out and is estimated to have a global market share of over US\$3 billion. The company is actively developing a new generation of 48 nm NOR Flash process and is now in mass production. In the future, the company will be able to provide customers with higher capacity, more cost competitive Flash products that meet the quality and reliability requirements.

PSMC's 30 nm memory process is mature and in mass production, and has successfully assisted customers to migrate to the 25 nm process. In terms of new memory, the Wafer-On-Wafer (WOW) technology for logic wafers is continuously being advanced to further enhance the performance of memory products. In the near future, we will continue to research and develop NAND Flash and NOR Flash products. We have already mass-produced 28 nm NAND Flash and next-generation 48 nm NOR Flash, and plan to further develop sub-25 nm memory and sub-28 nm NAND Flash process technology platforms. In the long term, we plan to continue to work with our customers to provide more customized product solutions and enhance the product lifecycle. At the same time, PSMC will continue to develop next-generation NOR/NAND Flash advanced process technologies to meet the market demand for more efficient and stable memory products. Last but not least, we will also aggressively develop new markets and new customers in the Greater China region to contribute to the regional economic development.

Current Status

- 30 nm memory process matured for mass production
- Assist customers to successfully implement 25 nm process
- New type of memory chip of logic wafer on wafer (WOW-Wafer On Wafer)
- Mass production of 28 nm NAND Flash and next generation 48 nm NOR Flash

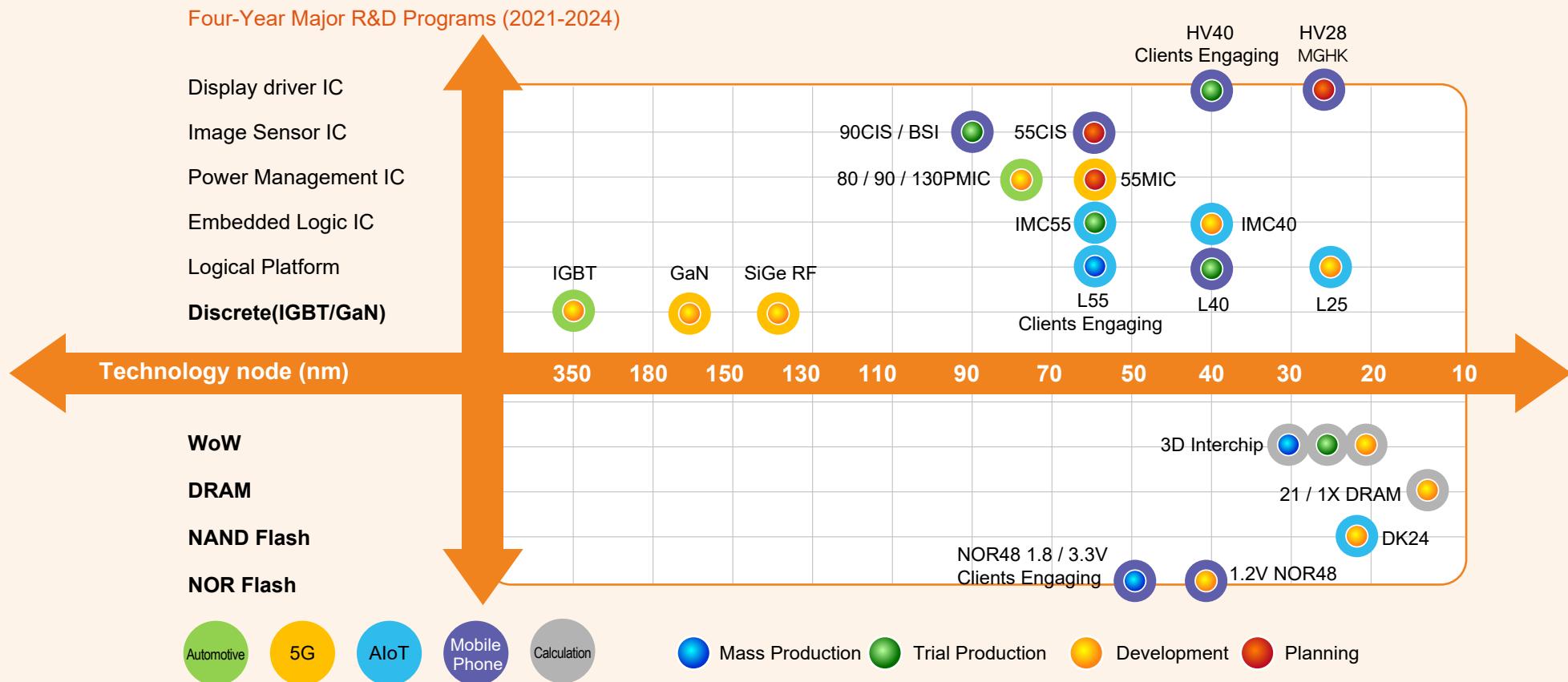
Short Term Goals

- Development of sub-25 nm DRAM process technology platform
- Development of sub-28 nm NAND Flash process technology platform

Long Term Goals

- Collaborate with customers to produce customized products to enhance product lifecycle
- Continued development of next-generation NOR/NAND Flash advanced process technology
- Aggressively develop new markets and customers in the Greater China region

PSMC Technology Development Blueprint



As the Company continues to move forward with advanced semiconductor process technologies, it plans to develop the following next-generation products and services:

(1) Foundry service platforms for logic and special application products: 28 nm display driver IC process, 55/80 nm BCD process, BSI CMOS image sensor IC process, 25 nm logic process, 40 nm memory integrated chip process and other foundry platforms, 3D integrated chip technology platform, third generation power semiconductor device process and other foundry platforms.

(2) Memory product foundry service platform: Currently, we provide more advanced DRAM foundry platform for 38/25/21 nm and below and 28 nm NAND Flash foundry products, and are developing 48 nm NOR Flash foundry products.

Green Product Development and Technology Breakthrough

Advances in semiconductor process technology have led to a 70% reduction in IC linewidth, resulting in smaller die sizes and lower power consumption for electronic products. PSMC's competitive advantage is its ability to offer a comprehensive wide range of special processes, and its superior integration capabilities to provide customers with better power consumption, performance and chip size optimization solutions, while reducing the environmental impact of technology. In the future, we will continue to advance new process technologies to reduce chip power consumption and conserve resources to produce advanced, energy-efficient and environmentally friendly products for our customers and contribute to the sustainable development of our planet.


2019

PSMC planned for a brand new component framework of 90 nm BCD technology, which integrated 1.2-volt high density 90 nm logic circuit and 9 to 100-volt power supply components, as well as a back-end aluminum process for metal interconnects. This process technology had a highly competitive advantage, which could provide more highly efficient and low energy consuming mobile PMIC solutions.


2020

Regarding the 80nm BCD technology of the new component architecture, PSMC has integrated 1.2-volt high-density 80nm logic circuits and 9-100-volt power components, along with the backend aluminum process, for metal interconnects; the R&D of the relevant technologies has been completed 80%. This process technology has great advantages and can provide a mobile PMIC solution that features higher performance and lower power consumption.


2021

80 nm technology platform adopts aluminum in the later stage of the manufacturing processes, it integrates 32/40V high voltage components which is a unique technology platform in the industry. It has been in mass production by 2020 and is adopted by multiple clients with a yield rate of over 90%.

- Low power consumption computer/TV display driver chips

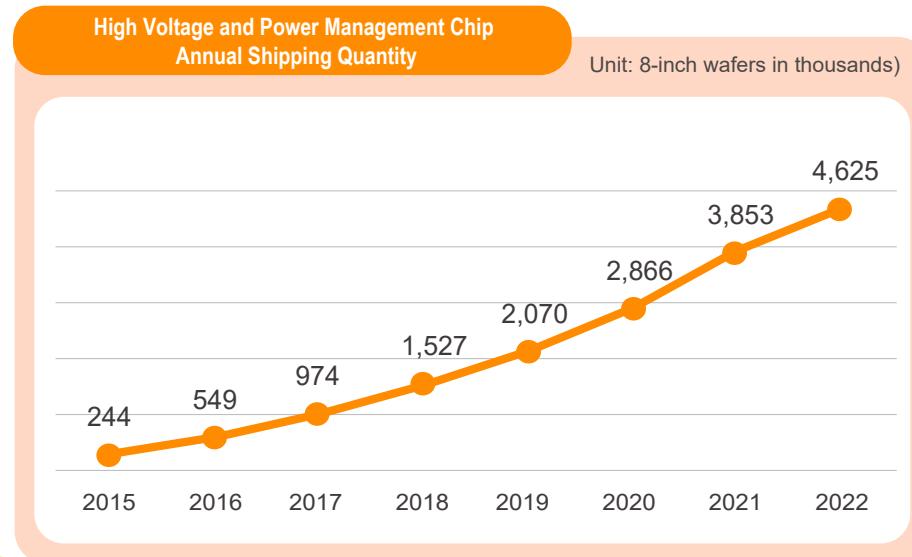
The number of electronic components that an 80 nm die can accommodate is twice that of a 110 nm die, and the power consumption of an 80 nm IC product in use or on standby is only about 70% of that of a 110 nm product, which is equivalent to a 2.8 times increase in performance per unit area. Our goal is to continue to improve the development of the 80 nm process and more advanced process technologies (e.g. 55 nm, 40 nm, 25 nm, etc.), and to increase the share of more energy-efficient processes below 80 nm in our wafer sales revenue to contribute to our growth and the sustainable development of our planet.

- Increase 24 nm NAND Flash throughput per unit area

In 2020, we started the development of the 24 nm NAND Flash technology platform with the new IP design that significantly reduced the mask count by 16% and the total process count by 9%, while continuing to increase the output per unit area by 14%, effectively reducing the production power consumption. In 2021, the development of the 1.2V NOR Flash technology platform was initiated to meet the future needs of the low power-consumption product market

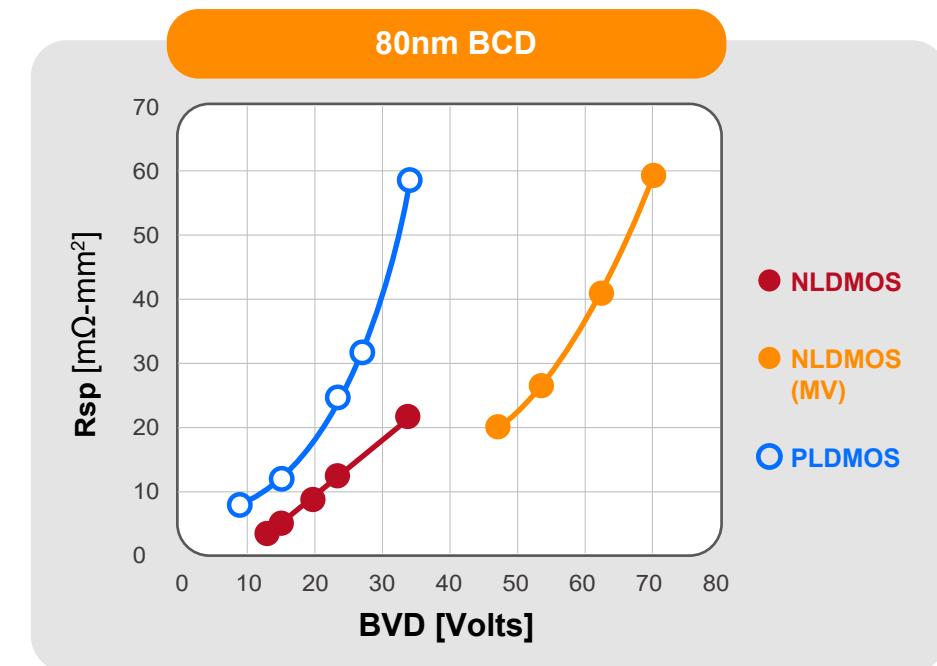
● Power Management IC Technology for Optimal Power Efficiency

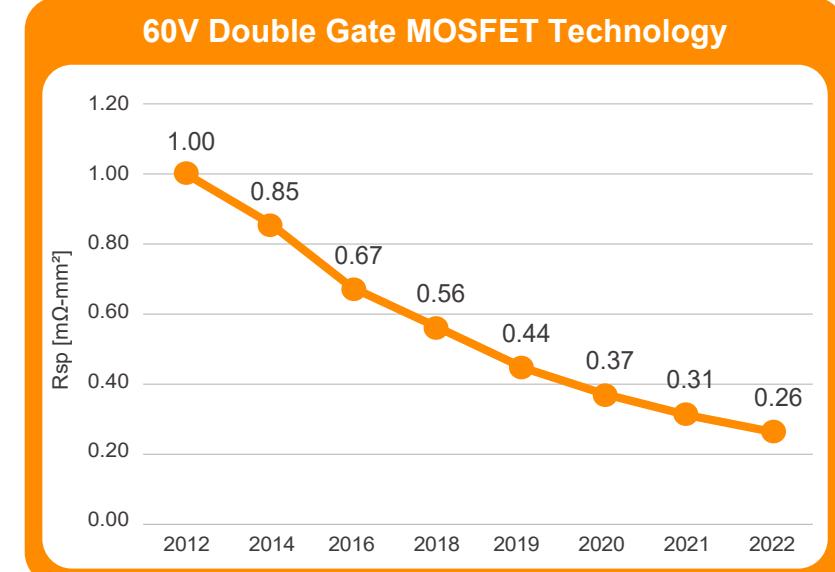
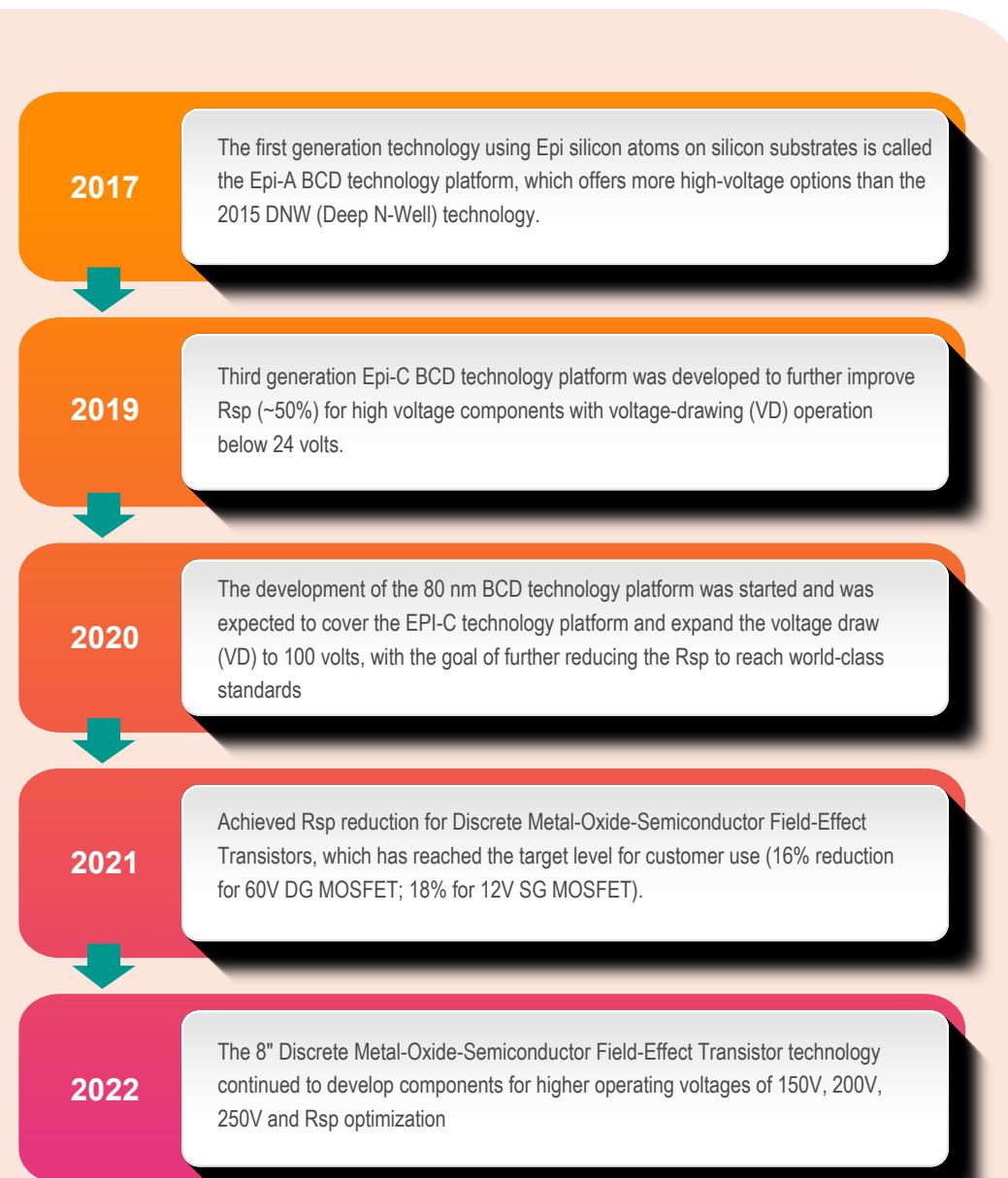
Power management chips are the core components of electronic products that handle power requirements for a wide range of applications in consumer electronics, communications, and computer products. Our 8" and 12" wafer fabs have developed discrete MOSFETs, Bipolar-CMOS-DMOS (BCD), and Ultra-High Voltage (UHV) technologies to enable our customers to produce high quality power management ICs that can supply stable power and reduce energy consumption. Power management chips account for a significant portion of revenue in the industrial applications category for PSMC, with more than 4.62 million wafers sold in high voltage MOSFETs and power management ICs (PMIC) from 2015 to 2022.



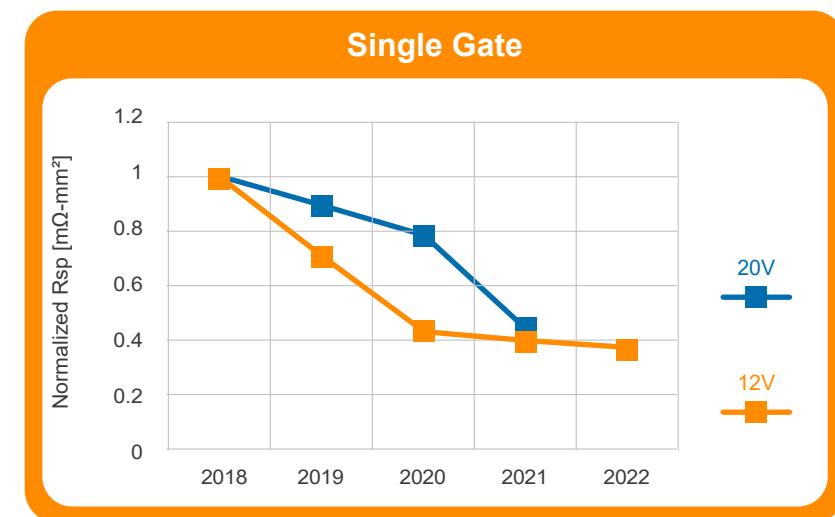
● Bipolar-CMOS-DMOS (Bipolar-CMOS-DMOS, BCD) and Discrete MOSFET Technology

Discrete MOSFETs are electronic components formed by many MOSFET elements of the same type, which act as switches for the circuit, and the BCD process is to use ICs to make multiple MOSFET elements to form a number of logic circuits to control the voltage/current of the power supply. The unit of Rsp is [$\text{m}\Omega\cdot\text{mm}^2$], and it is an indicator of great concern for technological breakthroughs. The lower the Rsp value, the better the performance during voltage conversion, and PSMC continues to reduce the Rsp value every year to bring better product quality and performance to our customers.





Note: The Double Gate is a Metal-Oxide-Semiconductor Field-Effect Transistor with a Double Poly Trench Gate structure



Note: The Single Gate is a Metal-Oxide-Semiconductor Field-Effect Transistor with a Single Poly Trench Gate structure.

Column

Digital Transformation Committee

PSMC is moving towards Industry 4.0 and actively developing smart manufacturing technologies and applications. In 2022, PSMC formally established the “Digital Transformation Committee” to focus on production intelligence, process intelligence, terminal intelligence and diagnostic intelligence, combining experts from various fields, AI data and IT professionals, paired with a deepened infrastructure. The AloT project connects machines and sub-system parameters to execute digital transformation projects, mainly in optimizing production dispatching and scheduling, automating transmission paths, production quality prediction and monitoring (AVM), machine abnormalities and major parts residual life-span warning (PHM), personnel safety monitoring, energy-saving ESG, improving personnel efficiency and machine productivity, and product yield quality improvement.

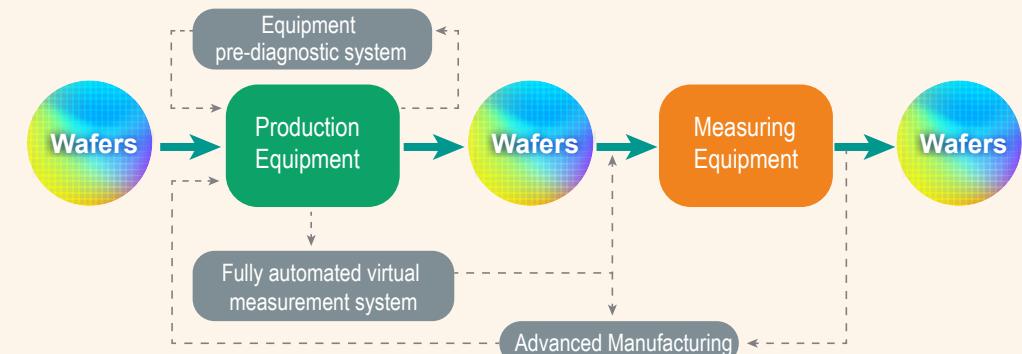
To improve customer satisfaction, product quality assurance is an important part of the production quality system, mainly by using the machine parameters (FD C /ED) to do real-time abnormality monitoring and control, and then using the measurement machine to ensure product quality. By introducing artificial intelligence (AI) and big data technology, we can apply relevant AI technology in the three stages of product production: before production (Before), during production (Processing) and after production (After), and establish the 3Ps, which are Prediction, Prevention and Protection for the machine and product, as the goal. By flexibly applying AI technology to predict or immediately grasp the production machine abnormalities and product quality abnormalities, we can prevent the occurrence of abnormal product defect rate and reduce the risk of production line loss.

PSMC has been committing to digital transformation and building a smart factory environment in all aspects, and has been actively developing smart manufacturing related industry-academia cooperation projects since 2022 by participating in the establishment of the Semiconductor Institutes of National Tsing Hua University and National Cheng Kung University, expecting that the cooperation with the Institutes will not only bring in academic research and technology, but also provide opportunities for on-site demonstration to nurture more professional and research talents. All 16 projects in the first year have achieved significant results.

PSMC PSMC Digital Transformation Roadmap



Digital Transformation Roadmap



► 1.1.2 Intellectual Property Rights Management

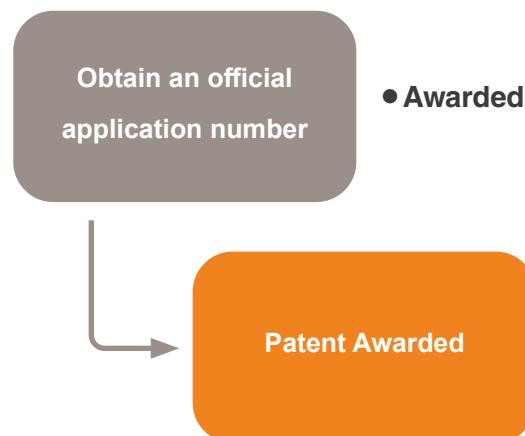
The Intellectual Property Group of the Office of Legislative Affairs has been established to manage intellectual property, develop intellectual property management plans based on the patent landscape, and continuously improve the patent management system, optimize the patent portfolio, and actuate maintenance costs in conjunction with the company's strategic considerations and operational objectives. Through the generation, management and utilization of intellectual property rights, we ensure the technological leadership position of PSMC. To further strengthen the management of intellectual property rights, the Company has established the "Intellectual Property Management Guidelines" to encourage employees to contribute their intelligence and the in-house "Patent Management System" is used to systematically manage specifically new invention proposals for technologies related to R&D, production, and operations of the Company. The patented technologies are also subject to strict scrutiny by technical reviewers to maintain the quality of PSMC's intellectual property.

In order to accumulate intellectual capital for continuous investment in innovation and R&D, PSMC has set up online educational training related to intellectual property rights to strengthen the intellectual property legal concepts among employees and increase the accumulation of intellectual capital to continuously invest in innovation and R&D. In addition, we use an incentive mechanism to encourage innovative technology proposals and patents to foster a quality R&D environment in which new technologies and ideas are expected to sprout. In addition, the company continues to expand internal resources to assist employees in new technology development. The Derwent Innovation patent database is used to analyze patent trends and examine novelty for specific technologies around the world, as well as to track patent information from competitors. The patent research and development team of PSMC is responsible for setting annual targets for internal proposals and external applications, and encouraging colleagues to inspire



Patent Incentive System

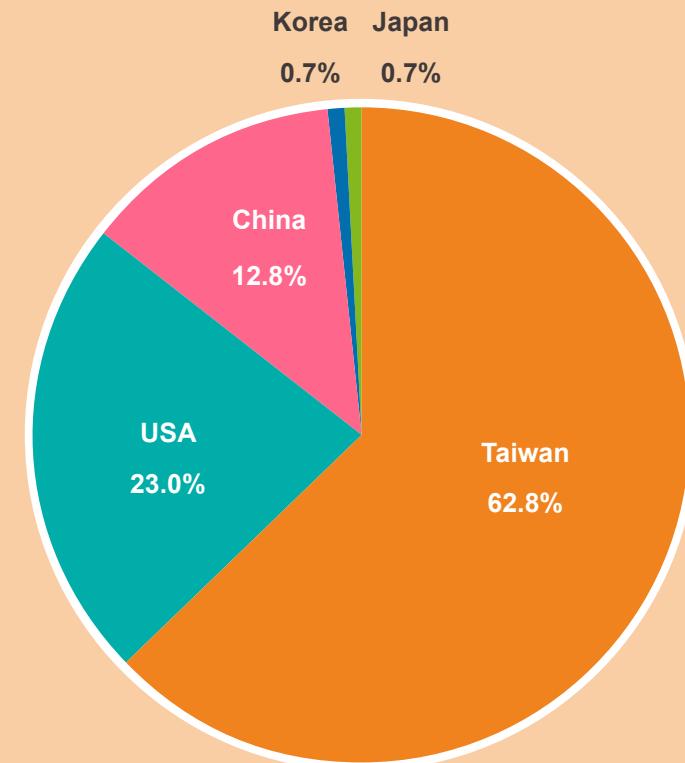
The Company has specified the patent incentive measures in its patent management regulation, and a bonus of NT\$10,000 will be given to those who file patent applications and receive an official document number. After the patent is granted, the bonus will be paid according to the region where the patent is applied for and the bonus will be paid in the amount of NT\$40,000 for the United States, Japan, the European Union as well as other countries, and NT\$20,000 for Taiwan and China.



In the face of increasingly fierce competition in semiconductor technology, the Company focuses on enhancing its key technological capabilities in order to maintain its technological leadership. In addition to continuous technological breakthroughs, the Company also places great emphasis on patenting to ensure the protection of technological intellectual property rights. As of 2022, PSMC has obtained 1,170 valid patents, of which 148 were granted in 2022. These patents not only provide a strong intellectual property barrier, but also offer complete technical support for the company's manufacturing processes.

2022 Patent Filing Target	2022 Actual Patent Applications Filed
110 applications	202 applications

Number of patents obtained by country



► 1.2 Product Liability and Quality

With professional and superb process technology and strict quality control process, PSMC provides wafer foundry services to our customers and continues to improve product quality to create a win-win situation with our stakeholders. The Company is also committed to the quality of its production processes; through the introduction of various management systems and clear processes to control all aspects of production, it adheres to the principle of strict quality control and insists on being customer-focused, continually pursuing excellence in quality and service.



► 1.2.1 Product Quality Management

In the spirit of aggressive innovation and with the goal of sustainable management, PSMC has established the "Three Don'ts Policy" to provide customers with products and services of excellent quality, cost competitiveness and on-time delivery through the participation of all employees. We also have a professional laboratory quality team to provide accurate and reliable test results to ensure product quality.



The Three Principles of Quality Management

PSMC is known for its diversified product technologies, and currently provides process technologies and products that include LCD Driver IC, Integrated Memory Chip, CMOS Image Sensor, Discrete Device and Power management. In order to effectively manage product quality, the Company adopts an automated production management system and abides by the following three quality management principles to ensure that our production efficiency and quality meet the requirements and expectations of our stakeholders.

Effective Yield Improvement

Effectively shorten the learning curve. Improve product yield and shorten time - to - market for customers.

Optimal and Flexible Production Scheduling Management

Continuously improve production management efficiency and optimize production processes to meet customer needs in the shortest possible time, in the most efficient way, and reduce risks with flexible production scheduling.

On-time Delivery

Fully automated production and strict online monitoring system, with full control of the product input and output schedule, to effectively complete the delivery.

Product Quality Management Objectives

With a responsible attitude toward our stakeholders, PSMC continuously strengthens quality management to ensure that the products we provide meet the expectations and needs of all parties. To this end, we have established five quality management audit objectives to maintain a high degree of stability and consistency in our internal product quality. Through quarterly statistics on the performance of quality control items, deficiencies can be identified in a timely manner and improvement measures can be taken accordingly. Semi-annual quality control meetings are held to review and improve various indicators in order to further improve product quality and ensure compliance with operational and sustainable development goals and values. Under the operation of the Company's stringent and high standard quality control mechanism, there were no product recalls in 2022.

PSMC understands that quality is the cornerstone of corporate development, therefore, we are constantly improving our quality management and aiming to achieve higher standards to fulfill our commitments to our customers, suppliers, employees and shareholders. In the future, PSMC will continue to focus on its customers and improve quality management standards through continuous enhancements and innovations to achieve a win-win situation for both product quality and sustainable development.



6S Management

6S is composed of 6 elements, including Sort, Set, Shine, Standardize, Sustain, and Safety. In order to improve the quality of our products, PSMC believes that it is necessary to improve the quality at the root, and therefore focuses on the maintenance of the working environment and related policies. To this end, the Company has implemented the 6S audit in the 8-inch production line and held a 6S competition in the 12-inch fab in order to raise the awareness of our employees on the maintenance of the working environment and to encourage them to find problems in their daily operations to improve the cleanliness of the manufacturing environment and the safety of the employees.

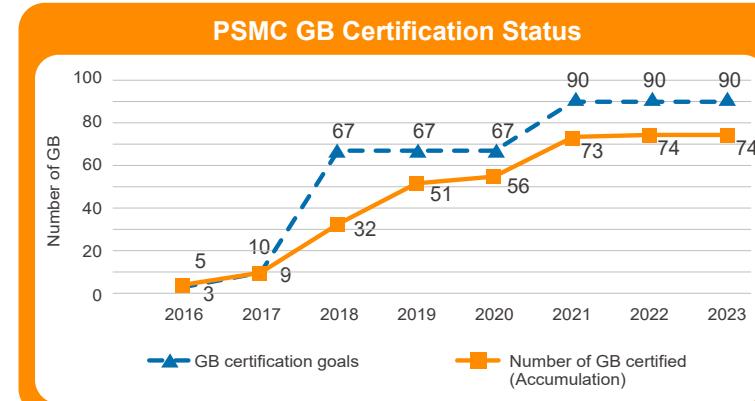
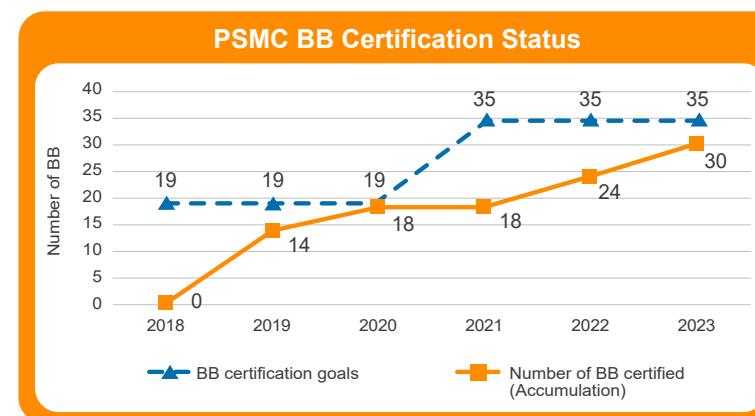
Fabrication Facility	8-inch Fab	12-inch Fab
6S Management Approach	Production line auditing and "Wafer Garden" evaluation	6S Competition

In order to implement the 6S management goal, the 8-inch fab incorporated the spirit of 6S into the daily production auditing specifications, and the items found in the audits were included in the quality discipline deficiencies. In addition, the "Wafer Garden" evaluation was conducted every six months and has been implemented for the 46th time so far. The "Wafer Garden" evaluation assesses the degree of 6S implementation in the production category, counts the number of quality deficiencies in each shift every month, and awards the "Wafer Garden" group prize for the accumulated scores. The 12-inch fab established a 6S management team to promote the implementation of on-site 6S management methods and the implementation details, and established a 6S competition to enhance the motivation of employees by providing competition prizes as an incentive. In the quarterly management review meeting held jointly with Environmental Safety and Health, the Company announces the improvement results of the 6S participating departments and presents the related implementation contents and performance. The target scores of the competing departments set for 2022 have all been achieved, and there were no major deficiencies in the customer's FAB audits. The Company hopes that through its daily efforts, it will accumulate long-term improvements in production quality by leaps and bounds.

Six Sigma Training

Six Sigma is a systematic and scientific management method that aims to reduce product defect rates and maintain product quality. The Six Sigma methodology is used by PSMC as the basis for problem analysis and resolution, and internal employees are required to attend Six Sigma training courses in engineering, R&D, and quality departments to improve problem

solving ability and performance. This training program invites external professional instructors to teach the course, and after passing the training, the participants can obtain the professional certificate based on external qualification accreditation. There are three levels of training: Yellow Belt (YB), Green Belt (GB) and the highest level Black Belt (BB). The Yellow Belt does not come with a certificate, the Green Belt certification takes 1-2 years to obtain, and the Black Belt takes 2-3 years. The Yellow Belt course is held twice a year and is required to be taken by every employee in the engineering department. In addition, employees are encouraged to attend Green Belt and Black Belt level training to further enhance their professional skills and problem solving abilities. As of 2022, the cumulative number of employees who have obtained the Green Belt certificate was 74 and the number of employees who obtained the Black Belt certificate was 24. With the completion of the P5 plant, we will continue to train and expand the number of employees obtaining the certificate.



► 1.2.2 Hazardous Substance Management

With a high regard for environmental protection and social responsibility, PSMC is committed to meeting the needs and expectations of stakeholders by complying with regulations, reducing risks, refining the management of hazardous substance processes, and promoting the systematic IECQ QC 080000 certification of all five plants, as well as following the Hazardous Substance Free (HSF) initiative. PSMC is committed to complying with international environmental regulations in all production processes, and uphold the principle of using less or no hazardous substances in order to implement green initiatives. The Company has received the SONY Green Partner certification, which was renewed in March 2022, as an affirmation of the Company's tireless efforts in environmental protection and social responsibility. Our company will continue to improve and work together to maintain the health and well-being of mankind and the sustainable development of the earth.


P1/2

P3

8A

8AD

8B

SONY G.P.

In order to maintain the health of the people in the global village and to avoid the cycle of pollution to the environment, the Company follows the chemical management process to establish a defensive line of control. The Company requires its raw material suppliers to establish hazardous substance management capabilities and to classify and regularly monitor the risks of all potentially hazardous substances (please refer to 2.1.3 Responsible Procurement for Hazardous Substance Management of Raw Materials).

When it is necessary to use substances controlled by laws and regulations for process development, we will ensure that the risks related to environmental protection, safety and health are minimized through an internal review process. We ask our users to evaluate alternative chemicals and adopt the highest principle of non-use. If 100% restriction of use is not possible immediately, we will continue to devote resources to find alternative solutions. At the same time, we will provide strong protective equipment for on-site workers and conduct regular risk analysis of the operating environment in accordance with the "Environmental Safety and Health Risk Assessment Practice" to ensure that workers are not exposed to risks.

PSMC updates the regulatory information and stakeholder expectations and requirements in accordance with international regulations, mainly based on the EU RoHS (Restriction of Hazardous Substances Directive) as a hazardous substance process management system, and incorporates customer-specific requirements for the comprehensive management of hazardous substances. We are regularly updated with significant news related to regulations to facilitate revisions and re-evaluation of internal standards, and report to the Management Audit Committee on a semi-annual basis on internal regulations and the degree of regulatory compliance, which also serves as the basis for customer audits. Through continuous improvement of hazardous substance management, we strive to maximize technological development and safeguard the environmental and human safety development. In 2022, no violations of laws and regulations regarding product quality or the use of hazardous substances occurred.

Regulatory Compliance

[Restriction of Hazardous Substances in Electrical and Electronic Equipment Directive 2011/65/EU, RoHS](#)

[EU Regulations on Registration, Evaluation, Authorization and Restriction of Chemicals](#)

[SONY's Management Regulations For The Environment-Related Substances To Be Controlled Which Are Included In Parts And Materials](#)

[European Union Directive on Packaging and Packaging Waste](#)

[International Electrotechnical Commission International Standard for Material Declaration for Products of and for the Electrotechnical Industry \(Halogen Free Requirements\)](#)

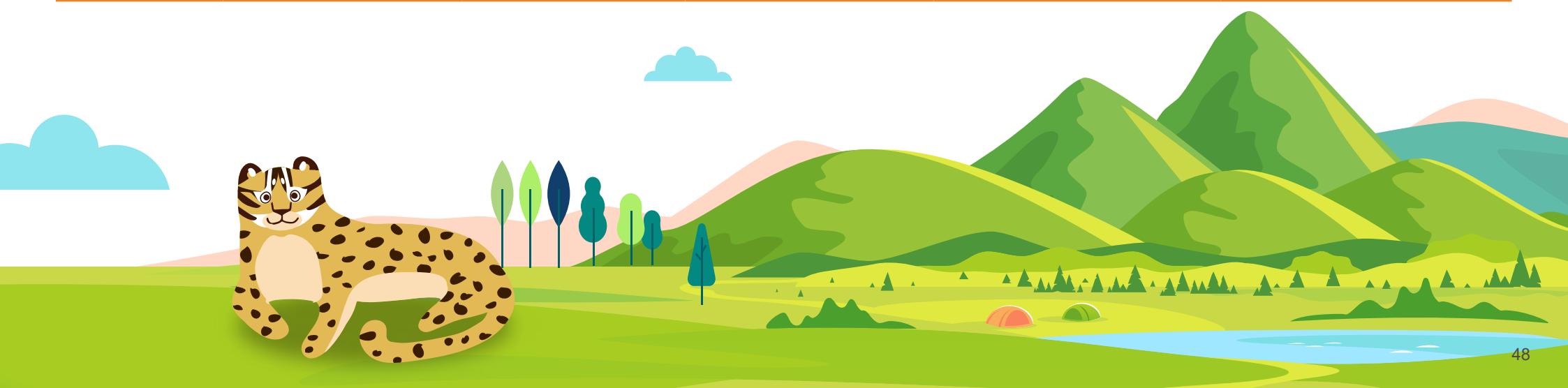
[Administrative Measure on the Control of Pollution Caused by Electronic Information Products or China RoHS](#)

Hazardous Substance Substitution Plan

In recent years, there has been increasing global concern about the potential hazards of perfluoroalkyl substances (PFASs) to human health and the environment, and governments have been enacting regulations to control them. In 2019, PSMC fully completed the PFOA and PFOS substitution project and decided not to use these substances. In addition, the chemical substance N-Methyl-2-pyrrolidone (NMP), which is used in the cleaning of semiconductor parts and the dilution of photoresist, has been proven to be harmful to human reproductive

health. As such, PSMC has been actively working with suppliers since 2021 to evaluate and develop the replacement of harmful substances in raw materials for manufacturing processes, and has formulated a yearly phase-out plan in order to meet future international regulatory trends. As a result of these efforts, PSMC has successfully reduced the use of hazardous substances containing NMP by 32.06% in 2022. These initiatives demonstrate PSMC's strong commitment to human health and environmental protection, as well as its exemplary corporate social responsibility.

Material name	NMP Concentration (%)	Process / Application	Substitution Status	Year of Substitution Plan	Hazardous Substance Reduction Ratio (%)
Implemented hazardous substance substitution program					
Resister A	75	Cleaning	Discontinued	2022 Actual Achievement	19.00 32.06 ✓
Future planning of hazardous substance substitution program					
Resistor B	100	Cleaning	Substitute material B1	2023	33.42
Chemical A	40	Cleaning	Substitute material A1	2023	97.75
Polyamide A	45-55	Protection		2027	97.86
Polyamide B	50-60	Protection	In Research and Development	2029	98.18
Polyamide C	1-3	Protection		2030	100.00



Column

Continuous Improvement Process (CIP) Competition

Based on PSMC's corporate culture of "Integrity, Service, Quality, and Innovation" at its core, the company firmly believes that the spirit of continuous improvement is the driving force behind the company's technological progress and quality improvement. The purpose of the CIP Competition is to replicate the DNA of continuous improvement in every employee, hoping to let this spirit take root in every member of the company, thus creating a culture and habit of striving for continuous improvement. We believe that only through continuous efforts can we continue to break through and surpass, and win more competitive advantages in the marketplace. The CIP Competition was held 4 times since 2019. Each time the competition has been held, it has received enthusiastic response from colleagues, and all departments have been actively participating in the competition to showcase the fruitful results of teamwork. We believe that through the CIP competition, not only can it inspire the creativity and competitiveness of our employees, but it would also enable us to further improve our quality, efficiency, innovation, and service standards, so that we can better contribute to our customers and society.





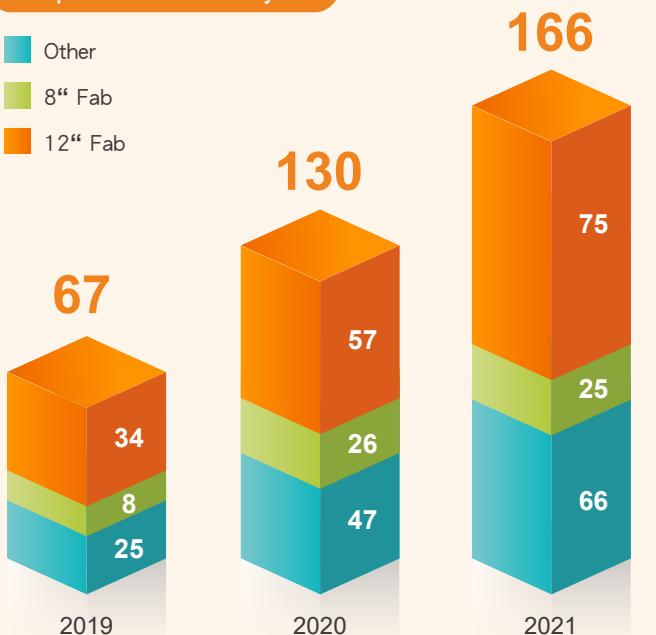
CIP Competition Status

The total number of entries for 2022 was 247. The participating departments included 12-inch production operation, 8-inch manufacturing center, quality center, advanced technology R&D center/module technology center, LSPF BU technology development center, and other departments. This is a 49% increase over the previous year, with the largest number of entries focused on quality improvement, accounting for over 40% of the total entries.



Statistics of the number of competitions over the years

Other
8" Fab
12" Fab



247

137

75

31

25

66

47

79

130

166

67



Application
and
Information
Submission



Document
Review



Finals
Announcement



Quarterly
Meeting
Awards
Presentation



- The total number of submissions in 2022 was **247**

- The factory/division chief will be the judge
- A total of **38** submissions were selected as finalists

- The factory/division chief will be the judge
- Announcement of finalists by Quality Engineering Division

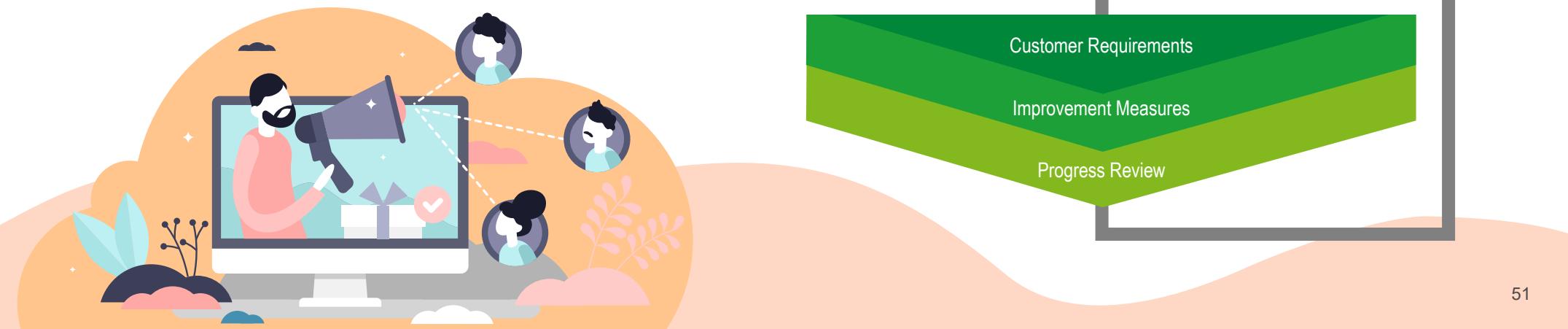
- Awards Presented by the President

► 1.3 Customer Relationship Management

► 1.3.1 Customer Communication

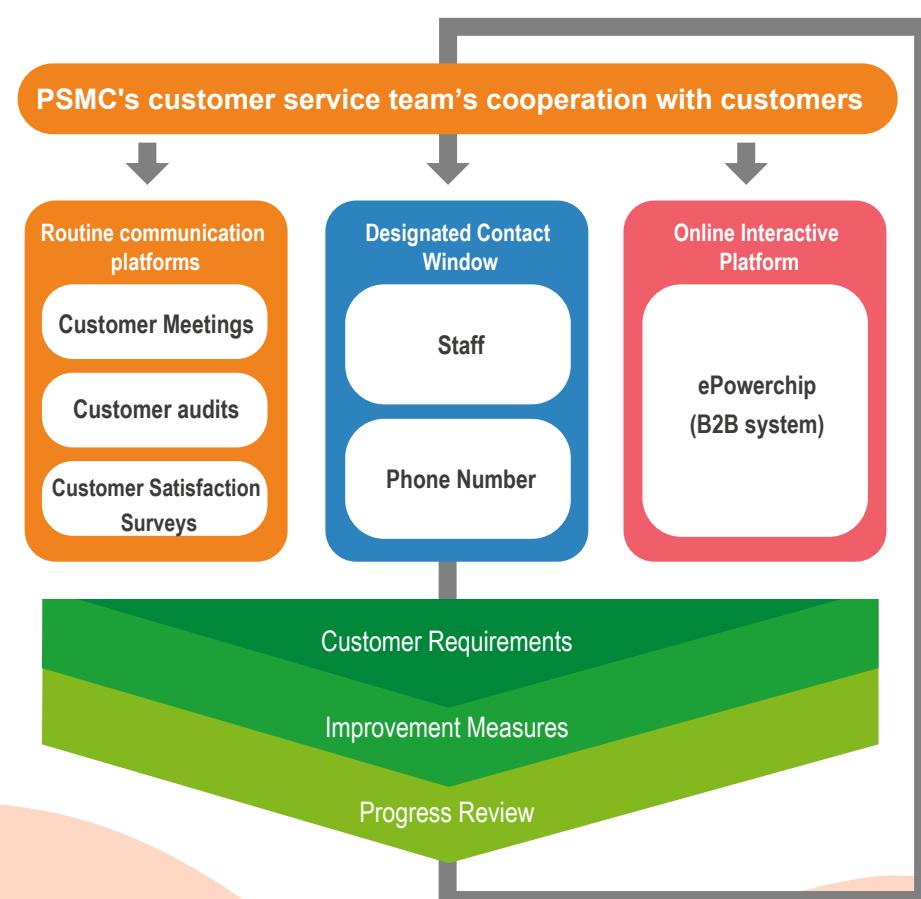
In order to gain a deeper understanding of our customers' needs, PSMC has established a variety of communication channels to ensure that customers receive timely solutions. Each type of communication channel has a dedicated person or hotline to act as the communication and coordination contact window to immediately address customer issues, and to obtain customer feedback through customer meetings, customer satisfaction questionnaires and customer audits. The above communication channel records and improvement suggestions will be discussed in the internal management performance meeting and further corresponding improvement plans will be formulated. We believe that by continuously improving customer relationships and providing better services, we can work together with our customers to achieve mutual success.

2022 Customer Communication Meeting Status		
Meeting Type	Number of sessions held	Content of Discussion
Weekly / Monthly Meetings	>1,800	Product quality improvement, yield improvement, abnormal event countermeasures
Quarterly Meeting / Quarterly Operation Meetings	25	
Audit Meetings	27	Annual audits, ISO9001/IATF16949 audits, Automotive Supply Chain Quality Control System (VDA6.3) audits



ePSMC Platform

In 2019, the ePowerchip platform for communication with customers was renamed the ePSMC platform, and the associated operating system was designed to allow customers to upload and download data. All types of customer communication can be carried out on this platform. The communication covers product distribution status, product development, process changes, engineering experiments, and customer satisfaction evaluations. The communication covers the R&D communication in the early stages of product design, to the requirements control and process change of the experimental wafer, and other information such as process change notification.





Pteam customer-manufacturer cooperative communication platform

In order to deepen the connection between customers, suppliers, subsidiaries and employees, while ensuring the confidentiality of trade secrets, PSMC developed the Pteam customer-manufacturer collaborative communication platform, which provides various functionalities such as teleconferencing, remote collaboration and augmented virtual reality (AR) integration. These functionalities are designed to improve the efficiency of internal and external communication, reduce communication costs, and quickly solve on-site problems while increasing customer satisfaction. Through this platform, we expect to be able to communicate and collaborate more effectively with our stakeholders and bring greater growth to our business.

The Four Benefits of Pteam's Customer-Manufacturer Collaborative Communication Platform



Improving Productivity

- Delivered a total of 200,000 online meetings with 1.7 million attendees (80% annual growth) and 200 million messages (91% annual growth) in 2022.
- We provided customers and vendors with an exclusive app to directly collaborate with our employees remotely to bring employees closer to the customers and vendors. Currently, 71 customers and vendors have been introduced to this app, with about 314 users. In 2022, the app transmitted about 16,000 messages and conducted about 9,400 online meetings with customers and vendors (an annual growth of 57%).
- Customers can collaborate with remote experts through Pteam (about 30 visits per month), thus increasing the speed of debugging and customer satisfaction.



Optimizing Cost Effectiveness

- Self-development saves the cost of outsourced software associated with real-time communication, remote platforms and online meetings, totaling about NT\$100 million and an annual maintenance expense of about NT\$8.05 million.
- During the pandemic, working from home reduced overtime by 30% and moving costs such as employee travel, and supported online meeting functions to reduce the cost of office and physical meeting rooms (including the new Tongluo factory). It can further promote the flat and real-time communication among colleagues, so that they can check the information at any time and effectively reduce the cost of failure caused by communication errors. With the function of remote collaboration, it can enable the customer/factory to solve the on-site problems remotely. In addition to reducing the cost of moving customers and the risk of exposure to the infection, it also supports the company's future business strategy of moving towards European and American customers.



Protecting Trade Secrets

- Pteam provides password double-authentication, anti-photography and other information security functions, which can not only detect the deliberately hidden, altered and tampered secret documents, but AI intelligence can also be used to detect similar confidential design documents, test programs, and key intellectual properties. So far, more than 60,000 confidential documents and 61,000 design files have been protected, taking into account both efficiency and protection of trade secrets.

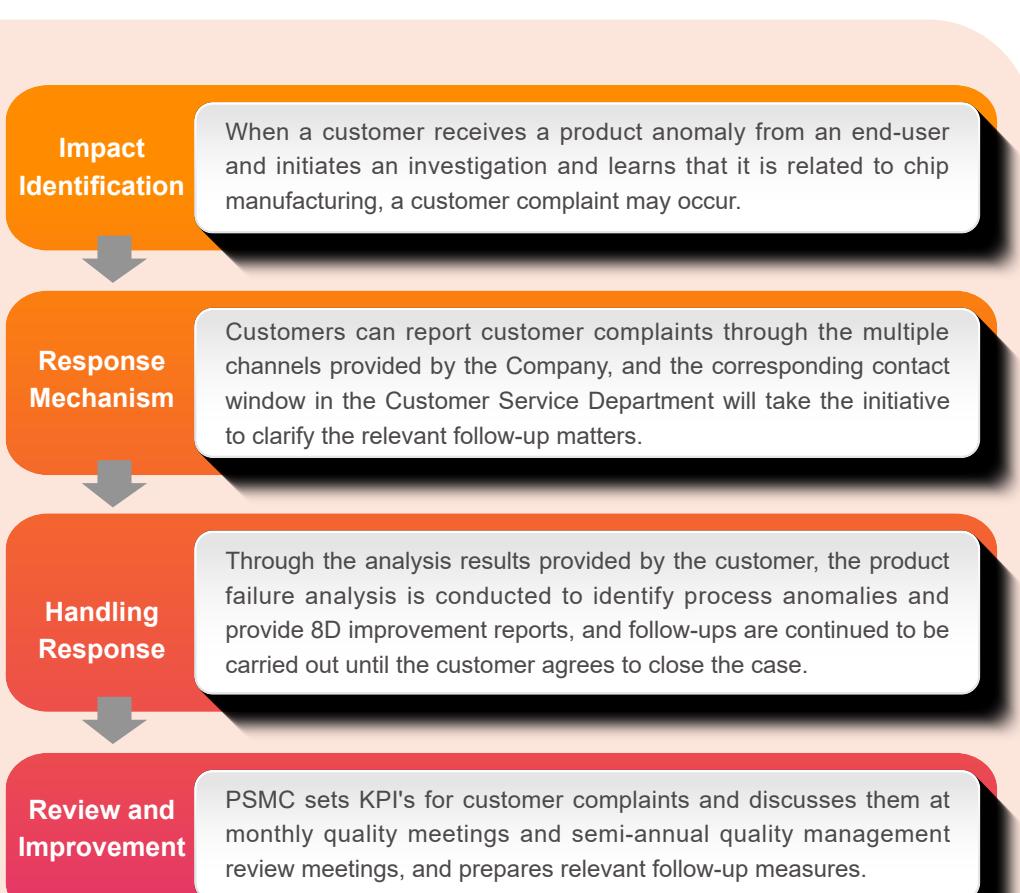


Mitigating Pandemic Impacts

- In 2022, when there was a severe shortage of global wafer fab production capacity and the number of confirmed COVID-19 cases in Taiwan was soaring, Pteam was developed in-house to save costs and to ensure uninterrupted operations, so that the company's sales would not be affected by the pandemic. 80% of indirect employees continued to work at home in 2022, but sales increased by 16% over the previous year. Pteam's industry-leading and innovative management style effectively reduced the impact of Covid-19.

Responding to Customer Needs

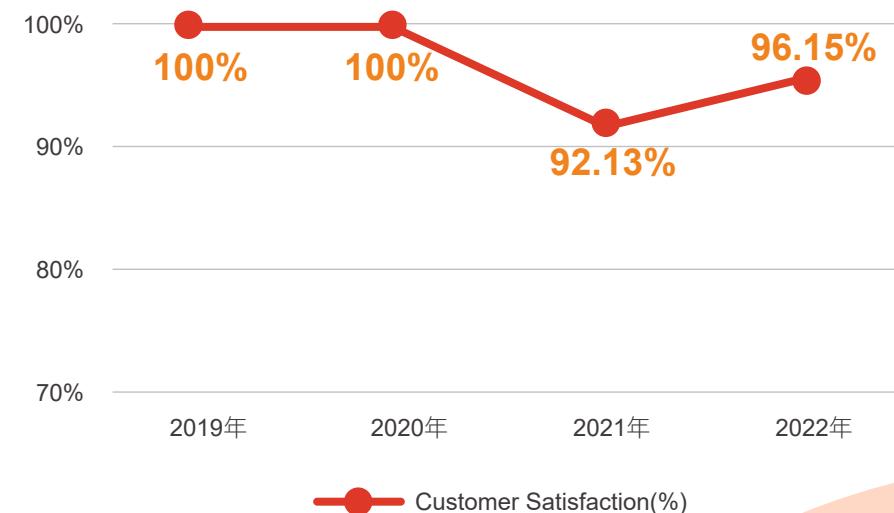
The standard process for responding to customer needs is divided into four stages: impact identification, response mechanism, handling response, and review and improvement. When a customer receives a product anomaly from an end-user, PSMC will initiate an investigation and provide a mechanism for the customer to report the incident through multiple channels. Through the analysis results provided by the customer, PSMC will identify the process anomaly, provide an 8D improvement report, and follow up until the customer agrees to close the case. In addition, PSMC will set KPI's for customer complaints and conduct regular quality management review meetings to develop follow-up measures to ensure customer satisfaction.



Customer Satisfaction Survey

At the beginning of each year, based on the previous year's customer tape-out volume, PSMC selects customers whose total tape-out volume is greater than 80% of their wafer production to participate in a customer satisfaction survey; the coverage rate of this survey was 100%. We conduct monthly satisfaction surveys and provide the results to our customers at the end of the year, and further discuss the results with them and improve the problems. The satisfaction survey covers five major areas: quality, delivery, technology, green products, and others. PSMC's customer satisfaction target for 2022 was to achieve a score of 85 or higher for each customer. A total of 26 customers participated in the annual satisfaction rating, 25 of which had a score of 85 or higher, resulting in a target achievement rate of 96.15% for 2022, meeting the annual target of 90% customer satisfaction set for 2022, with an annual average score of 94.

Customer Satisfaction Trends



2 Synergized Sustainability

Supply Chain

2.1 Sustainable Supply Chain



Sustainable Supply Chain

► Synergized Sustainability - Supply Chain

Sustainable consumption and production are key elements in achieving sustainable development goals and are the foundation for sustainable business operations. PSMC is to build a sustainable supply chain in accordance with the core spirit of the Responsible Business Alliance (RBA), to evaluate suppliers to ensure that their business partners are in line with the company's sustainability philosophy, and to strengthen the resilience of the supply chain through a risk identification mechanism and contingency measures for material shortages. At the same time, we have implemented green procurement and continue to implement sustainable consumption and production models in our daily operations. In addition, we have further implemented due diligence on conflict minerals to ensure that our products are not affected by any illegal or unethical procurement practices. PSMC strives to implement the spirit of responsible consumption and production, demonstrating its professionalism and commitment to sustainable supply chain management.



**Sustainable
Supply Chain**

Corresponding United Nations Sustainable Development Goals (SDGs)



Corresponding Material Topic



Sustainable Supply Chain

Material Topic GRI Standards

GRI 204 : Procurement Practices

GRI 308 : Supplier Environmental Assessmen

GRI 409 : Forced or Compulsory Labor

GRI 414 : Supplier Social Assessment

Stakeholders who have priority reading

Suppliers / Contractors

Sustainable Supply Chain

► 2.1 Sustainable Supply Chain

The supply chain management policy of PSMC is based on the Responsible Business Alliance (RBA) Code of Conduct, which aims to protect labor rights, promote safe working conditions, value the environment, be responsible in mineral procurement, and behave in an ethical manner in business. The Company firmly believes that adherence to this core philosophy is effective in improving efficiency, working conditions, economic development and the environment, and helps create better social, economic and environmental outcomes for all involved in the supply chain. PSMC actively encourages its supply chain partners to work together to achieve the goal of sustainable supply chain management.

► 2.1.1 Supply Chain Management

Our suppliers are important partners in the development of the semiconductor industry. To ensure that our partners are aligned with our corporate direction of sustainability, in addition to requiring suppliers to comply with basic business practices such as quality, cost and delivery, we further emphasize requirements for labor rights, health and safety, environmental protection, business ethics and management systems. The “Supplier Management Policy” set by PSMC, which is based on the RBA Code of Conduct, requires suppliers to fully comply with local laws and regulations, prohibits the use of child labor by suppliers and contractors, and ensures a win-win collaboration between the Company and its suppliers in a sustainable supply chain by conducting regular assessments and requiring suppliers to sign a commitment letter.

Supplier Management Guidelines :
<https://esg.powerchip.com/en-global/staticpage/supplier-and-contractor-management>



Vendor Reviews

100% completion rate of raw material vendors and contractors evaluations



New Supplier Survey

Establishment and audit achievement rate of the preliminary survey form for new suppliers.



Do not use conflict minerals

The percentage of target material and gas suppliers that PSMC has dealings with that promise to not use conflict minerals.



Sign the RBA Commitment Letter

Percentage of key suppliers required to sign RBA commitment letter

Note: There are three categories of key suppliers, namely, critical components (production wafers), high-volume suppliers (suppliers with whom we have semi-annual procurement amounts greater than NT\$5 million), and irreplaceable suppliers or the like (suppliers whose raw material changes are Grade A).

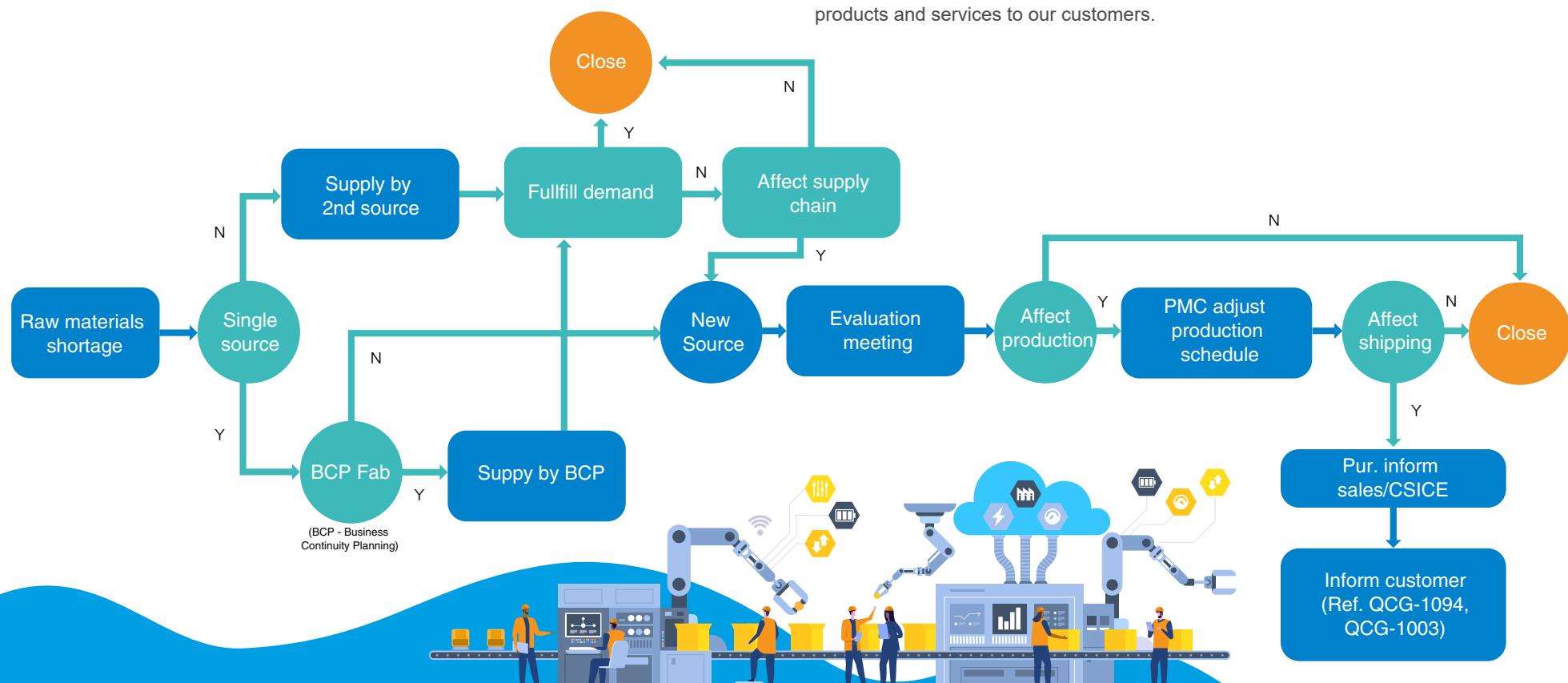
Sustainable Supply Chain

Supply Chain Risk Impacts

The sustainability risks derived from the evolving overall environment have led to the need for PSMC to incorporate emerging sustainability risks into the scope of risk management, in addition to traditional risks such as global raw material and parts shortages, establishing a more comprehensive supply chain response strategy and ESG plan, and having the Board of Directors oversee the implementation of supplier management, can ensure that losses due to risks can be effectively reduced. In terms of traditional risk management, according to the Company's "Production Raw Material Shortage Contingency Response Rules", a supply shortage with significant impact is defined as when the supply from qualified suppliers is lower than the Company's demand. In such cases, the procurement department immediately initiates an interdepartmental assessment meeting to take further contingency measures. In 2022, there were no significant changes in the Company's business operations and, therefore, there were no significant changes in the supply chain (including selections and terminations

of suppliers). In the face of emerging sustainability risks, the Company continuously reviews suppliers' procurement practices to ensure that suppliers comply with the relevant regulations of the Supplier Management Regulations and to avoid potential conflicts with the Company's ESG target requirements. In addition, during the supplier selection phase, the Company excludes suppliers that cannot meet the minimum ESG requirements within the prescribed time frame, and takes ESG performance into consideration when selecting suppliers and signing contracts in order to give priority to suppliers with better ESG performance. The company also provides training to our procurement specialists and internal stakeholders on supplier ESG programs so that supplier management can be effectively implemented in our daily procurement operations.

Committed to ensuring a continuous and stable supply to our customers and partners, PSMC takes all necessary actions to ensure the smooth operation of the supply chain and manufacturing process. The Company believes that a comprehensive response strategy will help overcome the challenges of global supply shortages and continue to provide superior products and services to our customers.





Sustainable Supply Chain

Major Raw Material Supplier Management Measures

The major raw materials used by PSMC can be classified into four categories: silicon wafers, photoresists, gases and chemicals. To ensure the quality, safety and stability of our supplies, we have developed a procurement strategy based on the nature of our raw material suppliers' industries and our relationships with them to maintain product quality and minimize supply chain risks.

Major Raw Material	Procurement Strategy
Silicon Wafers	<ul style="list-style-type: none"> Strictly control and select the source of silicon wafer suppliers, and the quality of suppliers must first go through the sample evaluation process stipulated by PSMC and be approved by the relevant departments before being classified as qualified suppliers. Source chips from regions such as Asia and Europe to effectively diversify risks. Maintain good business relationships with suppliers and retain advantages in terms of purchase price and quality of wafers supplied. The supplier's supply price, quality, delivery accuracy and related technical consultation services should be reviewed regularly, and the evaluation results are taken into consideration when deciding the quantity of orders subsequently.
Photoresists	<ul style="list-style-type: none"> Provide the demand estimation of photoresist usage in advance at the beginning of each month, so that the supplier can prepare the inventory in advance and minimize the risk of inventory disruption. Monthly control of the inventory to ensure a steady supply of materials.
Gases	<ul style="list-style-type: none"> The suppliers compete with each other and have a supportive relationship with the Company, so the Company has favorable purchasing conditions and can ensure the security of its supplies in case of shortages. Monthly control of the inventory to ensure a steady supply of materials.
Chemicals	<ul style="list-style-type: none"> Our suppliers have factories and warehouses in Taiwan to ensure stable delivery, which helps us to reduce inventory and ensure quality.

► 2.1.2 Supplier Evaluations

During the supplier evaluation management process, PSMC first reviews and evaluates the specific risks of all suppliers by product category, industry and country (location origin), in order to analyze and capture the potential risks. Later on, in 2022, PSMC implemented the Responsible Business Alliance's (RBA) Self-Assessment Questionnaire (SAQ) for the first time, focusing on five major areas: labor, health and safety, environment, ethics, and management system. By asking suppliers to fill out the SAQ, we review their sustainability performance at the current stage and establish a supplier sustainability assessment management process based on the survey results, supplemented by a risk management grading system and key suppliers, which are defined by indicators such as procurement spending and product criticality, in order to establish a sustainability assessment management process for suppliers. In 2022, out of the 56 tier-one key suppliers, two suppliers from each for the five raw materials categories, including chemicals, special gases, photoresists, abrasives, and targets, and four suppliers from the wafers category, a total of 14 suppliers were selected for self-assessment. The self-assessment results achieved a compliance rate of over 80%. As a result, no high-risk key suppliers were identified in 2022. Among the suppliers who completed the written self-assessment, a total of 4 suppliers were audited in accordance with the annual quality audit program, and the results of the on-site audits were all satisfactory and in line with the spirit of sustainable management required by the Company and the RBA.

Sustainability Management Self-Assessment Questionnaire Results

Compliance Rate	Risk Level	Improvement Actions	Number of Suppliers
Compliance rate over 80%	Low Risk	-	14
Compliance rate between 70% - 80%	Moderate Risk	Correction plan required	0
Compliance rate less than 70%	High Risk		0
Total			14

Sustainable Supply Chain

Supplier Screening Results

Item	2022
Total number of Tier-1 suppliers	113
Total number of significant suppliers in Tier-1	56
Percentage of total spend on significant suppliers in Tier-1	98%
Total number of significant suppliers in non Tier-1	56
Total number of significant suppliers (Tier-1 and non Tier-1)	112

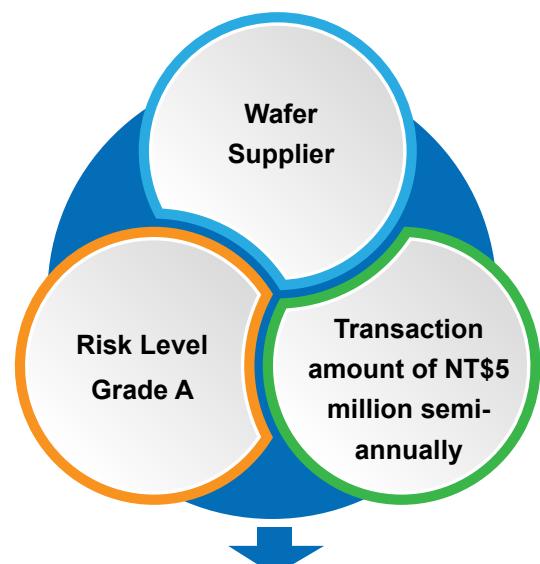
Scope of evaluation (both environmental and social)

Item	Scope of evaluation (both environmental and social)
Total number of suppliers assessed	14
Total number of suppliers where on-site audits were conducted	4
Number of suppliers where written assessments were conducted	10
Percentage of impact assessments conducted	100%

Regular Evaluation of Existing Suppliers

In accordance with the Raw Material Supplier Management Regulations and the Contractor Management Regulations, raw material suppliers are evaluated on a semi-annual basis based on the frequency and value of previous transactions to ensure that they meet the requirements of PSMC for a sustainable supply chain and to achieve the mission of promoting corporate social responsibility in the supply chain.

PSMC selects suppliers for evaluation based on risk level, supply type, and transaction amount. Suppliers that meet any of the criteria of "critical components (production wafers), high-volume suppliers (suppliers with semi-annual purchase amounts greater than NT\$5 million), and non-substitutable suppliers or similar suppliers (suppliers with an A grade for raw material changes)" are considered critical suppliers and must participate in the periodic evaluations. In 2022, a total of 56 suppliers were evaluated, all of which passed the evaluation, enabling a continued business relationships. In addition, no suppliers with significant actual/potential negative impacts were identified, and the 2022 target of auditing 100% of the key suppliers was also achieved. In accordance with PSMC's procurement practices, we assign evaluation scores for quality, service, cost and delivery. For failed items in the supplier evaluation, the reasons will be analyzed by the procurement department, the relevant units and the supplier, and improvement plans will be proposed to offer the necessary counseling and support to the supplier. To ensure that suppliers comply with the Company's requirements and expectations, the Company has implemented stringent supplier evaluations and has made every effort to avoid major incidents involving significant losses due to human error. There were no major supplier non-compliance incidents in 2022.



Selecting Suppliers for Evaluation

Sustainable Supply Chain

Supplier Periodic Evaluation Result

Item	2022
Supplier Evaluation	
Total number of suppliers audited by written evaluation/on-site	56
Percentage of key suppliers evaluated	100%
Number of suppliers assessed to have significant actual/potential negative impact	0
Percentage of suppliers with significant actual/potential negative impacts that have discussed corrective actions/improvement plans	0%
Number of suppliers with significant actual/potential negative impact and consequent termination of cooperation	0

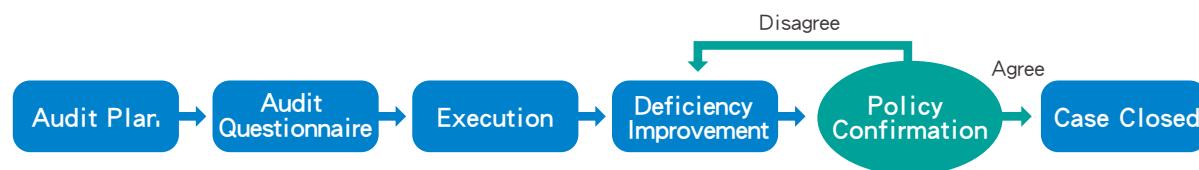
New Supplier Screening

According to the “Raw Material Parts/Supplier Management Regulations”, new suppliers must sign the RBA commitment letter and complete the preliminary survey form to complete the evaluation survey, the evaluation includes environmental and social indicators of sustainability issues, including procurement, quality, risk, environmental safety and engineering. We also evaluate the environmental safety and health risks of new suppliers, and review the communication channels of suppliers' employees as well as those measures related to being good neighbors. The percentage of new suppliers of raw materials that have passed the preliminary survey form in 2022 was 100%, and there were no new suppliers of critical parts that were added this year.

Item	Number of Suppliers
Number of new suppliers added in 2022	15
New suppliers screened based on environmental standards	15
New suppliers screened based on social standards	
Percentage of new suppliers screened based on environmental standards	100%
Percentage of new suppliers screened based on social standards	

Supplier Quality Audits

To ensure the effectiveness of the supplier quality system, PSMC selects suppliers for quality audits in accordance with the “Supplier Audit Guidelines” and “Parts Supplier Audit Guidelines”. Production wafer suppliers are audited at least once a year, while other production raw materials or critical parts suppliers are audited every three years, and a supplier audit plan for the following year is proposed at the end of each year. Audits are conducted in accordance with the requirements of the ISO 9001 quality management system and individual material-specific checks, including material characteristics, abnormal events, review of previous improvement deficiencies, horizontal development issues, and the audits are conducted by our trained and qualified auditors. All related documents and records, including audit reports, deficiencies improvement and supporting documents records, are communicated with suppliers through our eAuditing system in both directions, and are confirmed by the audit team before the audits are finalized to ensure the validity of the audit plan and individual audit activities.



Sustainable Supply Chain

In accordance with the requirements of ISO 9001 or IATF 16949, PSMC performs supplier quality system audits and currently performs quality system audits in the form of on-site audits and document reviews. 94 suppliers met the quality system requirements of ISO 9001 or IATF 16949 as a result of the on-site supplier audits and document reviews performed in 2022.

2022 Supply Quality Audit Results	
Audit Method	Number of Suppliers
On-site Audit	41
Paper Assessment	53

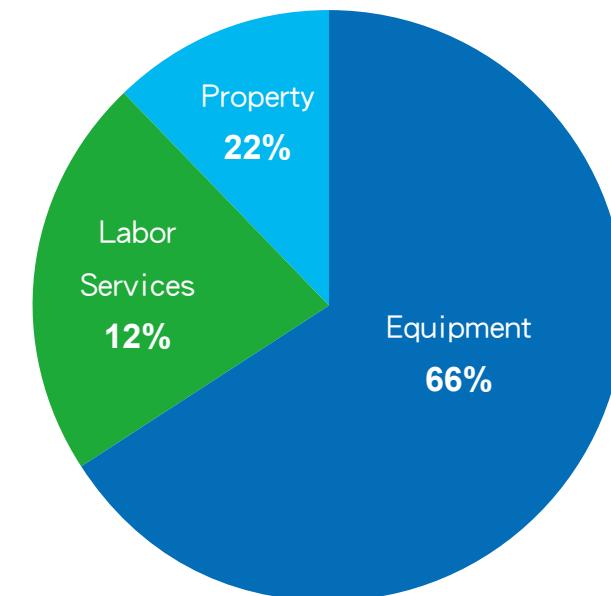
► 2.1.3 Responsible Procurement

Supply Chain Composition

PSMS is considered to be in the midstream of the semiconductor industrial chain and is mainly responsible for wafer fabrication and foundry. Its suppliers are divided into three main categories: property, equipment and labor services. PSMC had a total of 2,717 suppliers and about NT\$84.9 billion in total transactions in 2022. Of these, 94.18% are made up of domestic suppliers and 5.82% are made up of overseas suppliers.

Supplier Category	Main Product/Service Provided	Provider Geographic Location		Total Number of Suppliers
		Domestic	Overseas	
Property	New Products and Raw Materials	824	52	876
Equipment	Factory Matters and Manufacturing Process	792	97	889
Labor Services	Contracting and Services	943	9	952

Percentage of purchase amount by procurement type

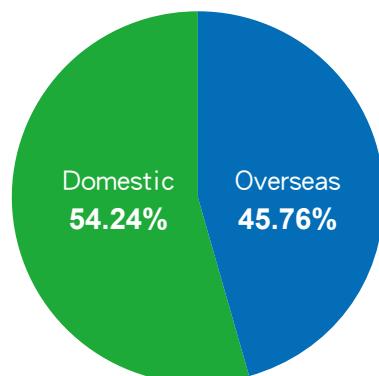


Local Procurement

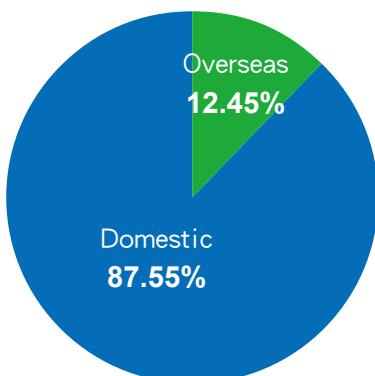
PSMC's main operation is in Taiwan, and in response to the spirit of "Sustainable Development Goal 12 Responsible Consumption and Production", PSMC has appropriately applied the principle of local procurement and production to minimize supply chain risks and effectively reduce management operating costs, while creating local employment opportunities and promoting economic prosperity. In 2022, the total amount of local purchases was approximately NT\$46.1 billion, accounting for 54.24% of the total procurement transactions. The decrease in local purchases this year compared to the previous year is mainly due to the fact that semiconductor equipment is still largely manufactured overseas, and the construction of the fourth 12-inch fab, the Tongluo P5 fab, in the past two years has required a large number of equipment purchases from overseas manufacturers. In addition, local suppliers were the main suppliers of property and labor services, with a local procurement ratio of nearly 90% or more.

Sustainable Supply Chain

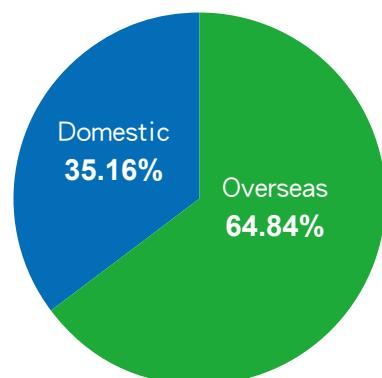
Percentage of local
procurement amount



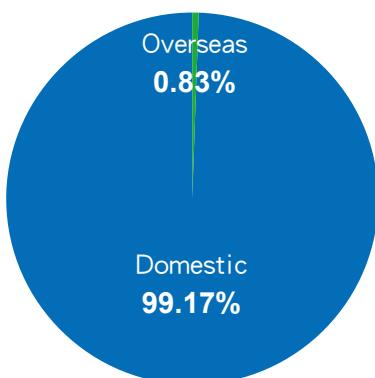
Percentage of Local
Purchases - Property



Percentage of Local Pur
chases - Equipment

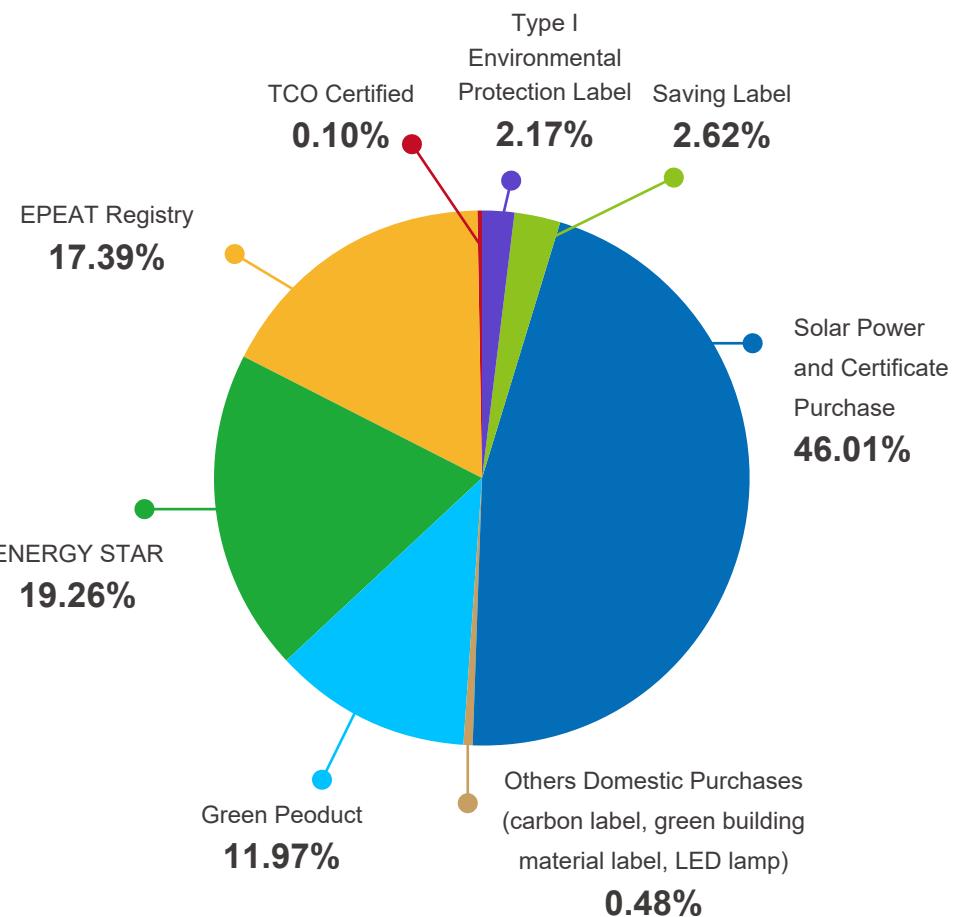


Percentage of Local
Purchases - Labor Services



Green Procurement

In order to conform to the global trend of green products, PSMC has given priority to evaluate the use of green label products and services recognized by governments and international organizations, and has included them in the selection mechanism of procurement methods and supplier evaluation. In 2022, the total amount of green procurement by PSMC was approximately NT\$160 million, including domestic products and services with Type I environmental protection labels, energy saving labels, carbon labels, green building materials labels, solar power and certificate purchases, LED lamps, as well as green products from overseas, Energy Star products, EPEAT Registry tools, and TCO-Certified products by the Swedish Federation of Professional Employees; PSMC will continue to expand its investment in green procurement in the future.



Sustainable Supply Chain

Hazardous Substance Management

In order to realize green procurement and achieve the hazardous substance management goal of “100% completion of Green Product Test Reports/Commitment Letter for Production Materials”, all suppliers are required by PSMC to provide commitment letters and test reports, which must be disclosed on the safety data sheet in accordance with the “Chemical Substances Management Regulations”. Through the establishment of hazardous substance management in the “Environmental Hazardous Substance Control Regulations”, education, training, auditing and counseling, suppliers are required to submit the relevant report to prove the materials are in compliance prior to shipment, and include this as a required item in the incoming material quality report.

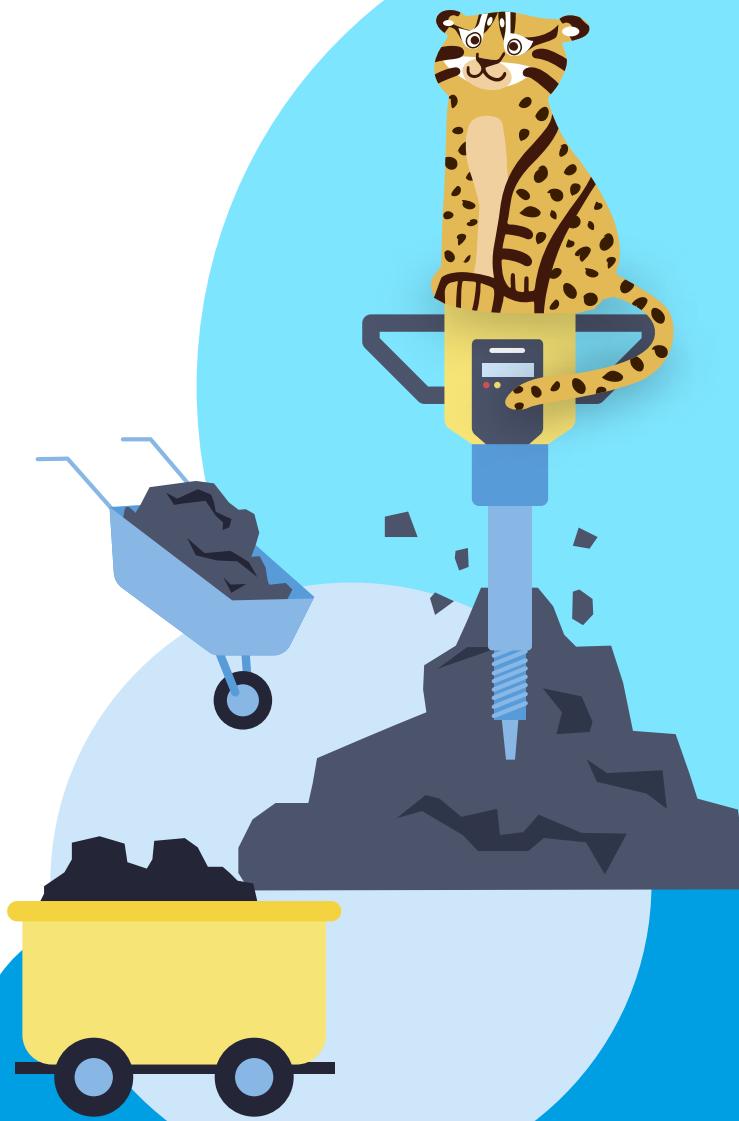
Based on the international standard IECQ QC 080000, we have established a hazardous substance management mechanism and implemented controls on incoming materials. In accordance with the EU RoHS (Restriction of Hazardous Substances Directive) and other laws and regulations, PSMC has established a database of ICP test reports and declarations for raw materials on the company's e-Supplier platform, and has automated the Incoming Quality Control, or IQC, phase, to manage raw materials to comply with the Hazardous Substance Free (HSF) regulation. We also strictly control the validity of suppliers' test reports and declarations to minimize the risk of the misuse of hazardous substances.

In addition, other than the requirements of laws and regulations, PSMC manages the environmentally restricted substances contained in the parts and components and materials used in the manufacturing process and production of upstream and downstream suppliers and subcontractors, in accordance with the specific needs of our customers, to ensure that our supply chain meets the standards of green procurement and sustainable development: providing our customers with environmentally friendly products while reducing the negative impact on the environment.

► 2.1.4 Conflict Minerals Due Diligence

PSMC is committed to respecting and protecting human rights, practicing high standards of social ethics and fulfilling corporate responsibilities. To this end, PSMC asks all target and gas suppliers with whom we have dealings to commit to not using upstream suppliers and countries of origin in conflict minerals areas in order to achieve the goal of 100% conflict-free minerals. We also call on all of our supplier partners who have business dealings with PSMC to join the Responsible Business Alliance's "No Minerals Accepted from Conflict Mines" pledge and ask our raw material suppliers to comply with the following requirements:

- Suppliers must fulfill their social and environmental responsibilities.
- Ensure that the products do not use minerals mined in the Democratic Republic of Congo, its surrounding countries that are in armed conflict, or in poor working conditions.
- The sources of the tantalum (Ta), tin (Sn), gold (Au), and tungsten (W) minerals are disclosed, and survey forms are completed.
- Communicate PSMC's policy of not using conflict minerals to upstream suppliers and their supply chain.



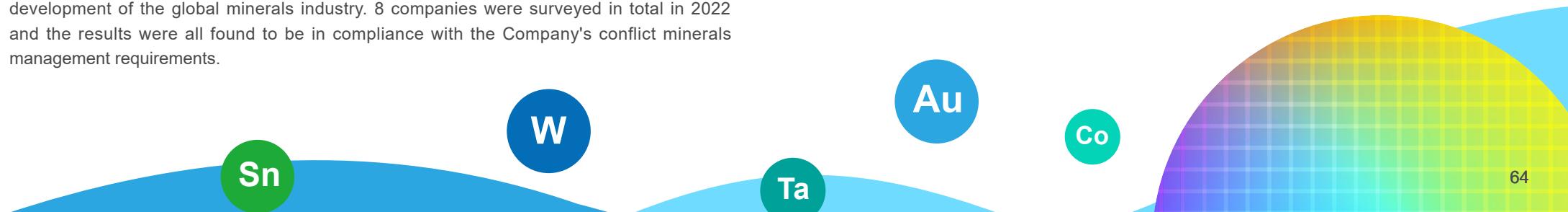
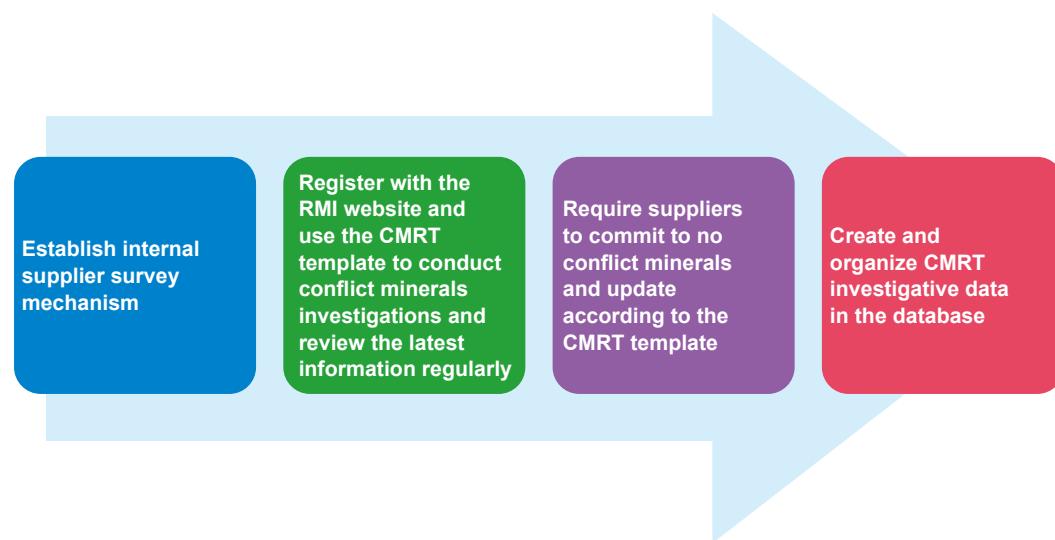
Sustainable Supply Chain

Conflict Minerals Management Measures

Types of Conflict Minerals	Management Measures
3T1G: tantalum (Ta), tin (Sn), gold (Au), tungsten(W)	Conflict minerals due diligence is conducted and updated annually, and the latest information is reviewed from time to time on the official website of the Responsible Minerals Initiative (RMI), and any updated conflict minerals templates are requested to be updated and returned by the supplier to ensure conflict-free use of the minerals.
Cobalt (Co)	It has not yet been included in the scope of RMI's Conflict Minerals Investigation Report, but we will continue to monitor the Conflict Minerals Reporting Template (CMRT) for updates and, if it becomes part of the scope of regulation, the suppliers will be mandated to implement control measures.

Conflict Minerals Due Diligence Process

3T1G minerals are essential raw materials in the manufacturing process of semiconductor products and may be mined in environments of armed conflict and human rights violations. Even so, in the spirit of social justice and humanitarianism, PSMC strives to reduce the amount of materials from conflict zones and conducts strict due diligence along the supply chain to ensure that its products are 100% free of any minerals from conflict zones. The Company conducts conflict minerals due diligence on suppliers whose materials contain 3T1G and cobalt and has established an internal supplier investigation mechanism to thoroughly investigate the raw materials and products used by suppliers to ensure consistency with the ethical and legal standards related to conflict minerals followed by the Company. In order to effectively conduct conflict minerals investigations, PSMC has registered with RMI's official website and uses the CMRT template to conduct investigations. This template allows the Company to collect detailed information from suppliers regarding the origin of raw materials and manufacturing processes to be used as a basis for country of origin investigations for the Company's use in risk identification and to ensure the use of 100% conflict-free minerals, in addition to regularly checking for updates to ensure that investigations are conducted in compliance with international standards. Subsequent updates will be performed in the database to ensure that the supply chain is free of conflict minerals, thereby contributing to the ethical and sustainable development of the global minerals industry. 8 companies were surveyed in total in 2022 and the results were all found to be in compliance with the Company's conflict minerals management requirements.



3. Commitment to Sustainability

Environment

3.1 Climate Strategy

3.2 Energy Management

3.3 Water Resources
Management

3.4 Waste Management

3.5 Air Pollution Emissions
Management

3.6 Biodiversity



► Commitment to Sustainability - Environment

Climate change is an operational challenge that companies must face to mitigate the risks associated with climate change by establishing an environmentally sustainable operating process. As part of PSMC's operating missions to achieve environmental sustainability, we expect to reduce our impact on the environment through energy savings, carbon reduction, water recycling improvement, air pollution reduction, and waste reduction to realize green operational practices.



Corresponding United Nations Sustainable Development Goals (SDGs)



Corresponding Material Topics



Energy Management



Climate Strategy

Material Topics GRI Standards

GRI 302 : Energy

GRI 305 : Emissions

GRI 303 : Water and Effluents

GRI 306 : Waste Topic-specific Disclosures

GRI 304 : Biodiversity

GRI 308 : Supplier Environmental Assessment

Stakeholders who have priority reading

Customers, investors/shareholders,
authorities/government agencies, social/
local communities

► 3.1 Climate Strategy

► 3.1.1 Climate Action

Pursuant to the framework of Task Force on Climate-related Financial Disclosures (TCFD), PSMC's climate risk management framework is based on the four major areas of governance, strategy, risk management, indicators and targets. This framework aides us in the identification of potential risks and related opportunities topics derived from climate change, to assess the actual impact and the degree of influence of climate issues on the Company's business.

Climate Governance

As the highest climate governance body at PSMC, the Board of Directors is responsible for overseeing the consistency of the climate change strategy with the direction and goals of the group's operations, and for monitoring the achievement of these goals. In order to enhance the evaluation and implementation effectiveness of the climate change strategies and plans, the Company has established the Sustainable Development Committee to manage and integrate the organizational ESG issues and climate-related risks and opportunities, and to confirm the overall strategic direction and objectives of the organization, and has set up an ESG Committee and a Risk Management Committee under it. The ESG Committee is responsible for formulating climate change strategies, and the four strategy implementation teams under the ESG Committee will assist/guide business units in implementing climate change strategy response plans and reviewing the compliance and appropriateness of the response strategies and objectives. The Risk Management Committee is responsible for identifying and analyzing the organization's climate related risks, effectively managing the potential risks confronting the organization in the face of climate change, and ensuring that risk management is practiced in every business unit during daily operations through the four strategy implementation teams. The ESG Committee and the Risk Management Committee will regularly report the strategy implementation of each department's climate risks and opportunities to the Sustainability Development Committee on a quarterly basis, so that it can track the progress of each strategy implementation and make necessary adjustments.

TCFD Governance Framework



Climate Risk Management Process

In order to reduce the impacts of the risks associated with climate change, PSMC conducts risk assessment surveys of key operational activities in each department through risk assessment forms. Based on the results of the risk assessment, we identify the key risks the Company encounters at this risk stage by applying factors such as severity, probability of occurrence, and level of risk hazard to the potential threats, impacts, and degrees of influence. At the same time, in order to reduce the impact of risks, we also develop corresponding risk control strategies and clearly specify that the risk assessment should be in line with the Company's business and personnel adjustments, and should be re-examined at least every two years. The Company has also established an emergency response plan. In the event of a hazardous disaster, the head of the department in charge will follow the emergency response plan for the plant to carry out the notification process, and the crisis incident management team will coordinate the crisis handling and follow-up recovery work to maintain the Company's continuous operation.

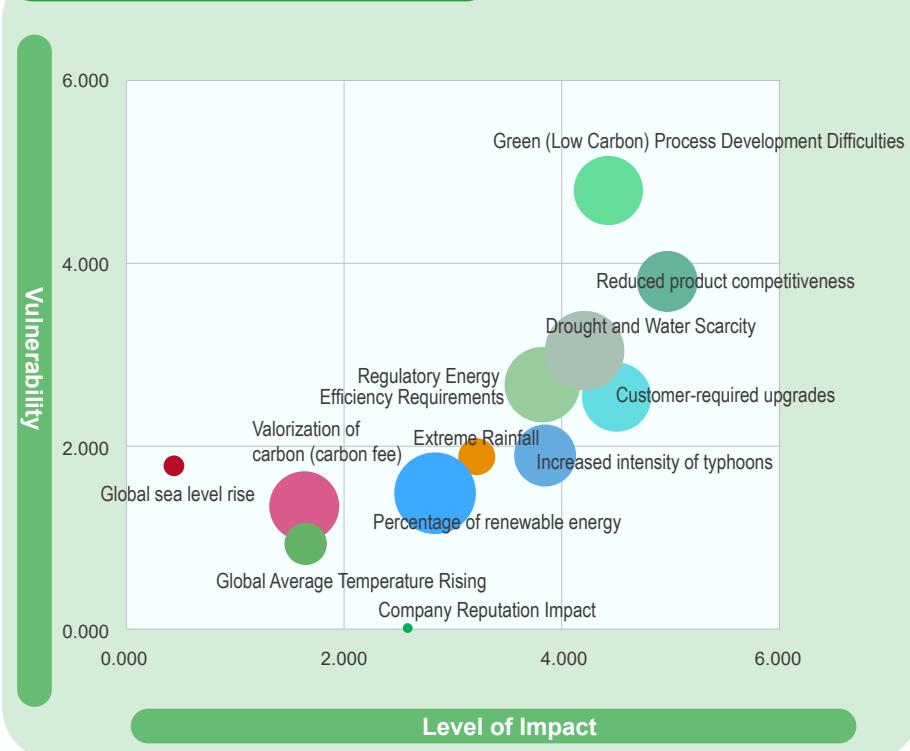
Risk Identification and Management Flow Chart



Climate Strategy

The Company has identified 12 climate risks and 9 climate opportunities by considering the domestic and international climate change development trends and its own current operating conditions, and the relevant departments of authority have jointly evaluated the degree of impact of climate related risks and opportunities. The evaluation covers the entire value chain of PSMC. Based on the degree of impact, vulnerability, control, and probability of occurrence that each risk and opportunity has on PSMC, we identified the key issues that we should prioritize and address for climate change after an internal investigation, and formulated the strategies and targets in order to implement climate change management.

Climate Risk Identification Results



Note: Horizontal axis - degree of impact: if that particular risk were to occur, the extent to which it would most severely affect the Company's revenue or operations; vertical axis - vulnerability: the Company's readiness and ability to adapt to that risk if it were to occur; the size of the diameter of the circle - probability of occurrence: the probability of the occurrence of that risk factor affecting the Company.

Climate Risk List

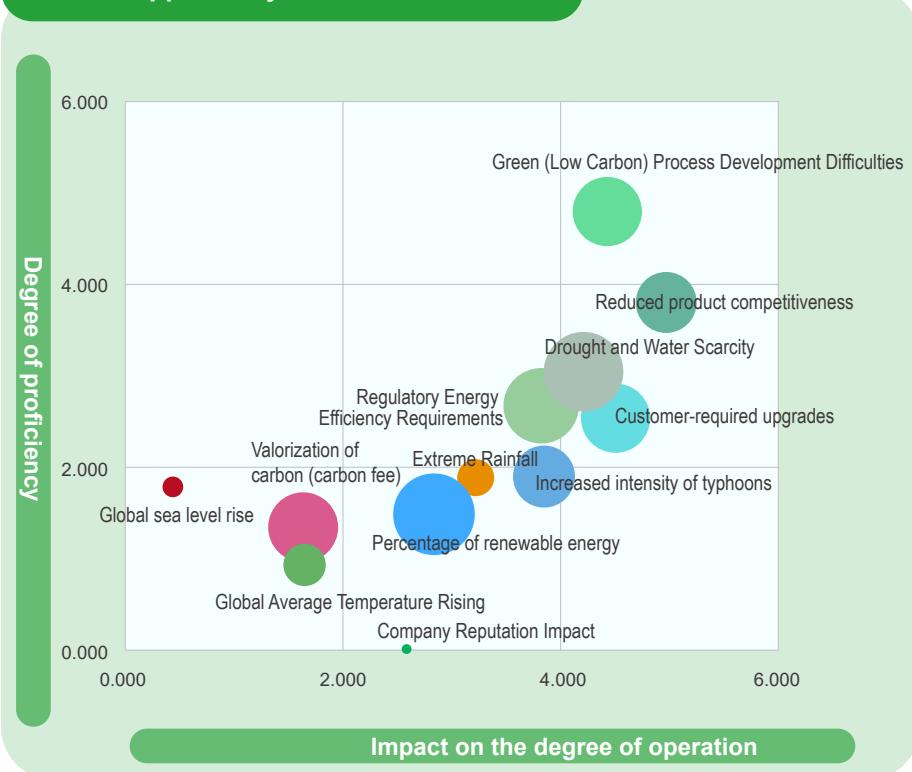
Type	Risk Items	Possible time of occurrence	Criticality	Scope of Impact		
				Upstream	Operation	Downstream
Immediate	Increased intensity of typhoons	Short Term	Medium	V	V	V
	Extreme Rainfall	Short Term	Low		V	V
Physical Risk	Global Rising Average Temperature	Long Term	Low		V	
	Drought and Water Scarcity	Medium Term	High		V	V
Regulations and Policies	Global Rising Sea Levels	Long Term	Low		V	
	Regulatory Energy Efficiency Requirements	Short Term	High		V	
Transformation Risk	Percentage of Renewable Energy	Short Term	Medium		V	
	Valuation of carbon (carbon fee)	Medium Term	Medium		V	V
Market	Customers requests for enhancements	Medium Term	Medium		V	V
	Reduced competitiveness of products	Medium Term	High	V	V	V
Technology	Green (Low Carbon) Process Development Difficulties	Medium Term	High		V	
	Impact on Company Reputation	Long Term	Low		V	V
Reputation	Company Reputation	Long Term	Low		V	V

Note: Short Term: 1~3 years, Medium Term: 4~6 years, Long Term: 7 years or more

Key Climate Risks and Response Strategies

Risk Factor	Risk Description	Area of Impact (Influence to the business and strategy of the enterprise)	Response Strategy (Influence to the strategy of the enterprise)
Drought and Water Scarcity	Extreme weather causes uneven rainfall, long periods of no rainfall cause water scarcity, and water restriction policies cause disruptions in product production and reduced operational efficiency.	Operating Costs Increase Operational Disruptions Risk Increases	<ul style="list-style-type: none"> The plant can withstand about a 20% water restriction ratio, and in the case of unbearable water restriction, water trucks will be activated to carry water. Plan for the use of recycled water. Emergency contingency plans for tap water shut-offs and water restrictions are in place to manage and control the water supply.
Regulatory Energy Efficiency Requirements	The Bureau of Energy of the Ministry of Economic Affairs (MOEA) has set the "Energy Conservation Targets and Implementation Plan for Energy Users", which stipulates that large industrial and commercial customers with electricity consumption of 800 kilowatts or more must conserve 1% of electricity each year and must continuously invest in energy-saving cost improvements. In addition, if the electricity savings do not reach the 1% requirement, they will be punished by the central Competent authority.	Operating Costs Increase	<ul style="list-style-type: none"> Implement the ISO 50001 energy management standard to establish an energy baseline and control energy usage. Each plant promotes energy-saving actions to achieve the goal of conserving more than 1% of electricity each year.
Customers' requests for enhancements	Customers are advocating for international trends such as the Paris Agreement and the Carbon Disclosure Project (CDP), hoping that raw materials in the supply chain will also contribute to reducing carbon emissions; customers may demand a shift to renewable energy use (e.g. RE100), or a reduction in greenhouse gas emissions (e.g. commitment to SBT).	Operating Costs Increase Investment Costs Increase	<ul style="list-style-type: none"> Set up the "Green Energy Project" team to carry out the planning of renewable energy installations and report the progress to the President on a monthly basis. Active participation in international ESG evaluations such as DJSI and CDP in response to customer requests.
Reduced competitiveness of products	The increase in demand for low-carbon products and alternative raw materials from investors, customers and other stakeholders has caused the Company to lose competitiveness as its existing products are replaced by lower-carbon options, which in turn affects operating income.	Revenue Decreases	<ul style="list-style-type: none"> Understand customers' preference to switch to low-carbon products. Gather information on low-carbon product markets or technologies to develop response strategies.
Green (Low Carbon) Process Development Difficulties	In order to achieve sustainable development, the company needs to move towards green (low-carbon) product development and green (low-carbon) process improvement, and the investment in human resources and research and development time will lead to increased operating costs.	Operating Costs Increase Investment Costs Increase	<ul style="list-style-type: none"> Continued development of higher-end, lower energy consumption process technologies and innovative applications (e.g., 3D packaging, power management ICs, low leakage oxide semiconductors, storage memory, and automotive electronics).

Climate Opportunity Identification Results



Note: Horizontal axis - degree of influence: if the opportunity occurs, how much revenue or cost savings will be brought to the company;
 vertical axis - degree of control: if the opportunity occurs, the readiness with which the company is able to create a competitive advantage;
 size of the diameter of the circle - probability of occurrence: the probability that the opportunity factor will bring benefits to the company.

Climate Opportunities List

Type	Opportunity Items	Possible time of occurrence	Criticality	Scope of Impact		
				Upstream	Operation	Downstream
Resource Efficiency	Water resource efficiency improvement	Short Term	High		V	
	Energy use efficiency improvement	Short Term	High		V	
	Recycling of waste materials	Medium Term	Low	V	V	
Energy Sources	Increase the share of renewable energy	Medium Term	Low		V	
	Obtain incentives and cooperation from the central Competent authority	Short Term	Low		V	
Products and Services	Development of low carbon products and services	Medium Term	Medium		V	V
Market	Enhance information transparency to attract investment	Long Term	Medium		V	V
	Demand for electric vehicles is rising, and the supply of chips for automobiles is short of demand	Medium Term	High		V	V
Resilience	Improve resilience to natural disasters	Long Term	Medium		V	

Note: Short Term: 1~3 years, Medium Term: 4~6 years, Long Term: 7 years or more

Key Climate Opportunities and Response Strategies

Opportunity Factor	Opportunity Description	Area of Impact	Response Strategy
Water resource efficiency improvement	Make full use of water resources and improving water recycling and reuse will reduce reliance on natural water resources, and strengthen operational resilience in the face of extreme weather, while reducing the chance of impact and loss.	Operating Cost Savings	<ul style="list-style-type: none"> Continuously improve water recovery rate and establish the following: process water recovery rate >85%, plant-wide water recovery rate >70%
Energy use efficiency improvement	By examining the overall operational efficiency of our machinery, equipment and plants, we explore opportunities to improve energy efficiency and lower operating costs by reducing energy consumption while meeting regulatory and customer requirements for low carbon products.	Operating Cost Savings	<ul style="list-style-type: none"> Set a 1% electricity savings usage reduction target each year, and continuously adjust the energy savings target on a rolling basis. A 13% reduction in electricity consumption per wafer area compared to the base year
Demand for electric vehicles is rising, and the supply of chips for automobiles is short of demand	The growing trend towards electric vehicles is obvious, and will drive the growing demand for automotive wafers. By increasing the volume of wafer tape-out for automotive wafer products and ensuring stable supply of products, we will be able to secure long-term cooperation with major automotive manufacturers.	Increase revenue*	<ul style="list-style-type: none"> Electric vehicle chip market technology product customer planning Development of electric vehicle related power management chip process technology Stabilize future revenue momentum by signing prepaid supply contracts with automotive manufacturers for automotive chips

Scenario Analysis

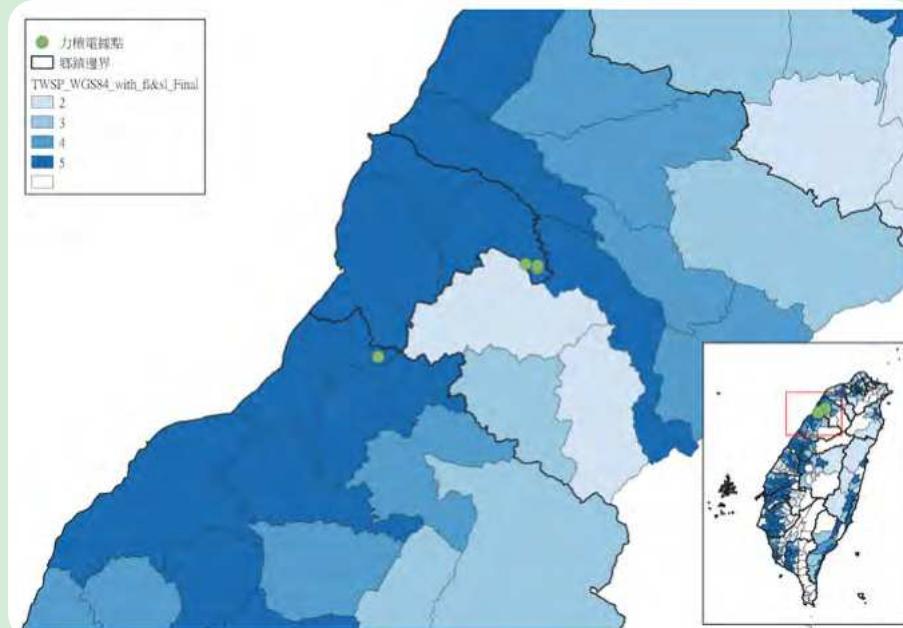
1. Physical Risk Scenario Analysis: Flooding & Landslide Disasters (Operational Locations)

Extreme rainfall events are becoming more frequent due to climate change. Short-term heavy rainfall may cause flooding of the fabs facilities and equipment due to the inability of municipal drainage systems to accommodate the heavy precipitation; extreme rainfall may also cause natural disasters such as landslides and mudslides. Currently, PSMC has two 8-inch and three 12-inch fabs that are located in Hsinchu City and Miaoli County, Taiwan. According to an RCP8.5 mid-century (2036-2065) flooding and slope disaster risk scenario simulation by The Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP) of the National Science and Technology Council, the Company's five fabs are located in areas with the highest level of flooding risk (Level 5). One of the fabs (Tongluo Fab) is also in the risky slope area, but the risk level is not high (Level 2).

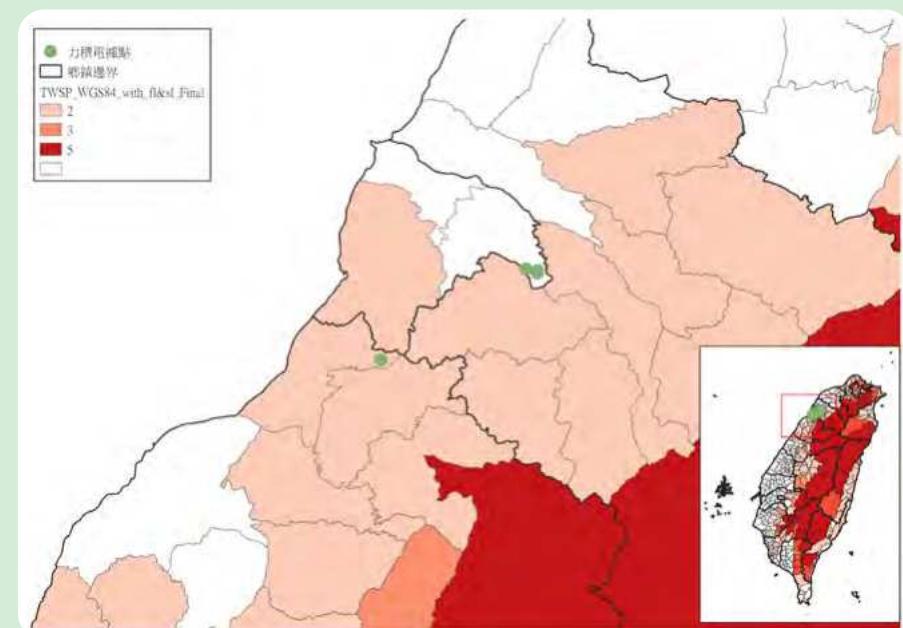
The company has considered the risk of extreme weather and heavy rainfall when setting up the plant, and has chosen sites that are located on higher grounds, at a height of 100.8 meters above sea level. The entrance and exit floors are elevated by 1.2 meters above the nearby roadway, with rainwater intercepting ditches around the building, and a dedicated flood pump in the underground pit, to close off the lowest underground floor and act as a temporary water reservoir or flood detention level if necessary, in order to cope with short term heavy rainfall.

In addition, in order to respond to various possible emergencies, the Company has established a crisis management plan to meet the severe challenges brought on by potential extreme weather, and conducts annual drills to review the effectiveness of various countermeasures. In addition, emergency response Standard Operating Procedures (SOPs) have been established to activate the emergency response team in the event of a disaster to reduce the impact of the disaster.

RCP8.5 Scenario Flooding Risk



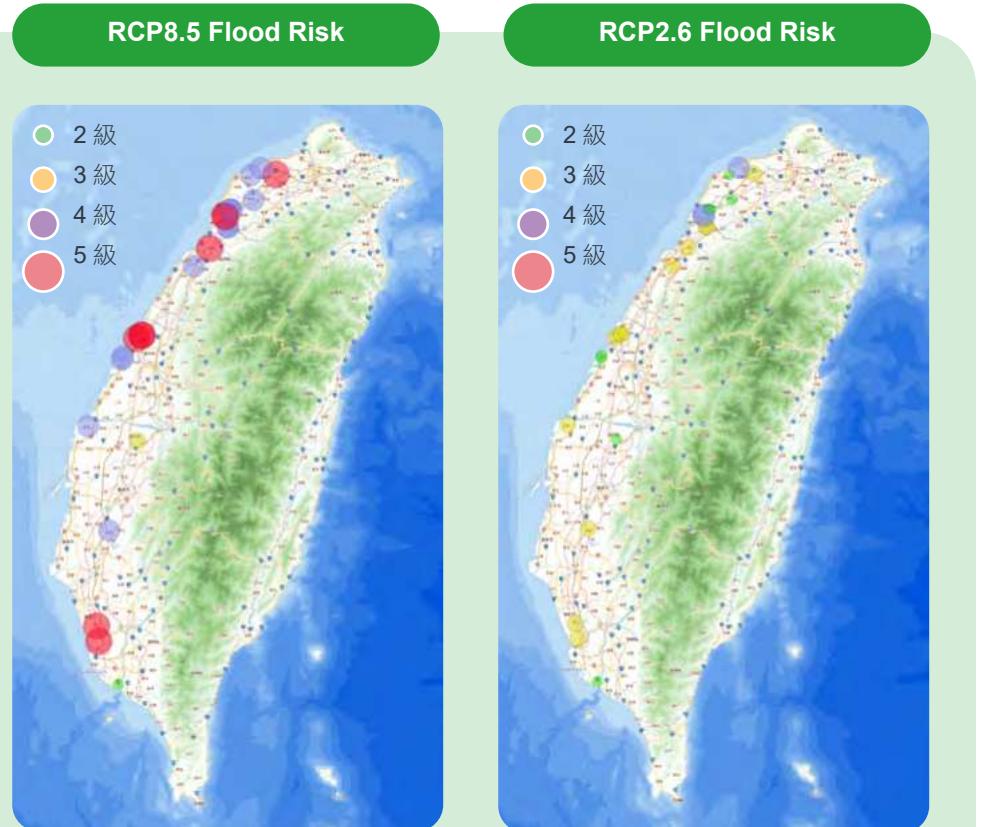
RCP8.5 Scenario Slope Disaster Risk



2. Physical Risk Scenario Analysis - Flood Disaster: Supplier Locations

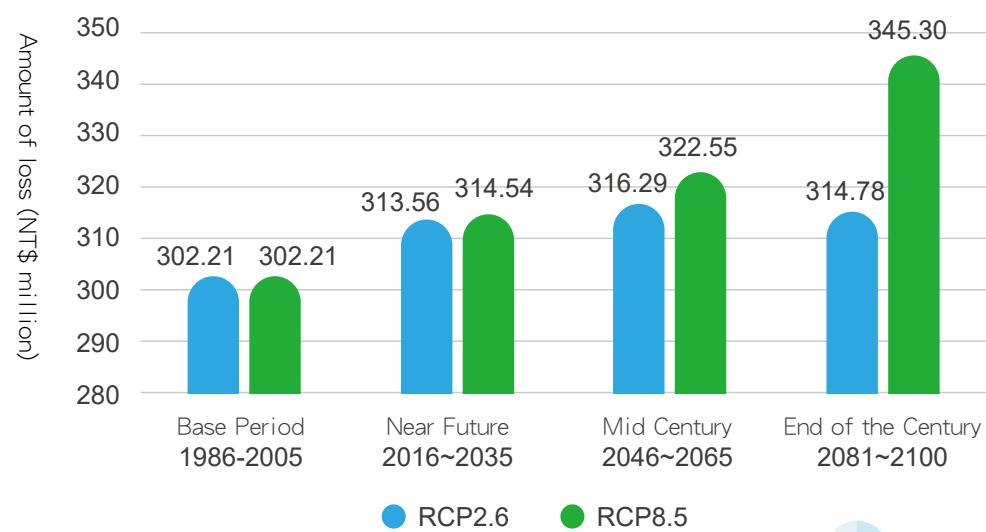
In order to evaluate the impact of the disruption in the supply chain for suppliers facing climate risks, the Company has identified possible physical risk disasters for Taiwan suppliers (supplier types include photoresist, chemicals, packaging materials, wafers, and gases). According to an RCP2.6 and an RCP8.5 mid-century (2035-2065) flooding and slope risk scenario simulation by The Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP) of the National Science and Technology Council, we preliminarily identified that there is no slope risk for suppliers at present. In the RCP2.6 flooding risk

scenario, the main risk is level 3, and the highest risk level (level 5) does not occur. In the RCP8.5 scenario, the primary risk is Level 4 and there are 9 suppliers with the highest risk level (Level 5). The Company estimated the potential financial exposure under each scenario by the degree of flooding risk, vulnerability and possible impact of the risk occurrence, shown below. In order to reduce the risk of supplier disruption, a second supplier system has been introduced for key suppliers to reduce the risk of material shortage. The risk impact of suppliers with lower replaceability among suppliers in Taiwan accounts for approximately 15% of the total supplier disruption exposure.



3. Physical Risk Scenario Analysis: Drought and Water Scarcity

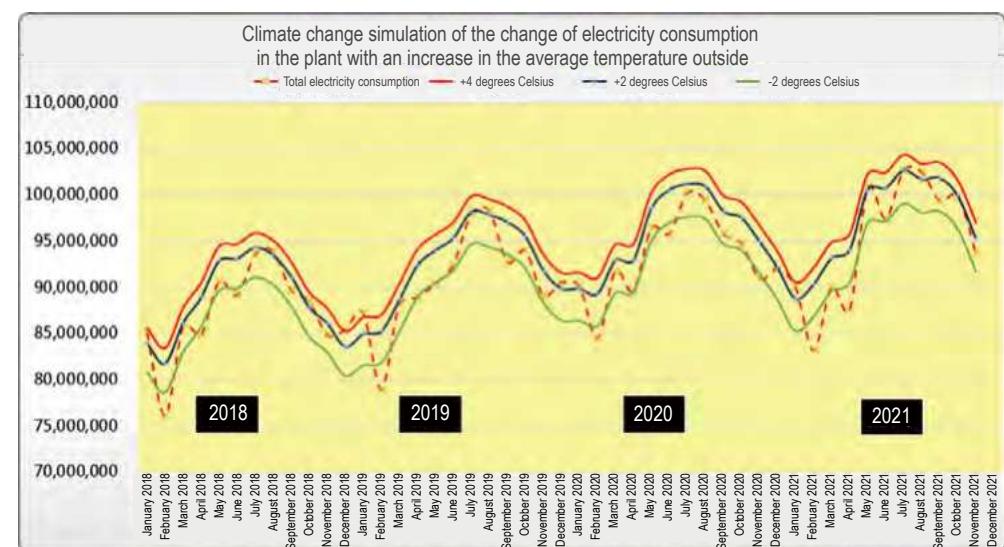
The uneven rainfall caused by extreme climate and the lack of water due to the prolonged absence of rainfall, as well as the water restriction policy promulgated by the government, will have a significant impact on the manufacturing process and shipment progress of PSMC. The Company has calculated the maximum amount of water shortage in the past water restriction events to estimate the potential financial impact as a result of water shortage events. In addition, based on The Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP) of the National Science and Technology Council of Taiwan, we estimated the reduction in production capacity and financial losses for PSMC due to water shortage risk changes for each scenario in the near future, mid-century, and end of the century by simulating the rate of change of continuous non-rainfall days for RCP2.6 and RCP8.5 scenarios.



4. Physical Risk Scenario Analysis: Rising Global Temperatures

In 2022, electricity will be the main source of energy used by PSMC, accounting for 89.30% of total energy use, which demonstrates the importance of electricity to the Company. Among them, plant electricity consumption accounts for 46.2% of the total electricity consumption, and the breakdown of plant electricity consumption is mainly for air conditioning, which accounts for 26.8% of the total electricity consumption, equivalent to an annual electricity consumption of 313 million kWh in 2022 just for air conditioning. According to the World Energy Outlook released by the International Energy Agency (IEA) in 2021 with regard to its assessment of the greenhouse gas emission path and global warming trend under the scenarios of STEPS, APS, SDS, and NZE, until 2050, it is estimated that the temperature increase under each simulated scenario is about 2.0 ° C, 1.8 ° C, 1.7 ° C, and 1.6 ° C, respectively.

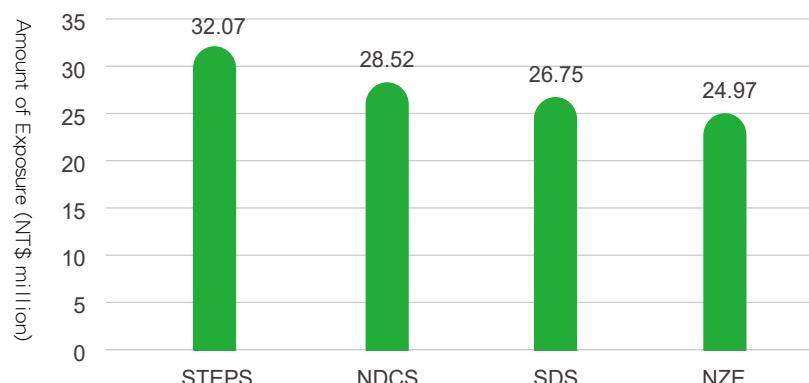
Based on the electricity consumption data of the plants from 2017 to 2021, the Company evaluated the correlation between the current average external air temperature increase and electricity consumption by model simulation, and selected the directly related dynamic variables of average external air temperature and the number of INPUT pieces to obtain the graph of the simulated change in electricity consumption of the plants with the increase in average external air temperature by using the multiple regression model.



An increase in outdoor temperature will lead to an increase in electricity consumption for air conditioning. Based on this simulated temperature and electricity consumption formula, it is estimated that each simulated scenario may increase the load on air conditioning by 3.4% to 8.6% and increase the electricity consumption of the entire plant by 2% to 4%. Based on the Company's electricity consumption and the average price of electricity, under the most severe scenario of rising temperature and using the current unit price of electricity set by Taiwan Power Company, it may indirectly increase the Company's annual cost of electricity for air conditioning by approximately NT\$32.07 million through 2050.

Since direct air conditioning only accounts for about 1/3 of the plant's electricity consumption, other electricity consumption is still primarily static factors such as process equipment and stationary electricity consumption. The Company also continues to improve the energy efficiency of related equipment, and promotes various power saving programs to reduce the dependence on electricity usage and the outlay of costs.

Amount of Increase in Electricity Cost for Air-Conditioning by Scenario



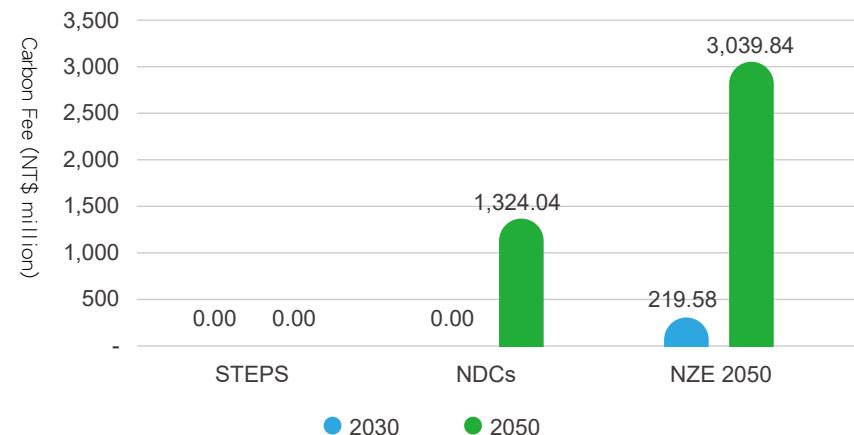
5. Transformation Risk Scenario Analysis: Carbon Fee

Net zero emissions has become an important target for climate change, and Taiwan is expected to introduce a carbon fee in 2024. In order to evaluate the impact of the future carbon fee on the Company, the IEA World Energy Model was used to estimate the carbon fees and the carbon reduction pathways for each scenario in STEPS, NDCs, and NZE 2050. In addition, considering the current status of the Company's greenhouse gas emissions in 2021 and the expected time frame for the introduction of green energy, the Company estimated the changes in greenhouse gas emissions and carbon reduction targets for each scenario in the future, assuming that the difference between the actual and the scenario targets would be subject to the carbon fee, thereby understanding the impact of the carbon fees that the Company may be faced with.

Scenario	Scenario I - STEPS	Scenario II - NDCs	Scenario III - NZE 2050
Scenario Description	Development under established policies, the global average temperature in 2100 is 2.6°C higher than before industrialization.	All commitments are expected to be met by all countries, and the global average temperature is about 2.1°C warmer in 2100 than it was before industrialization.	Assess the global progress towards the 1.5°C target and other energy-related sustainable development goals.
Carbon Fees	2030: NT\$300/ton (Taiwan's expected carbon fee) 2050: US\$53/ton	2030: US\$40/ton 2050: US\$160/ton	2030: US\$90/ton 2050: US\$200/ton
Carbon Reduction Pathways	2030 compared to the base year: 1.17% 2050 compared to the base year: 12.72%	2030 compared to the base year: 14.00% 2050 compared to the base year: 66.16%	2030 compared to the base year: 37.64% 2050 compared to the base year: 100.00%

PSMC's greenhouse gas emissions are mainly in category 2 - indirect energy emissions. In support of the net-zero emissions trend, we continue to promote a number of energy-saving measures every year and strive to improve the efficiency of our production lines and reduce the carbon emissions per unit of product. In terms of promoting green energy, we have announced our participation in the RE30 Global Renewable Energy Initiative to reduce indirect energy emissions through the introduction of green energy, and we assess that we will continue to increase the usage of renewable energy in the future to gradually reach the goal of net zero emissions.

Estimated Future Carbon Costs by Scenario



Indicators and Objectives

In order to effectively manage PSMC's response to climate change, the Company has set various climate-related indicators to measure the effectiveness of climate actions, and through the TCFD governance framework, the Company has promoted the implementation of climate strategies, set climate-related objectives, adjusted them on a rolling basis in accordance with global trends and policies and regulations, and regularly reviewed the achievement of these objectives to continuously reduce the impact of climate change on the Company and enhance its resilience to climate change in the future.

TCFD Disclosure Content	Promoted Strategy
Indicators used by the organization to assess climate related risks and opportunities in accordance with the strategy and risk management process.	<ul style="list-style-type: none"> Greenhouse gas emissions, electricity consumption, renewable energy use, and water recovery rates are used as metrics for climate related risks and opportunities.
Scope 1, Scope 2 and Scope 3 (if applicable) greenhouse gas emissions and associated risks.	<ul style="list-style-type: none"> The plants of PSMC follow ISO 14064-1 to calculate the emissions and disclose the related data, refer to 3.1.2 Greenhouse Gas Emissions and Management for details.
The objectives used by the organization to manage climate-related risks and opportunities, and the performance in achieving those objectives.	<ul style="list-style-type: none"> Climate related objectives are set, covering water resources, electricity, renewable energy, greenhouse gases, and waste. For related data and objectives results, see 3.2 Energy Management, 3.3 Water Resources Management, and 3.4 Waste Management.

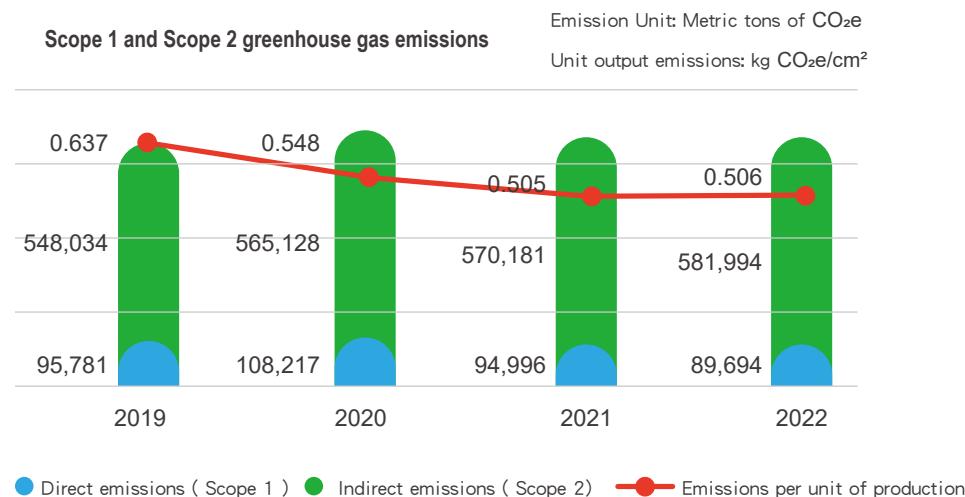
Climate Related Aspects	Indicators	Objectives
Water Resources Usage	<ul style="list-style-type: none"> Manufacturing process water recycling rate Full plant water recycling rate 	<ul style="list-style-type: none"> Manufacturing process water recycling rate >85% Full plant recycling rate >70%
Electricity Usage	<ul style="list-style-type: none"> Total power consumption Power consumption per wafer area 	<ul style="list-style-type: none"> 1% in annual electricity usage savings 13% (short term), 15% (medium term), 20% (long term) reduction in electricity consumption per wafer area compared to base year (2015)
Renewable Energy Usage	<ul style="list-style-type: none"> Percentage of renewable energy facilities Percentage of renewable energy usage 	<ul style="list-style-type: none"> 100% completion of the annual construction work of the self-owned solar power plant (short term) Renewable energy facility construction >8% completed (medium term) 30% reached in renewable energy usage (long term)
Greenhouse Gas Emissions	<ul style="list-style-type: none"> Greenhouse gas emissions 	<ul style="list-style-type: none"> Reduce organizational greenhouse gas emissions (Scope 1 and Scope 2) by 1% per year
Waste Production	<ul style="list-style-type: none"> Waste recycling rate Number of waste reduction cases 	<ul style="list-style-type: none"> Waste recycling rate ≥ 90% (short term), ≥ 91% (medium term), ≥ 92% (long term) Waste reduction cases reach 30 cases/year (short term), 40 cases/year (medium term), 50 cases/year (long term)

Note: Short Term - 2023, Medium Term - 2025, Long Term - 2030

► 3.1.2 Greenhouse Gas Emissions and Management

Greenhouse Gas Inventory and Reduction

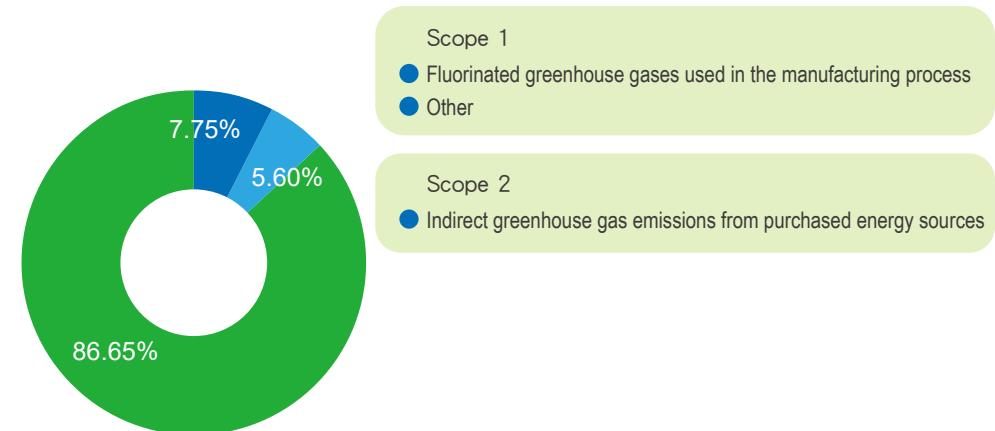
In order to meet the requirements of environmental protection laws and regulations, the competent authorities, customers and other stakeholder groups, and to fulfill the responsibility of jointly protecting the global environment, PSMC is committed to reducing and managing greenhouse gas emissions. According to the results of the annual greenhouse gas inventory conducted at each of the company's plants, the overall greenhouse gas use and emission status is reviewed and managed in order to establish various reduction management measures; each department also draws up relevant greenhouse gas reduction measures and plans, and in 2022, the reduction performance of the implementation of energy-saving and carbon-reduction programs by PSMC reached 1.98%, achieving the goal of a 1% annual reduction. The total greenhouse gas emissions in 2022 across Scope 1 and Scope 2 are 671,688 metric tons of CO₂e, including direct emissions of 89,694 metric tons of CO₂e, which was a 5.58% reduction from 2021.



Note 1: The greenhouse gas inventories of all plants of PSMC are conducted in accordance with ISO 14064-1 procedures, and passed an external third-party verification; greenhouse gas emission coefficients mainly refer to the greenhouse gas emission coefficients management table published by the Environmental Protection Agency version 6.0.4, in which the electricity coefficient is calculated using 0.509 kgCO₂e/kWh for Scope 2 (this calculation method is based on the regional coefficient method for statistics).

Note 2: The source of the global warming potential (GWP) used in this table is the “IPCC Fourth Assessment Report (2007)” edition.

Greenhouse gas emissions in Scope 1 and Scope 2 as a percentage



Note 3: Greenhouse gas types include nitrous oxide (N₂O), methane (CH₄), carbon dioxide (CO₂), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃).

Note 4: Method used for aggregating greenhouse gas volumes: Operational controlling rights method.

Note 5: Standards, methodologies, assumptions and/or calculation tools used: The energy consumption is derived from the measured values of the chargeable receipts, and the checklist does not have any estimated values.

Note 6: The emission coverage of Scope 1 and Scope 2 is 100%.

In addition, in order to strengthen the integrity of the greenhouse gas inventory along the value chain, PSMC conducted a Scope 3 inventory in accordance with the Greenhouse Gas Protocol and passed the external verification in accordance with the ISO 14064-1 standard. The following table shows the results of the Scope 3 greenhouse gas emissions inventory for 2022, indicating that the main emission categories for Scope 3 are fuel and energy-related activities (outside of Scope 1 and Scope 2) accounting for 67.58%, followed by purchased goods and services accounting for 31.4%, with the first two accounting for over 90% of total Scope 3 emissions.

Indirect greenhouse gas emissions in Scope 3 for 2022

Item	Source of calculation	Greenhouse gas emissions (metric tons CO ₂ e)
Upstream Transportation Distribution ^{Note 1}	Carbon emissions from the transportation of raw materials from the suppliers to the plant.	530
Downstream Transportation Distribution ^{Note 1}	Carbon emissions generated from the transportation of produced wafers from the plant to the customer's designated location.	9
Staff Commute ^{Note 1}	Carbon emissions from company transportation vehicles.	433
Business Travel ^{Note 2}	Carbon emissions from staff travel by public transportation.	23
Purchased Goods and Services ^{Note 1}	Carbon emissions from purchased primary raw materials and auxiliary raw materials in the manufacturing process.	67,098
Fuel and energy-related activities (not included in Scope 1 or Scope 2) ^{Note 1}	Carbon emissions from the use of fuels and energy sources at the plant calculated by subtracting the usage from the entire life cycle.	144,392
Waste generated from business operations ^{Note 1}	Carbon emissions from waste treatment and transportation at the plant.	1,184
Total		213,668

Note 1: Coefficients are quoted from the EPA Carbon Footprint Information Platform.

Note 2: Coefficients are cited from the EPA Carbon Footprint Information Platform and the High Speed Rail Transit Service Carbon Footprint.

Climate Strategy

Energy Management

Water Resources Management

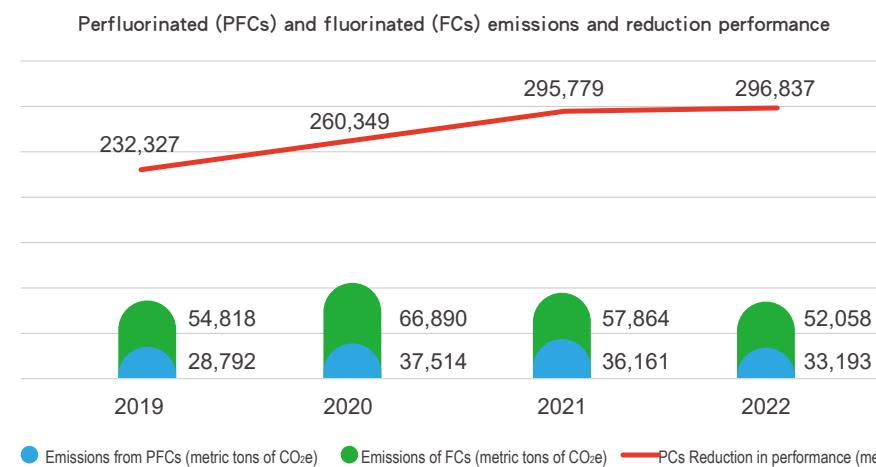
Waste Management

Air Pollution Emissions Management

Biodiversity

According to the results of the greenhouse gas inventory, the main source of direct greenhouse gas emissions from PSMC Scope 1 is the fluorinated greenhouse gas used in the manufacturing process, and the source of indirect greenhouse gas emissions from the purchased energy in Scope 2 is the use of electricity. The aforementioned two categories account for about 90% of the total emissions, therefore, the main focus of greenhouse gas reduction at PSMC is a reduction of fluorinated greenhouse gas as well as a reduction of indirect greenhouse gas emissions from the purchased energy.

For the reduction of fluorinated greenhouse gases used in the manufacturing process, in addition to continuous source management to assess material substitution, the Company also strives to improve the processing efficiency of terminal local scrubber device or replace old equipment in the hopes of achieving the ultimate goal of 90% reduction of fluoride emissions from manufacturing processes by 2030. In 2022, our total greenhouse gas emissions of perfluorinated (PFCs) was 33,193 metric tons of CO₂e, total greenhouse gas emissions of fluorinated (FCs) was 52,058 metric tons of CO₂e. Each unit is actively committed to promoting the carbon reduction plan, including proposing practical action plans such as replacing the old local scrubber system during the manufacturing process with a new one, increasing the scope of the local scrubber, and installing high-efficiency local scrubber system in new machiness. In 2022, the total greenhouse gas emissions of perfluorinated (PFCs) saw a reduction of 8.208% compared to 2021, and the greenhouse gas reduction performance of fluorinated (FCs) also increased by 0.358%.



Note 1: Reduced gas emission types include hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride.

Note 2: The reduction is in the scope of direct greenhouse gas emissions (Scope 1).

Note 3: Calculated using the Intergovernmental Panel on Climate Change (IPCC) Tier 2b emissions calculation method.

Item	2019	2020	2021	2022
PFCs emissions (kg PFC)	4,315	5,088	4,997	4,539
PFCs emissions (metric tons CO ₂ e)	32,034	37,480	36,738	33,193
Unit product PFCs emissions (kg PFC/metric tonne of production)	24.1	23.2	21.3	19.2

2022 Fluorinated Greenhouse Gas Reduction Effectiveness Statement

Fab Number	Program Name	Implementation Method	2022 Reduction Effectiveness (tCO ₂ e)
P1/2	1. Replacement of on-site local scrubber system 2. Increase the scope of the local scrubber	1. Replace 15 old electric L/S with new combustion type L/S 2. Adsorption L/S connected to PFC L/S in series to improve PFC local scrubbing efficiency	2,903
P3	Install new manufacturing machineries containing fluorinated gas in the factory are all equipped with high efficiency local scrubber systems.	Install new manufacturing machineries containing fluorinated gas in the factory are all equipped with high efficiency local scrubber systems, a total of 3 units have been installed.	2,834
8A / 8AD	Replacement of on-site local scrubber system	For the etching production machine, the new LS with removal efficiency is added; only one unit was delivered in 2022 due to the pandemic and the remaining one will be delivered in 2023.	3,704
8B	Install new manufacturing machineries containing fluorinated gas in the factory are all equipped with high efficiency local scrubber systems.	Installed new manufacturing machineries containing fluorinated gas in the factory are all equipped with high efficiency local scrubber systems, a total of 2 units have been installed.	157
Total			9,597

► 3.2 Energy Management

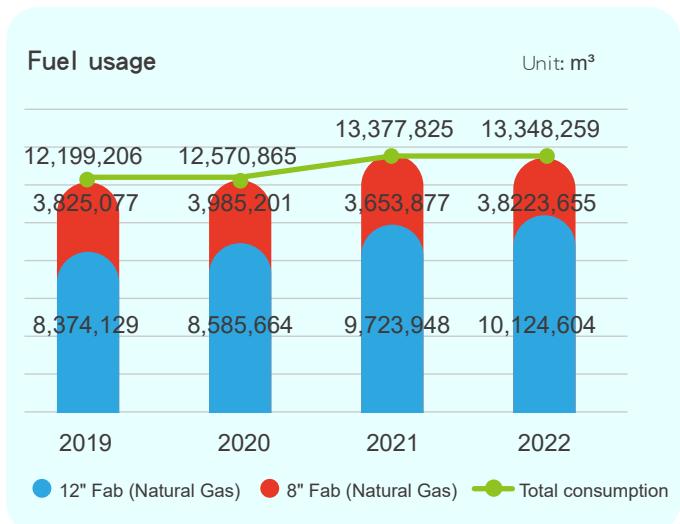
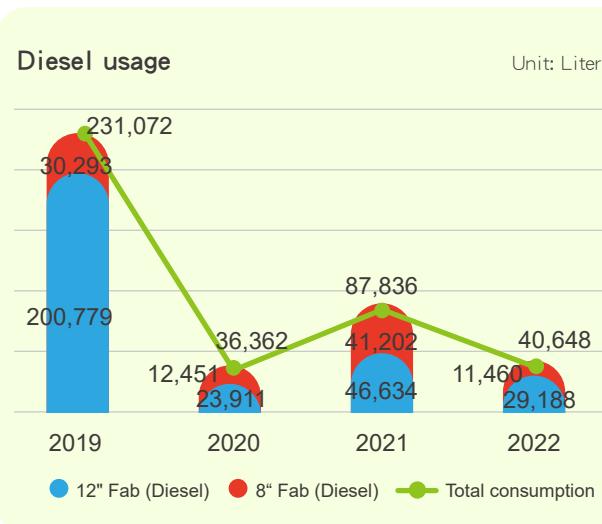
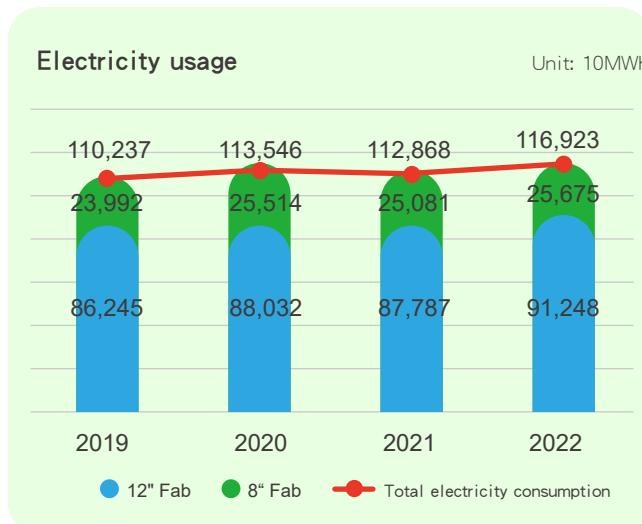
► 3.2.1 Energy Policy and Management

PSMC has an environmental safety and health policy, and has obtained the ISO14001 environmental management system certification. Also, in order to meet the introduction time and the new version of the announcement, as of 2021, PSMC has fully implemented the ISO 50001 energy management system to analyze the efficiency of energy consumption and seek efficient use of energy to create a green factory. In addition, we regularly update the management system validation through the verification operations of a third-party impartial inspection organization to ensure its effectiveness, so that the performance and culture of energy management will gradually take hold and flourish. In addition, the company has set an annual energy saving target of 1% or more, and provides incentives through the proposed improvement system and CIP competition to encourage management and employees to take the initiative to propose recommendations around energy savings, climate response measures, productivity improvements, and work efficiency. At the same time, the Company is committed to continuously carry out and improve the following tasks to achieve the mission of environmental sustainability:

- Provide energy improvement resources and enforce energy laws
- Enhance equipment energy management and reduce energy consumption in order to achieve energy saving targets
- Continue to carry out energy reduction measures to optimize energy use efficiency
- Increase the procurement of equipment with energy-saving labels and introduce energy-saving design products and processes
- Establish appropriate energy strategies and engage all employees to promote sustainable business operations

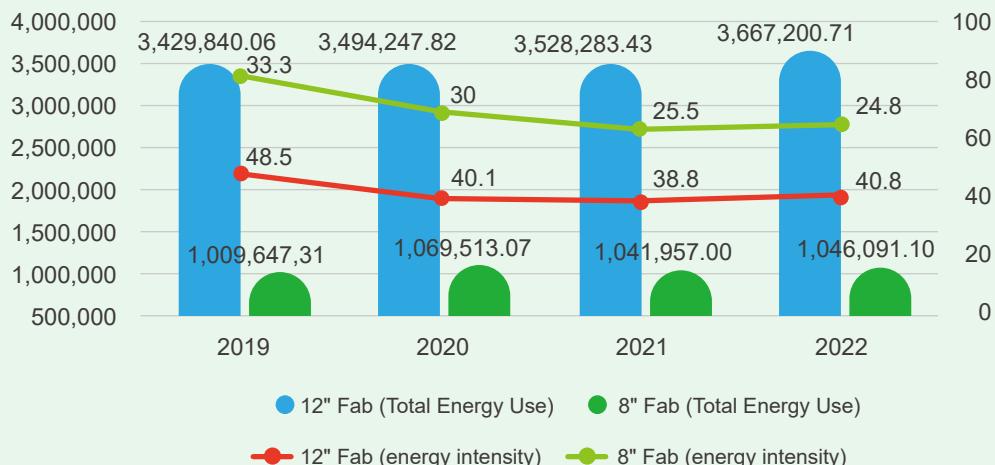
Energy Resources Consumption

The primary energy source of PSMC's energy infrastructure is electricity, which accounts for 89% of the total. Despite a slight increase in total consumption as production ramps up (the use of diesel generators for the 2019 yearly maintenance led to an increase in diesel fuel usage), we continue to improve the efficiency of our resource usage and strive to reduce the environmental impact. Statistics on the use of energy resources by the Company are as follows:



Units: Gigajoules (GJ)

Total Energy Consumption and Energy Intensity

 Total energy use: gigajoules
 Energy intensity: gigajoules per square meter

2022 Energy Consumption

Electricity	4,209,221.17
Natural Gas	502,642.04
Diesel	1,428.60
Total Energy Consumption	4,713,291.81

Note 1: Energy calorific value: purchased electricity calorific value: 3,600 gigajoules per million kilowatts; converted using the coefficients in the Environmental Protection Agency's "Greenhouse Gas Emission Factor Management Table Version 6.0.4", the coefficients used for natural gas and diesel are 9,000 kcal/m³ and 8,400 kcal/L, respectively.

Note 2: Calculated at 4.186 kilojoules per kilocalorie.

Non-Renewable Energy Consumption

Unit: MWh

Item	2019	2020	2021	2022
Non-renewable energy consumption	Non-renewable fuels	130,818	132,255	140,831
	Purchased non-renewable energy (electricity)	1,102,373	1,135,456	1,128,680
	Total	1,233,191	1,267,711	1,309,316
Coverage rate (%)	100%	100%	100%	100%

Note: From 2019 to 2022, none of the energy used by the Company is renewable energy, so the total consumption of renewable energy is zero.

► 3.2.2 Energy Saving Measures

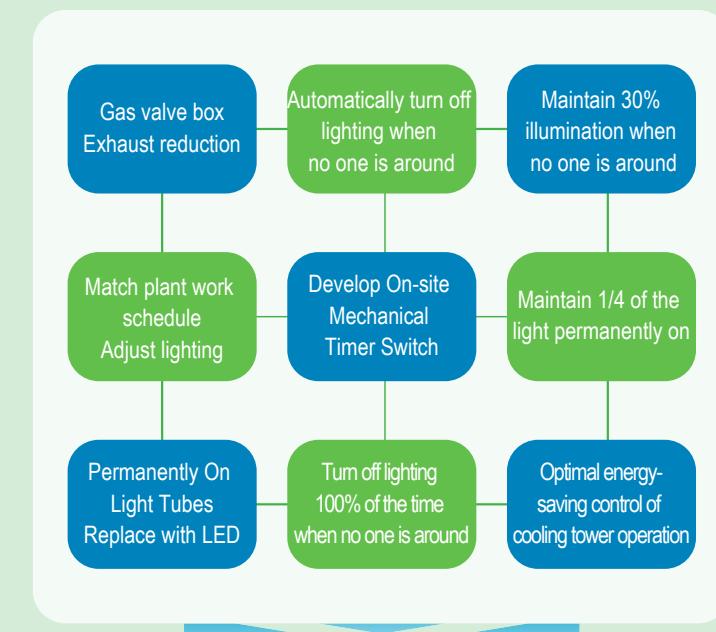
Energy Saving Goals and Key Solutions

In accordance with the Ministry of Economic Affairs' "Energy Conservation Targets and Implementation Plan for Energy Users", PSMC has set a target of 1% annual energy savings. 2022 saw the implementation of over 80 energy saving measures, including reviewing and improving the reduction of electricity consumption per unit of production, planning the retirement of old equipment, and developing renewable energy, reducing energy consumption by 60,928.48 gigajoules (including electricity, diesel and natural gas) and 7,057 metric tons of CO₂e compared to the previous year. The energy saving rate of the entire plant is 1.30%, achieving the set target. The energy savings programs are summarized in the table below.

Fab	Reduction of Energy Consumption	Energy saving rate/year	Highlights of Energy Saving Solutions
Fab P1/2	27,548.65 GJ	1.14 %	<ul style="list-style-type: none"> Work vehicles with gasoline engines were replaced by hybrid vehicles to reduce the waste of gasoline and diesel Improved water quality in cooling water towers by using Oxide recycled water to improve chilled water mainframe efficiency External air conditioning tank circulation pump retrofitted with inverter to regulate the payload flow and reduce power consumption Replacement of high pressure rotors of air compressors #2 and #5 with new ones to improve compression efficiency and save on electricity consumption
Fab P3	13,483.52 GJ	1.09%	<ul style="list-style-type: none"> Chiller unit condenser cleaning to improve condenser efficiency and reduce chiller efficiency The three pumps in the clean room are equipped with inverters to adjust the flow rate according to the load to reduce power consumption. The machine originally used Hot N2 for heating which was modified to the VAO system to reduce power consumption Due to low capacity utilization of EWAM3, the power was turned off to reduce standby power consumption. The second section of the NH3 gas stripping tower heater was tested and did not affect the efficiency of the gas stripping tower, so it was closed for use.
Fab 8A	12,014.04 GJ	1.78%	<ul style="list-style-type: none"> The temperature of the air exhaust from the external air conditioning box is lowered to reduce the amount of hot water and the heat load of the clean room. Main chiller 1000RT#1/#4/#8 ice water pumps were replaced with new ones to improve efficiency. Replaced the Dry Pump with an energy-saving pump to save energy consumption Replacement of low pressure loss RO membrane in water treatment RO system B set, and upgraded with high efficiency pump
Fab 8AD	502.86 GJ	2.22%	<ul style="list-style-type: none"> Proper operation and deployment of clean room FFU to reduce energy consumption DEP02 adjustment of operation parameters to improve equipment efficiency
Fab 8B	7,379.41 GJ	2.11%	<ul style="list-style-type: none"> PV (perfect vacuum) system updated with high efficiency pump to improve efficiency and save energy The temperature of the air exhaust from the external air conditioning box is lowered to reduce the amount of hot water and the heat load of the clean room. The adsorption time of the air pressure system dryer was extended to reduce the power consumption required for regeneration time.

Basic Energy Saving Solutions

In addition to energy-saving measures such as product energy efficiency and setting new specifications for machines, PSMC also has basic energy-saving solutions, such as automatically turning off lighting when no one is around, adjusting lighting to accommodate the factory's work schedule, and replacing frequently used fluorescent tubes with LEDs. We look forward to working with our employees to save energy and maintain a sustainable environment through basic energy-saving solutions.



► 3.2.3 Renewable Energy

In addition to the continuous improvement of energy efficiency, in 2022, PSMC has set up a green energy team to plan the Company's green energy procurement and installation in order to achieve diversified energy use, reduce greenhouse gas emissions, and prepare for future compliance with regulatory requirements. This year, we have completed the procurement and contracting of 0.5 MW of in-plant solar power system installation and the external procurement of 10.5 MW of green power certificates. In order to actively promote low-carbon transformation, PSMC also announced its participation in the RE30 Global Renewable Energy Initiative in 2022, which is expected to reach 30% of renewable energy use by 2030. PSMC will continue to incorporate the use of renewable energy in the future to achieve the mission of environmental sustainability.

Renewable Energy Goals

Short Term Goals (2023)

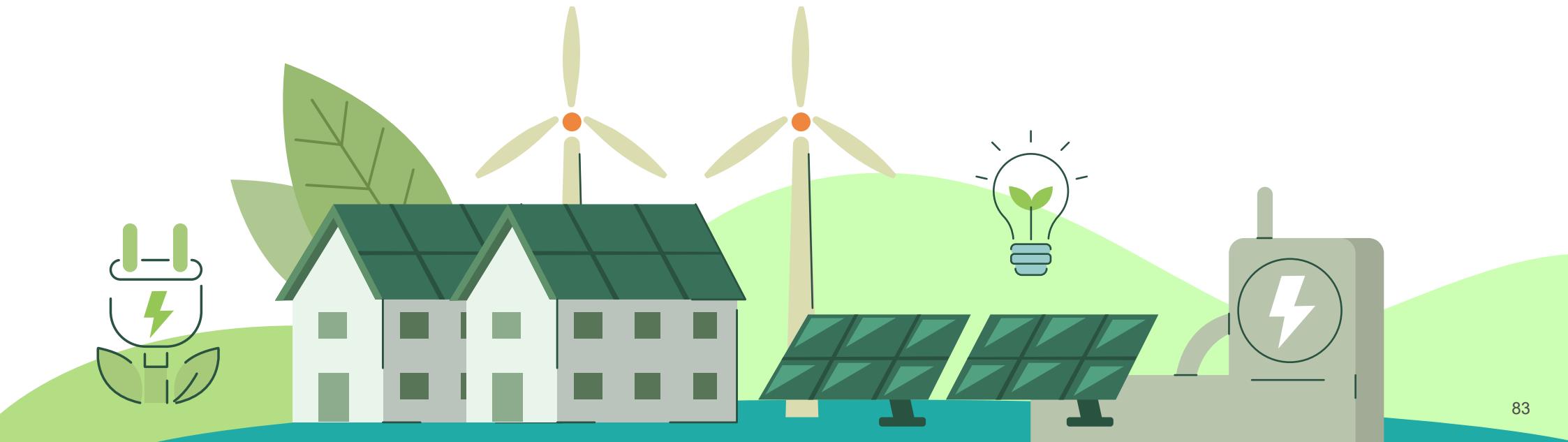
- Completed the purchase of the 2023 Green Power Certificate for 10.5 MW (MW)
- P1/2 and 8A fabs are expected to be completed in March 2023 with the installation of a 0.5 megawatt (MW) solar photovoltaic system

Medium Term Goals (2025)

- The installation capacity of large electricity users was achieved with the early bird special of 8% (11 megawatts (MW)).
- The P5 Tongluo Fab was scheduled to use 25% green power after the environmental impact difference analysis.

Long Term Goals (2030)

- Achievement of the RE30 initiative objective: 30% of renewable energy use (520 million kWh)



► 3.3 Water Resources Management

► 3.3.1 Water Resources Policy and Management

The water used at all of PSMC's fabs is tap water, mainly from the Hsinchu Baoshan Reservoir No. 1 and No. 2 and the Miaoli Yonghe Mountain Reservoir, and the water resource stress in the Hsinchu Science Park is Low-Medium according to the World Resources Institute (WRI) water resource stress map. In addition to the water used for cleaning during the manufacturing process, there is also the water that is used for air conditioning to maintain the operation of the clean rooms, the water that is used for cleaning the exhaust gases during the manufacturing process, and the rest of the water that is used on a daily basis by the employees in the fabs.

Due to the special needs of the semiconductor manufacturing process, after obtaining tap water or recycled water from the process, we need to go through appropriate treatment procedures to meet the usage standards. The Company's ultrapure water usage in 2022 was approximately 8,810,525 tons, which represents a 0.24% reduction in water usage per unit of product area, and did not achieve the 5% target that was set in the previous year because the production area was not as expected this year. However, there is a certain amount of basic usage for ultrapure water, which is why the relative amount of ultrapure water used per unit area would increase. The data of ultrapure water usage covers 100% of the ultrapure water usage at all of our sites. The Company also commits to using 750 cubic meters per day (CMD) of the reclaimed water (P1/2: 500 CMD, P3: 250 CMD) after the establishment of the water reclamation plant in the Science Park, in support of the government's policy to actively promote the reuse of reclaimed water.

The Water Resources Agency held a water resources communication meeting with the manufacturers' associations.

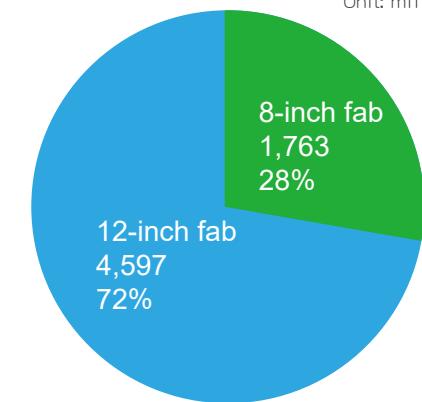
During the low-water period, the manufacturers and the Water Resources Agency increased their cooperation on water resources allocation.

Participated in the water conservation counseling program for science park manufacturers.

During the low water period, water trucks were sent to the Keya Water Resources Center to carry reclaimed water.

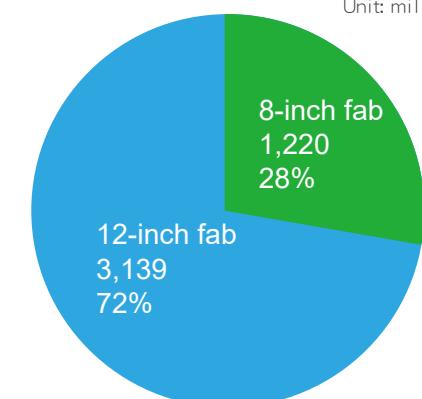
Total water intake

Unit: million liters



Total Drainage Capacity

Unit: million liters



Water Intake Statistics

Unit: million liters

Item	2019	2020	2021	2022	
Water Intake Amount	Taken from a third party - Taiwan Water Corporation	5,569.99	5,893.67	5,769.60	6,359.99
Discharge Volume	Discharged to a third party	3,802.79	4,011.90	4,040.84	4,359.01
Total Water Consumption		1,767.20	1,881.77	1,728.76	2,000.98

Note 1: In 2022, PSMC no draw from Surface water or Underground water Total water intake = tap water + recycled water (condensate, rainwater), tap water intake is based on the water bill.

Note 2: The discharge volume is the actual volume of water measured by the flow meter in the plant.

Note 3: The Company's main water sources come from the Hsinchu Baoshan No. 1 and No. 2 Reservoirs and the Miaoli Yonghe Mountain Reservoir. The water resource stress is Low-Medium and the water quality is all fresh water ($\leq 1,000$ mg/L total dissolved solids).

Ultrapure Water Usage Statistics

Unit: cubic meter

Ultrapure Water	2019	2020	2021	2022
Ultrapure Water Usage	8,253,029	8,740,283	8,765,869	8,810,525
Data Coverage Rate	100%	100%	100%	100%



▶ 3.3.2 Water Reclamation Management

In recent years, due to climate change affecting the normal water supply to our plants, PSMC has continued to improve the water recovery rate and manufacturing process water usage efficiency through technology improvements and equipment investments. PSMC became the first semiconductor foundry in the Science Park to commit to a manufacturing process water recovery rate of 85% or higher in 1996, and the average manufacturing process water recovery rate for all plants reached 87.78% in 2022, achieving the original target of 85.6%. In addition, we have made it our mission to reduce water consumption in our 12-inch fab to less than 95% of the permitted water consumption. Since our founding, we have maintained a tradition of excellent water conservation through continuous technology improvement and equipment investment, making water conservation our mission.

Average Annual Recovery Rate for the Manufacturing Process Recovery Program

Unit: million liters

Fab	Item	2019	2020	2021	2022
12 inch	Annual manufacturing process recovery volume	7,351.116	7,682.072	7,856.444	8,039.699
	Average annual manufacturing process recovery rate	86%	87%	87%	88%
8 inch	Annual manufacturing process recovery volume	2,697.796	2,901.176	2,949.503	3,845.315
	Average annual manufacturing process recovery rate	88%	87%	87%	87%
Total	Annual manufacturing process recovery volume	10,048.912	10,583.248	10,805.947	11,885.014
	Average annual manufacturing process recovery rate	87%	87%	87%	88%
Number of times each drop of water is used		3.3904	3.4292	3.5290	3.4080

Water Efficiency in 2022

Fab	Improvement Program	Improvement Effectiveness
P3	HOT DIW Instrument Drainage Recovery	Additional 263m ³ of water can be recycled annually
8A	Adjustment of Low Capacity Circulating Water	Additional 3,572m ³ of water can be recycled annually
	Condensate Recovery	Additional 35,694m ³ of water can be recycled annually
8B	Transformation of the Dormant System to LSR Recovery System	Additional 89,790m ³ of water can be recycled annually
	O-CMP Water Recovery System Expansion	Additional 26,919m ³ of water was recycled in 2022

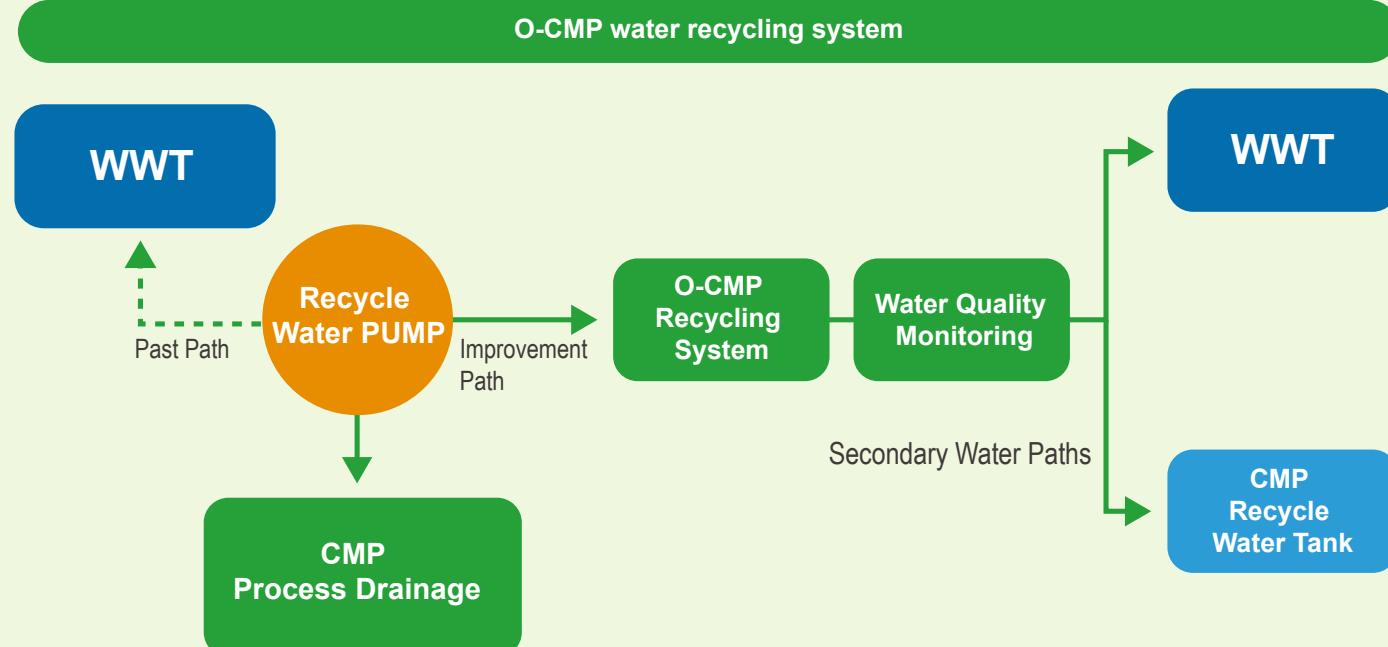
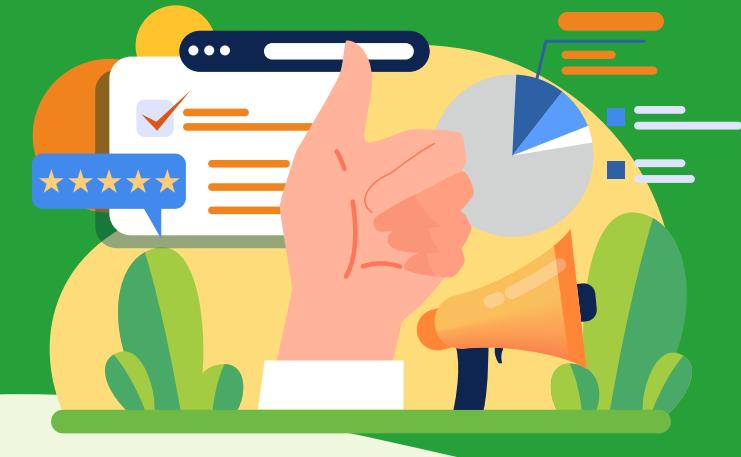
Note: The P3 plant O-CMP recycled water system was introduced in July 2022, so the improvement benefit statistics are from July to December 2022.



Column

P3 Water Recycling System

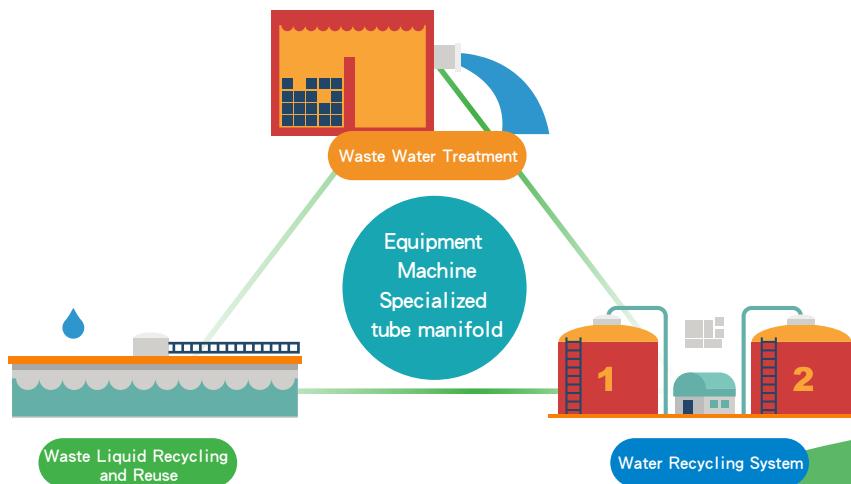
In order to achieve the water saving target in 2022, PSMC is also expanding the O-CMP water recycling system at the P3 fab to recover an additional 26,919 million liters for the year, which effectively removes organic compounds from industrial and domestic wastewater and converts them into useful resources. The expansion of the O-CMP system will not only treat more wastewater, but also increase the recovery rate and resource utilization rate, reduce the consumption of natural resources, and reduce the negative impact on the environment, which in turn reduces the operating costs and environmental risks for the company.



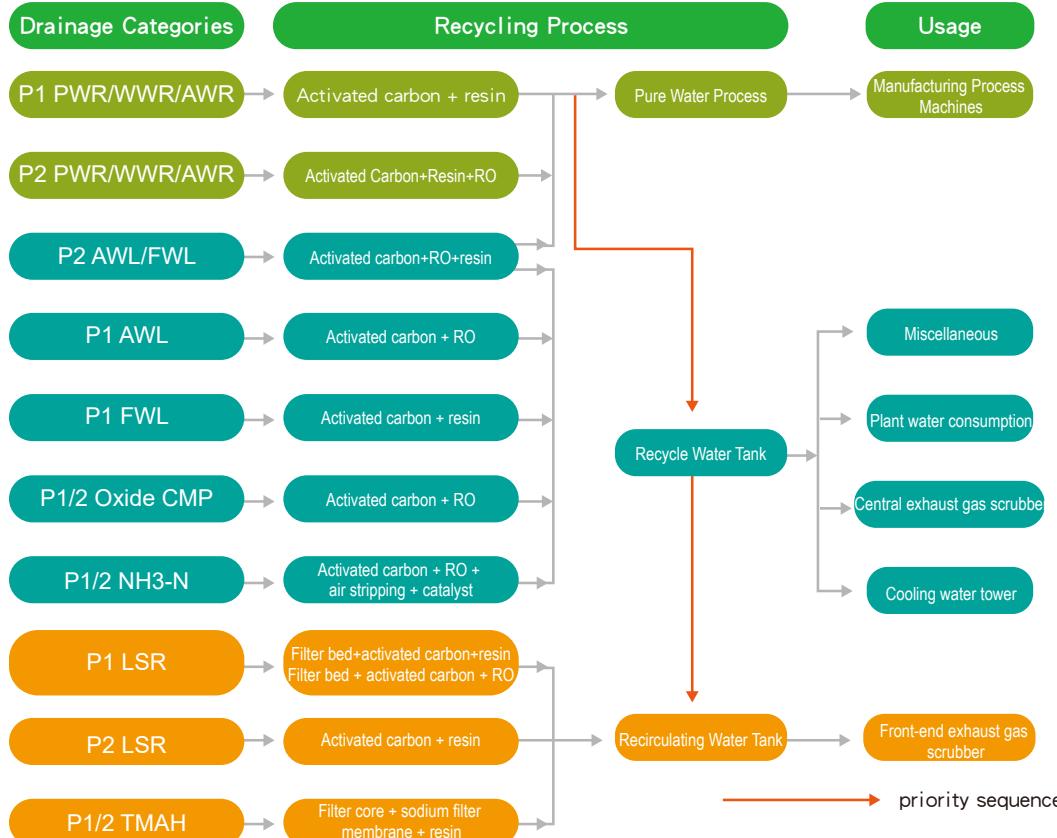
► 3.3.3 Wastewater Management

The manufacturing process wastewater from all of our plants is treated in our wastewater treatment plant before being discharged into the wastewater treatment plant in the Science Park for subsequent treatment and discharge. In order to grasp the effectiveness of the treatment of different components, a total of 20 different water systems, including recoverable and non-recoverable, are diverted for treatment according to the different characteristics of the discharge liquid at the manufacturing end, such as type, concentration, and conductivity. In addition to increasing the recovery rate of water, some waste acids (phosphoric acid/copper sulfate/sulfuric acid/ammonium hydrofluoride/ammonium fluoride) and organic waste liquids (isopropyl alcohol/photoresist/de-photoresist/photographic solution) still have economic value for recovery, so having separate diversions can not only reduce the amount of dosing in the wastewater plant, but can also reduce the difficulty of waste treatment at the back-end and the burden on the environment. In order to continuously improve the amount of recycled water and reduce the amount of effluent discharge, we have pH and Fion testing equipment installed in our effluent process, and the Hsinchu Science Park Administration conducts sampling tests on effluent quality twice a month to strictly control the effluent quality of our plants, and to prioritize the management of effluent quality in accordance with plant regulations. In recent years, the annual average test values of the effluents from each plant have been in compliance with the Science Park's standard of control, and there have been no incidents of non-compliance with the effluent value limits.

Waste water recycling and discharge classification planning



Manufacturing Process Recovery Water Flow



Effluent Water Quality Monitoring

Item	Unit	2019	2020	2021	2022
Ammonia Nitrogen NH3-N	mg/L	39.6	37.6	44.2	33.2
Chemical Oxygen Demand (COD)	mg/L	268.7	296.5	295.6	269.5
Total Suspended Solids (TSS)	mg/L	109.2	97.9	135.1	114.4

Note 1: The wastewater discharge is the actual amount of effluent measured by the flow meter in the plant.

Note 2: The measurement value of each pollution indicator is the annual average of the two monthly measurements by the Hsinchu Science Park Administration.

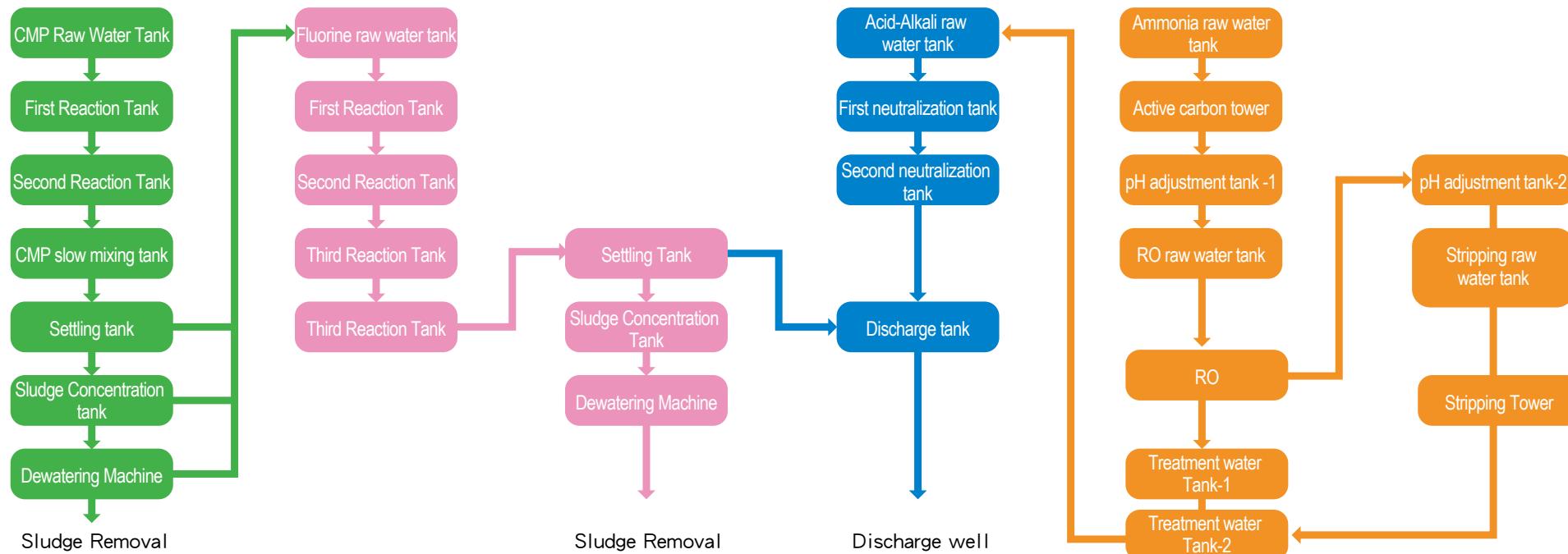
Note 3: The ammonia nitrogen (NH3-N) values are not listed in the Science Park where Fab 8B is located.

Note 4: The Company's drainage water is remitted to the wastewater treatment plant in the Science Park and total dissolved solids have not been tested.

Wastewater Treatment Process

The recycled water from the manufacturing process is treated by the appropriate recycled water system and then returned to the pure water system for reuse to increase the recovery rate. For high concentrations of unrecoverable wastewater, it is discharged to the wastewater treatment system (including acid-alkali, fluorine, and ammonia-nitrogen wastewater treatment system) and then piped into the wastewater treatment plant at the Science Park for subsequent treatment and discharge, so our effluent is not directly discharged into rivers and bodies of water, and has no direct impact on bodies of water and related habitats. There has also been no serious leakage of wastewater from any of the PSMC plants over the years, and there have been no major fines.

Wastewater treatment process <diagram>



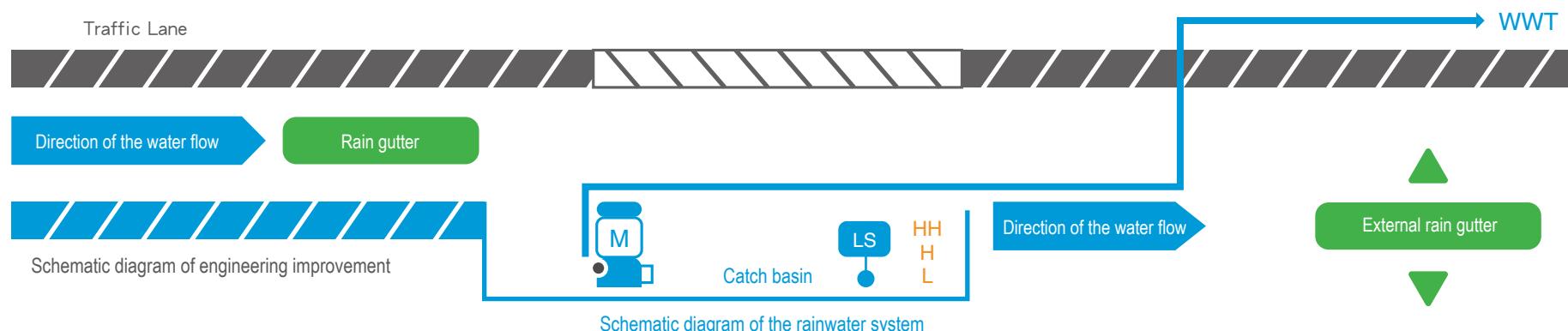
Wastewater Ammonia Nitrogen Reduction and Treatment Technology

Item	12 inch fab		8 inch fab	
	P1/2 fab	P3 fab	8A fab	8B fab
Wastewater ammonia nitrogen reduction (unit%)	≈90%	≈95%	90%	91%
Treatment Technology	Air stripping + Catalyst	Air stripping and catalytic conversion	Air stripping + sulfuric acid washing	Air stripping + sulfuric acid wet scrubber
Final product	None	Nitrogen	Ammonium sulfate	Ammonium sulfate
Wastewater ammonia nitrogen reduction benefits	Reduces sewage costs by NT\$230 million per year	Ammonia nitrogen value of effluent water was reduced from 163.1ppm to 9.53ppm.	Conforms to regulatory standards	Conforms to regulatory standards

Stormwater System

In order to ensure the environmental safety of the Science Park, the Company has installed overflow prevention dikes and flood pumps at the perimeter of each plant, and flood pumps at the ground floor of each building. In the event of an abnormal leak or heavy rainfall, the flood pumps will pump the water to the wastewater treatment plant for treatment and then discharge it to the sewage drain in the Science Park. In addition, chemical tanker filling areas are equipped with overflow prevention ditches to prevent chemicals from leaking and polluting the environment. In the stormwater drains of the high-risk areas, abnormal event drainage pumps are also installed to pump abnormal sewage back to the wastewater treatment plant for treatment in order to prevent pollution incidents. All relevant measures are in accordance with the Company's internal stormwater drainage practices.

Schematic diagram of the rainwater system



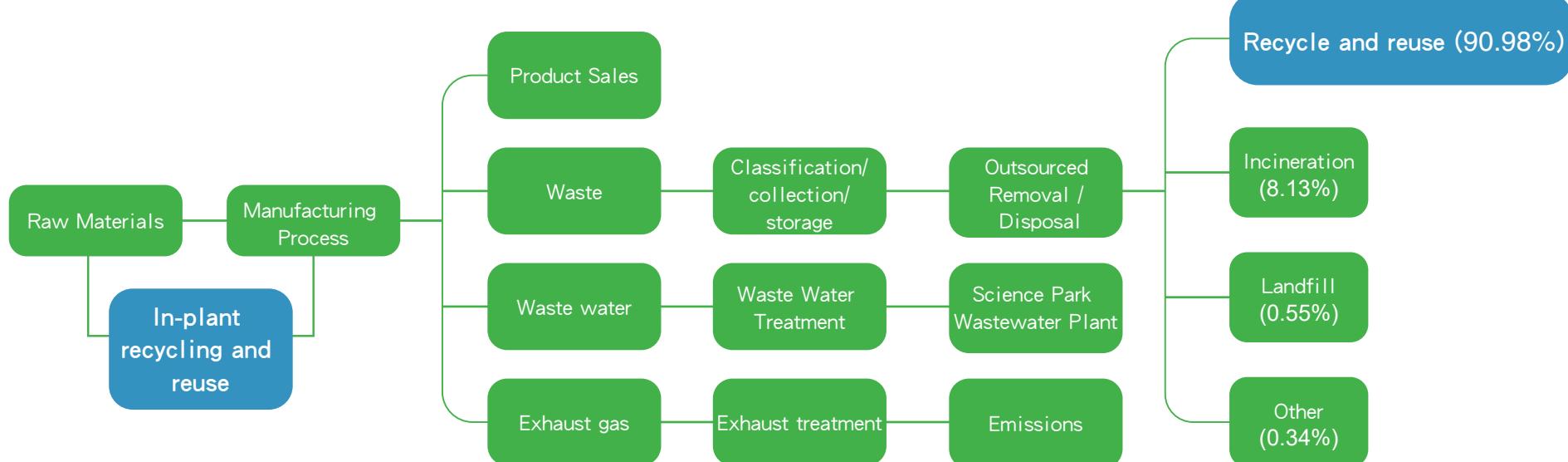
► 3.4 Waste Management

► 3.4.1 Waste Policy and Management

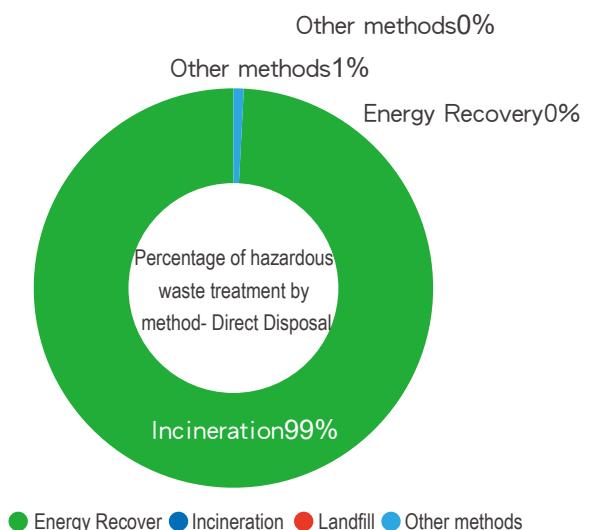
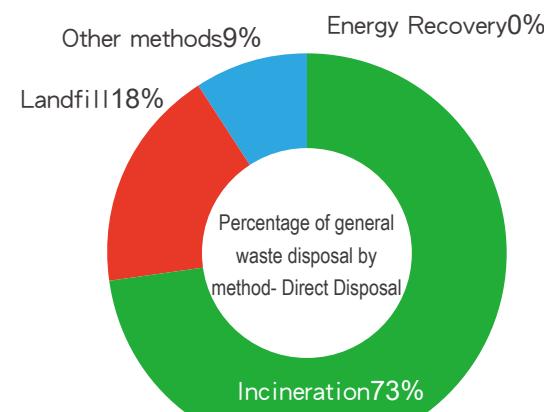
PSMC has dedicated staff at each of its plants to manage the waste in the plants, and the relevant departments of Plant Services, General Affairs and Property Management have also assisted in the implementation of related activities. The waste removal and treatment costs in 2022 were approximately NT\$125 million. The total waste that was generated in 2022 was approximately 17,066 metric tons, and the overall waste generated per unit was approximately 4.5% lower than that in 2021. The total waste recovery rate was 90.98%, achieving the 2022 target of a recovery rate of $\geq 87\%$. The waste landfill rate was 0.55%, also achieving the 2022 target of a landfill rate of $\leq 1\%$. In the future, PSMC will continue to adhere to the management concept of introducing life cycle into waste management, and consistently promote reduction measures. In addition, in conjunction with the monitoring and verification of the replacement of machines, pipelines and valves to reduce waste production, we will achieve overall waste reduction.

Short Term Goals (2023)	Medium Term Goals (2025)	Long Term Goals (2030)
<ul style="list-style-type: none"> • Waste recovery rate $\geq 90\%$ • Waste landfill rate $\leq 0.5\%$ • Proportion of on-site audit and counseling for waste vendors $\geq 85\%$ • Waste reduction cases of 30 cases/year 	<ul style="list-style-type: none"> • Waste recovery rate $\geq 91\%$ • Waste landfill rate $\leq 0.4\%$ • Proportion of on-site audit and counseling for waste vendors $\geq 90\%$ • Provide guidance to waste vendors to obtain ISO14001 certification $\geq 60\%$ • Waste reduction cases of 40 cases/year 	<ul style="list-style-type: none"> • Waste recovery rate $\geq 92\%$ • Waste landfill rate $\leq 0.3\%$ • Provide guidance to waste vendors to obtain ISO14001 certification $\geq 80\%$ • Waste reduction cases of 50 cases/year

Flow chart of waste production



Total waste production



Waste Production

Unit: metric tons

	Item	2019	2020	2021	2022	
Output	Non-hazardous wastes	10,106.15	10,935.79	11,333.56	10,862.04	
	Hazardous wastes	4,888.03	6,246.60	6,454.36	6,204.18	
	Total Output	14,994.18	17,182.38	17,787.91	17,066.22	
Transfer (Recycle/Reuse)	Non-hazardous wastes	9,218.46	10,293.84	10,710.90	10,335.53	
	Hazardous wastes	4,086.96	5,051.87	5,516.50	5,190.71	
	Total Transfer	13,305.42	15,345.71	16,227.40	15,526.24	
Direct Disposal	Non-hazardous wastes	Incineration	693.83	477.67	448.51	
		Energy Recovery	0.00	0.00	0.00	
		Landfill	146.22	137.58	127.42	
		Other methods	47.64	26.70	46.73	
	Hazardous wastes	Incineration	799.48	1,188.50	880.09	
		Energy Recovery	0.00	0.00	0.00	
		Landfill	0.00	0.000	0.00	
		Other methods	1.59	6.23	57.77	
Total Direct Disposal		1,688.76	1,836.50	1,560.54	1,539.98	
Unit waste output (kg/cm ²)		0.01484	0.01400	0.01351	0.0129	
Coverage rate (%)		100	100	100	100	

Note 1: The reuse method is adopted from the EPA reuse channel or commissioned and co-processed reuse channels.

Note 2: Incineration is the waste treated by incineration (Z05) and does not include low calorific value organic waste liquids.

Note 3: Landfill is the waste disposed of by burying in the landfill (X01).

Note 4: Other wastes that are not treated by the above treatment methods (solidification treatment, offshore treatment or intermediate treatment of wastes that does not change the shape of the wastes).

Note 5: The Company is required by law to file the relevant quantity declaration for waste disposal.

► 3.4.2 Waste Reduction Measures

PSMC continues to uphold the spirit of a shared planet, with the concepts of reduction, recycling, and reuse at the core of waste management, and diligently attends to the waste generated on site and evaluates the adequacy of the waste disposal market. The plant's safety, health, and environmental committee compares the reasonableness of waste production (raw material volume vs. waste) every quarter, and completes internal management review procedures in accordance with the ISO 14001 environmental management system, and conducts PDCA effectiveness evaluations on emission management every quarter. In line with our four major objectives: (1) Source reduction, (2) End of process waste reduction, (3) Enhancement of waste reuse value, and (4) Proper disposal and tracking of waste flow, we aim to effectively achieve waste reduction.

Objective 1. Source Reduction

Item	Description
Implement effective classification and save water resources	For waste solvent that cannot be reused in the plant, a machine is designed to divert the flow and a selective valve is installed in the discharge line to switch the discharge line, effectively reducing the discharge of waste solvent by 20% and discharging the remaining wastewater into the wastewater field or recycling system for water recycling. With the correct selective recycling setting, the DI Rinse Time of the machine is recycled to the wastewater recycling system, which also reduces the waste solvent treatment and increases the reuse of water resources. (Please refer to 3.3.3 Wastewater Management for wastewater treatment)
Isopropyl Alcohol (IPA) Concentration Reuse	In order to reduce the treatment cost of waste solvents at the end of the tube and reduce the amount of raw materials used, the Company has installed one set of isopropanol (IPA) waste online recycling equipment and one set of waste liquid sorting and collection equipment at Fab 8A to purify the higher concentration of isopropanol (IPA) waste by sorting it into the indirect potable reuse system (IPRS) and returning it to the isopropanol (IPA) supply system for the manufacturing process for reuse. PSMC has saved 181,816L of isopropanol (IPA) raw material usage in 2022, and consequently reduced the raw material usage and the waste solvent treatment amount.
EKC waste liquid reduction	EKC is an organic solvent used in the semiconductor industry. We adjusted the dosage parameters in the manufacturing equipment of Plant 8A by shortening the cleaning seconds to 2 seconds, and at the same time, monitored the water quality of each section at the wastewater end by outsourced Total Toxic Organics (TTO) testing to confirm compliance with the discharge water quality standards. The amount of wastewater discharged from the ELM-C30 instrument to EKC was reduced, after the completion of the test, which reduced the outsourced cleaning cost; the actual amount of wastewater was reduced by 25% and the cleaning cost savings were NT\$670,000.

Upgrade the equipment of filter	The equipment of the P3 plant used the original filter and was replaced with a new type after evaluation. The replacement cycle can be extended to an annual basis, thus achieving the goal of reducing costs and waste generation, which can result in a reduction of 77 kg of waste material generation and a reduction of NT\$1,257,800 in parts cost per year.
Waste Liquid Recovery	Plant 8B's raw material isopropanol (IPA) is continuously equipped with a selective valve in the discharge line to switch the discharge line, effectively reducing the discharge of waste solvent and discharging the remaining wastewater into the wastewater plant or recycling system for water recycling; the organic solvent waste is then purified and concentrated into industrial solvent by the reuse vendor and returned to the market for sale. 138.38T of waste liquid was recovered for value in 2022, with a stable concentration of over 95% and a recovery amount reaching NT\$480,000.
Reduction of waste thermal storage medium	The P1/2 plant has improved and adjusted the thermal storage material for the air pollution control equipment. After evaluation, it can reduce the dust blockage problem, extending the service life from 2~3 months to 6 months, reducing the thermal storage medium replacement and waste production by 50%, and reducing the waste thermal storage medium by approximately 45 tons per year for a total of 5 sets of Regenerative Thermal Oxidizer (RTO).

Objective 2. End of Process Waste Reduction

Item	Description
Ammonia Nitrogen Wastewater Treatment	In our 12-inch fab, we prioritized the environment-friendly approach and included the derivative waste treatment in the evaluation planning of the ammonia nitrogen wastewater treatment system, so we chose the hot air stripping and catalyst treatment method without derivative waste generation to reduce the overall waste output and achieve an ammonia nitrogen reduction rate of 85% or more.
Sludge Waste Reduction	The P3 plant produces hydrofluoric acid waste with a concentration of over 20% due to the characteristics of the process machine. In order to reduce the environmental pollution caused by the treatment of highly concentrated waste and to avoid wasting available resources, a recycling system was set up and collected in a specialized manner after discussion with the on-site units. A licensed vendor was commissioned to recycle and reuse the highly concentrated hydrofluoric acid waste to produce a fluoride flux substitute. In addition to improving the reuse rate of the waste in the plant, this can also achieve the benefit of sludge reduction.
Convert replacement materials into refractory materials	Considering an eco-friendly environment and resource recycling, starting from 2022, the zeolite rotor system of the P3 plant will be replaced and about 13.51 tons of zeolite and thermal storage bricks were produced, all of which were 100% entrusted to legal manufacturers to make refractory materials and particles for controlled low-strength materials. Not only does this enhance the reuse rate of waste in the plant, but it also reduces the overall landfill rate.

Objective 3. Enhancement of Waste Reuse Value

The waste generated by the Company mainly consists of waste solvents, waste acids and sludge. By strengthening the front-end sorting, continuously improving the value of waste, and cooperating with manufacturers to conduct recycling feasibility assessments, we can ensure the safe disposal of back-end products. The actual reuse rate was increased to 90.98% in 2022, which met the short term objective set by the Company. After the completion of the company's consolidation in 2019, some of the waste from the 8-inch plant was also gradually introduced into the recycling process, so the company's overall recycling rate will continue to increase.

2022 Waste Recycling Rate and Reuse Methods

Types of Waste	Recycling rate	Reuse Method
Empty barrel containers	100%	Recycled and reused by suppliers, cleaned and crushed by manufacturers and made into plastic and glass materials
Sulfuric acid waste	100%	The acid is recycled in the plant for use in air conditioning and water treatment, and then purified by the manufacturer to produce industrial-grade sulfuric acid.
Copper sulfate waste	100%	Refined into copper sulfate powder by the manufacturer
Activated carbon waste	100%	Regenerated by the manufacturer for secondary use after desorption
Inorganic sludge	100%	Recycled by manufacturers and made into artificial stone granules, alternative raw materials for cement, artificial fluorite
Phosphoric acid waste	100%	Purified and reprocessed into industrial grade phosphoric acid by the manufacturer
Slurry residue	100%	Potassium silicate raw material is produced by the manufacturer after dosing.
Tetramethyl ammonium sulfate waste	100%	Recycled by the manufacturers into tetramethyl ammonium hydroxide (TMAH) for use in panel factories
Diluents waste	100%	Purified and remanufactured into optoelectronic cleaning fluid (EBR)/paint material by the manufacturer
Ammonium sulfate waste	100%	Purified and reconstituted into solid ammonium sulfate by the manufacturer
Waste mercury lamps	100%	Dismantled and refined for reuse by the manufacturers
Hydrofluoric acid waste	100%	Remanufactured into fluorite for use by the manufacturers
Ammonium fluoride	100%	Remanufactured into fluorite for use by the manufacturers

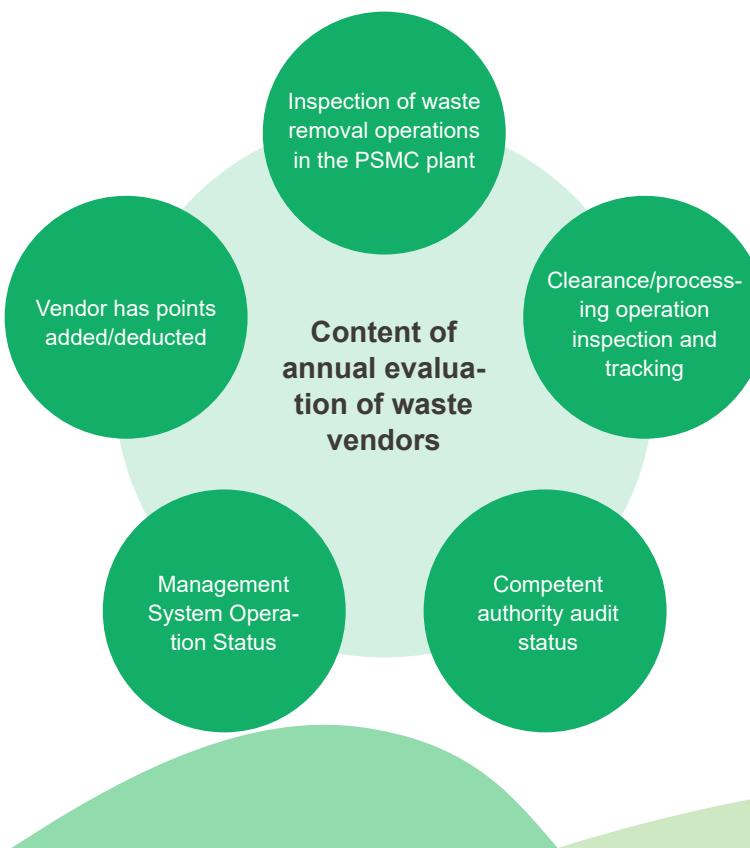
Objective 4. Proper Disposal and Tracking of Waste Flow

PSMC attaches great importance to environmental protection, and the waste generated is categorized according to type and disposal method, and is cleaned up and reused by qualified waste vendors; strict requirements are met for waste cleaning in accordance with the Waste Disposal Act and international regulations, among which the nickel-cadmium batteries used in the DC chargers and the SUPS systems at each plant needed to be replaced every 3-4 years. Therefore, about 8.809 metric tons were produced in 2022, accounting for 0.0516% of the total waste, which will be shipped by sea to advanced countries for recycling in accordance with the Basel Convention.

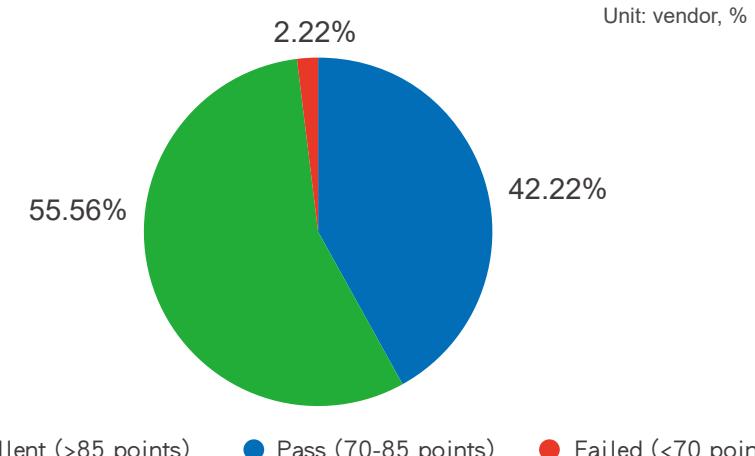
► 3.4.3 Waste Vendor Management

Every year, PSMC draws up a comprehensive waste vendor audit plan, coordinates with industry associations and the in-house audit schedule to pay regular visits to the industrial waste removal and disposal businesses, to ensure that compliance with the laws and regulations and the legality of proper disposal are the primary objectives of the audits. In 2022, PSMC audited a total of 47 waste vendors (including industry associations), and found a total of 60 cases of deficiencies which required improvements. All of them were tracked and improved by opening audit reports through the company's E-Auditing system, and vendors were requested to strengthen the implementation of environmental safety and health/fire safety regulations to avoid the risk of violations.

In addition to conducting regular audits of waste vendors and planning the annual evaluation of waste vendors at the end of each year, the scope of the evaluation is divided into five categories of operation management.



Evaluation results of waste treatment plants



As a result of the score analysis, 19 vendors qualified as excellent vendors in 2022, which accounted for 42% (85 points or higher), 25 vendors met the qualifications, which accounted for 55% (70~85 points), and 1 vendor was unqualified (less than 70 points); the results of the annual evaluation are provided as a reference for the procurement department to determine the purchase allocation for the following year.

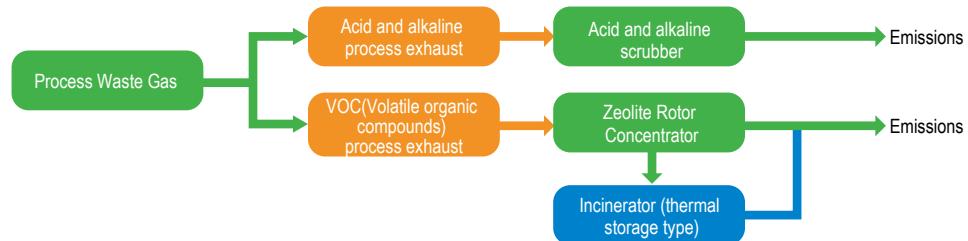
In order to ensure that the overall process and flow of waste disposal and reuse are well documented and ready for effective inspection at all times, and to ensure that no deliberate violation of laws or pollution of the environment occurs, PSMC signed the TSIA Convention for Waste Disposal and Reuse by High-Tech Industries initiated by the Taiwan Semiconductor Industry Association. The company continues to cooperate with the Association to implement the Waste Disposal Vendor Counseling and Evaluation Program and to appoint a third party to conduct source-side audits of waste disposal companies to confirm that the management operations meet the requirements of the Self-Regulation Convention. The Company has always complied with environmental protection laws and regulations, and the primary goal of environmental protection work at each plant is to reduce pollution emissions. In recent years, the Company has not suffered any losses due to environmental pollution incidents and has not experienced any disputes due to pollution related incidents since its establishment.

► 3.5 Air Pollution Emissions Management

► 3.5.1 Air Pollution Prevention and Control Policy

In order to maintain the environmental quality, PSMC strictly controls the emission of pollutants and has complied with the regulatory standards over the years. The air pollutants in the semiconductor manufacturing industry are divided into two categories: acid-base and volatile organic gases, which are discharged after treatment of acid-base exhausts by wet scrubber, and organic exhausts are discharged after adsorption and concentration by zeolite concentrator rotor and incineration by burner. The pollution prevention is carried out using the best feasible technology, and the content of pollutants discharged meets or exceeds the legal requirements.

Flow chart of exhaust gas treatment



Acid and alkaline exhaust gas treatment

The first stage: the local scrubber equipment is set up at the end of the machine to treat the toxic, flammable and fluorinated greenhouse gases (FG).

The second stage: the gases are then discharged to the central scrubber system on the back end and then discharged into the atmosphere through the discharge pipe.



Acid and alkaline exhaust gas treatment facility



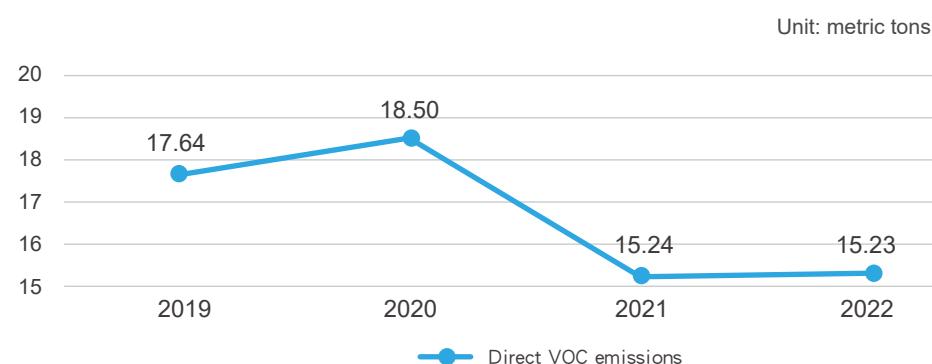
Volatile organic compounds exhaust gas treatment facility

Volatile organic compounds exhaust gas treatment

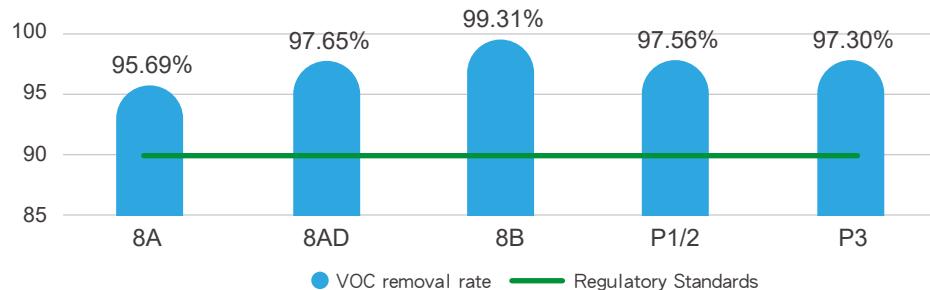
Volatile organic compounds exhaust (Solvent Exhaust) is discharged based on "low-temperature adsorption and high-temperature desorption" through the zeolite rotor equipment of volatile organic exhaust gas.

The zeolite rotor processing equipment is set up in the volatile organic exhaust gas system at all of the Company's plants. Each plant is committed to continuously improve the treatment efficiency of the prevention equipment, 8A, P1/2 plant and P3 plant also completed a set of prevention equipment, so that the removal rate can be more effectively controlled. In 2022, PSMC's overall volatile organic compounds (VOC) emissions removal rate has reached an average of 97.43%, better than the Best Control Technology Conditions for semiconductor manufacturing processes ($\geq 92\%$) of the "Best Available Control Technology for Stationary Pollution Sources". In addition, the company's zeolite concentrator rotor system reduction rate is also increasing year by year, striving to strengthen pollution prevention.

Directly emitted volatile organic compounds (VOC) emissions



Volatile Organic Compounds (VOC) removal rate of each plant



In addition, according to the emission coefficients of sulfur oxides (SO_x) and nitrogen oxides (NO_x) set by the Environmental Protection Administration of the Executive Yuan for the semiconductor industry, the emissions of sulfur oxides (SO_x) and nitrogen oxides (NO_x) for PSMC were estimated to be 198.06 metric tons and 4226.21 metric tons, respectively, in 2022.

► 3.5.2 Air Pollution Management Measures

In order to effectively manage air pollution emissions, PSMC has implemented the ISO 14001 environmental management system with the goal of continuously reducing pollutant emissions and refining the best available technology. In addition to taking measures to enhance the air pollution prevention equipment in the plant against possible pollutants, we are also working together with other companies in the Science Park to assess relevant air pollution issues, and to evaluate from time to time whether to add or improve prevention equipment for the production process, and to improve the perception of related issues, such as the improvement of odor and white smoke. The related improvement projects will be carried out in accordance with the schedule, such as Local Scrubber (L/S) operation optimization and processing efficiency verification, Central Scrubber (C/S) processing efficiency verification, efficiency improvement, prevention equipment addition or replacement, and white smoke improvement. The air pollution improvement projects and results in 2022 are as follows:

Fab	Improvement Projects	Improve Benefits
P1/2	A308 Gas Burner Leakage Repair	Reduce VOC emissions by 0.0012 tons per year
P1/2	Turret Maintenance (Turret Tilt and Airtightness Improvement)	Reduce VOC emissions by 0.097 tons per year
P3	VOC#3 Zeolite Rotor Replacement	Rotor efficiency rate increased to 99% from 98%

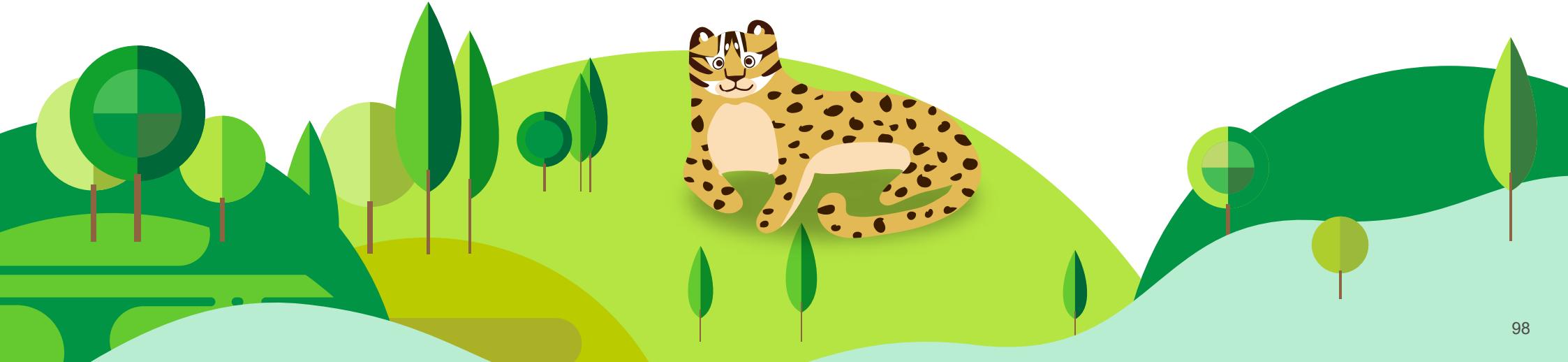


In order to measure the benefits of investment in environmental protection, PSMC calculates the return on environmental investment annually and sets a target of 6% or more. The Company's environmental rate of return for 2022 was 6.0%, covering 100% of its locations. The return on environmental investment has been on an upward trend in recent years, but in 2022, due to the preparation for the operation of Tongluo plant and the continued tightening of environmental emission standards, the return on environmental-related facilities and operating costs will gradually increase, resulting in a slight decrease in the return on investment.

Unit: TWD(NT\$)

Item	2019	2020	2021	2022
Capital Investment	268,534,230	417,001,265	206,513,454	229,373,276
Operating Expenses	497,048,990	517,151,715	496,423,956	637,849,901
Total expenses (= capital investment + operating expenses)	765,583,220	934,152,980	702,937,410	867,223,177
Cost savings, cost avoidance, income, tax incentives, etc.	61,418,153 ^註	58,411,271	53,945,581	52,385,332
ROI	8.0%	6.3%	7.7%	6.0%

Note: In 2019, in response to climate change-related issues, we accelerated investments in energy-saving related facilities, so the cost of savings increased significantly.



► 3.6 Biodiversity Management

In the course of its industrial development, PSMC continues to make efforts to protect and maintain biodiversity. In response to international concerns about biodiversity and forest conservation, we have formulated the “PSMC Biodiversity Policy” to demonstrate our commitment to the conservation of the ecological environment through the monitoring and promotion of corporate sustainable governance.

Biodiversity and Non-Deforestation Commitment

PSMC is committed to maintaining biodiversity in accordance with SDG15, with ecosystem protection as the starting point, and calling on our supply chain partners to support biodiversity preservation and forest conservation to promote the well-being of mankind and the planet in response to the environmental and ecological challenges posed by climate change.

Biodiversity and Non-Deforestation Policy

- Avoid establishing or operating plants in the vicinity of areas of global biodiversity and/or of national importance
- Avoid operating related activities that could destroy protected forests and organisms
- If operational activities touch on biodiversity and ecological reserves, actions must be taken to eliminate, mitigate, offset and restore the richness and variability of biodiversity.
- According to the characteristics of the operating site and the nearby ecosystem, priority is given to measures that can help mitigate or adapt to climate change, and the introduction of biodiversity enhancement practices, as well as attention to ecological indicators monitoring and maintenance.
- Comply with international and local forest-related laws or specific regulations, and conserve forests based on the principle of zero net logging.
- Actively pursue conservation and sustainable use in response to the Convention on Biological Diversity signed by the United Nations Environment Programme
- Bringing together the upstream and downstream value chain and working with suppliers and external stakeholders to support and practice biodiversity conservation
- Actively promote the concept of biodiversity, raise public awareness of ecological conservation, and promote ecological conservation actions.

Biodiversity Conservation Initiative

The Company's P5 Tongluo Plant (the total floor area of the first phase is estimated to be 189,379.81m²) is currently under construction at the Tongluo site of the Hsinchu Science Park, and since the Tongluo site of the Hsinchu Science Park is one of the important habitats of plants and animals in the green network of national ecological conservation, the conservation of the leopard cat is especially of the utmost concern. Therefore, in order to maintain PSMC's commitment to biodiversity and environmental and ecological balance, the following management measures are implemented to reduce the impact and influence on the environment and ecology derived from the new plant during the construction period.

Construction equipment (excavators, bulldozers, rollers) must be equipped with smoke filters at a rate of 50% during the construction period.

Construction vehicles must meet Phase IV or higher emission standards.

More than 50% of the construction vehicles and construction machines should obtain self-management badges.

In addition to implementing the above mentioned environmental protection measures for the construction of the plant, PSMC also carried out a number of actions related to the conservation of the leopard cat during the development of the plant as follows. In addition, we will further cooperate with the competent authorities (the Science Park Administration) on the conservation of the leopard cat in the entire area of the Tongluo site, such as the creation of animal-friendly environmental facilities, e.g. noise equipment, which will increase the noise level and make wild animals more alert when crossing the area; as well as the addition of ecological corridors to link the ecological habitats within the site; at the same time, we will keep track of the relevant ecological monitoring to ensure the maintenance of the environment and ecology around the base and create a friendly and co-prosperous environment between the PSMC plant and the surrounding ecology.

The conservation of the leopard

Multi-layer planting of native species is used at the plant, and herbicides, rodenticides and traps are prohibited.

Complete installation of fences and overflow dikes in the construction area

Adding warning signs on the roads around the new construction area to remind people slow down, reducing the chance of injuring animals and road kill

Ensure proper control and disposal of food compost to reduce food sources for stray cats and dogs

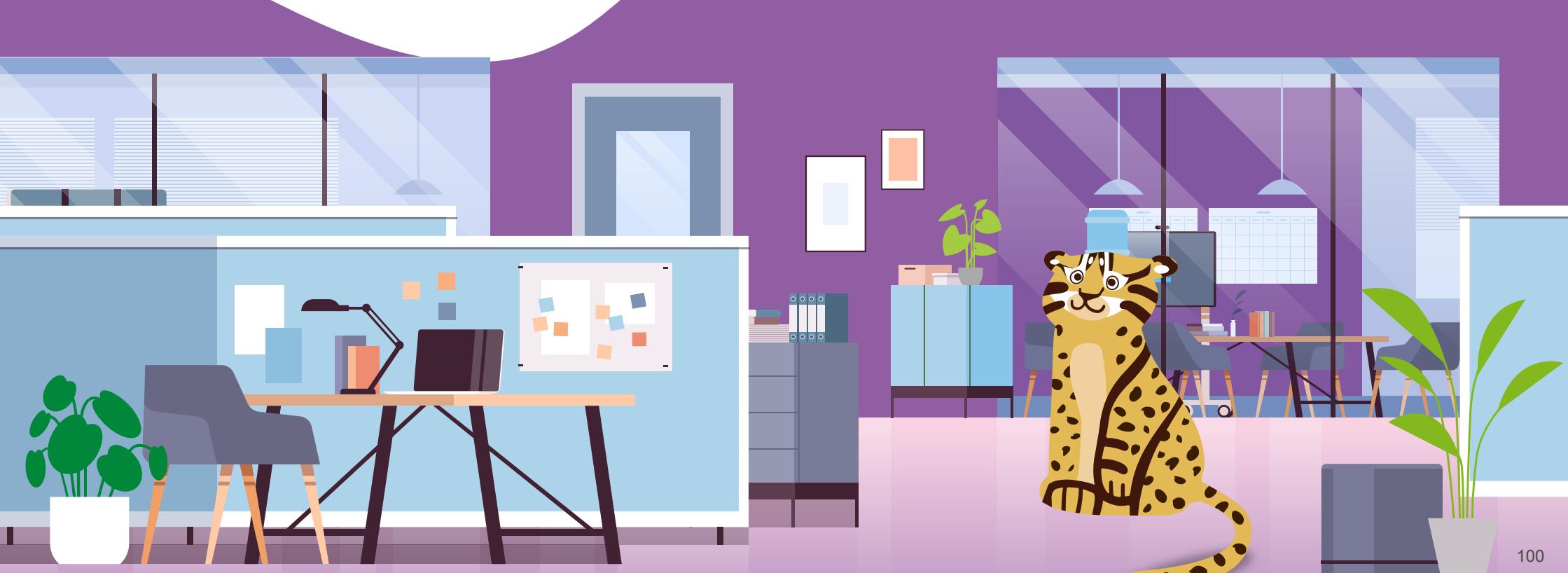
Understanding the results of biodiversity surveys and monitoring results conducted by the competent authorities around the Tongluo site

In addition to complying with government regulations, PSMC also aims for sustainable environmental development and actively participates in environmental and ecological conservation activities. In 2022, PSMC held activities such as the adoption of the Nanliao Fishscale Ladder Beach in Hsinchu City, the introduction of ecological monitoring at the Tongluo site, lectures on the conservation of the leopard cats and ecological conservation, and a campus drawing contest for animal conservation in cooperation with the nearby Hsinchu County Zhudong Junior High School. Please refer to [5.1.2 Environmental Conservation for more details](#).

4 Collaborative Sustainability

Talent

- 4.1 Talent Attraction and Retention
- 4.2 Talent Nurturing and Development
- 4.3 Human Rights
- 4.4 Occupational Health and Safety



► Collaborative Sustainability - Talent

Employees are a critical capital for the company's sustainable development and a cornerstone for the company's continuous innovation and breakthrough. PSMC provides competitive salary and benefits to protect the basic human rights for our employees. At the same time, we provide a robust system of education and training, performance appraisal and labor communication to help our employees develop their talents in an environment with a well-defined system. In addition to caring for the career development of our employees, we are also committed to building a safe and secure workplace environment through a comprehensive occupational safety and health risk identification process and a health care system to ensure the safety of our employees.



**Talent
Attraction and
Retention**



**Talent
Nurturing and
Development**



**Human
Rights**



**Occupational
Health and
Safety**

Corresponding United Nations Sustainable Development Goals (SDGs)



Corresponding Material Topics



**Talent Attraction and
Retention**



**Occupational Health
and Safety**

Material Topics GRI Standards

GRI 401 : Employment

GRI 403 : Occupational Health and Safety

GRI 405 : Diversity and Equal Opportunity

Stakeholder who have priority reading

Employees, Contractors

► 4.1 Talent Attraction and Retention

In compliance with local laws and regulations, PSMC is committed to protecting employee rights, personal privacy, prohibiting inappropriate discrimination and sexual harassment, and providing an equal employment opportunity and environment. The recruitment policy is diverse, equal, and inclusive, and the selection of personnel is based solely on their professional ability and suitability for the position, with no differential treatment based on gender, age, race, nationality, marital status, religion, physical or mental disability, political affiliation, or gender orientation. We have clear rules and regulations for promotion, training, employee benefits and performance appraisal, to ensure that every employee enjoys equal opportunities and treatment.

In terms of recruiting channels, the Company has adopted multiple recruiting channels. In addition to continuing to participate in the semiconductor academy program at top universities, the Company has also expanded its close interaction with universities to establish a comprehensive talent cultivation mechanism in an effort to address the talent gap in the semiconductor industry. In addition to actively participating in large-scale recruitment activities such as campus recruitment and various job fairs, we also publish recruitment-related information through online job announcements on social media to increase exposure. Interviews are conducted in both physical and video formats to ensure that annual recruitment targets are effectively met.

► 4.1.1 Diversified Workforce Composition

As of the end of 2022, there were 8,150 regular employees at PSMC, all of whom are permanently employed full-time employees, and zero employees with non-guaranteed hours; the average age was 39 years old and the average length of service was 10 years, which helped to support the company's rapid growth and maintain its competitiveness. The total number of 7,448 regular employees was significantly higher in 2022 than in 2021 due to the new plant and production line expansion. In terms of non-regular employees, 27 new interns were recruited in line with the pre-recruitment and internship system that was implemented in 2022 to help new graduates transition smoothly into the workplace. Meanwhile, in order to satisfy the company's operational needs, a total of 8,805 employees were contracted to take on the responsibility of providing group catering, environmental cleaning, security services, machine equipment maintenance, and plant facilities repair or expansion.

In order to realize the policy of talent diversity and to create a diverse, equal and co-prosperous workplace environment, the Company employs 14 employees with indigenous status and 52 employees with physical and/or mental disabilities, which is in line with the government's ratio of hiring people with physical and/or mental disabilities. In terms of employee nationality distribution, 94.87% of the employees are of Taiwanese nationality and 5.13% are of foreign nationality. Under the Group's global expansion plan, we will continue to increase the proportion of foreign employees in the future, with the aim of enabling more foreign employees to bring their strengths and influence to bear in their workplace through cultural and professional exchanges across nationalities and enhancing overall operational efficiency.

Workforce Composition Statistics (by Employment Type)

Employment Type	Category	Number of People	Percentage of total employees (%)
Regular Employees	Female	3,146	38.44%
	Male	5,004	61.14%
	Total	8,150	99.58%
Temporary Staff	Female	17	0.21%
	Male	17	0.21%
	Total	34	0.42%

Workforce Composition Statistics (based on permanent employees category)

Permanent Staff Category	Type	Number of People	Percentage of total employees (%)
Gender	Female	3,146	38.60%
	Male	5,004	61.40%
Management Level	Non-managerial general employees	7,215	88.53%
	Junior Management Level	391	4.80%
	Middle Management Level	522	6.40%
Nationality	Senior Management Level	22	0.27%
	Taiwan	7,732	94.87%
	The Philippines	385	4.73%
Age	Japan	15	0.18%
	Others	18	0.22%
	Under 30 years old	1,603	19.67%
	30~50 years old	6,045	74.17%
	older than 50 years old	502	6.16%

Note 1: Junior management level: team leaders or supervisors (excluding technical/project leaders/supervisors), middle management level: department and division level heads/supervisors, senior management level: assistant vice president/director level or above.

Note 2: The percentage of permanent employees of each country at the management level is 98.95% from Taiwan, 0.86% from Japan, and 0.19% from other countries.

Distribution of Female Workers

PSMC values the promotion and development of female employees, but due to the nature of the semiconductor industry, the majority of the company's management and professional engineering staff are male, while the majority of the technical and administrative staff are female. To increase women's participation in decision making, the Company is committed to increasing women's willingness to take on supervisory positions and creating opportunities for advancement through educational training and topical seminars, and is aspiring to have more than 15% of female executives (including junior, mid-level and senior management positions) by 2025.

Category	Female		Male	
	Number of People	As a percentage of this category	Number of People	As a percentage of this category
Management Level	122	13.05%	813	85.95%
Junior Management Level	52	13.30%	339	86.70%
Senior Management Level	1	4.55%	21	95.45%
Revenue Generation Related Unit Management	97	11.07%	779	88.93%
Number of employees in science, technology, engineering, and mathematics (STEM) related positions	1,147	20.21%	4,528	79.79%

Note: The junior management level includes team leaders and supervisors (excluding technical/projects leaders and supervisors), and the senior management level includes assistant vice president level or above.

► 4.1.2 New and Departed Employees

New Hire Overview

The total number of new employees was 1,397 in 2022 in response to the demand for manpower due to the construction of the P5 plant and the expansion of production capacity, focusing on talents in the fields of equipment, manufacturing process, plant operations and R&D. It also included the younger generation, foreign blue-collar and white-collar workers. The average recruitment cost per full-time employee was NT\$6,853.

Type	Fiscal Year	2019	2020	2021	2022
Number of new employees		546	964	974	1,397
New Hire Rate		7.94%	13.44%	13.08%	17.14%
Average Cost of Recruitment (NTD\$)		6,338	10,537	7,317	6,853

Note 1: New hire rate = Number of new employees / Total number of employees at the end of the year.

Note 2: Average Cost of Recruitment = Cost of Hiring New Personnel for the Year / Number of New Employees.



Statistics of New Permanent Employees

Category	Type	2019		2020		2021		2022	
		Number of People	Percentage						
Gender	Female	191	34.98%	340	35.27%	324	33.26%	503	36.01%
	Male	355	65.02%	624	64.73%	650	66.74%	894	63.99%
Age	Under 30 Years Old	299	54.76%	612	63.49%	588	60.37%	830	59.41%
	30~50 Years Old	238	43.59%	346	35.89%	375	38.50%	560	40.09%
Management Level	Older than 50 Years Old	9	1.65%	6	0.62%	11	1.13%	7	0.50%
	Non Management Level	532	97.44%	953	98.86%	955	98.05%	1,383	99.28%
Nationality	Junior	0	0.00%	1	0.10%	18	1.85%	5	0.07%
	Middle	10	1.83%	9	0.93%	1	0.10%	9	0.64%
	Senior	4	0.73%	1	0.10%	0	0.00%	0	0.00%
	Taiwan	509	93.22%	896	92.95%	937	96.20%	1,235	88.40%
	The Philippines	34	6.23%	64	6.63%	35	3.60%	150	10.74%
	Japan	2	0.37%	2	0.21%	1	0.10%	0	0.00%
	Others	1	0.18%	2	0.21%	1	0.00%	12	0.86%

Employee Departure and Internal Rotation

The Company has been tracking employee turnover for a long period of time. Through the analysis of turnover rates, the main reasons for employee turnover are a combination of factors such as salary and benefits, working environment and personal career development considerations. In response to the reasons for employee turnover, the Company has formulated various plans to address the situation. The turnover rate and voluntary turnover rate for 2022 were 8.53% and 8.42%, a significant decrease compared to 2021, which shows that the implementation of the workplace environment improvement plan is effective. In addition, when the Human Resources Department receives an application for resignation from an employee, it will first try to understand the specific reasons for the employee's resignation and attempt to adjust the employee's job content, department or work location based on the employee's expertise and experience, so as to achieve the goal of talent retention by providing internal rotation opportunities.

The Company has a well-developed internal rotation mechanism, in which the hiring unit proposes internal recruitment requirements, the HR unit announces the recruitment information and opens the application for employees, and conducts preliminary assessment after the announcement. The HR unit will then send the application form to the applicant's original unit and the hiring unit for approval if the applicant meets the recruitment requirements, and the transfer can be made only after both parties have agreed and approved the application. In addition, in accordance with the company's operational and organizational needs, a staff member can also be transferred after the new unit submits an application and requests the signatures from the original unit or the relevant responsible supervising authority.

Category \ Fiscal Year	2019	2020	2021	2022
Number of Departed Employees	478	668	700	695
Turnover Rate	6.90%	9.30%	9.40%	8.53%
Voluntary Turnover Rate	6.90%	9.20%	9.30%	8.42%
Internal Rotation Rate	50.80%	34.20%	42.50%	38.40%

Note 1: The number of departed employees include those who left voluntarily or by dismissal, as well as those who retired and stayed without pay.

Note 2: Turnover rate = Number of employees who left the company / Total number of employees at the end of the year.

Statistics on Departed Permanent Employees

Category	Type	2019		2020		2021		2022	
		Number of People	Percentage						
Gender	Female	192	40.17%	286	42.81%	237	33.86%	263	37.84%
	Male	286	59.83%	382	57.19%	463	66.14%	432	62.16%
Age	Under 30 Years Old	212	44.35%	259	38.77%	336	48.00%	256	36.83%
	30~50 Years Old	257	53.77%	394	58.98%	345	49.29%	413	59.43%
	Older than 50 Years Old	9	1.88%	15	2.25%	19	2.71%	26	3.74%
Management Level	Non Management Level	467	97.70%	652	97.60%	682	97.43%	669	96.26%
	Junior	2	0.42%	4	0.60%	5	0.71%	3	0.43%
	Middle	9	1.88%	10	1.50%	10	1.43%	20	2.88%
	Senior	0	0.00%	2	0.30%	3	0.43%	3	0.43%
Nationality	Taiwan	436	91.21%	622	93.11%	672	96.00%	640	92.09%
	The Philippines	42	8.79%	44	6.59%	27	3.86%	53	7.63%
	Japan	0	0.00%	0	0.00%	1	0.14%	1	0.14%
	Others	0	0.00%	2	0.30%	0	0.00%	1	0.14%

Column

Pre-employment Internship Program

Talent Recruitment Outpost -

Pre-employment Internship Program for Current Students

The Coronavirus pandemic has changed the lifestyles and work patterns of people around the world over the past three years, bringing far-reaching effects to human society. The emergence of distance learning and home office has led to a surge in demand for electronic peripheral products. Following the rise of global environmental awareness and the consensus of reducing the use of fossil fuels, along with the governments of various countries setting the deadline for the "ban on fossil fuel vehicles", has all contributed to the electric vehicle revolution of major automobile manufacturers worldwide. With the increasing clarity of the international trend and the direction of the industry change, the semiconductor industry will become a key player and create a market of immediate demand for products. As a result, major semiconductor manufacturers are accelerating their plant expansion plans and recruiting talents, resulting in a serious shortage of talents in the semiconductor industry. The phenomenon of sub-replacement fertility in Taiwan in recent years has made the recruitment market even more competitive. As a result, the Pre-employment Internship Program was launched in 2022 to provide internship opportunities for prospective graduates who are willing to join the company. The program allows students to gain early exposure to the workplace, familiarize themselves with the working environment and team atmosphere, understand fab operations, and provide relevant practical training in order to enhance their adaptability in the workplace, while reducing the settling-in period and recruiting costs for the Company.

The program started in April of 2022 with a semester-based internship. A total of 13 students participated in the internship program in April of 2022, and 12 of them were qualified for pre-employment during the internship due to their excellent performance. 14 students participated in the pre-employment summer internship program from July to August, and 11 of them were able to participate in the internship portion and received pre-employment offers by the company, while 3 others were not able to participate in the internship portion, but were still qualified for pre-employment after considering their academic experience. A total of 30 students were pre-employed in 2022, of which five of them already completed their on-boarding process by the end of 2022.

In order to expand the effectiveness of the program, the Company organized pre-employment internship orientation sessions at relevant departments of universities and colleges from September to December 2022. A total of 25 Pre-Employment Internship Program Information Sessions were held at 19 schools, including National Taiwan Normal University, National Taiwan University of Science and Technology, National Chung Cheng University, and Yuan Ze University, attracting more than 1,600 students to apply for the program and more than 250 students in their junior year or above to apply for engineering internship positions. The accepted interns will be placed in related departments from April to August 2023 to start their internship.

Performance Category	Implementation Results in 2022
Number of Participants in the Program	30
Percentage of People That Qualified for Permanent Positions (%)	87%
Actual Job Conversion Rate (%)	19%
Amount of Scholarship Awarded (NTD\$)	100,000



Feng Chia University Pre-employment Internship Orientation



Changhua Normal University Pre-employment Internship Orientation



Group photo of interns

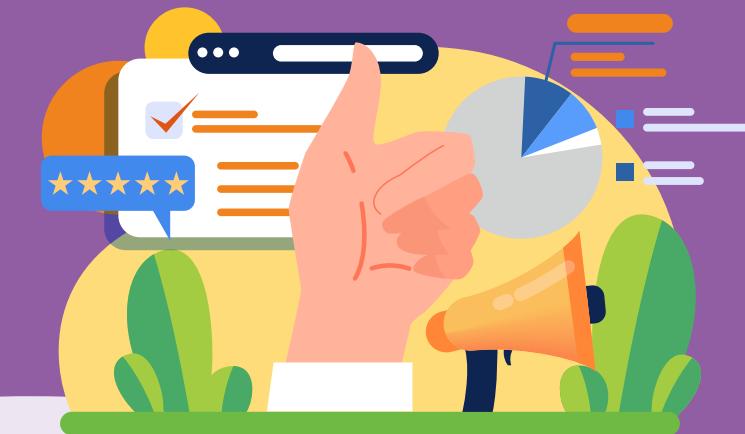
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Semiconductor Academy Program

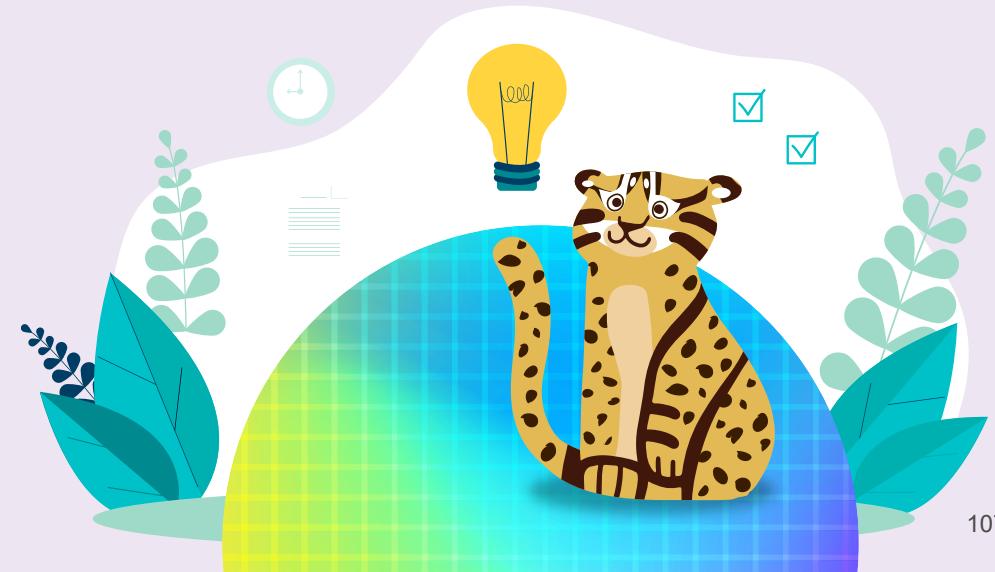
Top Talent Incubator - Semiconductor Academy Program

With the stability of chip supply being a strategic issue in the international arena, governments are actively establishing semiconductor supply chains in their countries, making the semiconductor industry a battleground for all players. In order to continue to expand Taiwan's leading edge in semiconductor technology, the Executive Yuan has passed the National Key Fields Industry-University Cooperation and Skilled Personnel Training legislative act and the Higher Education Sandbox Innovation Act, and will spend NT\$9.6 billion over 12 years to establish the Semiconductor Academy at National Taiwan University, National Cheng Kung University, National Tsing Hua University, and National Yang Ming Chiao Tung University, with the goal of cultivating 400 masters and doctoral graduates in semiconductor-related fields each year.

Now that Taiwan has become a "semiconductor silicon valley", talent development and self-sufficiency will be the key to maintaining Taiwan's leading position in the semiconductor field. Recognizing the importance and urgency of talent cultivation, PSMC has become one of the few companies to fully participate and donate to the four major semiconductor colleges in Taiwan, and plans to invest NT\$100 million annually to support the operation of the four universities' semiconductor colleges, hoping to nurture more than 5,000 semiconductor professionals for Taiwan in the next 12 years, and to leverage this opportunity to also recruit more talents to join the company and contribute to Taiwan's semiconductor industry. In 2022, PSMC has signed contracts with National Taiwan University, National Tsing Hua University, National Yang Ming Chiao Tong University, and National Cheng Kung University to collaborate on a total of 46 research projects with the semiconductor colleges of the four universities, with a total investment of over NT\$40 million, and to provide scholarships for outstanding students from the sponsorship fees totaling NT\$7 million this year.



Performance Category	2022 Implementation Results
Number of Collaborative Technology R&D Projects	46
Actual Number of Projects Executed	46
Total Amount of Scholarship Awarded	NT\$7 million



► 4.1.3 Compensation System

The Company's compensation system is based on the principles of fairness and reasonableness, and provides competitive compensation packages, including base salary, allowances, employee cash bonuses, and employee rewards, as well as an incentive bonus plan based on performance and job responsibilities, regardless of race, management level, language, religion, political affiliation, marital status, nationality, place of birth, gender, sexual orientation, age, or group affiliation. The Company's compensation and benefits system is formulated by the Compensation Committee, taking into account factors such as the Company's operational performance, industry development trends, the overall economy, and sustainable corporate development. The compensation plan is reviewed and adjusted annually on a rolling basis, and distribution recommendations are prepared and submitted to the Board of Directors for consideration to ensure that the Company's overall compensation structure remains competitive in the industry.

In addition to fixed compensations such as base salary and allowances, PSMC also provides additional various compensations such as employee incentive bonus, retention bonus, and employee stock option certificates. The amount of payment is determined by individual performances, the company's current year profits, and the achievement rate of each unit's targets, and does not vary by gender, for the purposes of rewarding employees for their excellent performance and sharing the results of management, as well as encouraging employees to actively strive for performance through the incentive mechanism to create a positive competitive working environment. In 2022, the average salary of full-time employees not in supervisory positions was NT\$1,677,000, an increase of 11.73% compared to 2021, and the median salary of full-time employees not in supervisory positions was NT\$1,453,000, an increase of 10.49% compared to 2021. The ratio of the annual compensation of the Company's highest individual to the annual median compensation of all employees (excluding the highest paid individual) was 183 times, and the ratio of the percentage increase in the annual compensation of the highest individual to the percentage increase in the annual median compensation of all employees (excluding the highest paid individual) was 0.26.

Average, median and variance of salaries for full-time employees not in supervisory positions

Item	Fiscal Year	2021	2022	Difference between 2022 and the previous year
Number of full-time employees		7,357	7,943	586
Average Full-Time Employee Salary (NT\$10,000)		150.1	167.7	17.6
Median Full-Time Employee Salary (NT\$10,000)		131.5	145.3	13.8

Note: The statistics are calculated based on the definition of "employees in supervisory positions" by the Taiwan Stock Exchange, and the data listed above are not in supervisory positions.

The starting salary standards and remuneration conditions for women and men are the same, and they are significantly better than what is regulated by applicable laws and regulations, including minimum wage, working hours, and pension contribution system. The difference in remuneration between women and men in 2022 at PSMC was mainly due to a combination of factors such as position, duties, years of experience and performance, and not due to gender. Overall, the Company provides competitive compensation and benefits to help employees balance career development and family life quality.

Gender Differences in the Mean and Median Employee Compensation and Bonuses

Item	Fiscal Year	2022
Difference in the average salary by gender		15.6%
Difference in the median salary by gender		14.1%
Difference in the average bonus amount by gender		20.1%
Difference in the median bonus amount by gender		19.2%

Note 1: The scope covers indirect employees other than managers.

Note 2: Salary gender difference = (male salary - female salary) / male salary; Bonus gender difference = (male bonus - female bonus) / male bonus.



Retirement Life Security

In accordance with the Labor Standards Act and the Labor Pension Act, there is a retirement plan for all regular employees, and those who have worked for the Company for at least 10 years and are at least 45 years old, and with the sum of the first two items reaching 60, are eligible to apply for retirement. Employees subjected to the Labor Standards Act (also known as the old system) are required to contribute 2% of their monthly salary to the Bank of Taiwan's Labor Retirement Fund Supervisory Committee's special account. If the balance of the special account is not sufficient to pay for workers who are expected to meet the retirement requirements in the following year before the end of the year, the balance must be replenished by the end of March of the following year. Employees subjected to the Labor Pension Act (also known as the New Labor Retirement System) are required to contribute 6% of their monthly wages to the personal pension account established by the Labor Insurance Bureau. For more information on pension liabilities, please refer to the Company's annual report.

► 4.1.4 Employee Benefits and Support Programs

Benefits and Employee Rights

In addition to offering competitive compensation packages, the Human Resources Department and the Employee Welfare Committee (hereinafter referred to as the Welfare Committee) at PSMC have devised a comprehensive employee welfare system, including vacations, insurance, wedding and funeral allowances, maternity benefits, and employee stock option plans, to create a workplace environment where employees can take care of both work and family. In addition, in order to provide employees with the appropriate amount of stress relief to promote physical health despite their busy schedules, the Welfare Committee regularly organizes group activities such as theater performances, arts and culture activities, and family days, extending its care and support to employees' families, and building a sense of belonging and solidarity among the PSMC family.

Item	Details	Employees' Participating in the Retirement Plan
Labor Standards Act Pension (Old System)	Employer: Contribute 2% of monthly salary to workers' retirement reserve fund	100%
Labor Pension Act (New System)	Employer: 6% of employee's monthly salary Workers: 0~6% of monthly salary	100%

Health Care and Life Care	Festivals and Annual Events	Complete Work Environment
<ul style="list-style-type: none"> • In accordance with the government's maternity policy, in addition to the 8 weeks regulated by the law, an additional 2 weeks of postnatal care leave with half pay is granted. • Regular planning of health screenings and health improvement activities to protect and track the physical and mental health of employees, as well as implement workplace stress management • In addition to providing employees with labor insurance and universal health insurance in accordance with the law, we also provide free and self-funded group insurance (including disability, medical, and life) to benefit their spouses and children, so that both employees and their families can be protected • We provide hospitalization, funeral and burial assistance, and emergency loans to help our colleagues cope with the difficult times. • Flexible working arrangements to help employees achieve work-life balance more easily <ul style="list-style-type: none"> -The supervisor of the unit controls the work hours of the employees -With the approval of the unit supervisor, one can apply to work from home. • The establishment of welfare measures such as wedding red envelope, maternity leave, maternity examination leave, maternity subsidy, child care leave without pay, breastfeeding room, and scholarship for children are in place to encourage colleagues to have children. • We have signed special deals with several contracted childcare providers to offer special packages to our colleagues. • We cooperate with many banks to provide preferential loan or deposit programs to meet the capital needs of our employees. 	<ul style="list-style-type: none"> • We organize arts and cultural activities such as family theater, lectures by celebrities and picnic concerts (family day) to provide arts and cultural education and promote parent-child interaction, so that our staff can strike a proper balance between work and leisure life. • A photo contest was held to encourage employees to cultivate diverse interests and to enjoy the exhibition together so that they can appreciate the beauty of the PSMC family and Taiwan. • In order to promote exercise and healthy living, we organized an internal electronic darts competitions and encouraged employees to participate in external sports competitions to learn teamwork and create cohesion among colleagues. • The welfare committee subsidizes the operating funds of clubs to encourage employees to participate in and establish clubs, and to participate in external competitions, so that employees can develop interests and interpersonal relationships outside of work. • We issue gift certificates for the three major holidays, birthday coupons, and important holiday gifts for Labor Day, Mid-Autumn Festival and Christmas, etc to celebrate the festive season with our employees. 	<ul style="list-style-type: none"> • On-site staff restaurants, convenience stores, and cafes • Free transportation to Hsinchu and Miaoli areas, and staff dormitory shuttles • Recreational facilities such as libraries, gymnasiums and other sports halls

Arts and Cultural Events

Family Theatre Appreciation and Celebrity Special Lectures

Each year, the Company organizes a variety of arts and cultural activities, including family theater performances and lectures by celebrities, to bring the arts closer to the lives of employees and cultivate a humanistic atmosphere, and to promote parent-child interaction and learning, and optimize the work-life balance of employees. In 2022, as the pandemic gradually subsided, two adult theater productions were resumed, including two theater productions, which included the Taking Out the Trash by the All People Theater Company and the Magic A-Ma by the Spring River Performing Arts Troupe, reaching a total of 1,900 viewers, where employees and their families spent a warm and wonderful time in a joyful atmosphere.

In addition to the theater, there were four cultural lectures held in 2022, including "Hong Lan - Using Praise to Stimulate Children's Greatness" , "Lai Xianzheng - How to Create Wealth in the Age of Low Profits" , "Zhou Muzi - Controlling Good Emotions and Being Your Own Emotional Coach" , and "Ding Lingjuan - New Abilities in the Workplace in an Era of Change" . These celebrity lecturers not only shared their life experiences and professional knowledge, but also expanded our colleagues' understanding and exchange in various fields.



Ding Linjuan's lecture / Taking Out the Trash family theater by the All People Theater Company

The “Beauty of PSMC Architecture” and “My Happy Moment, I Love Beautiful Taiwan” Photo Contest

In 2022, PSMC held the "Photo Contest for the Beauty of the PSMC Architecture", in which 31 employees participated with 96 entries. The selected and winning entries were exhibited at the Company after the contest, allowing employees to appreciate the beauty of the PSMC family. In addition, to encourage employees to continue to cultivate their interest in photography, a photo contest was held under the theme of "My Happy Moment, I Love Beautiful Taiwan", in which a total of 54 employees participated in the contest with photos of family happiness or ecology related to nature, environmental protection awareness, and care for the environment. A total of 54 pieces of work was submitted for selection, and 23 pieces were selected.



Award-winning work of the Beauty of the PSMC Architecture

Picnic Concert and Christmas Thanksgiving Music Dinner

In 2022, PSMC held its first prairie picnic concert at the Left Bank Water Prairie in Hsinchu, and 2,510 employees signed up for the two rounds of events, where employees brought their families and enjoyed the food booths on a crisp autumn afternoon, and not only could they watch the exciting stage performances, but also arranged games and raffle drawings, as well as designed two small events: a picnic decorating contest and a drawing contest. The picnic was a great opportunity for the whole family to enjoy the fun and joy of the picnic and to enhance their sense of belonging to the PSMC family. In addition, Christmas is also a special time to give thanks. During the 2022 Christmas event, a Christmas gift card from Family Mart was distributed to each employee, and a total of 8,200 employees were given a Christmas gift card, blessing them with a little bit of Christmas happiness.



Diverse Clubs and Sports Events

Club Activities and Ball Games

PSMC encourages its employees to develop their interests and interpersonal relationships outside of work by actively promoting community participation. The Company provides subsidies to the clubs through the Welfare Committee, and the clubs receive additional prizes when they represent the Company in external competitions, thus motivating employees to participate in club activities. In addition to the existing 16 clubs, including the Badminton Club, Billiards Club, Tennis Club, Volleyball Club, Table Tennis Club, Basketball Club, Bowling Club, Softball Club, Rhythm Club, Video Club, Cycling Club, Jogging Club, Healthy Mind Club, Agriculture Club, Language Club, and Philharmonic Club, a new Mountain Climbing Club was established in 2022, which shows the employees' enthusiasm and willingness to participate in clubs are growing year by year. In order to support the concept of a green environment and a friendly earth, 40 members of the Healthy Mind club volunteered to participate in the Guanxinli Rencixin open house activity. The members used the company's waste wood pallets to make planting boards to beautify the local community environment. The proceeds from the activity amounted to NT\$10,000 and were donated to the "Ci Xin Organic Agriculture Development Foundation" to support the environmental development of the local community.

The club competition is not only an incentive for colleagues to participate in the club, but also reinforces the team strength of mutual collaboration and cooperation among colleagues through healthy competition. Therefore, PSMC encourages the clubs to participate in external competitions to actively compete for external honors and take pride in our colleagues. The winners of the 2022 awards are as follows:

Club	Competitive Events	Placement
Basketball Club	2022 Science Park Cup Health Group	Third Place
	Sunrise Cup Charity Basketball Tournament	Second Place
Volleyball Club	2022 Science Park Cup Men's Division	First Place
	2022 Science Park Cup Women's Division	4th Place
Tennis Club	2022 Science Park Cup Women's Division	Third Place
Table Tennis Club	2022 Science Park Cup Men's Division	4th Place
	Zhubei City Mayor's Cup Organization Group	Second Place
Softball Club	SOGO Cup Softball Invitational Tournament	First Place
	Taiwan Cooperative Bank Cup Invitational Softball Tournament (Health Division)	4th Place



PSMC Electronic Darts Competition

In the midst of the pandemic, in order to protect the health of our employees, the internal ball games were halted for three years. During 2022 where the pandemic has been gradually easing up, the Welfare Committee organized an electronic darts tournament to help employees relax and promote the relationship between the departments, with 4 preliminary games and 1 final game held at 4 sites in the PSMC plant, with a total of 121 teams and 1,210 participants. The first ever darts tournament was a very exciting and thrilling event, with a lot of cheering and fanfare in the preliminary and final rounds. The event fostered departmental camaraderie and brought unforgettable moments of joy to the staff.

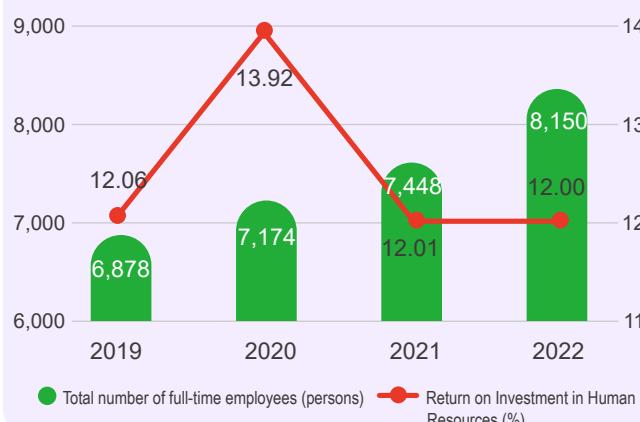


Child Care Leave without Pay and Maternity Benefits

The Company has established a comprehensive child care leave without pay system, and in accordance with the rights and benefits granted to workers under Taiwan's Act of Gender Equality in Employment, all employees who meet the relevant requirements may apply for childcare leave without pay to retain their work rights and ensure that they can maintain a work-family balance; at the same time, the company has also set up a breastfeeding room in accordance with the law, so that female employees can use it at any time during the working period, with pay, depending on their personal situation. In addition, in response to the government's maternity policy, the Company has introduced a new "Maternity Allowance" in July 2022, which provides a subsidy of NT\$20,000 for each newborn baby; a total of 86 applicants and a sum of NT\$1.72 million were paid out as of the end of December 2022. A new "Postnatal Care Leave" was introduced in September 2022 that is superior than the regulatory requirements, which allows female employees to apply for a two-week postnatal care leave after the expiration of the statutory eight-week maternity leave, which makes a total of 10 weeks of paid parental leave, where the postnatal care leave will be granted at half pay for the working days during the postnatal care leave in order to provide more recuperation and care for female employees.

In 2022, the number of employees who were entitled to parental leave was 671, and the actual number of applicants for parental leave was 42. The job reinstatement rate was 61%, and the retention rate was 85%, with both the reinstatement and retention rates showing a stable status. All of our employees who have not returned to work after their leave of absence without pay were women, and all of them left voluntarily due to family care needs and personal career development.

Human Resources Investment Effectiveness



Note: Return on investment in human resources = [operating revenues - (operating expenses - employee salaries and benefits)]/employee salaries and benefits.

Child Care Leave without Pay Statistics

Item	Female	Male	Total
Number of employees entitled to child care leave in 2022	215	456	671
Actual number of employees applying for child care leave in 2022	36	6	42
Number of employees reinstated in 2022	46	5	51
Actual number of employees reinstated in 2022	30	1	31
Actual number of employees reinstated in 2021	23	3	26
Number of employees who are still working 12 months after their reinstatement in 2021	19	3	22
Reinstatement rate	65%	20%	61%
Retention rate	83%	100%	85%

Note 1: Reinstatement rate (%) = (Actual number of staff reinstated in FY2022 / Number of staff to be reinstated in FY2022) * 100%.

Note 2: Retention rate (%) = (Number of employees still working 12 months after reinstatement in FY 2021 / Actual number of employees reinstated in FY 2021) * 100%.

► 4.2 Talent Nurturing and Development

Employees are the capital of sustainable development and the cornerstone of innovation. PSMC spares no effort in creating a comprehensive learning environment, providing comprehensive education and training programs and multiple learning channels, and cultivating the professional knowledge and skills required by employees through systematic training programs. At the same time, we also encourage our employees to maintain independent learning habits while working. Through the establishment of online learning resources and the provision of statutory professional certification examinations and on-the-job training subsidies, we create a work environment for continuous learning and innovation, allowing employees to continuously develop their functions and stimulate their potential, thereby enhancing their performance standards and company operational efficiency.



► 4.2.1 Educational Training Framework

PSMC has established the “Employee Education and Training Program”, which incorporates the PDCA cycle into the education and training development process. At the end of each year, the management of each department will consider the company's vision and management philosophy, medium- and long-term management strategies and the training needs of each unit, and formulate the education and training plan for the following year. The Human Resources Department acts as the executive unit and is responsible for conducting various physical and online education and training activities, as well as tracking the participation of each employee in the training and recording feedback from the courses, which will serve as the direction for refining the education and training plan for the following year.



The education and training system is centered around the three core areas of “Newcomer Orientation Training”, “Functional Training”, and “Knowledge Inspiration”, which are extended into two major categories of training contents for “new associates” and “on-the-job associates”. In order to reduce the adjustment period for new employees, the training content mainly focuses on constructing the basic knowledge of semiconductors, and assisting employees to quickly integrate into the company's operation system and culture through on-the-job training (OJT). In order to meet the company's core philosophy of continuous learning for employees, the vocational training area is divided into three categories: professional, management and general education. Based on the employee's academic background, work style and professional functions, the supervisor and the employee jointly plan and formulate course combinations for different career stages to provide the most timely and appropriate training assistance programs to inspire the employee's long-term goal of lifelong learning and self-development

Three cores of education and training system



New employee orientation training

Courses to enable new employees to quickly understand the company rules and regulations, as well as work safety environment requirements, in order to integrate into the corporate culture.



Functional training

Professional core competency training is planned according to the organizational functions of each unit; management and general knowledge courses are provided with the company's management strategy and organizational hierarchy in line.



Knowledge inspiration

Including on-the-job training and self-development, encourages employees to continue to study and learn, develop their personal potential, and improve their multi-disciplinary skills in a self-growth blueprint.

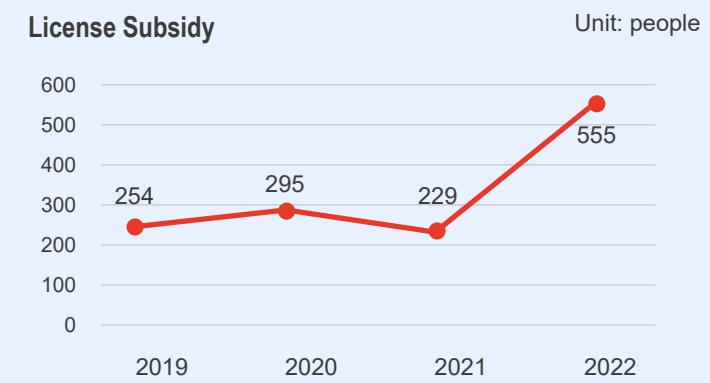
Educational Training Content		
Target	Category	Course Content
New associates	Onboarding Training	Assist employees to understand the company's quality, environmental safety, information security and other regulations and policies, as well as company regulations, benefits and rights that are relevant to them
	Professional Basics	All colleagues are trained to have basic knowledge of semiconductor basic technology, intellectual property rights and relevant business knowledge.
	On the Job Training (OJT)	The head of each department will design the training contents for the new employees in line with their duties, and the departments will evaluate the training to ensure that the employees can quickly grasp the key points of the business.
	Professionals	Provide professional courses in operation technology and administration to improve the professional skills of our staff
	On-the-Job Associates	Provide stage by stage management skills refinement for management/succession to nurture excellent managers and successors
	Managerial	

Employee Development Program

In addition to education and training programs, PSMC plans long-term training programs for technical research and development employees based on the principle of continuous improvement of core functions.

Project Name	Project 1	Project 2
Project Goals and Business Benefits	Quality CIP Continuous Improvement Plan	Six Sigma Engineering Specialist
	Continuous improvement is the only way to achieve sustainable management, and through training and activities, the DNA of continuous improvement is replicated in each employee, inspiring the innovation and enthusiasm of the team. In 2022, we conducted training courses such as KT problem analysis and SPC, and quality training such as 3L5W to strengthen employees' quality awareness of continuous improvement, along with the CIP competition system to reward employees for proposing continuous improvement projects, in order to increase production efficiency, reduce unnecessary process waste, and improve manufacturing quality and productivity.	Through the Six Sigma course and 8D problem solving skill training, we cultivate Six Sigma Black Belt and Green Belt engineering experts, and continue to implement the Six Sigma Yellow Belt Basic Course to cultivate quality awareness, problem analysis and problem solving ability of all engineering staff, and improve product manufacturing yield, production efficiency and product delivery time. Through the implementation of projects to strengthen engineers' problem solving ability and execution, and to cultivate internal experts to pass on their experience, we hope to continuously improve quality and process yields and enhance the overall competitiveness of the company.
Quantitative Impact of Business Benefits	<ul style="list-style-type: none"> 1. Reduce the number of process steps to improve production efficiency 2. Improve process yield 3. Shorten machine inspection time 4. Improve machine and equipment utilization 	<ul style="list-style-type: none"> 1. Cultivate black belt and green belt engineering experts 2. Improve production capacity 3. Reduce product defect rate 4. Reduce production cost 5. Strengthen the quality awareness of all employees
Percentage of full time staff participation	Target: R&D, integration, process, and equipment engineers Percentage: 91.8%	Target: R&D, integration, process, and equipment engineers Percentage: 78.4%

PSMC encourages employees to take relevant professional licenses or qualification examinations and provides full subsidies for application and license fees for those who need to obtain legal licenses; in addition, if employees have the need to obtain higher education, they can apply for it in accordance with the "Regulations for On-the-job Training". A total of 7 colleagues obtained higher education in 2022, most of whom obtained master's degrees; in addition, 555 people applied for and obtained licenses in 2022, and nearly NT\$1.57 million in subsidies were provided.



Flexible and diverse learning formats

Taking into account the differences in work attributes and working hours, and in order to enhance the willingness and effectiveness of learning, PSMC has integrated various training resources inside and outside the company and developed a dedicated training website, so that employees can acquire the most up-to-date professional knowledge, regulatory changes and the latest company decisions through more flexible learning formats and multiple channels. In addition, the online learning platform is also conducive to the company's ability to keep track of employees' learning status and provide timely guidance and support to maximize the effectiveness of their learning.



In 2022, the total number of training hours for employees reached 315,974, with an average of 38.77 hours per employee; annual training-related expenses reached NT\$3,973,136, and the average cost of education and training for employees was NT\$487.50, representing a double-digit increase compared to the previous year. In addition, Pteam, an in-house communication software developed by the company, continues to arrange online training courses and has received positive feedback from employees. The completion rate of the training program (including the E-Learning system) in FY2022 was 94.1%, and a total of 32 in-person standard courses were held, with an average satisfaction rate of 96%.

Education and Training Hours Statistics				
Category	2019	2020	2021	2022
Total training hours (hours)	251,145	237,882	225,420	315,974
Training hours per capita (hours)	36.51	33.16	30.27	38.77

Average training hours by job level				
Category	Total training hours (hours)	Number of employees	Training hours per capita (hours)	
Non-managerial employees	Female	84,978	3,024	28.10
	Male	211,534	4,191	50.47
	Total	296,512	7,215	41.10
Junior Management Level	Female	1,341	52	25.79
	Male	9,627	339	28.40
	Total	10,968	391	28.05
Middle Management Level	Female	1,130	69	16.38
	Male	7,271	453	16.05
	Total	8,401	522	16.09
Senior Management Level	Female	17	1	17.00
	Male	76	21	3.62
	Total	93	22	4.23

Note 1: Management positions refer to supervisors at or above the team or section level (excluding technical/project section chiefs and technical/project assistant managers).

Note 2: The training course hours statistics include the e-Learning system.

Note 3: At the non-management level, the total number of hours of education and training is higher because the majority of engineers are male.

► 4.2.2 Performance Evaluation System

In order to achieve the company's operational goals, explore the potential of employees, and ensure the efficiency of the team's operations, PSMC has established a fair and equitable performance appraisal system in which supervisors at all levels review the performance of employees in their departments, including the achievement of goals and key performance indicators, and the tracking of issues for improvement. All employees, regardless of their rank and gender, will receive the performance evaluation twice a year, except for those who have been on the job for less than three months, who will not be evaluated. The results of the performance evaluation will be used as an important basis for the promotion and compensation of employees. The supervisor will provide counseling and necessary resources to employees with poor performance, and if necessary, adjust their duties according to their condition to ensure that their performance can be improved.

Type of Assessment	Applicable Target	Frequency	Execution Method
Management by objectives	All Employees	Once every six months	At the end of each year, the Company establishes its operational policies and goals for the following year. After each unit has set departmental goals based on the Company's goals, the departmental employees and their direct supervisors jointly set quantitative and specific performance targets as individual performance goals at the beginning of the year, which are then tracked every six months and evaluated by the direct supervisors at the end of the year according to the status of individual performance.
Team-based performance appraisal	All Employees	Once every quarter	In addition to the employee's personal evaluation, the achievement of team goals will also affect the overall employee evaluation results, so as to motivate employees to collaborate with each other and maximize individual and team performance.
Multidimensional performance appraisal	Unit Supervisors	Once a year	In addition to the employee's personal evaluation, the achievement of team goals will also affect the overall employee evaluation results, so as to motivate employees to collaborate with each other and maximize individual and team performance. The annual evaluation is based on the results of the annual Employee Performance Evaluation, which integrates the individual and departmental performance achievement, contribution to the company's overall goals, and other factors.
Agile conversations	All employees	Once every quarter/ immediately	The president and employees have quarterly conversations, and department heads communicate with employees about their work performance in order to review and track the progress of employee performance and work status. We also provide appropriate feedback to employees on work-related problems, and give praise and encouragement to employees when they perform well or make significant progress. If the employee is not in good working condition, the supervisor will also provide necessary counseling and support immediately.

► 4.2.3 Labor Relations and Communication

Open Communication Channels

PSMC has long been concerned about and respects the diverse voices of its employees, and believes that good labor relations can optimize the corporate culture and organizational atmosphere and promote harmonious labor relations. In order to protect and safeguard the rights and interests of our employees, we not only actively develop various one-way advocacy and two-way communication channels, but also hold regular labor-management meetings to discuss issues related to the rights and interests of our employees, such as working hours, leave and benefits, or any opinions and concerns related to the company's operations.

In order to immediately direct them to the correct channel, we have established an Employee Relations Department in the Human Resources Division to provide employees with the most appropriate assistance and consultation referral services in the shortest possible time, and to provide information on mental health, emotional stress management, and communication skills from time to time to strengthen mental health awareness. In addition, employees are entitled to five complimentary psychological consultations per year to achieve the company's core goal of talent retention.

Since the establishment of the Company, labor relations have been harmonious, thus there has been no labor union established. In 2022, there were no incidents of labor disputes or violations of freedom of association or group consultation that resulted in penalties imposed by the competent authorities. In addition, in the event that employees are dismissed or discharged as a result of Article 11, 13, or 16 of the Labor Standards Act, the minimum notice period required by law is applied at each plant and the Company will follow up on these matters.



Online Communication Platform

Through the “Feedback Corner” communication platform, employees are provided with a channel to respond to comment on the company's system, management practices or specific issues, and are referred to the relevant responsible departments to respond to their questions and suggestions. 637 responses were received from employees through the “Feedback Corner” communication platform in 2022, with a 100% response rate.

Workplace Abuse and Workplace Sexual Harassment Complaint Mechanism

In addition to the various complaints and reports, which are handled according to the procedures established by each responsible unit, the Employee Relations Department has set up an “Employee Care Site” to create a friendly workplace with dignity and gender equality, and receives complaints in accordance with the “Regulations on the Prevention of Unlawful Acts of Assault in the Performance of Duties”, “Procedures for Notification of Unlawful Acts of Assault in the Performance of Duties”, and “Measures to Prevent, Report a Complaint and Punish Sexual Harassment in the Workplace”, and convenes an investigation committee to make decisions and impose sanctions to protect the rights and interests of employees.

Labor & Management Meetings

The election of labor representatives is conducted in accordance with the provisions of the Labor Standards Act, and the re-election of labor representatives in each plant's labor-management meeting was completed in 2022. Each plant holds regular quarterly labor-management meetings in accordance with the provisions to coordinate various labor-management issues and promote harmonious labor-management relations.

Employee Feedback Survey

Employee opinion surveys are conducted through questionnaires, and the survey results will be used as an important reference for the company to develop/revise its operating guidelines and formulate various policies.

Employee Engagement Survey

In order to understand employees' perspectives and suggestions on the long-term development of PSMC, and to improve working environment and management practices, we regularly conducted annual surveys through questionnaires beginning in 2022 to understand employees' concerns regarding the operational aspects and potential problems of the organization, and to plan refined countermeasures to address key aspects and issues, with the goal of building a more resilient operational model that supports the well-being of our employees.

Questionnaire Survey Construct

Degree of satisfaction with regard to the company's vision, corporate culture, the "three don'ts" of quality policy, the company's professional standards, and a friendly workplace. Employees' opinions on their job satisfaction, job purpose, happiness and stress were also surveyed.

Survey Results

Number of respondents: 5,419

Questionnaire coverage rate: 100.00%

Questionnaire response rate: 67.53%

The 2022 survey results show that the employee engagement score for PSMC was 4.5 (based on a 5-point scale); the percentage of employees actively participating in employee engagement was 86.33%, achieving the target of 85% set for 2022. The average score for males is slightly higher than that for females, and the average score for the management level is higher than that for the non-management level, indicating that the higher the rank, the higher the overall engagement and satisfaction score.

Category		Sample Size	Average Score
Gender	Female	1,551	4.5
	Male	3,868	4.5
Management Level	Non-management employees	4,208	4.5
	Junior Management Level	771	4.6
	Middle Management Level	353	4.7
	Senior Management Level	87	4.7
Seniority	Under 2 years	1,147	4.5
	3-5 years	693	4.4
	5-10 years	847	4.5
	More than 10 years	2,732	4.5
Total		5,419	4.5

Note: Management level classification for the Engagement Survey: Junior Management Level: team leaders or supervisor; Middle Management Level: departmental supervisor; Senior Management Level: divisional supervisor or above.

Post-Survey Improvement Measures

- The analysis of the types of issues of concern to employees mainly focuses on the company's policies, compensation system and stock matters/share prices. The management will adjust the company's rules and regulations and related policies on a rolling basis depending on the company's operating conditions and the industry environment to meet the expectations of employees and to enhance their sense of identification with the Company.
- For issues with weak results, improvement action plans will be prepared by the corresponding departments and reviewed on a quarterly basis, and the direction of improvement of the company's operational development will also be managed through target setting in the future.

► 4.3 Human Rights

► 4.3.1 Human Rights Policy Communication

PSMC is committed to a “people-oriented” management philosophy, employs employees in strict compliance with local laws and regulations, and does not discriminate against employees on the basis of race, gender, age, marital status, religious beliefs, political affiliation or disability. In order to keep pace with the international trend of balancing environmental, social and corporate governance development, and to protect the basic human rights of employees, suppliers, partners and other stakeholders, PSMC adheres to the relevant regulations stipulated in the Code of Conduct of the Responsible Business Alliance (RBA), the United Nations Guiding Principles on Business and Human Rights, the Declaration of Fundamental Principles and Rights at Work of the International Labor Organization (ILO), and the United Nations Universal Declaration of Human Rights. The President of PSMC has also signed and ratified the labor and human rights policy that was developed in 2022. In addition, suppliers and partners are required to cooperate in conducting RBA compliance surveys and occasional on-site audits in order to build a friendly workplace that is both diverse and inclusive.

Labor and Human Rights Policy

<https://esg.powerchip.com/en-global/staticpage/respect-human-right>



The Company is committed to prohibiting the employment of child laborers under the age of 16 as employees of the Company and the employment of foreign workers is in compliance with the age requirement for workers of the exporting countries. The Company does not recruit workers by means of rape, coercion, detention, debt collection, human trafficking or other illegal methods, and prohibits forced labor or related coercive measures, including but not limited to physical punishment, intimidation, verbal violence, withholding of workers' finances, identity documents or other unlawful forced labor to ensure that the basic human rights of foreign workers are not unreasonably restricted. If there is a need to extend the working hours, the employee must apply for the extension after agreeing to do so, and be paid overtime according to the number of overtime hours shown in the system. When the number of overtime hours exceeds the standard value, the system will put up an alert and the overtime order cannot go through. In addition, in order to take care of the physical and mental health development of workers under the age of 18 (young workers), we do not assign them to work that may endanger their health, safety or morality, including overtime or night shift work. In 2022, no operation sites with significant risk of child labor or forced labor were identified nor were there any incidents of child labor, forced or compulsory labor, infringement of aboriginal rights, workplace discrimination or fines from the competent authorities.

In order to implement the human rights policy, the Company provides human rights-related training to all employees and security personnel. In addition to the induction training for new recruits, which introduces human rights related policies, the Company also conducts six human rights protection related training courses, including Corporate Social Responsibility and Business Ethics and Labor Laws and Regulations, for a total of 7.4 hours, with a total of 18,162 participants and a 100% employee training attendance rate. The Company will continue to pay attention to human rights protection issues and ensure the implementation of human rights policies through education and training, human rights due diligence and RBA self-assessment.



► 4.3.2 Human Rights Issue Management

Starting in 2021, the company was the first to have its P1/2 plants verified by a third-party organization appointed by the Responsible Business Alliance (RBA), using the Self-Assessment Questionnaire (SAQ) designed by the RBA to identify human rights-related risks on its own (which covers the scopes of our own operations, value chain, and new business relationships such as mergers, acquisitions, or joint ventures). In addition to focusing on human rights-related issues such as discrimination, harassment, forced labor, child labor, human trafficking and freedom of association, we also focus on the rights and interests of employees, children, women, migrant workers and immigrants. At the end of 2021, Plant P1/2 successfully passed the Validated Audit Process (VAP) validation and received a gold certificate in the first quarter of 2022, and in the same year, we conducted the RBA self-assessment for Plants P3, 8A, and 8B. We expect to conduct RBA VAP verification in 2023, through a systematic survey process that regularly addresses potential human rights risk issues, so that we can grasp the significant human rights-related risks in the current year and formulate mitigation and remedial measures as well as response strategies.

Based on the results of the 2022 Human Rights Risk Assessment, mitigation and remedial measures will be established for specific target audiences to reduce the likelihood of risk occurrence in order to avoid the occurrence of human rights abuse.



Item	Target	All Employees	Foreign, female employees	Suppliers
Risk Issues		<ul style="list-style-type: none"> • Working Hours • Sexual Harassment 	<ul style="list-style-type: none"> • Forced Labor • Anti Discrimination 	<ul style="list-style-type: none"> • Forced Labor • Working Hours • Conflict Minerals
Mitigation Measures		<ul style="list-style-type: none"> • Recruit sufficient staff to fill the labor gap and avoid overtime work due to lack of manpower • Ensure that human rights-related training and advocacy are carried out in the plant, and establish a sexual harassment complaint and handling process. 	<ul style="list-style-type: none"> • Review and evaluation through various complaint channels/internal audits/internal management procedures such as "prohibition of forced labor" and "prohibition of discrimination and harassment" 	<ul style="list-style-type: none"> • Conduct RBA compliance survey • On-site field audits
Remedial Measures		<ul style="list-style-type: none"> • Control the number of overtime hours through the work hour management system and provide alerts to remind supervisors of the situation when the maximum number of legal hours is reached • Follow up on complaint cases to ensure effective implementation of counseling measures / disciplinary actions as a basis for future improvement and adjustment 	<ul style="list-style-type: none"> • Units where forced labor or discrimination has occurred will be placed on the priority list for future audits. 	<ul style="list-style-type: none"> • Conduct RBA compliance survey • On-site field audits

► 4.4 Occupational Safety and Health

► 4.4.1 Occupational Safety and Health Management

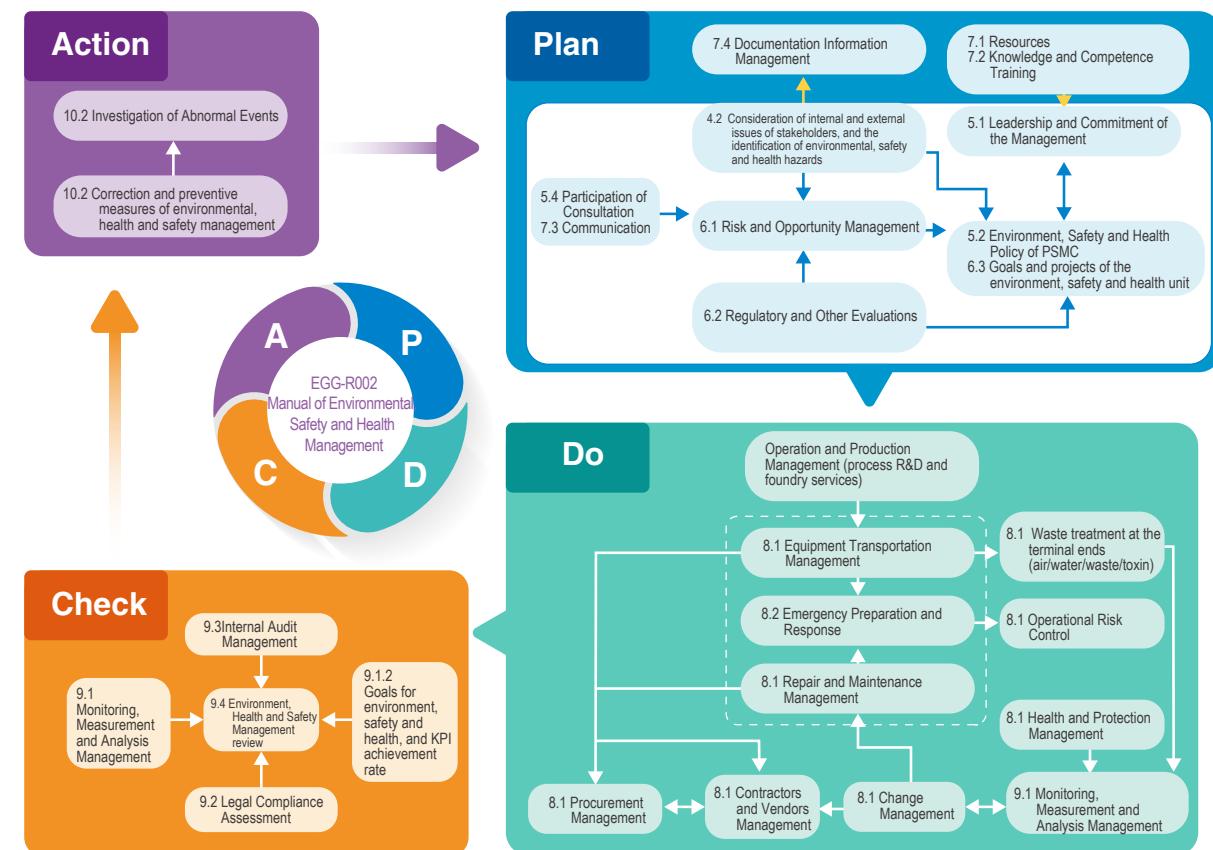
Environmental Safety and Health Management System

PSMS is committed to creating a safe, healthy and friendly workplace environment for our employees, suppliers/contractors and other business partners, and strictly complies with international standards and regulations related to occupational safety and health. The Company has also established an in-house ESH Management System in accordance with the ISO 14001 Environmental Management System and the ISO 45001 Occupational Safety and Health Management System, covering all of the Group's plants, which includes all 8,150 employees and 8,805 non-employee workers, with a coverage rate of 100% (48.07% and 51.93% of total workers for employees and non-employee workers respectively). The company's ESH management system operates in accordance with the ESH policy signed by the president. The ESH business implementation unit is responsible for planning and promoting various ESH operations, integrating the corporate culture of "safety and health is not an extra task, but an important part of everyone's work" into daily operations, and continuously improving the company's occupational safety and health to be in line with international safety and health standards. We plan to conduct a three-year certification renewal in 2023 to continue the effectiveness of our management system.

The company's environmental safety and health management organization is closely integrated with the company's administrative organization, and in accordance with the environmental safety and health policy. The Safety, Health and Environmental Protection Committee, led by the president and composed of legal personnel, serves as the highest review body of the environmental safety and health management system. Each year, the president sets the annual guidelines for environmental safety and health-related issues, and each plant develops the company's strategic objectives for environmental safety and health based on its own risks and

opportunities assessment results, and carries out internal audits of the system's operational effectiveness through the environmental safety and health audit team, which is composed of internal environmental safety and health auditors from each plant. We also review the implementation rate of the environmental safety and health objectives every quarter, carry out internal environmental safety and health audits every six months, and commission an external verification company to verify the effectiveness of the overall environmental safety and health management system operation, and the implementation records are in accordance with the provisions of the regulations. Furthermore, we review these findings and make revisions to our policy and guidelines accordingly during the Safety, Health and Environmental Protection Committee meetings held every quarter for the purpose of continuous improvement.

Powerchip Semiconductor Manufacturing Co. Process flow of ESH Management System



The Company actively encourages each plant to participate in the “Excellent Unit in Promoting Occupational Safety and Health” and “Personnel Selection” activities organized by the competent authorities to review the effectiveness of the implementation of various environmental safety and health operations through the process of participation in the activities and to achieve the goal of continuous improvement of environmental safety and health management. The Company was awarded the 2022 Outstanding Unit Award for Promoting Occupational Safety and Health and the 2022 Outstanding Personnel Award for Safety and Health.

Hsinchu Science Park promotes the Outstanding Unit for Occupational Safety and Health - Exceptional Award



Hsinchu Science Park Outstanding Safety and Health Personnel



Safety and Health Organization

The Risk Management Department and the Risk and Environmental Safety Department of each plant at PSMC are in charge of the overall environmental safety and health related business, and have established the head office and the Safety, Health and Environmental Protection Committee at each plant respectively, which are responsible for planning and promoting the auditing, verification, risk assessment and education and training related to environmental safety and health. Regular safety, health and environmental management review meetings are held to discuss environmental safety and health-related issues, and labor representatives are elected to participate in the meetings in accordance with the law, so that employees can fully understand the company's safety, environmental safety and health operation model and provide a formal channel for discussion and debate.

Risk Management Division (oversees the following)



Safety, Health and Environment Committee Head Office

Plant (P1/2、P3、8A、8B)

Risk and Environmental Safety Department (Oversees the Following)



Plant Safety, Health and Environment Protection Committee

Plant	HQ	Fab P1/2	Fab P3	Fab 8A	Fab 8B
Number of labor representatives (persons)	25	11	7	13	9
Total number of committee members (persons)	66	29	20	29	21
Percentage	37.88%	37.93%	35.00%	44.84%	42.86%

Note:Statistics as of January 16, 2023; ratio = (number of labor representatives / total number of committee members) * 100%

Employee Consultation and Communication

Questions, opinions or complaints from our employees' regarding environmental safety and health can be raised through the internal communication channel of “Feedback Corner”, and the responsible unit will provide consultation and communication coordination accordingly.

Information related to the environmental safety and health management system, such as environmental safety and health policies, environmental safety and health objectives, laws and regulations, stakeholder requirements, and changes to the environmental safety and health management system, will be communicated to the responsible units through internal safety, health and environmental committee meetings, environmental safety and health representative consultation and communication meetings, and safety, health and environmental newsletters on a regular or occasional basis in accordance with the communication procedures of the “Environmental Safety and Health Management Consultation and Communication Regulations”. If the complaints and communications received by the Human Resources Department are confirmed to be directly related to the company's operations, they will be forwarded to the responsible departments for risk and opportunity assessment through the intranet, the Environmental Safety and Health Law Management System, and the DCMS Document Management System to ensure that questions, comments, or complaints raised by employees are appropriately responded to and handled.

► 4.4.2 Occupational Safety and Health Risk Assessment

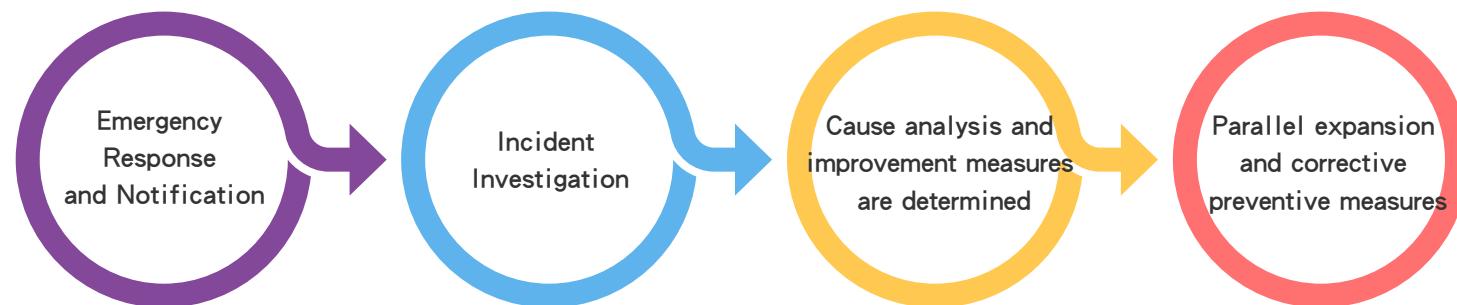
Environmental Safety Risk Identification and Improvement Measures

In order to manage the potential environmental, safety and health risks caused by business activities or product manufacturing processes, the "Process/Activity Hazard Identification and Risk Assessment Process" was established. According to the scope and flow of the manufacturing process/activity, each department identifies all operation contents or activity information in advance, including the activities of contractors and visitors in the plant, the environmental safety and health issues of product delivery to customers, and the information related to raw materials, parts, cleaning products, personal protective equipment, waste water, exhaust and waste generated. All of this information serves as the basis for subsequent environmental safety and health risk assessment, so as to effectively reduce the impact of each operation or activity on the manufacturing process, employees and other stakeholders.

In the implementation of environmental safety and health risk assessment, various assessment techniques such as "machine safety inspection, change management, hazardous workplace process safety assessment, SEMI standard, Hazard and Operability Analysis (HAZOP), Failure Mode and Effects Analysis (FMEA), Fault Tree Analysis (FTA) and SWOT analysis" can be applied depending on the needs of the process activity. In addition, environmental safety and health audit activities are conducted every six months, where we conduct internal/external audits on the effectiveness of our environmental safety and health management system, covering all employees and non-employee workers such as contractors with qualified work permits, in order to effectively and continuously identify hazards, assess risks, and implement necessary controls to achieve the spirit of continuous improvement.

In addition, according to the "Environmental Safety and Health Risk Assessment Procedures" in the plant, the risk identification mainly focuses on general safety, chemical, physical, biological and human hazards. The risk assessment results will be classified and controlled, improvement measures and tracking targets will be set, and the progress of the implementation of improvement measures will be reviewed in the environmental safety and health management and audit meetings. Therefore, for employees who are at risk of being exposed to significant environmental safety and health risks, they have completed relevant education and training before taking up their duties to achieve hazard awareness and the ability to avoid immediate risks. If there is a risk of immediate danger during the performance of their duties, they can stop their work and evacuate to a safe place without endangering the safety of other operators, and will not be subjected to any adverse punishment, and should immediately report to their immediate supervisor. In addition to providing a safe and healthy working environment, the Company regularly identifies internal and external violations in accordance with the "Regulations for the Prevention of Unlawful Acts Against the Performance of Duties" to put an end to the occurrence of inappropriate incidents such as workplace violence or bullying.

In the event of environmental pollution, occupational disaster/injury and health impact incidents, the incident investigator will analyze the cause of the incident and propose corrective and improvement measures in accordance with the standard operating procedures of the "Abnormal Incident Investigation Procedures" in conjunction with relevant personnel, and make improvements to address potential or existing non-conformities in order to reduce the impact of environmental safety and health incidents. Moreover, through parallel investigations and corrective and preventive measures at each plant, we will enhance the safety of our operations and the performance of our environmental safety and health management.



Environmental Safety and Health Strategy and Goal Setting Process

The Company's environmental safety and health policies, management systems and objectives are formulated based on the specific risks and opportunities identified through SWOT analysis at the corporate and departmental levels. The management objectives and implementation plans are discussed through the environmental safety and health representatives at each plant, and then implemented after the results are reported upward by the management audit committee.

Environmental Safety and Health Policy / Target Strategy

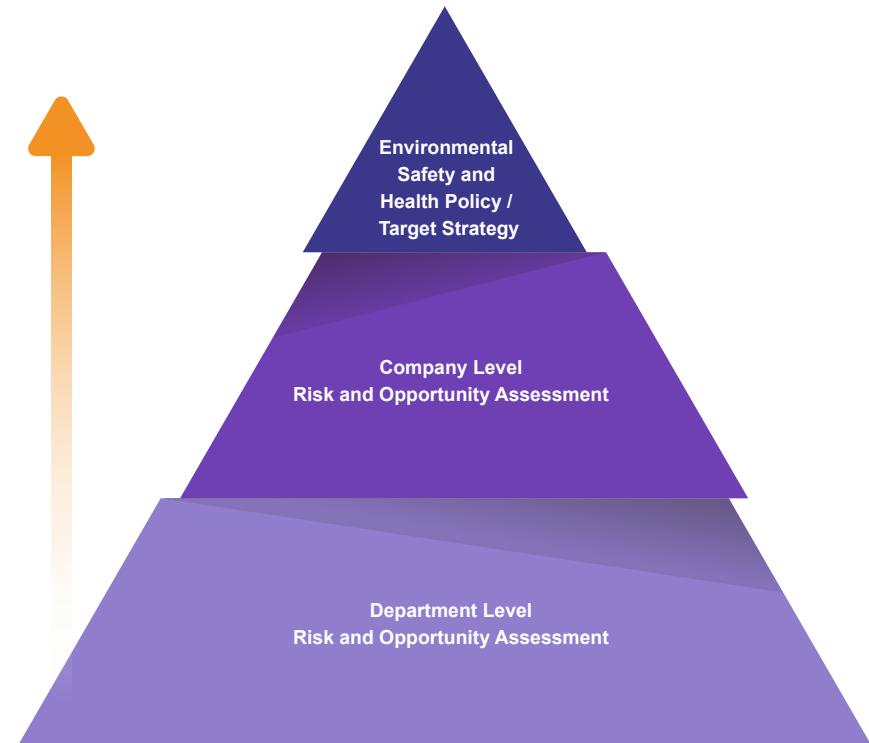
- Innovate for sustainable development and fulfill corporate social responsibility
- Enhance the effectiveness of safety and health management
- Strengthen environmental safety and emergency response capabilities
- Reduce operational losses caused by internal and external abnormal events

Company level risk and opportunity assessment

Through the sustainable major issues identification process, each plant identifies major issues related to environmental safety and health to find “risks” to set environmental safety and health goals and “opportunities” to improve the performance of the management system, and presents the analysis results at the management review meeting, as well as to discuss environmental safety and health policies and goals.

Department level risk and opportunity assessment

Each responsible unit reviews and updates the manufacturing process activity step-by-step checklist (including process and SWOT analysis) and risk assessment form, and reviews departmental risks and opportunities with assessment items such as “occurrence of major abnormal events, unacceptable risks, stakeholder concerns, workplace injuries, major non-conformities deficiencies, and regulatory impacts” .



In 2022, we analyzed 10 issues including “occupational safety, occupational health, water and effluent, waste, new P5 plant project, and environmental education”. The evaluation and analysis results will be linked to departmental objectives to help departments identify strengths and weaknesses, seize available opportunities and eliminate potential hazards, and establish strategic plans for improvement in line with the spirit of continuous improvement of the management system.

Contractor Management Mechanism

The two 8-inch fabs and three 12-inch fabs owned by PSMC have implemented the principle of "one card for each contractor" to control the flow of activities in the fabs. Each contractor receives an exclusive work ID card and a magnetic access card after passing the course, in conjunction with the contractor's work permit approved by the Company's organizer, before they can swipe the card to enter and leave the fabs and the current operation area. Using the dual control measures of the work ID card and the magnetic access card, the measures are an effective implementation for the control of factory activities. According to the statistics, in 2022, there were a total of 234,284 visits from contractors to each plant in response to operational changes such as capacity adjustment and expansion in response to the recovery of international market demand after the pandemic, in addition to the demand for plant supply facilities, production machines, operation support and other equipment disassembly and relocation, electrical system/automation upgrade projects, regular maintenance and general service.

Each business organizer receives the monthly report on the management of contractors on a regular basis, and based on the statistical analysis results, they determine the items to strengthen the management and supervise the vendors with more violations to carry out autonomous management. In addition, the safety, health and environmental protection committee held every quarter reviews the performance of contractors and includes the records of operational violations as an important indicator and basis for the evaluation of contractors. By regularly reviewing the procurement and contractor-related management practices, integrating the contractor/access control system to improve operational safety management, and by strictly implementing the hazard prevention mechanism such as pre-operation hazard notification and high-risk operation verification, we continue to ensure that every contractor employee who enters the plant can "work safely" in our plant.

Contractor evaluation and audit is also an important part of the management mechanism. Through the company's contractor management system, the occupational safety and health-related requirements and specifications are included in the procurement contracts, and we ensure that all suppliers, subcontractors and contractors are informed of the Company's enforcement requirements related to operational regulations and environmental safety and health laws. To establish a unified contractor evaluation mechanism, the risk safety and environmental department of each plant would then cooperate with the procurement department to conduct regular evaluation of contractors, so as to select companies with excellent performance and ensure the engineering quality meets the relevant requirements of the user as well as environmental safety and health. Regarding the deficiencies on the part of vendors, we also require them to reply with improvement measures and conduct follow-up reviews, and the evaluation results will also be included as a basis of reference for subsequent contract

renewals. 37 contractors were selected for evaluation in 2022, and all of them passed the evaluation and maintained a sustainable cooperative relationship. We will continue to review the excellent vendor evaluation system in the future according to the content of operations and types of violations, so as to encourage contractors to deepen the concept of safe operations and improve their awareness for autonomous management.

▶ 4.4.3 Workplace Safety Protection

In order to effectively control the activities, products, services, and internal and external issues related to the environmental safety and health operations at the plant site, PSMC has established the "Environmental Safety and Health Management Manual", which covers all stakeholders related to the company's operations, including all employees, customers, contractors, suppliers, subcontractors, environmental safety and health authorities, and non-governmental organizations.

The president of our Company takes the lead and is committed to promoting various environmental safety and health businesses to ensure that the environmental safety and health management system can achieve the expected outcomes. In terms of implementation, supervisors at all levels provide adequate resources and support according to their duties, and encourage departmental colleagues to actively participate in proposals for improvement and training discussions to enhance the vigilance of business execution and the safety of the working environment, and to strengthen the overall environmental safety and health quality, with "proactive, safe and immediate" as the starting point. In terms of supervision and management, we regularly review the level of compliance of the operation of the environmental safety and health management system in accordance with the Environmental Safety and Health Management Review Regulations and Abnormal Incident Investigation Practice on a quarterly basis, and deliver the evaluation results to the management and stakeholders as a point of reference for the improvement and adjustment of the management system. In addition, the Company has established abnormal event investigation procedures, which include investigation of occupational disasters (including traffic accidents) and abnormal events, hazard identification, safety inspections, and on-site audits to confirm the causes of accidents and propose measures to prevent accidents and correct and prevent their recurrence.

Since contractors are important partners of the Company, the Contractor Safety, Health and Environmental Protection Regulation have been established to ensure that contractors understand the management rights and responsibilities of safety and health before entering the plant and comply with the regulations to prevent occupational hazards and protect the safety and health of workers. A total of 8,809 contractors have valid work ID cards as of mid-January, 2023.

Operating Environment Monitoring

In accordance with the operating environment monitoring plan, PSMC determines the monitoring locations and sampling plans based on the identification of hazards and risks that have occurred or are potentially present in the workplace. The results of the operating environment monitoring cannot exceed the requirements of the Allowable Exposure Standards for Labor Workplaces as announced by the Ministry of Labor, and if they do, improvement measures must be immediately formulated in accordance with the control measures of the Environmental Safety and Health Risk Assessment Practice, and the effectiveness will be evaluated again and records kept..

In order to grasp the actual working environment of employees and evaluate the exposure of hazardous factors as a basis for work environment improvement, the Company performs semi-annual monitoring of items required by law, including chemical hazards (including organic solvents and specific chemical substances), physical hazards, and bacteria testing, in accordance with the Regulations on Implementation of Labor Environment Monitoring. It also commissions an operating environment monitoring organization approved by the Ministry of Labor to perform various environmental testing tasks, review the data of operating environment monitoring results, quantify the variation characteristics of the data distribution, and provide feedback to the next sampling strategy planning for reference, and conduct follow-up operating environment monitoring plans and notification of monitoring results.

Monitoring Items	Monitoring Details	2022 Monitoring Compliance Rate
Chemical Factors	Organic solvents and specific chemical substances (including regional measurements and personal sampling)	
Physical Factors	Illumination and noise measurement (including area measurement and individual sampling)	100%
Bacteria Detection	Indoor Air Quality Bacteria Testing (Office Area)	

In terms of reducing employee workplace risks, the Company evaluates and improves the potential risks of human-induced hazards and occupational health in each unit based on the operating environment monitoring results and environmental safety and health risk assessment practices. 66 applications for potential risks evaluations and improvement proposals were approved by the Risk Safety and Environment Department of each plant in 2022, exceeding the annual target of more than 50 proposed improvements; 4 improvements were made to the operating environment monitoring results, effectively improving the working environment and personnel safety.

Use of Protective Equipment

In order to ensure the safety and health of employees during operations and to reduce the occurrence of hazard risk factors during operational processes, PSMC continues to ensure that adequate and appropriate protective equipment is available in the workplace through protective equipment suitability assessments and updates of personal protective equipment (PPE) training materials to prevent injuries due to inappropriate PPE or outdated information. To this end, we have established recommendations on the use of PPE for each type of operation, so that our employees can effectively reduce the chance of occupational accidents while ensuring compliance with the usage regulations.

Types of Personal Protective Equipment



Instructions on Wearing and Using Protective Equipment



► 4.4.4 Occupational Safety and Health Education and Training

In accordance with the Environmental Safety and Health Education and Training Regulations and the Employee Education and Training Procedures, the Company has designed occupational safety and health general education courses and departmental/plant-organized courses to train all employees to understand the operation model of the Company's environmental safety and health system and to possess the necessary knowledge and skills for workplace safety and disaster prevention. To effectively enhance the professionalism of our personnel and their ability to respond to crises is the focus of the Company's occupational safety and health education and training.

General Occupational Safety Training

The Company's environmental safety and health education and training is divided into three major categories, including "environmental safety and health management system, legal license, and operational control". Each department conducts the suitability assessment of personnel who may affect the performance of environmental safety and health and compliance obligations in order to plan the required education and training categories, and formulates the "departmental environmental safety and health education and training plan". 191 education and training plans were completed in 2022 and were included in each department's target. The achievement rate is confirmed to be 100% on a quarterly basis, and the electronic environmental safety and health education and training plan system was used to provide departments with updates and inquiries on safety and health training results, making the control and verification of environmental safety and health training more effective.

In 2022, a total of 125 training sessions were conducted, with 25,149 trainees, including 36 sessions for new personnel training, with 1,394 trainees. As of the end of 2022, there are 1,052 people holding various environmental safety and health positions, all of whom are currently licensed in accordance with the regulations.

Effectiveness of Environmental Safety Education and Training		
Targets	Topics	Training Results
Plant engineering, equipment engineering and manufacturing department staff	<ul style="list-style-type: none"> • Supervisory ability and accident investigation capability development 	A total of 10,844 people completed the training sessions
Departmental staff in administrative categories	<ul style="list-style-type: none"> • Biological pathogens hazard prevention 	A total of 2,098 people completed the training sessions
Foreign personnel	<ul style="list-style-type: none"> • Chemical Hazards 	A total of 329 people completed the training sessions
All Personnel	<ul style="list-style-type: none"> • Reducing Plastics in happy living - A Philosophy of Life in a New Era • Seminar on Ecological Introduction and Conservation Promotion of the Leopard Cat in the Tongluo Science Park • Climate Change Impacts and Challenges Seminar • Biodiversity Seminar • Road Traffic Safety Driving Training 	A total of 1,208 participants

Emergency Response and Fire First Aid Training and Drills

In order to be able to use the emergency response equipment correctly and effectively in case of emergencies, and to avoid injuries to the Emergency Response Team (ERT) personnel during rescues, ERT personnel are regularly trained every year on how to put on protective gear and operate emergency response equipment. After the initial training such as ERT certification and fire base training, all qualified personnel will obtain a qualification sticker, which is used to promote the concept of ERT and the division of roles to enhance the recognition of ERT staff and their willingness to participate in training. By the end of 2022, the Company has completed 6 training sessions, accumulating 947 qualified personnel in the ERT rescue team training. 76 personnel in the ERT first aid team training have also completed the CPR and AED online training courses.

In 2022, the fire training and practical exercises can be divided into ERT training and ERT drills, in which ERT training includes ERT rescue team fire fighting training, drill without warning, executive building ERT rescue team fire extinguisher training, ERT rescue team training, ERT first aid team training, and response commander training, with a total of 79 sessions held. The ERT drills include clean room evacuation drills, departmental autonomous response drills, and interdepartmental joint drills, totaling 150 sessions.

Disaster Emergency Response Training

The Company has established the Emergency Response Plan for Plant Disasters to enable the Company to use correct and effective systematic response procedures to eliminate injuries, property damage and environmental impacts caused by accidents in case of emergencies. Considering the fact that companies in the park are in close proximity to each other, if an emergency occurs, it may affect neighbors. Therefore, in addition to the 24-hour monitoring of the system operation in the plant, regular training is provided to enhance the disaster management skills of the emergency response personnel and their ability to report and support emergency responses. The company also participates in the joint disaster prevention organization of Hsinchu City and the Hsinchu Science Park. Through the large-scale disaster emergency response drills held every year, we hope to activate the joint disaster prevention mechanism as quickly as possible to minimize the disaster damage should a disaster occur.

P1/2 Plant Local Scrubber Fire Response Drill



P3 plant silicon methane line leakage fire response drill



Plant 8A nighttime clean room evacuation drill



Plant 8B wastewater site H2SO4 spill response drill



Contractor Education Training

Starting from 2022, PSMC started to extend the three-year work permit for contractors and provided them with safety, health and environmental regulations training materials to promote the autonomous training of 8,805 contractors to ensure that they have a thorough understanding of the Company's contracting management regulations before entering the plant. In addition, to ensure that the contractors have sufficient professional ability and knowledge and meet the comprehensiveness of education and training stipulated in the law, the contractors are required to undergo construction competency certification before entering the plant; a total of 887 contractors have completed the certification process per the agreements. Through the establishment of the competency certification system, we can effectively ensure that all operators have the ability to identify hazards and reduce the chance of occupational accidents. Permanent contractors in the plant, such as those who provide group catering, security, cleaning, and cylinder replacement, are required to receive at least one hour of safety and health-related training each year.

► 4.4.5 Occupational Injuries and Illnesses

When an occupational accident occurs, we will follow the accident investigation process and feedback the management system to control the source and start improvement at the same time to avoid the recurrence of the same problem. In 2022, the total number of hours worked by PSMC employees was 16.9 million, and the total injury index value was 0, which was much lower than the three-year average of 0.15 in the semiconductor manufacturing industry (referring to the statistics from 2019 to 2021); in 2022, there was one recordable occupational injury incident, in which an employee was accidentally injured by a machine, and the total number of hours lost was 82, and the prevention and improvement measures were extended to all plants. Starting in 2023, we will plan safety promotion courses and related activities around the repair and maintenance of machinery and equipment in order to strengthen employees' awareness of the dangers of machine operation and to prevent

the recurrence of similar accidents. In addition, the Company has taken into consideration the recommendations of experts and scholars to consolidate the business operations of the plants and to specify the implementation of occupational illness prevention and management measures at the company to achieve the ultimate goal of "zero illness at work and a healthy life" through three approaches: prevention, return to work, and compensation (PRC). In the meantime, we will conduct screenings of potential hazards, update the list of potential hazards, and incorporate them into the plant control management on a regular basis. There were no defined cases of occupational illnesses in 2022.

Injury Index				
Item	Fiscal Year	2020	2021	2022
Total hours worked (hours)		15,139,768	15,745,948	16,900,136
Frequency rate (FR) of disabling injuries		0.06	0.25	0.05
Severity Rate (SR) of Disabling Injuries		0	1	0
Sum of Injury Index (FSI)		0	0.01	0
Prior Year Industry Three-Year Average		0.07	0.11	0.15
Aggregate Injury Index				

Note 1:Calculated in accordance with the Occupational Safety and Health Administration of the Ministry of Labor's Occupational Accident Statistics Format.

Note 2: Injury incident statistics do not include employee commuting traffic accidents.

Item	Fiscal Year	2022
Total hours worked (hours)		16,900,136
Occupational Injuries (Recordable Occupational Injuries)		1
Number of working days lost (days)		10
Types of occupational injuries (e.g., fractures, cuts, contusions, etc.)		1 clip injury
Injury Rate (IR)		0.06
Lost Day Ratio (LDR)		0.59

Note 1: Serious occupational injury refers to workers who have lost more than six months of work.

Note 2: Injury rate (IR) = (number of occupational injuries / total hours worked) * 1,000,000.

Note 3: Lost day ratio (LDR) = (number of days lost / total hours worked) * 1,000,000.

Note 4: In 2022, there were no fatalities or serious occupational injuries caused by occupational injuries.

Note 5: Occupational injury incident statistics do not include employee commuting traffic accidents.

The overall average employee absenteeism rate of 0.71% was below the Company's 2022 target of 0.75%.

Item	Year	2019	2020	2021	2022
Absentee rate		0.44%	0.39%	0.35%	0.71%
Percentage of total employees covered		100%	100%	100%	100%

Note: Absentee rate = ((official sick leave + general sick leave)/total hours worked)x100%

► 4.4.6 Comprehensive Health Care

Building a Friendly Workplace

PSMC integrates the results of environmental safety and health risk assessment with the concept of a three-stage, five-tier prevention, and adheres to the implementation model of PDCA (Propose the Plan → Execute the Plan → Track and Manage → Continuous Improvement) to plan complete health checkups and health promotion activities, and actively participates in the health promotional activities organized by the Ministry of Health and Welfare, the Public Health Bureau of Hsinchu City, the Ministry of Labor, and the Hsinchu Science Park Administration to build a healthy and friendly workplace environment with a systematic health management model and diversified resources.

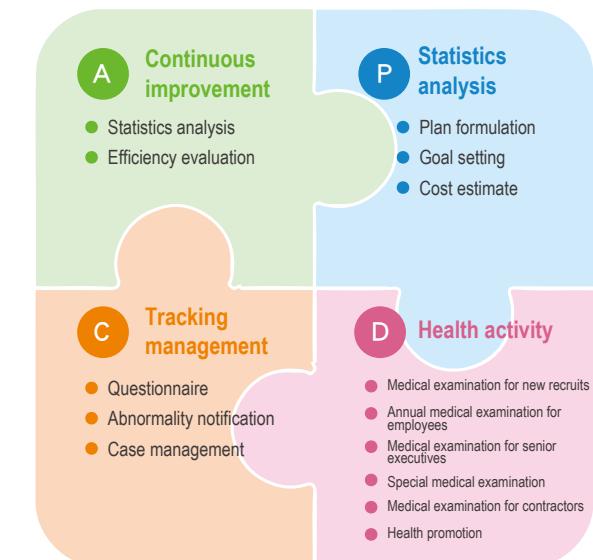
In accordance with the Contractor's Work Permit Application Rules, PSMC compiled statistics on the number of employees who have shared the same office environment or had regular work contact with our employees for more than three months during the past year, such as outsourced security, cleaning, and catering personnel, and required contractors to provide annual health examination reports or health declaration letters from the company to facilitate the tracking of the health status of the personnel assigned to the plant. We also strictly forbade those who did not provide health examination reports or did not give reasons to enter the plant. PSMC achieved a 100% control rate.

In the spirit of “continuous improvement”, the Company aims to prevent occupational injuries and illnesses. Through the implementation of the environmental safety and health management system, the Company continues to maintain smooth communication channels with employees, customers, suppliers/contractors and other stakeholders, and spares no effort to create a workplace environment with comprehensive health care to achieve the ultimate goal of sustainable business operation. In 2022, we have not been penalized by authorities for violating laws related to employee health, nor have we incurred financial losses from other legal proceedings.

Comprehensive Health Care

Based on our “people-oriented” management philosophy, we have established a “three-stage, five-tier prevention strategy” to take care of the health of our employees. We have also established a health management implementation process, from planning complete health checkups to organizing a series of health promotion activities, and increasing our health management budget year by year to ensure that all of our partners working at PSMC receive comprehensive health care and the necessary medical resources.

Comprehensive health management



A Three-Stage, Five-Tier Prevention Strategy				
Initial Stage of Prevention		Secondary Stage of Prevention	Final Stage of Prevention	
Promoting Health	Special Protection	Early diagnosis and appropriate treatment	Limiting Disability	Rehabilitation
<ul style="list-style-type: none"> Annual health check-ups Organized health education Provided in-plant sports field and gym 	<ul style="list-style-type: none"> Prevention of Infectious Diseases Avoidance of occupational disease hazards - occupational physicians to visit operational plant site 	<ul style="list-style-type: none"> Case Screening Special Health Screening: Organize testing events Organized activities for high-risk groups Regularly send disease hygiene education Occupational Medicine Interview Service Medical services provided by Powerchip Clinic 	<ul style="list-style-type: none"> Avoiding exacerbating the disease Referral for medical treatment 	<ul style="list-style-type: none"> Referral to appropriate medical institutions

PSMC has established a comprehensive health management process to ensure that the health management system is implemented and that all employees receive the most timeliest and appropriate improvement treatment. The source of health management is "senior medical checkups, general medical checkups, special operation medical checkups, newcomer medical checkups, foreign worker medical checkups and contractor medical checkups" to keep track of the health status of workers in real time. We can track the improvement of abnormal items through health management grading and disease classification management. We also conduct health promotion activities such as health education concept promotion, providing health education leaflets, holding health seminars and weight loss competitions. In addition, for the examination items with a high proportion of abnormalities among employees, relevant tests (such as abdominal ultrasound) and consultation with occupational physicians will be arranged, and will be the focus for strengthening health promotion activities in the future.

In addition to regular health checkups, for high-risk groups such as those with cardiovascular disease, obesity, maternal health protection, and special operators, we will additionally provide professional consultation services through case management tracking, and refer to occupational medical specialists for clinical services to assist in the selection of appropriate jobs as needed. For employees engaged in special operations (e.g., noise operations, free radiation operations, etc.), in addition to receiving regular special health examinations every year, an occupational medical specialist, together with relevant supervisors, employees, nurses and security personnel, will be arranged to visit the site to assess the correlation between the health of employees engaged in special operations and their work on site, and to make preventive work adjustments or fitness for duty assessments as appropriate. In 2022, a total of 549 people participated in the special health checkups, and 14 people were assessed to be in need of further consultation with occupational physicians.

Health Promotion Activities and Psychological Counseling 商

Based on the results of the employees' annual health checkups, we assess the types of health promotion needs, and take care of the employees' overall health through various activities such as ultrasound examinations, vaccination, low-calorie healthy meals, cardiovascular group care, and 3-point checkup for women. We also hold various seminars and provide health professional consultation services to enhance the employees' common sense and cultivate correct health education concepts. The specific assessments are as follows:

- Evaluate health examination data such as employee health examinations and medical examinations for new employees, analyze items with high abnormality rates, and plan them as key tasks in the health promotion plan.
- We use the Employee Health Needs Questionnaire to understand common health problems and implement various health promotion activities such as stress management, physical fitness activities and dietary guidance.
- In accordance with laws, seasonal and employee needs, we post new health information (divided into three categories: safety and health newsletters, general medical knowledge and health education for chronic disease groups) to enhance employees' general health knowledge.
- Through staff medical checkups and newcomer medical checkups, those with chronic diseases are screened and health education pamphlets are regularly sent every three months to keep employees up-to-date with the latest health education knowledge.

Health Promotion Activities			
Activity Topics	Total number of events held	Total number of attendees	
Special Health Screening (including abdominal ultrasound, thyroid ultrasound, breast ultrasound, gynecological ultrasound, prostate ultrasound, Pap smear, bone density test and eye pressure test, etc.)	41	2,368	
Blood donation	2	175	
Self-paid flu shot	3	498	
Low Calorie Healthy Meals	Every working day	200 per day	

Establishment of Powerchip Clinic

In order to meet the medical service needs of employees and contractors at work, PSMC has set up the Powerchip Clinic within the plant to provide health management services such as outpatient consultation, health counseling, and preventive vaccination. Relevant health information and activities are available on the company's intranet "Health Management System" for inquiries and appointments. In addition, during the pandemic period, we launched online video consultation and home delivery services for employees and their dependents, employees of affiliated companies and contractors. We also hired occupational medical specialists in our plants to provide health education and health guidance planning and assist employees in selecting appropriate jobs. In view of shift work in the plants, in addition to the full-time nurse practitioner at Powerchip Clinic, there is another nurse practitioner on duty 24 hours a day in the plants to provide professional health consultation, health promotion activities and emergency care services to ensure the safety of employees and to pursue zero health burden.



▲ Powerchip's clinical service information

► 4.4.7 The Coronavirus Outbreak Strategy

It has been three years since the global pandemic of the coronavirus. During this period, as the virus entered Taiwan and spread rapidly, the Company immediately set up an epidemic prevention command center and assembled members of the project management team, including the risk management office, human resources, information management, operation planning, purchasing, public relations, general affairs and health center, to work on the pandemic prevention in accordance with the classification of the disease and adjusted management measures on a rolling basis with reference to government policy guidelines.

With the efforts of the relevant units and the cooperation of our colleagues, we finally entered the post-pandemic era in the second half of 2022 as the vaccine coverage rate gradually increased, and business activities such as business travel, international exchanges, customer visits, and even supplier field audits, which were significantly affected previously by the pandemic, will gradually return to normal. In line with the government's relaxation of pandemic prevention regulations, and after evaluating the company's overall operation, we will maintain some basic pandemic prevention measures to prevent the invasion of variant viruses, while the rest of the pandemic prevention strategies will be adjusted on a rolling basis depending on the situation, in order to help our employees adapt to the work pattern in the post- pandemic era and achieve the goal of "a win-win situation for both work and health", thereby strengthening our operational resilience.

Prevention strategy for the second half of 2022

In line with the government's policy of coexistence, shifting from "zero cases" to "coexistence with the virus", the Risk Management Division, Human Resources Division and other relevant units will propose relaxation proposals with reference to the government's policy, and then the President of the Company will convene a meeting to decide on the relevant relaxation measures.

When guests/visitors/external lecturers enter the plant, the filling of health questionnaires and the provision of vaccination or rapid testing proof are cancelled.

Reopening of sports venues for normal use by employees

The government's policy is to gradually eliminate home isolation for those who are confirmed to be living with relatives or friends, and to regularly screen for negative test results for entry into the plant, but they must still cooperate with the implementation of autonomous health management.

The home isolation period is changed from 7 days to 5 days and the autonomous health management period is 7 days (wearing a mask throughout the whole period/no eating inside the cafeteria).

For those who are not feeling well, the company has a rapid testing kit, and one can go to work normally if the screening result is negative.

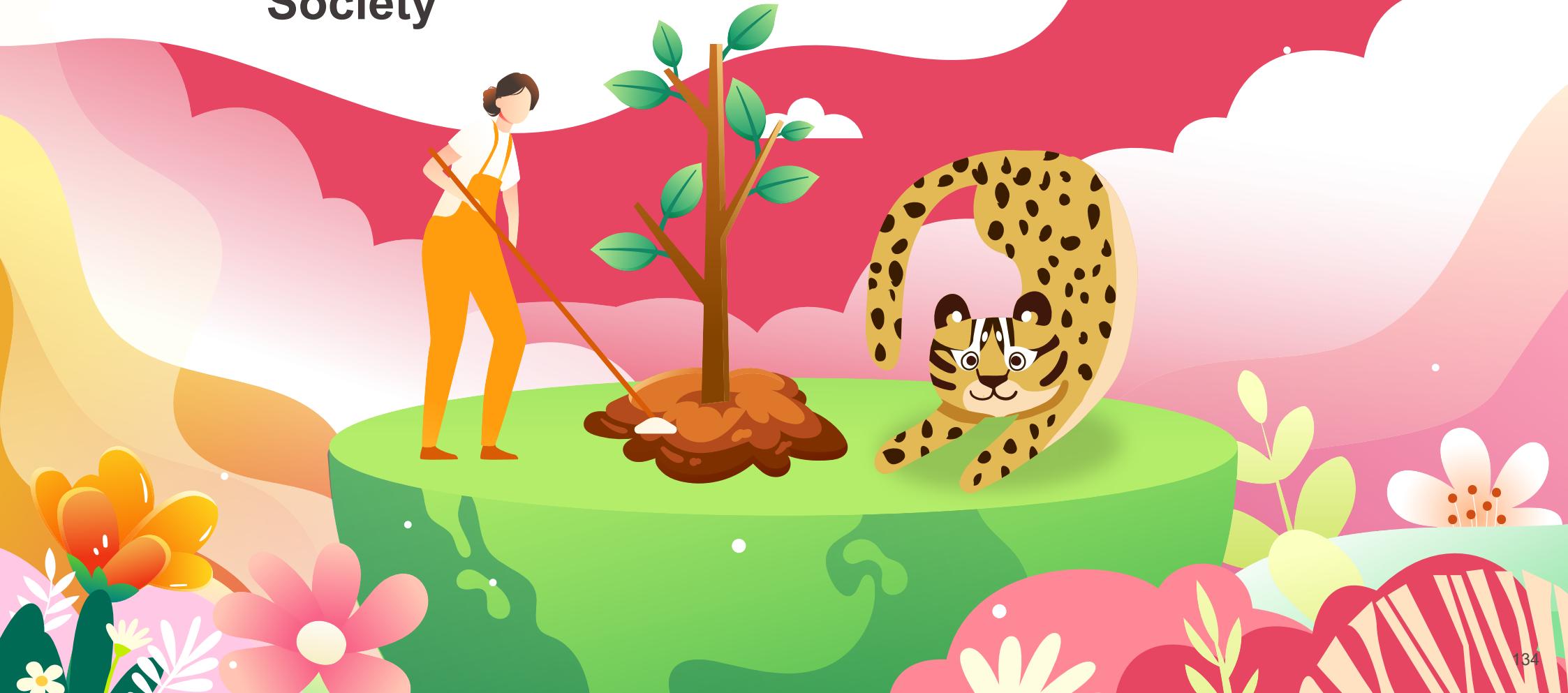
Staff are required to wear masks throughout the work process, pay attention to environmental cleanup and decontamination and make good use of the pandemic reporting system, as well as implementing self protective measures for all staff to ensure the normal operation of the production line.



5. Integrating Sustainability

Society

5.1 Social Values and Arts
Education



► Integrating Sustainability - Society

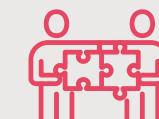
Community support is an integral component of PSMC's sustainable operation. Therefore, together with the Foundation, PSMC will always pay attention to the needs and development of the community, not only investing in environmental conservation projects, but also sparing no effort in the support of remote communities and the education of children, while simultaneously sponsoring Taiwan's promising musicians and artistic performances to promote the positive development of the domestic arts industry. PSMC believes that its commitment to social welfare activities and services will not only unite the hearts and minds of its employees, but also raise public awareness of social issues through its corporate influence. Moreover, it seeks to find solutions through practical actions and is committed to the development of a corporate environment that contributes to the common good of society.



Corresponding United Nations Sustainable Development Goals (SDGs)



Corresponding Material Topics



Society / Local

Community



► 5.1 Social Values and Arts Appreciation

► 5.1.1 Social Co-Prosperity

Based on the management philosophy of “committing to energy-saving, and carbon-reducing environmentally friendly measures and fulfilling corporate responsibilities,” PSMC has established three main strategic principles of social co-prosperity: environmental conservation, public welfare investment, and arts and cultural festivals. The Company has extended its social welfare activities along these principles to provide the necessary assistance and support to the environment, society, and specific ethnic groups in the areas of ecological maintenance, care for the disadvantaged, support for arts and cultural activities, and community building, in order to solve society’s long-term structural problems. To this end, PSMC has integrated internal and external resources such as the Group’s Public Welfare Committee and the Powerchip Culture Foundation through systematic social investment planning, and has joined hands with employees, suppliers/contractors, competent authorities, and other stakeholders to jointly participate in social welfare activities and demonstrate its corporate values through practical actions.

Social Co-Prosperity Strategy Principles and Achievements

Social Co-Prosperity Strategy Principles	SDGs Alignment	Business Drivers	Action Plans	Business Efficiency and Key Performance Indicators	Social Impact	Social/Environmental Benefits and Key Performance Indicators
Environmental Conservation	  	There is a global consensus that the impact of climate change must be mitigated, and that this is relevant to the sustainability of business operations. PSMC committed to making a tangible contribution to environmental conservation, establishing a philosophy of environmental conservation for stakeholders, and expanding the impact and continuity of social investment.	Animal Care, Environmental Education	Expanded staff participation and enhanced staff dedication <ul style="list-style-type: none"> Recruited 483 employees to participate in environmental conservation educational activities Enhance social recognition and brand image through community interaction <ul style="list-style-type: none"> Organized activities to promote environmental conservation, invited 1,000 local high school teachers and students to participate, strengthening the Company’s connection with the local community. 	<ul style="list-style-type: none"> Raised awareness of environmental conservation among employees and the public Reduced the impact of human activities on the environment 	Number of environmental conservation activities and beneficiaries <ul style="list-style-type: none"> In 2022, a total of five projects were launched, and three community entities (schools and parks) were served. Employee Volunteer Service Hours <ul style="list-style-type: none"> A total of 1,831.50 accumulated service hours Total amount of waste removal <ul style="list-style-type: none"> Cumulative 608.9 kg of general waste was removed
Public Welfare Investment	 	PSMC's sustainable management philosophy is to create a positive cycle between corporate operations and society. Through long-term investment in rural care, community development, and the promotion of education for rural students, PSMC is committed to bridging the gap between urban and rural areas and strengthening the link between social development and corporate sustainability.	Community Engagement and Rural Assistance	Expanded staff participation and enhanced staff dedication <ul style="list-style-type: none"> A total of 245 employees participated in volunteer efforts Volunteers put in a total of 757 hours Enhanced corporate reputation and exposure <ul style="list-style-type: none"> Featured 36 times in news media, and gained exposure for our partners as well 	<ul style="list-style-type: none"> Provided necessary resources and assistance to rural communities and students Supported and promoted the development of Taiwan’s sports culture Promoted industry-academia cooperation to cultivate outstanding talents in semiconductor innovation 	Established a positive corporate image <ul style="list-style-type: none"> A total of 9,546 individuals benefited from the community involvement and rural care investment Number of social welfare investment beneficiaries <ul style="list-style-type: none"> More than 13 social welfare organizations, institutions (libraries), schools, farmers, and other organizations and individuals benefited
Arts and Cultural Festivals		The diversified sponsorship programs demonstrate the possibility of combining corporate management with arts and cultural activities. PSMC aims to promote arts and cultural activities and devotes resources to support the arts and cultural industry through donations, sponsorships, and strategic cooperation to drive the overall cultural development of the country.	Powerchip’s Arts and Cultural Festival, Music Festival Education Series Activities	Enhanced social recognition and brand image through arts and cultural events series <ul style="list-style-type: none"> A total of 74,200 people benefited from the events 	<ul style="list-style-type: none"> Supported the development of Taiwan’s arts and cultural industries and enhanced social arts culture Created a stage for outstanding Taiwanese musicians to perform 	Number of social welfare investment beneficiaries <ul style="list-style-type: none"> Sponsored a total of 22 projects in 2022, covering 35 concerts and 38 music educational events

Social Engagement Impact Assessment

In order to evaluate and grasp the overall effectiveness of social engagement investments, PSMC referred to the Business for Societal Impact (B4SI) community investment evaluation framework and classified the social projects from 2022 into three categories: charitable donations, community investments and business initiatives, in order to measure the effectiveness and impact of each philanthropic activity and resource investment; this also facilitates timely adjustments to investment planning, enhancing the efficiency of resource allocation so that social engagement programs can be closely linked to social issues. In 2022, PSMC invested nearly NT\$150 million into various social engagement programs, devoting more than 281 volunteers and 2,727 volunteer hours, hoping to maintain the momentum of the positive cycle of social investment by not only investing in human and material resources, but also exerting an invisible influence on long-term social issues, such as promoting cultural education and establishing positive values for school children, and eliminating the resource gap in rural communities.

2022 Philanthropic Investment Types and Activity Categories		
Investment Type	Investment (NTD\$)	Proportion
Cash Donations	146,409,860	98.07%
Volunteer Costs	2,046,145	1.37%
Physical Material Donations	767,810	0.51%
Management Costs	69,926	0.05%
Total	149,293,741	100.00%

Investment Type	Investment (NTD\$)	Proportion
Charitable Donations	1,484,550	1.00%
Community Investment	126,725,066	84.88%
Business Initiatives	21,084,126	14.12%
Total	149,293,741	100.00%

► 5.1.2 Environmental Conservation

As extreme climate events and the loss of biodiversity are no longer hypothetical issues, PSMC recognizes the potential impact of climate change on the ecological environment and human society, and the need to take concrete actions to mitigate the impact. Through the Industrial Safety and Environmental Protection Month program, the core series of activities being promoted include environmental protection and environmental education, calling on employees, their families, and the general public to join in the effort to preserve the environment. The Company has expanded sustainability education for employees and the public alike, and demonstrated its determination to protect the ecological environment of land and sea.

Moreover, PSMC engages in and sponsors research, discussions, and related activities in the field of environmental conservation in order to promote environmental protection education and the application of environmental protection at home and abroad. The Company is actively applying the results of these programs to individuals, society, and enterprises, thus putting environmental conservation actions into practice in everyday life.



**Environmental
Protection****Let's Clean the Beach Together**

On October 15, 2022, PSMC gathered 67 employees and their families to participate in a beach cleanup activity on the north shore of the Guanyin Temple at Nanliao Fishing Harbor, Hsinchu City, Taiwan. The group not only physically removed non-marine litter but also established the concept of marine conservation. The beach cleanup activity was also documented in the International Coastal Cleanup (ICC) log sheet, which monitors marine debris. According to the item-by-item records of the garbage picked up by the group, the total area of the beach cleaned on that day was about 250 meters, and a total of 298.9 kg of various types of waste were removed.

**Environmental
Protection****Participation in Leopard Cat Conservation Promotion Activities and
Mountain Cleanup**

With the upcoming completion of the factory in Tunglo, Miaoli, PSMC continues to broaden its interest and invest resources in local environmental conservation. Therefore, on October 28, 2022, PSMC held a physical mountain cleanup education activity at the factory in Tunglo, calling on more than 300 employees to participate. The event included lectures promoting the environmental assessment and ecological monitoring of Tunglo Science Park and eco-conservation measures for the leopard cat, as well as environmental cleanup around the factory. This allowed the Company to make actual contributions to local environmental conservation while effectively enhancing the environmental conservation awareness of its employees.

**Environmental
Protection****Hsinchu Science Park General Inspection and NGO Environmental Visits**

On November 18, 2022, the Deputy Director of the Hsinchu Science Park Administration invited representatives from the Environmental Protection Administration, the Environmental Protection Bureau, experts, academics, and citizen environmental groups (NGOs) to visit the plant, helping stakeholders understand the Company's environmental protection management (covering a comprehensive range of aspects including air pollution, wastewater, waste materials, and greenhouse gases) and the performance of environmental management measures. After the on-site visit of the environmental protection and prevention equipment, the Company received praise and affirmation from the various representatives, which definitely enhanced the overall image of the Company. .

**Environmental
Protection****Public Toilet Adoption in the Chunan Science Park Community Park**

In order to continuously enhance the spirit of community service, in October 2022, PSMC organized its first neighborhood park adoption/cleaning activity and signed a two-year “public toilet adoption” contract with the Science and Technology Bureau. The Department of Public Safety and the General Affairs Administration will arrange for sanitation personnel to clean the surroundings of the public toilet, manage resource recycling, and conduct other operations to maintain the usage conditions of the public toilet, promoting the spirit of community service and strengthening the Company’s connections with the competent authorities and local residents.

Environmental Protection



Environmental Education



Drawing
Competition
/ Drawing
Competition First
Place Entry:
Forest Concerto

Industrial Safety and Environmental Protection Month Run Race

Activity

PSMC participated as a co-organizer in the charity run race organized by the Science Park Administration during the 2022 Hsinchu Science Park's Industry Safety and Environmental Protection Month. During the event, 1,500 employees, family members, and citizens jogged through Tunglo Science Park and Jiuju Village, where they could appreciate the beauty of the Hakka villages and the Tunglo chrysanthemum. A total of 16 volunteers were recruited to assist with the check-in, supplies distribution, and peripheral traffic control operations at the race site. The Company also set up a free blood pressure measurement booth at the activity venue to continuously promote a safe and healthy workplace environment.

Animal Conservation Drawing Competition

PSMC invited students from the local Chutung Junior High School to participate in a drawing competition. Students were able to choose from among Taiwan's unique/protected species such as the leopard cat, grass owl, and the Taiwan blue magpie as their sketch subjects. Through the process of replicating the animal, the students were able to gain a deeper understanding of the species itself and the importance of environmental protection. The contest also encouraged the students to actively participate in environmental conservation activities through the competition and the exhibition of their sketches, thus promoting environmental education.

Environmental Education

Environmental Health and Safety Newsletter Prize Contest

The Environmental Health and Safety Newsletter Prize Contest has been held for three consecutive years to raise awareness among employees on ESG-related topics such as pollution prevention, climate change, safety and hygiene, wellness promotion, and disaster prevention and safety awareness through weekly newsletters on different topics. This year, a total of 11 ESG newsletters were sent out, covering topics such as safe working environment, sustainable management of operations, pollution prevention management, climate change and carbon management, and biodiversity. 2,600 employees participated in the contest, with a 97.8% correct answer percentage, demonstrating the effectiveness of building awareness on sustainability issues for employees.



The Joyful Living: A Life Philosophy in a New Era of Reduced Plastics Seminar

To enhance the concept of energy saving, carbon reduction and environmental protection, the seminar started from the misuse of disposable consumables and led employees to think about how to reduce plastic at the source and evaluate the environmental benefits through common life scenarios. The lecturer shared his practical experience to help employees implement the concept of plastic reduction in their daily lives. The seminar attracted over 300 employees, who participated in person and online, demonstrating their high level of interest and concern for environmental conservation and a lifestyle with reduced plastics.

Environmental Education



A Dual Lecture on the Impact and Challenges of Climate Change and Biodiversity

Climate change has become the focal issue of global concern, and the concept of biodiversity has increased the importance of environmental conservation and ecological systems in various countries. Frequent forest fires, droughts, epidemics, and even ecological extinction in recent years have demonstrated that human beings are not only inseparable from the ecosystem on which our survival depends, but are also facing a serious challenge. The lectures on Impacts and Challenges of Climate Change and Biodiversity attracted 604 participants from various departments. The Company hopes that these lectures will raise employee awareness of the urgency and importance of the environment and ecology. Moreover, in order to continuously expand the popularity of environmental education, e-learning courses were held in addition to the physical lectures and online live broadcasts, with a total of 1,544 employees enthusiastically participating.

► 5.1.3 Social Welfare Investment

The developmental objectives of PSMC's local operations are to co-exist and co-prosper with the local community, which prompted PSMC to establish the Public Welfare Committee. Over the years, the Company has promoted and participated in various local affairs with a focus on community building, charitable donations, and education in rural areas. It has continued to reach into rural areas, campuses, and communities to bridge the urban-rural gap with actual volunteer efforts and resource donations, support local agricultural products, implement equal opportunities for youth education, and promote sports, in the hopes of leveraging its corporate power to build a society of common prosperity and sustainable development.

Community Building



Ihoyuan Organic Farm Eat Good Rice, Do Good Deeds, Gift Good Shoes

With guidance from the Taoyuan District Agricultural Research and Exchange Station, Council of Agriculture, Executive Yuan, the organic rice produced in Juanchiaoli, Chutung Township is irrigated by the Chutung Canal, which runs through the Shangping River in Wufeng Township, where the water is clean and clear, making it suitable for growing organic rice that is beneficial to the environment and health. PSMC and Ihoyuan Organic Farm in Juanchiaoli collaborated to spread goodness and love by promoting the Eat Good Rice, Do Good Deeds, Gift Good Shoes charity event, where employees volunteered to purchase a subscription service of organic rice from local mothers in Juanchiaoli, and the farm donated the “grain profits” to a shoe purchase fund. The purchased shoes were then donated to Francis Nursery School, Sacred Heart Kindergarten, and Taoshan Elementary School Kindergarten in Chienshih Township, Hsinchu County. In 2022, the employees' subscription amounted to NT\$667,520, and a total of 50 pairs of shoes were donated.

Community Building



Promote Badminton and Support Local Varsity Teams

In an effort to promote the local sports culture in Hsinchu, PSMC sponsored the varsity badminton teams of Chutung Junior High School and Tongtex Secondary School for three consecutive years, with donations totaling NT\$648,000, providing the teams with better training resources and competition funds, making every effort to create an excellent environment for nurturing young badminton talents in Taiwan.

Charitable Donations



Charity Basketball Game to Help Disadvantaged Students

Tsinghua University and the Rotary Club of Hsinchu co-hosted the Tsinghua Sunrise Cup Charity Basketball Invitational Tournament and School Fair on March 19, 2022. PSMC called on its employees to form teams to participate in the charity basketball tournament. The Company also held a blood pressure measurement charity activity during the tournament, and encouraged its employees to purchase tickets to the school fair or sponsor the event with cash. In the end, PSMC managed to sponsor a total of NT\$200,000 for the Sunrise Scholarship to help disadvantaged students at Tsinghua so that they can focus on their studies without worrying about paying for their education.

Charitable Donations



Support Local Agricultural Products

Every year from November to the following April is the season of the domestically grown atemoya. In response to the promotional activities of the Agricultural Technology Research Institute, PSMC purchased at least NT\$700,000 worth of atemoya to support the domestically grown fruit and farmers, and to share the local delicacies with employees.

Charitable Donations

2022年最珍貴的知識禮 疫苗先鋒套書 公益募書計畫

期待募集「全球疫苗先鋒」套書2,500套（10,000冊），贈予全國公共圖書館、大專院校及高中圖書館及全國醫學、護理及公衛科系。書中危機的因應、科學的探究、無私的合作，不僅凸顯「科學終將獲勝」的信念，更見證人類面對危機時的韌性與創新爆發力。



公益募書計畫

邀請天下文化事業有限公司《輝瑞登月任務》、《光速計畫》、《疫苗先鋒》、《商戰疫苗》公益募書計畫，希望將這些書贈予全國醫學、護理及公衛科系學生、為全國公圖館書館、大專院校、高中圖書館，共同投入裡面對疾病危險的行動與新研究，傳遞「生命優先、無私信念」的精神。誠摯感謝下列企業夥伴率先響應：

光明基金會、PMAC 力維思睿、牛爾教育大學管理學院
onyx 銳思、CATHER

Promote Charitable Book Giveaway - Popular Science on Vaccines

In order to encourage reading, enhance education, and cultivate knowledge in the pandemic era, PSMC actively responded to the Vaccine Pioneer Book Set donation campaign initiated by the Commonwealth Publishing Group and purchased 200 sets of books, worth a total of NT\$300,000, to provide to public libraries, college libraries, and related academic departments of medicine, nursing, and public health nationwide.

Charitable Donations



Education in Rural Areas



Sending Love to Rural Elementary Schools and Tribes During the Holiday Season

The Mid-Autumn Festival is one of the three major traditional festivals in Taiwan. In order to share the festive atmosphere with students in rural areas, PSMC employees organized a visit to Chien Shih Elementary School and the Chien Shih Hou Shan Tribe in Hsinchu County on the eve of the Mid-Autumn Festival. Employees brought mooncakes, pomelos, and other seasonal delicacies, giving students an opportunity to learn about and participate in the traditional festival culture, fulfilling the Company's mission to educate and care for rural communities.

Corporate Visits From Students in Rural Areas

In late 2022, a total of 26 students and teachers from Chien Shih Elementary School in Hsinchu County were invited to PSMC for a corporate visit. Through an easy-to-understand Wafer Baby - Production introduction video, the students learned about the importance of Taiwan's semiconductor industry and wafer fabrication process, with the objective of inspiring them to contribute to Taiwan's semiconductor industry in the future.

► 5.1.4 Art and Cultural Festivals

PSMC established and donated NT\$20 million in 2022 to the Powerchip Cultural Foundation with the mission of “building a stage for performing artists with roots in arts and culture education”. Driven by the two core principles of “promoting music education” and “promoting arts and cultural performances”, for the past 18 years Powerchip Cultural Foundation has continuously promoted the development of cultural and artistic activities and supported potential musicians and symphony orchestras in Taiwan through the organization and co-organization of cultural events, performances, and competitions. Most recently, it has launched the Powerchip Arts and Cultural Festival 2022, Powerchip Century Sound Series, and Music Festival Education Series, in addition to sponsoring other philanthropic arts and cultural activities that conform to the objectives of the Foundation, in order to improve the arts and cultural environment in Taiwan and enhance the value of the performing arts industry.

Promoting Music Culture

Powerchip Arts and Cultural Festival 2022 Series Events

The Powerchip Cultural Foundation's flagship program for sponsoring symphonic performances and arts and cultural exhibitions is the Powerchip Arts and Cultural Festival. We have long focused on outstanding musicians and renowned symphony orchestras from home and abroad, and have exclusively sponsored musicians and orchestras to perform in Taiwan. This also helped create a platform for the development of outstanding musicians in Taiwan by allowing Taiwanese music fans to experience an international music feast in person in Taiwan, and providing them with an opportunity to further exchange musical knowledge with international masters. In 2022, we sponsored a total of 31 concerts, attracting more than 65,000 Taiwanese music fans to experience these musical festivities.

Supporting Taiwan's Outstanding Young Musician Yu-Chien Tseng

The Powerchip Cultural Foundation aims to cultivate outstanding musical talents in Taiwan, and hopes to keep good musical concepts in Taiwan through the masters. Among them, violinist Yu-Chien Tseng, who won the silver medal at the Tchaikovsky International Competition in 2015, is one of our long-standing partners and collaborators. In 2022, with the support of the Powerchip Cultural Foundation, Yu-Chien Tseng collaborated with the National Symphony Orchestra (NSO), Taipei City Symphony Orchestra, and internationally renowned musician Gwyneth Chen, and performed three concerts at the Taipei National Concert Hall: Mozart and Beethoven by Yu-Chien Tseng, Tchaikovsky Concerto by Yu-Chien Tseng, and Yu-Chien Tseng and Gwyneth Chen. The concerts brought the audience into the world of classical music through the rich and diverse sounds of the instruments.

Pre-concert Guided Tours, Art Lectures, and Conversations with Masters - The Opening and Enlightenment of a Feast of Art and Literature

In order to promote music culture education, we provide a guided tour covering everything from the background of the music—the creation, structure, arrangement, and melody—to the characteristics of the performers, leading the audience from the real world into the fantasy world of the work. In addition to providing a stage for the performers, each Powerchip Arts and Cultural Festival arranges pre-concert guided listenings by professional speakers, rehearsal observations, art lectures, and master classes or lectures with the performers themselves, further providing a variety of music culture promotions and exchanges for audiences ranging from beginners to advanced music lovers.



Promoting
Music
Culture

Powerchip Century Sound Series Events

Supporting Domestic Performing Arts Events - Juan Diego Flórez, the World's #1 Tenor, Sings on Stage

In order to allow Taiwanese audiences to enjoy the performances of international vocal masters, in 2022, the Powerchip Cultural Foundation launched the Powerchip Century Sounds Series. The world's number one tenor, Juan Diego Flórez, who was once called "the dashing tenor, the king of the bel canto repertoire" by the New York Times, returns to the stage after a three-year hiatus, allowing Taiwanese vocal fans to witness once again the style of a great singer and exchange skills at close range; he was also the first vocalist to perform on stage after the reopening of the border, adding vitality to the performing arts scene in Taiwan under the catalyst of the Powerchip Century Sounds Series.

Promoting
Music
Culture

Music Festival Education Series

Rooted in Music Education - 2022 Taipei Music Academy & Festival

The Taipei Masters Music Festival is the most international classical music festival and educational music camp in Taiwan. The festival entered its fourth year in 2022, with over 9,200 participants in a series of promotions, lectures, and guided music education activities. The festival, jointly facilitated by the Ministry of Culture and community organizations, brings together a faculty of leading musicians from all sections of the world's top orchestras. In addition to solid individual courses and chamber music instruction, the festival also offers master classes and professional lectures, providing students with the opportunity to learn from the masters, and creating more musical possibilities through bilateral exchanges between teachers and students, expanding a broad international perspective. During the 2-week music festival, with the original goal of promoting music education in mind, we sponsored 16 faculty members and 69 students from Taipei National University of the Arts to participate in the music festival, hoping for the sustainable development of music energy, and encouraging young music students to learn from the experience of the masters so as to continue to nurture more outstanding musicians.

Promoting Arts
and Cultural
Performances

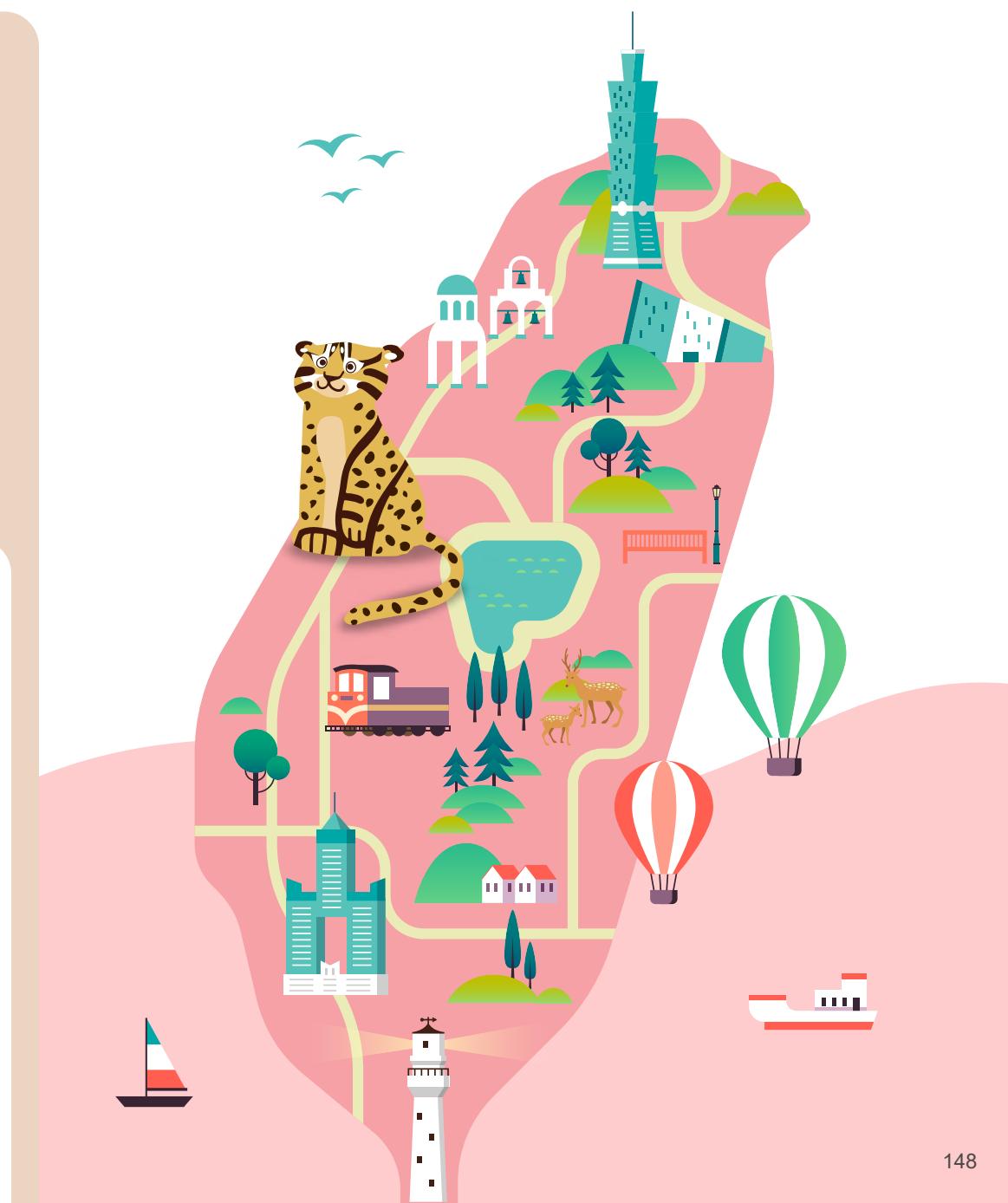


美國臺灣形象展 TAIWAN EXPO USA 2022

Powerchip Arts and Cultural Festival 2022 – Taiwan EXPO USA 2022

Promoting Taiwan's Traditional Culture on the International Stage - Taiwan Expo USA 2022

To promote Taiwan's technology and local culture to the world in the second half of the post-pandemic 2022, the Powerchip Cultural Foundation sponsored Taiwan Expo USA 2022 in Washington, D.C., organized by the Bureau of Foreign Trade of the Ministry of Economic Affairs and the Taiwan External Trade Development Council, to help companies explore business opportunities, promote Taiwan's quality image, and deepen business and cultural exchanges. During the 3-day exhibition period, it attracted more than 8,300 visitors. Among the exhibits, the Taiwan Culture Pavilion, curated by the General Association of Chinese Culture, with the theme of Taiwan Fusion, integrated traditional arts and cultural elements such as the heavenly generals, parade formations, and dragon and lion dances, leading guests from all over the world to appreciate the unique temple culture of Taiwan. The success of this exhibition not only demonstrated Taiwan's technological application capabilities to the world, but also promoted the unique and diverse integration of Taiwanese art and culture, giving it an opportunity to shine in the international arena.





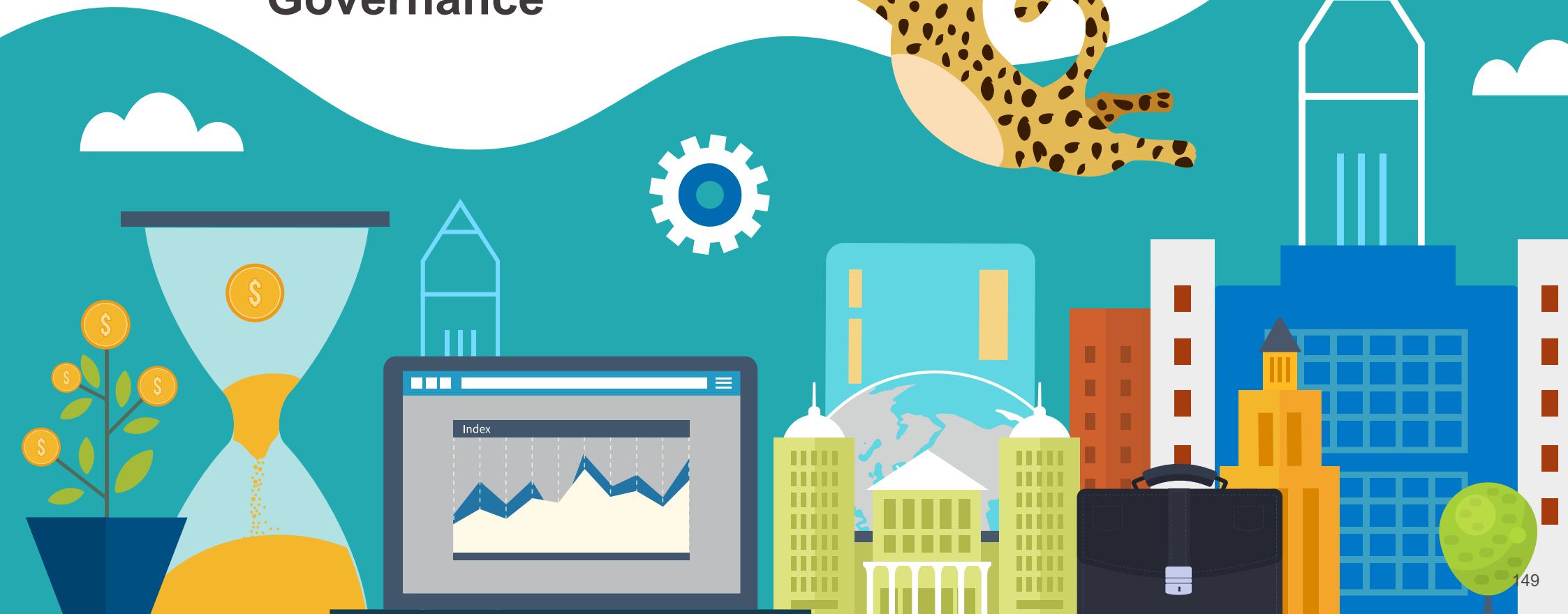
6. Efficient Sustainability

Corporate Governance

6.1 Corporate Governance 6.4 Responsible Taxation

6.2 Integrity Management 6.5 Risk Management

6.3 Regulatory Compliance 6.6 Information Security

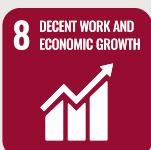


► Efficient Sustainability - Corporate Governance

Sound corporate governance structure is an important foundation for Powerchip Semiconductor Manufacturing Corporation to achieve its goal of sustainable development. In the face of emerging risks associated with climate change and geopolitics in recent years, the Board of Directors continues to play a key role in risk control and mitigation. Therefore, in addition to continuing to strengthen the functions of the Board of Directors, PSMC will progressively improve its risk authentication and management mechanisms, establish sound business practices, and comply with laws and regulations to ensure that it can effectively deal with potential impacts brought about by risks and to safeguard the rights and interests of its stakeholders, thereby fulfilling its core value of operating with integrity.



Corresponding United Nations Sustainable Development Goals (SDGs)



Corresponding Material Topics



Material Topics GRI Standards

GRI 201 : Economic Performance

GRI 206 : Anti-competitive behavior

GRI 205 : Anti-corruption

GRI 418 : Customer privacy

Stakeholders who have priority reading

Government/authorities, investors/shareholders, customers

► 6.1 Corporate Governance

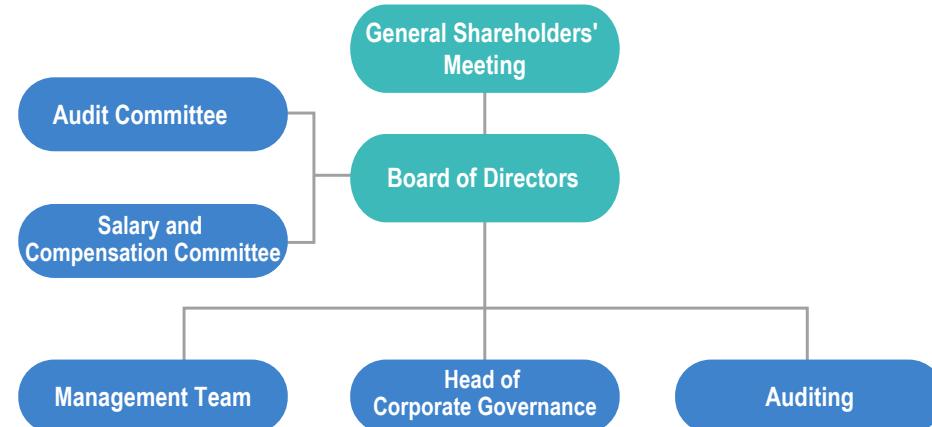
► 6.1.1 Corporate Governance Framework

Powerchip Semiconductor Manufacturing Corporation has a sound corporate governance structure. The shareholders meeting comprises of all shareholders and is responsible for deliberating on major issues and decisions related to Company operations, such as the issuance of new shares, dividend distribution, bylaws and important regulations, and the election of the directors. Under the shareholders meeting, there is a Board of Directors, which is the highest governance unit of the Company and whose members are elected by all shareholders at the shareholders meeting in accordance with the election rules. The duties of the directors are to set the Company's vision, strategy, operations, budgetary plans, formulate the Company's medium- and long-term direction of growth, and oversee the implementation of the Company's operating plans. Additionally, the directors have the experience and ability to manage and monitor risks, guiding the Company to remain firmly grounded in the international market during turbulent times.

Functional Committees

In order to strengthen its supervisory function and improve its management function, the Company's Board of Directors has established functional committees such as the Compensation Committee and the Audit Committee. In accordance with the organizational rules and regulations approved by the Board of Directors, these functional committees exercise the authority granted by the Board of Directors or as regulated by law. The Compensation Committee comprises of three independent directors and is responsible for assisting the Board of Directors in formulating and reviewing the performance evaluation of directors and managers, as well as the policies, systems, standards, and structures of compensation, and regularly evaluating and setting the compensation of the aforementioned personnel to ensure the competitiveness and appropriateness of salaries and wages. The Compensation Committee held a total of four meetings in FY2022, and the actual attendance rate was 100%. The Audit Committee is responsible for overseeing the fair presentation of the Company's financial statements; the selection (or dismissal), suitability, autonomy, and performance of the certified public accountants; the effective implementation of the Company's internal controls; the Company's compliance with relevant laws and regulations; and the control and management of the Company's existing or potential risks, thereby serving as a check and balance mechanism. Six Audit Committee meetings were held in FY2022, and the actual attendance rate was 100%. For more information on the composition, authority, and resolutions of the functional committees, please refer to the Company's 2022 Annual Report.

Corporate Governance Framework



► 6.1.2 Operation of the Board of Directors

The Company's Board of Directors is responsible for the operation, development, and supervision of the Company. It's comprised of four directors and five independent directors, for a total of nine directors, with a term of 3 years (the average term of all directors is 4.20 years as of the end of 2022). The percentage of independent directors is 55.56%, which exceeds the Company's target of setting the number of independent directors as more than 50% of the total number of directors. The number of other public companies in which the independent directors also serve as independent directors may not exceed three. Mr. Huang Chung-Jen, Chairman of the Board, also serves as the Company's Chief Executive Officer, which is necessary for the Company's organizational development and to ensure a smooth communication channel with the directors. Six board meetings were held in 2022, and the average actual attendance rate was 93.33%, with a 100% attendance rate including proxies, exceeding the minimum 80% attendance rate required by the Company's board performance evaluation standards.

Policy on Nomination and Election of Directors

The Board of Directors has established the "Regulations Governing the Election of Directors" as the criteria for the eligibility and selection of director candidates, and has adopted a strict candidate nomination procedure and a cumulative voting system; moreover, it has encouraged shareholders to participate in the nomination and election process. The verification of candidate eligibility and the determination of whether there has been any violation of the provisions of Article 30 of the Company Act are conducted and announced in accordance with the laws, and this process remains autonomous. The method of nomination and election of candidates, the professional qualifications of independent directors, the restrictions on concurrent employment, and any other matters that should be complied with are handled in accordance with the Company Act, the Securities and Exchange Act, and other relevant laws and regulations. The nomination process not only takes into account the professional background and industry experience of each candidate, but their integrity and leadership ability are also critical points of consideration. The results of the Board of Directors' performance evaluation, which is conducted on an annual basis, are also used as a reference for the nomination of directors for reappointment.

Director Independence and Conflict of Interest Management

The Board of Directors emphasizes the function of independent operation and transparency, and the directors and independent directors are independent individuals who exercise their duties and responsibilities independently. In addition, the Company has established the "Operating Procedures and Conduct Guidelines for Integrity Management", which has clear regulations on the recusal of conflict of interest, and the "Regulations for Board of Directors Meetings" also have provisions on the recusal of interest, whereby those who have a stake in the matters of the meetings, whether personally or in the capacity of a legal representative, are not allowed to join the discussion or vote, and the relevant recusal is stated in the minutes of the meetings. As of the end of December 2022, no material conflict of interest has occurred at the Company. Please refer to pages 18-19 of the Company's 2022 Annual Report for the implementation of the recusal of directors from motions of interest.

Diversity of Board Members

In view of the diversity policy and in an effort to strengthen corporate governance and to promote the development of sound board composition and structure, the Company has formulated a "Code of Corporate Governance Practices" which clearly states that the composition of the Board of Directors should take into account diversity and the complementary nature of the directors' professional capabilities, and that appropriate diversity policies should be formulated with respect to the Company's own operations, business model, and development needs, including but not limited to the following:

- (1) Basic qualifications and values: gender, age, nationality and culture.
- (2) Professional knowledge and skills: operational judgment, accounting and financial analysis, operational management, crisis management, industry knowledge, international market perspective, leadership, and decision-making skills.

The Company's current Board of Directors is composed of nine directors with diverse backgrounds, professional abilities, and practical experience. They provide professional counsel on different aspects of the Company's business and strengthen the functions of the Board itself through their extensive skills in the areas of management, leadership, decision-making, industry knowledge, and risk management. To meet the Board of Directors' diversity management objectives, no more than one-third of the directors may serve as managing directors, more than one-third of the directors should be independent directors, and independent directors may serve for no more than three terms.

Board Member Diversity Policy Implementation Status

Name	Basic Components			Professional Background				Professional Knowledge and Skills					GICS Level 1 (Note 1))	
	Nationality	Employee Status	External Independence (Note 2)	Accounting	Industry	Finance	Technology	Operational Judgment	Operational Management	Leadership & Decision Making	Crisis Management	Industry Knowledge	International Market Insights	
Director	Huang Chung-Jen*	Republic of China (Taiwan)	v	Executive Director		v		v	v	v	v	v	v	Industry, Healthcare, Finance, Information Technology, Communication Services
	Hsieh Tsai-Chu*		v	Executive Director		v		v	v	v	v	v	v	Information Technology
	Shao Chang-Jung*		v	Executive Director		v	v	v	v	v	v	v	v	Finance, Information Technology
	Hsu Ching-Hsiang*			Non-Executive Director		v		v	v	v	v	v	v	Information Technology
Independent Director	Wu Chung-Yu			Independent Director		v		v	v	v	v	v	v	Healthcare, Information Technology
	Chang Chia-Lin			Independent Director		v	v	v	v	v	v	v	v	Finance, Information Technology, Communication Services
	Lin Hsien-Ming			Independent Director		v		v	v	v	v	v	v	Finance, Information Technology, Communication Services
	Yeh Shu			Independent Director	v	v	v	v	v	v	v	v	v	Finance, Information Technology, Communication Services
	Chen Chun-Sheng*			Independent Director		v		v	v	v	v	v	v	Finance, Information Technology, Communication Services

Note 1: The director's industry experience assessment was conducted in accordance with the Global Industry Classification Standard (GICS) Level 1.

Note 2: The Powerchip Semiconductor Manufacturing Corporation Board of Directors has adopted a one-tier system, and directors must meet four of the following nine external independence assessment criteria, including two of the first three criteria, to be classified as independent directors; moreover, independent directors must be non-executive directors.

(1) During the past 1 year, the director has not held any senior positions within the Company.

(2) The director and their family members did not receive more than US\$60,000 from the Company, its parent, or its subsidiaries this year, except as permitted under Rule 4200 of the US SEC.

(3) No family member of a director worked as an executive officer of the Company, its parent, or its subsidiaries this year.

(4) The director is not an advisor to the Company or the management team and has no vested interest in the Company's advisors.

(5) The director has no vested interest in the Company's major customers or suppliers.

(6) There is no service contract relationship between the director and the Company or the management team.

(7) The director has no vested interest in a nonprofit organization that is a major recipient of corporate contributions.

(8) During the past 1 year, the director has not served as an external auditor or as a partner of the Company.

(9) There is no conflict of interest between the director and the independent operation of the Board.

In addition, pursuant to Article 4 of the Regulations Governing Appointment of Independent Directors and Compliance Matters for Public Companies, the independent directors of the Company shall not serve as independent directors of more than three other companies.

Note 3: The percentage of directors aged 51 or above is 100%, all of whom are male.

Note 4: To ensure the inclusiveness of stakeholders, the board members are representative of various stakeholders such as senior citizens, veterans, government workers, investors, and nonprofit organizations.

Note 5: Please refer to the Company's 2022 Annual Report for a brief biography of each director.

Note 6: All directors are executive directors; all independent directors are non-executive directors.

Note 7: Those names marked with an * are: Director Huang Chung-Jen, who is also the CEO of PSMC; Director Hsieh Tsai-Chu, who is also the President of PSMC; Director Shao Chang-Jung, who is also the Vice President and Chief Financial Officer of PSMC; and Director Chen Chun-Sheng, an independent director who took over from June 17, 2022.

Professional Development for Board Members

In consideration of the diversified approaches, such as operational patterns and development needs, while at the same time responding to the advancement of domestic and international corporate governance and sustainability issues, the Company evaluates the topics of professional development based on the characteristics of the industry, and takes into account the professional background of the directors, assists in drawing up a plan for professional development and arranges for courses of at least 6 hours per year in accordance with the law. The total number of hours of professional development for directors in 2022 was 64.5, with an average of 7.17 hours for each director. After taking into account international trends and feedback from the directors' self-assessments, issues such as international trade, economic trends, automotive semiconductor developments, and sustainable governance will be included in the professional development program. Risk management issues are also regularly incorporated into directors' training courses to ensure that directors have the ability to assess various risks and enhance their risk management awareness. In addition, directors may also participate in external training courses according to their needs. Please refer to pages 22-23 of the Company's 2022 Annual Report for further details regarding the directors' professional development.

Performance Evaluation and Compensation for Board Members

In order to strengthen corporate governance and enhance the functions of the Board of Directors and functional committees, the "Board of Directors Performance Evaluation Method" was established in accordance with the Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies to conduct performance evaluations of the Board of Directors and functional committees, and to adjust the focus of evaluation with reference to international trends and industry development. Additionally, plans have been made to incorporate sustainability-related elements into the evaluation items to more comprehensively measure the operational and supervisory performance of the governance units. The Company conducts an internal self-assessment by the Board of Directors, a self-assessment by the Board members, and a self-assessment by the functional committees once a year. Moreover, at least once every three years, the Company appoints an external professional independent organization or a team of external experts and scholars to conduct an assessment. The Company conducts the performance assessment for the current year in accordance with the assessment procedures and assessment indicators; the assessment proceedings should be completed before the end of the first quarter of the following year, then sent to the Board of Directors for review, improvements, and the formulation of enhancement measures, so as to facilitate the Company's understanding and grasp of the operational effectiveness of the Board of Directors and the functional committees.

The Company reported the results of the 2022 evaluation to the Board of Directors and the functional committees on February 21, 2023:

- (1) The self-assessment score for the performance evaluation of the Board of Directors was 97
- (2) The self-assessment score for the performance evaluation of the Board members was 99
- (3) The self-assessment score for the performance evaluation of the functional committee was 97

The results of all evaluations "Exceeded Standards" with scores of 90 or above. For

more information on the performance evaluation of the Board of Directors and functional committees in 2022, please refer to page 19 of the 2022 Annual Report.

In order to achieve the purpose of attracting, motivating and retaining talents, the Company evaluates the remuneration and compensation of directors and managers based on the evaluation results of the Board of Directors' Performance Evaluation Method and the Managerial Performance Evaluation and Compensation Regulations, and the performance evaluation and compensation policies are set by the Compensation Committee and evaluated regularly. The Company pays remuneration to directors and managers, taking into account the future development of the Company's operations as well as its operational risks, while evaluating their individual performance in order to strike a balance between sustainable management and risk control. The remuneration of the directors is reviewed by the Compensation Committee, submitted to the Board of Directors for approval, and proposed to the shareholders meeting for reporting. The managers' remuneration includes salary, bonuses, and employee compensation. Each manager's remuneration is based on the manager's participation in and contribution to the Company's operations, is paid based on the annual salary survey report with reference to industry salary standards, and is submitted to the Board of Directors for approval after review by the Compensation Committee. In the future, the Company will continue to deepen the relationship between managers' remuneration and the company's sustainable development performance, strengthen the incentives for managers to promote sustainable development goals, and demonstrate the common goal of sustainable corporate management:

- The compensation of the CEO is based on the achievement of financial and non-financial targets related to the Company's operations, in addition to the individual's operating performance. The Company issued new shares with restricted employee rights in 2020 and set long-term performance targets from 2021 to 2024, linking the CEO's variable compensation to the Company's financial targets (consolidated revenue, gross profit margin, operating income ratio, return on equity, etc.) and the performance of ESG governance-related non-financial targets (energy conservation and carbon reduction targets, green energy use planning, water withdrawal, etc.) as variable compensation items, to achieve consistency between operational objectives and sustainability results.
- In order to ensure and enhance the ethics and conduct of senior management and all employees, the Company has established the Code of Conduct for Integrity and the Procedures and Guidelines for Integrity Management. In the event of a violation of the Code and the Guidelines, the Company reserves the right to claim the profits from the improper conduct and the variable compensation paid to the employees to the extent permitted by applicable law, and to impose penalties, including salary reduction, withholding of bonuses and bonuses, demotion, dismissal or legal action, depending on the severity of the situation or the negative impact on the Company's reputation, in order to protect the interests of the Company and the shareholders as a whole, as well as to safeguard the long-term development of the Company by requiring employees to strictly adhere to ethical standards.
- In order to align the long-term interests of senior managers with those of shareholders, the Company encourages managers to hold a certain amount of stock for a long period of time during their employment.

► 6.2 Integrity Management

Powerchip Semiconductor Manufacturing Corporation is committed to “Integrity, Service, Quality, and Innovation” as its business beliefs, and has set the highest standards for its directors, managers, and employees to comply with the anti-corruption and anti-bribery laws and regulations applicable in the countries in which they operate. The Company also strives to enhance the work ethics and professional competence of its internal staff through the three main pillars of “Establishing a Integrity Management Code”, “Implementing Education and Training”, and “Establishing a Whistleblower System” for integrity management and communication.

Integrity Management Operation Status

With the approval of the Audit Committee and the approval of the Board of Directors, the Company has established the Code of Conduct for Integrity Management, Procedures and Conduct Guidelines for Integrity Management, Procedures for Reporting, Complaints and Suggestions, and Employee Participation and Feedback Management, and various internal rules and regulations, which were submitted to the shareholders meeting for implementation, as a commitment and basis for the Board of Directors and the management to actively implement the policy of integrity management. We also communicate our policy commitments to our employees, partners, suppliers and other related parties through our website, order invoices, major construction equipment purchase and sale contracts, and internal website. The Company also regularly evaluates the integrity of business ethics and improper profit behavior. We adopt a zero-tolerance policy for employees' ethics and behavior. Any violation of the Code of Conduct will be punished by warning or demerit depending on the circumstances, and the most serious cases will be punished by dismissal. In addition, in order to ensure that employees' behavior is in line with the requirements of the Code of Conduct and work rules, relevant behavioral performance will be linked to employee compensation through the company's reward and disciplinary system, and the reward and disciplinary records related to the Code of Conduct will be included in the annual performance evaluation of employees. In addition to regulating internal personnel, the policy also specifies that the Company shall consider the legitimacy of agents, suppliers,

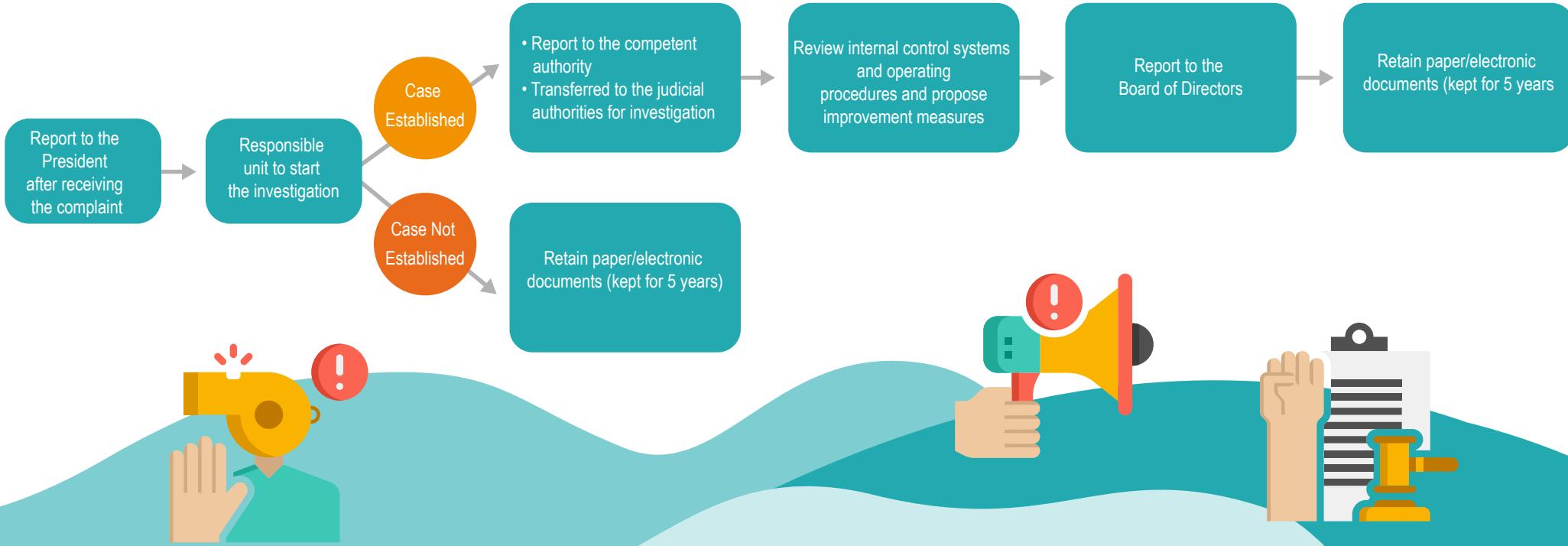
customers, and other business counterparts and whether they are involved in dishonest practices before engaging in business. The Company shall also enter into the “Responsible Business Alliance (RBA) Pledge” with suppliers and plant contractors or add integrity management clauses to the contract to ensure that external stakeholders work together to implement the policy of business ethics and integrity management. In accordance with the requirements of the Responsible Business Alliance (RBA), the Company has established the RBA Social Responsibility Risk Management Act, the RBA Social Responsibility Management Review Act, the RBA Social Responsibility Performance Target Management Act, the RBA Social Responsibility Risk Management Act, and the RBA Social Responsibility Regulation Collection and Authentication Act. The Company will regularly identify and evaluate business ethics, integrity management, and behaviors of impropriety. As of the end of 2022, the Company has not identified any significant corruption risk, nor has there been any corruption or other violation of integrity management.

The Company’ s Professional Ethics Advancement Committee, chaired by the Director of Legal Affairs, is composed of the heads of the Legal Affairs Office, Finance Division, Accounting Division, Human Resources Division, and Risk Management Division, and is independent of the organization. The Professional Ethics Advancement Committee is responsible for promoting the development and implementation of integrity management policies and preventive programs. Through annual internal audits, all departments and plants are required to conduct self-assessments of their operations, including assessments of compliance with laws and regulations and potential risks related to corruption, which serve as a reference for adjusting the design and implementation of internal control systems. The implementation status is also reported to the Board of Directors on a regular basis each year in order to carry out self-monitoring and track the status of the improvements.

Advocacy and Educational Training

In order to ensure that employees conduct business in an ethical manner, the Company not only regularly disseminates information on legal and regulatory changes to all directors and employees through emails, but also conducts education and training on the concepts of anti-corruption and business ethics for all employees, and conducts online tests after promoting the policy of integrity management. In 2022, the Company offered relevant courses on “Social Responsibility and Business Ethics” and “Sustainable Development and Integrity Management”. The completion rate was 100%, and all of the nine directors received relevant training on anti-corruption policies.

The Company's Professional Ethics Advancement Committee is responsible for handling complaints and will follow the following procedures:



In addition, the complaint processor shall declare in writing that the identity of the “whistleblower” and the content of the report shall be kept confidential, and establish “Whistleblower Protection and Anti-Retaliation Management Procedures” to protect employees, suppliers, and other internal or external parties from exercising their whistleblowing rights in accordance with the law, and provide them with due protection and immunity from retaliation.

In order to continuously optimize the Company’s complaint and reporting mechanism, the Company requires the Investigation Team to immediately create a file upon receipt of a reported case and notify the actual informant, complainant, or advocate in writing within 14 working days to present the facts in person, and the Investigation Team may conduct an investigation based on the facts. Additionally, in case of anonymous reports, the investigation team shall take into consideration the improvement of the case. If there is any intentional planting of evidence, smearing, defamation, or damage to the character of others, the case shall be handled in accordance with the relevant laws and regulations in order to strengthen the efficiency and effectiveness of the operation of the complaint and reporting mechanism.

Corporate Donations and Related Expenses

Technological innovation in the domestic semiconductor industry is a key element for Taiwan to gain a foothold in the international market. Through the cooperation and investment of industry, government, and academia, we will build a more complete semiconductor ecosystem and continue to expand our competitive advantage. The Company expects to exert its influence on the industry and invest resources to support the development of the domestic semiconductor industry over the years, covering issues such as technological innovation, environmental sustainability, and supply chain management, with particular emphasis on the cultivation of semiconductor industry talents to lay an important foundation for the development and transformation for the industry of the next generation.

2022 Issues of Focus and Investments

Issue	Description of the position/level of involvement	Investment Capital (NTD\$)
Talent Nurturing	<p>In May 2022, the Legislative Yuan passed the “National Key Fields Industry-University Cooperation and Skilled Personnel Training”, and the Ministry of Education approved the establishment of four semiconductor colleges, including National Taiwan University, Yang Ming Jiaotong University, National Tsing Hua University, and National Cheng Kung University, to cultivate high-level talents for the continuous advancement of semiconductor technology and to strengthen the competitiveness of Taiwan's semiconductor industry in the next generation.</p> <p>The Company supports and pledges to donate NT\$100 million per year to support the operation of semiconductor colleges in Taiwan and to promote industry-academia cooperation and policy evolution of the public higher education system; in addition, the Company also donated NT\$125 million to assist Tsinghua University in building a technology engineering building to optimize the academic environment.</p>	225,000,000
Environmental Sustainability	<p>In view of the global net-zero emission wave, the 2050 net-zero carbon emission target, and the upcoming EU carbon border adjustment mechanism, the Company supports and actively participates in various associations such as the Taiwan Semiconductor Industry Association (TSIA), the Science Park Industry Association, and environmental health related public association to exchange ideas and experiences with industry players in implementing environmental sustainability related issues, and also collaborates with supply chain partners to continuously refine energy management, water resource management, waste management and air pollution prevention as they relate to climate change.</p> <p>Our director, Mr. Ding Liwen, is currently the chief convener of the Environmental Protection Committee of the Science Park Industry Association, and also participates in the Environmental Safety and Health Committee of the Taiwan Semiconductor Industry Association, and is committed to working with our industry partners to contribute to environmental sustainability.</p>	1,436,660

2022 Issues of Focus Association Participation and Investment

Name of Association	Main Activities	Investment Capital (NTD\$)
Taiwan Semiconductor Industry Association (TSIA), Taiwan, R.O.C.	In 2022, TSIA will work with its member companies to develop a comprehensive ESG strategy for sustainable development, share resources and practical experience in the areas of climate change, greenhouse gas reduction, circular economy, corporate governance, human rights management, and social welfare, and continue to exert influence through practical actions in order to elevate the industry and achieve the goal of sustainable development.	1,051,860
JEDEC Solid State Technology Association	JEDEC is a global leader in the development of open standards for the microelectronics industry, and its standards are widely used in mainstream semiconductor memory circuits and related memory devices around the world, playing a key role in meeting the evolving technical challenges of the microelectronics industry and the growing demand for standards development and updates from manufacturers and suppliers worldwide, helping companies to meet the various challenges brought about by industry changes.	548,736
The Allied Association for Science Park Industries	The industry association mainly operates on the basis of cluster efficiency, vertical integration, and professional division of labor, and actively and effectively constructs an operational mechanism to establish various professional committees to resolve and promote the professional issues of member companies. In 2022, the association held seminars on topics such as zero emission, information security, and occupational safety and health, and through the sharing of insights and experiences by experts in the field, the association will help the enterprises in the science park to be able to respond to various risks and emergencies in the future in the face of industrial transformation, and to enhance their international competitiveness.	360,000

Public Affairs Participation and Investment

Category	Investment Capital (NTD\$)			
	2019	2020	2021	2022
Interest Group Lobbying	0	0	0	0
Donations to political organizations, candidates, etc.	0	0	0	300,000
Participation in industry unions, trade organizations, think tanks, or non-profit organizations	2,428,542	1,925,645	1,904,703	2,593,871
Other (e.g. election motions, referendum-related expenses, etc.)	0	0	0	0

Note: All donations were made in cash.

Column

RBA (VAP Certification)

RBA (VAP Certification)

In the past three years, the world has been suffering from the restrictions of the new coronavirus and its variants, and the extreme climate has significantly impacted human life and business activities, making human rights a core issue of international concern. Based on the philosophy of caring for human society, responding to customer expectations, and practicing corporate sustainability development, PSMC has established strict regulations and management processes, and established a positive organizational cycle through regular self-audit reviews and management review meetings with the president.



Management System Establishment

In compliance with the Labor and Business Ethics Policy of the [Responsible Business Alliance Code of Conduct](#) (hereinafter referred to as "RBA Code"), the company has established rules and regulations including the RBA Social Responsibility Risk Management Regulations, the RBA Social Responsibility Management Review Regulations, the RBA Social Responsibility Performance Target Management Regulations, and the RBA Social Responsibility Regulatory Collection and Identification Regulations, to regularly and systematically review the compliance of the Company's system with the risk assessment, feasible measures and actual operations in the areas of labor rights, health and safety, environment, business ethics, and management system, to ensure that the Company's conduct meets or exceeds the standards of the RBA Code. The RBA-designed standardized risk assessment quotas (SAQs) are used annually to self-identify the physical actions, management systems, and potential risks in each of the five major areas of business: labor, health and safety, environment, ethics, and management systems, with each area having a dedicated unit for implementing the SAQs. In 2022, the SAQ scores for the Company and each plant site all fell within the "low risk" range (a score of 85 or higher is considered low risk). In addition, the Company has been advised by an external consultant to integrate the differences in the five major areas among the plants, and to track the Validated Assessment Program (VAP) update project by a third-party organization appointed by the RBA and make improvements. The P1/2 plant obtained the RBA VAP Gold Certificate in the first quarter of 2022, and the rest of the plants are expected to implement the validation process by the end of 2023.

Item	Fab	Headquarters	P1/2 Plant	P3 Plant	8A Plant	8B Plant
SAQ 2022		99.3	89.8	90.1	89.8	89.9

SAQ Self-assessment score :: Low risk (≥ 85), medium risk ($\geq 65 \text{ & } < 85$), high risk (<65)

With the Responsible Business Alliance (RBA) pledge, Powerchip Semiconductor Manufacturing Corporation (PSMC) demonstrates that it is working together with all of its employees, suppliers and third parties to fulfill and comply with the requirements of the international community and its customers, and fulfilling commitments towards social responsibility as a world-class company.

Please refer to the Company's official website for the RBA pledge and certificate : <https://esg.powerchip.com/en-global/news/content/rba>



Column

RBA (VAP Certification)

Reinforce the Promotion of the RBA Spirit to Colleagues

For the sake of our customers and the market, quality has been the cornerstone of our long-standing foundation and growth, and is deeply rooted in our business. The RBA's focus on human rights is in line with benchmark international human rights standards such as the UN Guiding Principles on Business and Human Rights, the International Labor Organization's Declaration on Fundamental Principles and Rights at Work, and the UN Universal Declaration of Human Rights.

To this end, the President has reiterated RBA's human rights spirit on internal and external occasions. The promotion team publishes posters and displays them in prominent places as a reminder. We also use the opportunity of RBA audits by our clients to emphasize the human factor and implant its spirit in various self-reviews.



► 6.3 Regulatory Compliance

Powerchip Semiconductor Manufacturing Corporation's Research & Development and manufacturing center is based in Taiwan, and its products are marketed and serviced worldwide. In order to ensure that each business complies with the relevant laws and regulations in each market, and to avoid financial and reputation losses due to regulatory violations, the Company has established a complete regulatory compliance system, including a series of programs such as regulatory tracking and evaluation, internal compliance regulations and education training, and closely monitors the changes in regulations in each market in which its business is engaged.

► 6.3.1 Regulatory Compliance Management

In view of the diversification and globalization of the Company's operations, the Company will continue to expand its relevant business areas as it plans to extend its operating locations overseas. In order to enable each unit to have a clear understanding of the relevant laws and regulations involved in the execution of its business, the Legal Affairs Office, together with the Head of Corporate Governance, has established a clear regulatory compliance management system to assist the directors and the Legal Affairs Office in monitoring the legal compliance of each department and to introduce a legal compliance risk control mechanism to identify potential risks of non-compliance with laws and regulations in related businesses and to formulate preventive measures as early as possible in order to strengthen the effectiveness of corporate governance.

The Company adjusts its annual legal compliance focus in accordance with its business development priorities, and proceeds to identify, manage, and publicize laws and regulations related to product import and export, labor safety, environmental protection, and securities trading. In accordance with domestic laws and regulations, the Company has also established the principle that a single criminal law case or administrative law case with a penalty of NT\$1 million or more, or a major incident that seriously affects the Company's operations, must be disclosed, and major losses and improvements must also be publicly disclosed. In addition, we will review our operating procedures and strengthen our auditing mechanism to prevent the recurrence of such incidents. As of the end of 2022, no major violations of environmental or social laws and regulations, or anti-competitive, antitrust or monopolistic practices have resulted in financial penalties at any of our locations.

2022 Regulatory Compliance Status

Human Rights Laws and Regulations	Anti-competitive Behavior	Relevant Company Operating Laws and Regulations
Compliance with Labor Standards Act	No anti-competitive behavior involved	No violation of the Company Act
No use of child labor	No Antitrust Incidents	No violation of Commercial Law
No discrimination involved	No monopolistic incidents	No violation of securities and financial laws and regulations
No infringement of indigenous rights		No corruption-related incidents
No infringement of freedom of association and assembly		No incidents involving customer privacy or personal information leakage
No forced labor		

► 6.3.2 Internal Audit Mechanism

The auditing office under the Board of Directors of PSMC is staffed with the appropriate number of full-time auditors and has a comprehensive auditing and reporting system. The audit office is responsible for coordinating internal audit operations, planning annual audit projects and conducting audit assignments with reference to the regulations set forth by the competent domestic authorities and risk assessment results, as well as performing project-based audits from time to time as needed, in order to assist the Board of Directors and managers in checking and evaluating the effectiveness of the internal control system, so that the Company can reasonably ensure the achievement of the following objectives under the operation of the internal control system:

- (1) Effectiveness and efficiency of operations (including profitability, performance and safeguarding of assets)
- (2) The report has reliability, timeliness, transparency and is in compliance with relevant regulations
- (3) Compliance with relevant laws and regulations

The Company recognizes that internal control systems have inherent limitations and that no matter how well designed, an effective internal control system can only provide reasonable assurance that the above three objectives will be achieved, and that the effectiveness of internal control systems may change in response to changes in the overall environment and international trends. Therefore, the Company has a self-monitoring mechanism in its internal control system and should take immediate action to prevent the expansion of the impact of deficiencies whenever such deficiencies are detected or potential risks are identified. The Company determines the effectiveness of the design and implementation of the internal control system in accordance with the "Regulations Governing Establishment of Internal Control Systems by Public Companies" and classifies the internal control system into five major components, including control environment, risk assessment, control operations, information and communication, and supervision operations, based on the management control process. Based on the results of the aforementioned assessment, as of December 31, 2022, the Company's internal control system (inclusive of the supervision and management of subsidiaries), including understanding the extent to which operational effectiveness and efficiency objectives are achieved, the reporting is deemed to be reliable, timely, transparent and in compliance with relevant regulations, and the design and implementation of the internal control system are effective as well as in compliance with the relevant laws and regulations, which can reasonably ensure the achievement of the aforementioned objectives.

In addition, the Audit Office supervises each unit and subsidiary to perform self-assessment of the internal control system annually and reviews the self-assessment documents performed by each unit and subsidiary to ensure the quality of implementation and to fully realize the self-monitoring mechanism of the Company. The results of the aforementioned self-assessment and the improvement of internal control system deficiencies and irregularities identified by the Audit Office are reported to the independent directors of the Audit Committee, which also serves as the primary basis for the declaration of internal control system issued by the Board of Directors and the President of the Company. On February 21, 2023, the Board of Directors approved a declaration stating that the design and implementation of the internal control system for 2022 was effective.

► 6.4 Responsible Taxation

► 6.4.1 Tax Governance Policy

In line with the international trend of tax governance and under the premise of ensuring controllable tax risks, in order to achieve sustainable development and enhance shareholder value, PSMC follows the tax regulations of the countries in which it operates and the "Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations" issued by the Organization for Economic Cooperation and Development (OECD) to formulate a Tax Governance Policy in 2022 to support corporate innovation and promote economic growth. The policy shall be implemented after a resolution is passed by the Board of Directors.

For details of the Tax Governance Policy, please refer to :
https://esg.powerchip.com/upload/media/sustainability_development/Tax_Governance_Policy.pdf



Tax Governance Unit

The Accounting Office is the tax administration unit of the Company, employing personnel with both the background knowledge and practical experience to perform the day-to-day tax administration and management duties, and ensuring the effectiveness and professionalism of tax administration through the professional services provided by external professional organizations. The Accounting Office regularly reviews the content of regulations, conducts training and tax strategy reviews for relevant personnel on a monthly basis to ensure that the tax policies are in line with the latest regulations and changes in international trends. In order to avoid financial losses due to tax risks, we conduct pre-tax assessments before making major operational decisions and transactions, taking into account the tax regulations of the operating locations and international tax standards to avoid double taxation. With respect to the assessment of tax governance and control structure, the Board of Directors has appointed the Audit Committee to oversee the fair presentation of the Company's financial statements, the effective implementation of internal controls, the control of existing or potential risks and the legal compliance mechanism to ensure that the Company's tax governance policies comply with the regulations. In addition, the Company is committed to the management structure and transaction arrangements being in line with economic realities, not engage in tax planning for the purpose of tax avoidance, nor would it transfer the Company's profits to low-tax countries or regions, and it strives to establish a mutually respectful, transparent and trusting cooperative relationship with local tax authorities.

Tax Governance Policy Highlights

Tax Management

Regulatory Compliance,
Honest Taxation

Prudent assessment of tax risk and impact

conduct taxation assessment
to manage risk and create
shareholder value

Tax Relations

Healthy, Effective, Transparent
and Mutual Respect

Transparency of tax information

Tax information is disclosed
in accordance with relevant
regulations and standards
and is regularly disclosed to
stakeholders through public
channels



Tax Information

Unit: NTD 1,000

Country-specific tax information					
Tax jurisdiction	Primary Business	Net Income	Net Income Before Tax	Current Income Tax	Income Taxes Paid
Taiwan	Wafer Foundry OEM	78,161,968	26,965,252	5,409,934	1,333,800
Japan	Integrated Circuit Research and Development	183,679	11,300	7,343	6,262
British Virgin Islands	General Investment	3,879	(22,700)	-	-

Unit: NTD 1,000

Effective tax rate and cash tax rate			
Item	2021	2022	Average
Net income before tax	19,214,796	26,972,680	23,093,738
Income Tax Expenses	3,122,441	5,338,058	4,230,250
Effective tax rate	16.25%	19.79%	18.32%
Income tax payment	(19,047)	1,340,082	660,518
Cash tax rate	(0.10%)	4.97%	2.86%

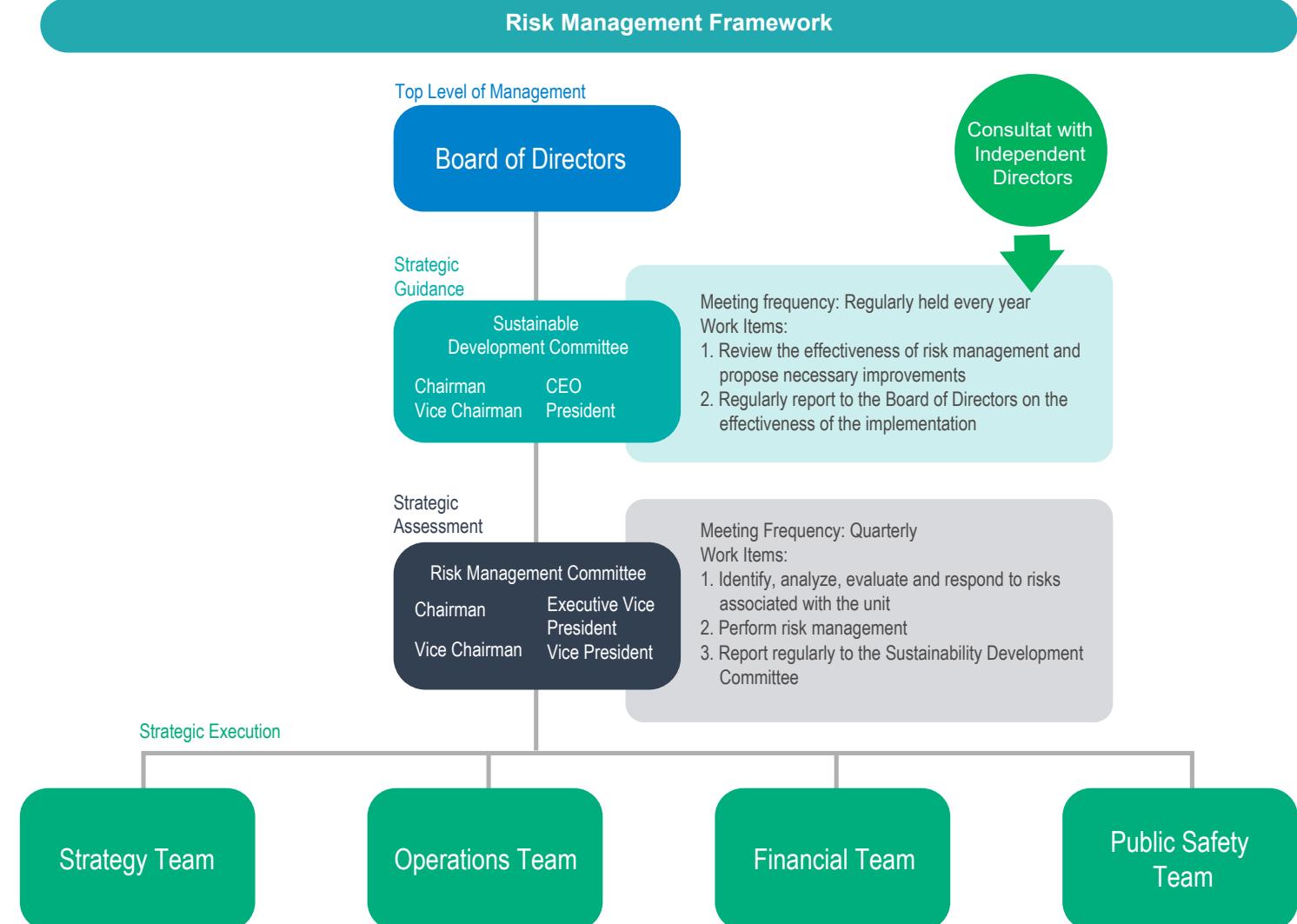
The effective tax rate of 19.79% for Powerchip Semiconductor Manufacturing Corporation in the year 2022 is higher than the average effective tax rate of 15.90% for the global “semiconductor and semiconductor equipment” industry as published by SAM CSA Companion. This is mainly due to the fact that Powerchip’s major business and revenue are concentrated in Taiwan, which is the main operating base, and therefore the effective tax rate is approximately 20% of the statutory income tax rate for Taiwan’s profit-making business. The cash tax rate of 4.97% for 2022 is lower than the effective tax rate of 19.79% for the same year and the average cash tax rate of 14.12% for the global “semiconductor and semiconductor equipment” industry as published by SAM CSA Companion. The main reason is that the Company’s cash tax rate for 2022 is lower than the industry average due to lower taxable income from depreciable assets due to timing differences.

► 6.5 Risk Management

► 6.5.1 Risk Management Culture

Risk Management Framework

The Board of Directors is the highest governance unit for risk management and oversees risk management-related operational mechanisms. To ensure effective risk management and provide oversight for the implementation of risk management measures, the Sustainable Development Committee provides strategic guidance and supervision, and establishes a Risk Management Committee under its umbrella to assign appropriate units to promote and execute risk management measures, which are then responsible for the planning, execution, and supervision of risk management-related matters, making the risk management function is structurally independent of the business lines, and each while the operating units perform daily risk management activities. The Risk Management Committee will coordinate with relevant internal departments to jointly review the internal and external risks faced by the Company in accordance with the overall risk policy, and promote countermeasures for major company-wide risk issues. The Risk Management Committee reports regularly to the Sustainable Development Committee to ensure consistency with the Company's sustainability strategy, and provides annual reports to the Board of Directors to ensure alignment with the risk management policy and to report on the effectiveness of risk management measures.



Shaping the Risk Culture

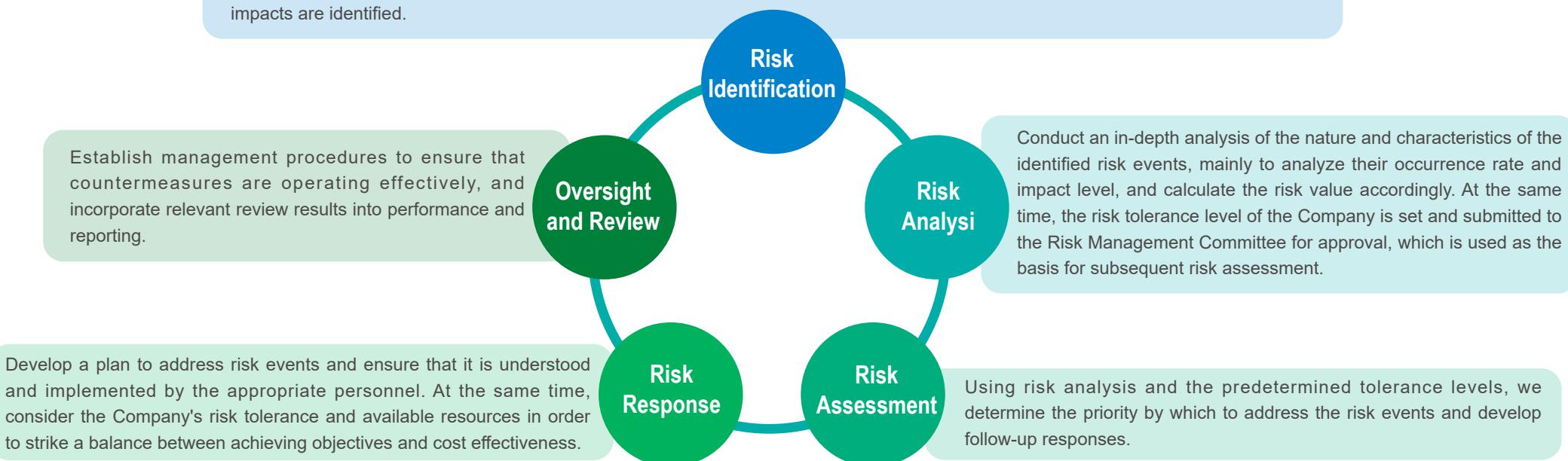
To enhance the risk awareness of all employees and establish a corporate culture of implementing risk management on a daily basis are important objectives of risk management at PSMC. To this end, PSMC has set a number of risk management indicators to track and review the effectiveness of risk management implementation. First, the Company has included operational risk items such as climate and occupational safety and health in the performance evaluations of senior executives and business department heads, and has developed various financial incentives to encourage management to refine their risk management capabilities over the long term. In addition, the Company also conducts key training on risk management through internal education and training, and includes "Risk Management and Crisis Awareness" in the employee performance evaluation, so

that all employees can clearly understand the potential risks in daily business and effectively enhance their awareness of risk prevention. The Company has also established measures and channels for individual employees to proactively identify and report potential risks to the entire organization, including a whistleblower mechanism such as the "Feedback Corner" online platform, an extension line and email, and encourages employees to participate in a structured feedback process to continuously refine the risk monitoring and management system. In addition, the Company incorporates risk criteria in the procurement of raw materials, product development or approval stages. At the same time, according to the internal innovation management system and the proposal improvement system, employees will be rewarded with credit for specific and feasible risk management or other management improvement suggestions depending on the degree of improvement, and various innovative risk culture activities conducive to risk assessment and management are continuously introduced to deepen employees' risk awareness.

▶ 6.5.2 Risk Identification Process

The risk management process of PSMC covers five major elements, and internal audits and reviews of the risk identification process are conducted regularly each year to ensure the effectiveness of the risk management process and related controls.

Based on the Company's strategic objectives and the risk management policies and procedures approved by the Board of Directors, we use past experience and information, and consider both internal and external risk factors and stakeholder concerns. Through analysis and discussion, potential risk events that may lead to failure to achieve the Company's objectives or result in losses and negative impacts are identified.



The Company understands the importance of risk management in protecting stakeholders and reducing damage. Therefore, the Company is actively implementing a corporate risk management mechanism and will conduct a comprehensive risk analysis in the future based on operational impact analysis, taking into account the size of the Company, its industry, business characteristics and operational activities, as well as the material topics identified in the annual materiality analysis, in order to understand potential threats of operational disruption, vulnerabilities and corresponding loss control measures, and then determine the location of operational risks and formulate corresponding risk control strategies to reduce risks.

It is expected that all departments of the Company will participate in the evaluation and diagnosis through the overall systematic management risk diagnosis, including factory, risk management, manufacturing, engineering, automation, information management, physical management, purchasing, business, production management, finished products, finance, human resources, and quality and customer service units. By doing so, we will not only evaluate the risks involved in each operation in a more comprehensive manner, but also prioritize the risk control measures for the material topics and risks identified in the current year, so as to mitigate the occurrence and impact of risks in a timely manner. In addition, the Company will make good use of the business opportunities that exist within the risks to develop a corporate development strategy that will enable the growth of business benefits from risk control, and is committed to making continuous efforts to ensure the success of the Company and its stakeholders in the area of risk management.

Risks related to information security, climate change, and human rights are described in separate sections with potential risks and corresponding strategies. The remaining major risks identified by PSMC in 2022 are listed in the following table:

Strategy

China's self-built semiconductor supply chain, the risk to the company's future growth	
Risk Description	Potential Impacts
China's self-built semiconductor manufacturing supply chain is limited to mature process capacity due to the limitations of advanced process equipment in the U.S. This trend will intensify competition for the company's future growth.	<ul style="list-style-type: none"> Increased competition: Increased competitive pressure in the mature foundry market has impacted the company's market share and pricing. Policy Support: China's policy support in semiconductor manufacturing may result in existing customers being incentivized to manufacture in China due to orders from China's domestic demand, which could negatively impact the Company's market share and revenue.
Risk Tolerance Level	Corresponding Strategy
<ul style="list-style-type: none"> Competition: Medium to high risk, the rise of China's semiconductor supply chain will bring intense competition to the company. Policy Support: Medium to high risk that the Chinese government may support local foundries through policy, resulting in the loss of potential customers in China. 	<ul style="list-style-type: none"> Improve technology innovation capability: Strengthen technology development and transfer, provide more efficient and competitive process platforms, increase flexibility for customer adoption, and increase market share. Market Expansion: Expand into overseas markets to reduce dependence on the China market and reduce the impact of geopolitical risks on operations. Strengthen management and reduce costs: Improve production efficiency and productivity by enhancing operational management and reducing costs in order to strengthen cost competitiveness.

Operation

Global semiconductor companies compete for talent, leading to risk of future talent shortage	
Risk Description	Potential Impacts
To meet market demand, major semiconductor fabs around the world are increasing their capital expenditures and recruiting scale. However, in Taiwan, with the worsening of birth rates, it is clear that the manpower demanded by the industry is starting to be insufficient to support the industry and company development. The industry is facing the dilemma of talent expansion.	<ul style="list-style-type: none"> Talent Shortage: Foundries may face difficulties in recruiting and retaining high quality technical talent, and the foundry industry is facing increased competitive pressure for talent given the increasing demand for talent from global semiconductor companies. Lower productivity: A lack of quality technical personnel in foundries may lead to lower productivity, which in turn may affect market competitiveness and profitability. Declining technology innovation: The lack of high quality technical talent will limit the foundry's ability to innovate, which will affect the foundry's market position.
Risk Tolerance Level	Corresponding Strategy
<ul style="list-style-type: none"> Rising Salary Costs: Medium risk. Taiwan's talent market is highly competitive, and rising salaries may have some impact on costs. Insufficient technical R&D: High risk, lack of sufficient technical R&D talents will affect the company's new manufacturing process development progress and long term technical competitiveness. 	<ul style="list-style-type: none"> Invest in training and development: Invest in talent training and development to enhance the skills and knowledge of our employees, thereby expanding our talent pool. Build a culture that attracts talent: To build a corporate culture that attracts and retains high quality technical talent by offering flexible work arrangements and a variety of benefits and compensation packages. Strengthen collaboration with academia and industry: The Company has established a semiconductor school with top universities to strengthen collaboration with academia and industry to conduct joint research and development projects to attract high quality technical talent. The Company will continue to emphasize talent management and develop effective talent management strategies to attract and retain high quality technical talent to ensure market competitiveness and long-term growth.

Sensitivity Analysis and Stress Testing

Financial Risk

Unit: NT\$ in thousands; %

Unit: NT\$ in thousands; %

1. Interest Rate Changes		
Year/Item	2021	2022
Consolidated interest expense	697,812	701,784
Consolidated net operating revenues	65,622,945	76,086,619
Consolidated interest expense as a percentage of net operating revenues	1.06	0.92

Corresponding Strategy:

Interest expense as a percentage of net operating income for 2021 and 2022 is 1.06% and 0.92%, respectively, which is a small percentage for each period. This is mainly due to the interest incurred by the Company in financing its borrowings from financial institutions for operating needs and capital expenditures, and although market interest rates fluctuate, they do not yet have a material adverse effect on the Company's revenue and profitability. The Company observes and analyzes the impact of interest rate changes in the financial market on the cash flows generated from all interest-bearing liabilities, maintains good relationships with banks, and evaluates the interest rate risk of all interest-bearing liabilities in a timely manner in order to reduce the impact of interest rate changes on the Company's profit or loss.

3. Inflation

The Company has not been materially affected by inflation, and the Company keeps an eye on market price fluctuations and maintains good interactions with suppliers and customers to avoid inflation affecting overall profitability.

Non-financial risks

1. Potential Risks of Capacity Expansion

In order to meet the medium and long term operation plan, we have officially leased the land from the Tongluo Science Park in July 2020 and plan to build a 12-inch production base in 10 years. However, the demand forecast will change significantly as the market environment changes, and when the demand decreases, the additional equipment purchased and additional personnel hired will have a negative impact on the Company's financial performance.

2. Fluctuations in the exchange rate		
Year/Item	2021	2022
Consolidated net foreign currency exchange gain (loss)	(212,671)	1,225,660
Consolidated net operating revenues	65,622,945	76,086,619
Consolidated net foreign currency exchange gains (losses) as a percentage of net operating revenues	(0.32)	1.61

Corresponding Strategy:

The Company's net foreign currency exchange gain (loss) as a percentage of net operating revenues for 2021 and 2022 is (0.32)% and 1.61%, respectively. Since the Company's capital expenditures and production costs are mostly paid in U.S. dollars or Japanese yen, and its revenues are mainly in U.S. dollars, excessive fluctuations in exchange rates will have an adverse impact on the Company. Therefore, depending on the changes in the exchange rate market, physical location and capital position, the Company adopts a natural hedge position and uses spot foreign exchange transactions and forward exchange agreements to hedge the exchange rate risk to the extent permitted by the policy.

Corresponding Strategy:

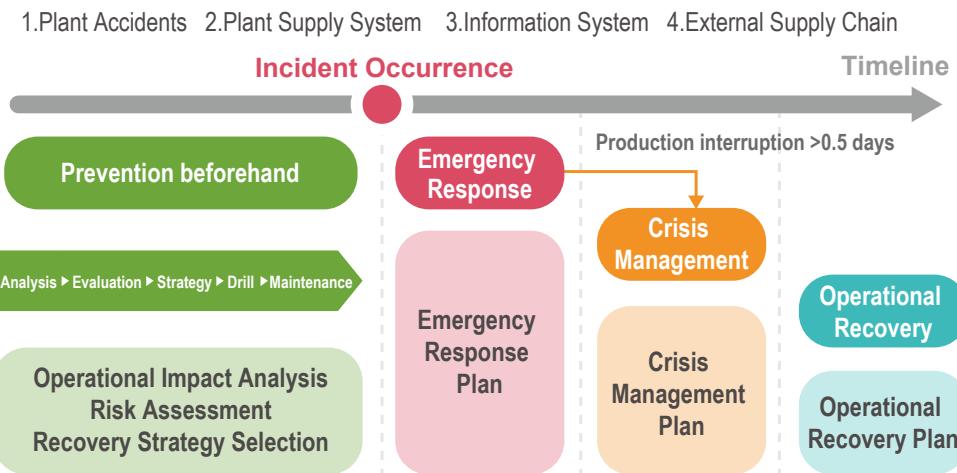
In the medium to long term, foundry capacity is still a key resource for customers' growth, and customers will actively acquire more capacity. However, in 2022, global demand for semiconductors entered a period of inventory adjustment starting in the fourth quarter of 2022 due to high inflation in the U.S. and increased economic uncertainty caused by the ongoing interest rate hikes by the Federal Reserve. The Company will continue to monitor market changes and work closely with customers. If market demand continues to fall short of expectations, the Company will adjust its production capacity plans in a timely manner to reduce the negative impact on the Company's financial performance. In principle, the Company will expand its plants and production capacity in a phased manner, with minimal risk and in a financially affordable manner, while taking into account the Company's steady growth and meeting customers' production capacity needs.

Business Continuity Management (BCM)

In our pursuit of sustainable management, we understand that in the event of a major accident or a crisis event, in addition to the possible disruption of operations, it will have a serious impact on property, employee lives, corporate image, customers and investors. In order to minimize such losses, we have developed a systematic management plan to deal with various crisis events.

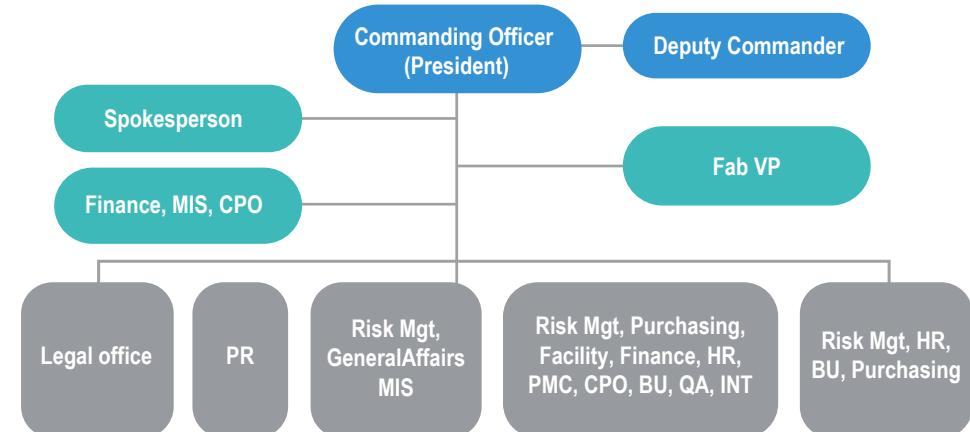
The objective of operational risk management is to ensure that normal operations can be resumed within the shortest possible time in the event of a major accident or crisis event. To that end, for specific crisis events, such as prolonged power supply interruptions, water outages, fires, earthquakes, climate change, raw material supply interruptions, labor shortages, hacking of information systems, and critical equipment failures, the Company has established crisis event management plans and recovery plans, and continues to conduct thematic drills on an annual basis.

The drills focus on the pre-emptive measures for handling operational shocks, conducting operational shock analysis, risk assessment, and selecting recovery strategies. The internal departments of PSMC prepare Standard Operating Procedures (SOPs) for emergency events and initiate emergency response plans immediately upon the occurrence of the event. If the emergency is so severe that production is interrupted for more than half a day, a crisis management plan will be conducted to eliminate the crisis and eventually resume operations in the shortest time possible.



BCM Crisis Management Organizational Chart

The President is the highest commanding officer, assisted by a spokesperson, a team of staff (including finance, information, and strategy planners), and the Fab VP. Functional groups are set up according to different emergencies, including Legal, Public Relations, Support, Coordination, and Liaison groups.



Column

Emerging Risks

In this dynamic generation, emerging risks are like undercurrents that can threaten the long-term development of a company. To ensure the Company's sustainable development, PSMC assesses the emerging risks the Company is facing and provides the appropriate corresponding strategies to address these risks. We identify the emerging risks that could have a serious impact on our operations, explore the trend of risk development, predict their possible impact, and provide practical countermeasures to help the Company build risk resilience, steadily respond to crises, adhere to our core values, and maintain operational stability and sustainability. In 2022, the emerging risks faced by Powerchip Semiconductors Manufacturing Corporation that have been identified were customers' carbon reduction requirements and the CHIPS for America Act.

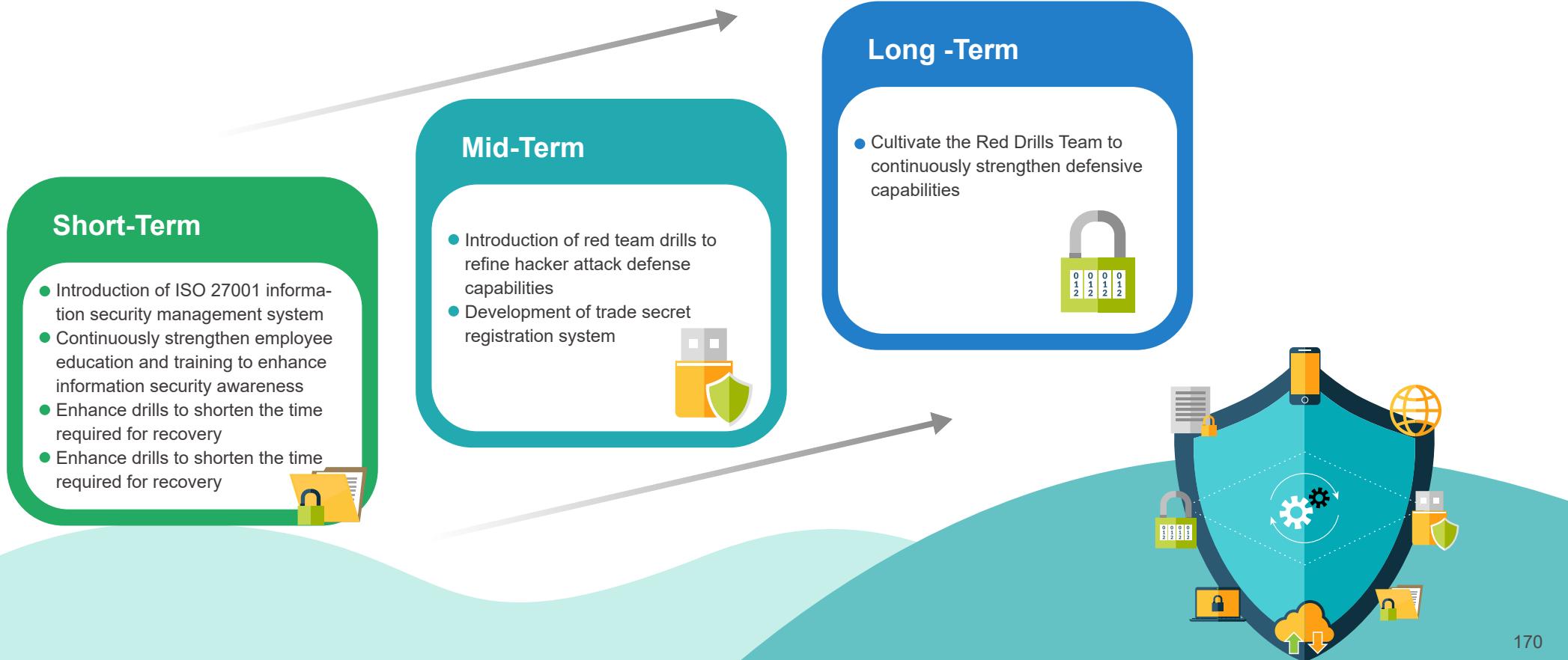
Emerging Risk	Customer Carbon Reduction Requirements	CHIPS for America Act
Risk Type	Market Transformation Risk	Geopolitical Risk
Risk Description	The world is witnessing a wave of industrial carbon reduction, aiming to achieve the goal of net zero emissions by 2050. Companies are investing in carbon reducing activities to continue to reduce direct greenhouse gas emissions from their business activities, joining major carbon reduction initiatives such as the global corporate renewable energy initiative (RE100), the global Science-Based Targets Initiative (SBTi), and participating in a variety of international sustainability competitions, demonstrating the commitment of global companies toward the goal of net zero carbon emissions. In addition, companies are beginning to demand carbon reductions from their suppliers to ensure that the entire value chain is moving toward net zero emissions. In addition to the RE100 and SBTi initiatives, this wave of carbon reduction has become mainstream globally, with many international organizations and governments joining in, including the EU's "European Green Deal" for "carbon neutrality" initiative, demonstrating the efforts and commitments made by global parties towards achieving sustainable development.	The main objective of the CHIPS for America Act is to strengthen the localization of the semiconductor industry in order to reduce geopolitical risks and to combat the speedy rise of China in the advanced semiconductor manufacturing process by implementing more stringent export control measures. This will affect companies in Taiwan's semiconductor supply chain, as China is an important customer and market for Taiwan's semiconductor industry. As a result of the U.S. policy, Taiwan semiconductor companies may need to adjust their strategies and sales models to the Chinese market. In addition, another potential impact of the CHIPS for America Act on Taiwan's semiconductor supply chain is the intensification of global competition in the semiconductor industry. The U.S. will join hands with Japan, Taiwan, and South Korea to form a Chip 4 alliance to further restrict technology and equipment exports to the Chinese semiconductor industry. This will intensify global competition in the semiconductor industry and cause drastic changes in the semiconductor supply chain.
Impact on PSMC	If we fail to reduce carbon emissions, we will not be able to keep up with the international trend and will thus affect the evaluation scores. In addition, the authorities are also planning to promote the implementation of carbon pricing, which will also increase additional costs if carbon reduction is not successful. In addition to PSMC, it is also necessary to further require suppliers to jointly reduce carbon emissions in order to reduce overall carbon emissions in the supply chain.	The CHIPS for America Act restricts the supply of high-end chips to China and prohibits the export of high-end equipment to China in order to prevent the manufacture of high-end chips. Chinese chip makers are shifting their production capacity to supply mid- and low-end chips, and Chinese IC design companies may also switch to a domestic supply chain, putting the Company at risk of losing Chinese customers.
Corresponding Response Measures	<p>Powerchip Semiconductor Manufacturing Corporation continues to plan its carbon reduction blueprint and is actively promoting carbon reduction in its supply chain. This effort will help drive carbon reduction in the global industry and ensure that we can achieve sustainable development.</p> <p>In order to keep pace with the international trend and to achieve the goal of carbon reduction, PSMC is actively planning the installation and use of renewable energy. We have established the Green Energy Project Team to promote the installation of renewable energy and the acquisition of renewable energy certification. In 2023, PSMC plans to build its own 3MW solar power plant off-site. By increasing the use of renewable energy, we aim to reduce indirect greenhouse gas emissions throughout the Company and move toward a vision of net zero carbon emissions. In the future, PSMC will continue to enhance its ability to use renewable energy and increase energy use efficiency in order to reduce its carbon footprint and meet the expectations of its stakeholders. While responding to the international trend of carbon reduction, the Company also demonstrates its determination to move forward on the path of sustainable development.</p>	<p>The following measures will be taken by PSMC to mitigate the impact of this risk through supply chain replacement solutions and sales management expansion:</p> <ol style="list-style-type: none"> 1. Expand Customer Base - Expand cooperation with non-China customers, increase external sales channels, and reduce dependence on the Chinese market. We are also actively pursuing return orders from risk-diversified customers to diversify risks. 2. Strengthen Supply Chain Resilience - PSMC can plan a comprehensive and diversified supply chain through cooperation with other suppliers to avoid over-dependence on the Chinese supply chain. 3. Enhance Technological Standards - Through continuous improvement of our own technological standards and product quality, we aim to increase customer loyalty and market competitiveness. This will help maintain long-term customer relationships and mitigate risks when market conditions are unstable. 4. Keeping Track of Policy Changes - We will pay close attention to policy changes, understand the policy environment of each country's market, and adjust our strategy in time to adapt to market changes.

► 6.6 Information Security

Information Security Management Objectives

As PSMC continues to make breakthroughs in technology, information security is becoming increasingly important, and is even more essential for the semiconductor industry. We are aware of the importance of information security and have set short-, medium-, and long-term goals for information security to ensure that the technology we are working on and our trade secrets are safeguarded. The Company has already passed the ISO 27001 Information Security Management System certification and has established a comprehensive information security management system. At the same time, we will continue to strengthen information security education and training for our employees, raise their

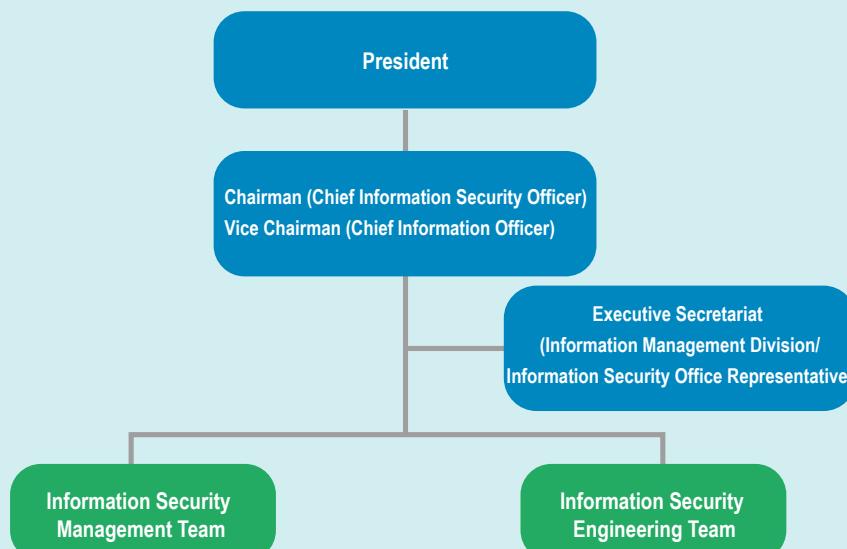
awareness of information security, enhance drills, shorten the time required for recovery, and accurately identify and verify trade secrets to ensure the reliability and integrity of information security. In the medium term, the Company will introduce red team drills to further refine hacker attack defense capabilities. We will also develop a trade secret registration system to protect the core assets of the Company. At the same time, we will continue to strengthen our information security technology and management capabilities to ensure the continuous improvement of corporate information security. The ultimate long-term goal is to develop a red drills team to continuously strengthen the defense capability. By continuously strengthening our information security defense capabilities, we will be able to maintain our leading position in the increasingly competitive environment.



► 6.6.1 Information Security Management Framework

With the continuous development of semiconductor process technology, information security awareness needs to be continuously strengthened. We have established the "Powerchip Information Security Policy" to ensure the security of our own information assets and those delivered by our customers and partners, and to continuously improve our information security capabilities to protect the interests of the Company and our stakeholders. To ensure the sustainability of information security in operations and critical businesses, and to increase customer trust, PSMC has established an Information Security Committee, with the President providing the highest level of direction, serving as the central decision-making unit for information security-related strategies, plans and risk management. The committee is responsible for supervising the information security management operations of each department, coordinating and communicating with internal and external technical resources and intelligence to enhance overall information security capabilities and reduce information security threats and risks. The Information Security Management Group and the Information Security Engineering Group have been established under the Information Security Committee and are responsible for the implementation of information security policies and regular reporting to the President to ensure that information security management is in line with the Company's operational objectives.

Information Security Committee



After conducting an information security risk assessment and taking into consideration the overall information security strategy development, the "Information Security Management Regulations" were established to protect the Company's trade secrets, intellectual property and other important information. We are committed to protecting customer information, and all information and documents derived from customer transactions are strictly recorded and controlled through our internal system. The approval and activation of the operation authority of the relevant internal personnel are handled in accordance with the relevant operation regulations of each system.

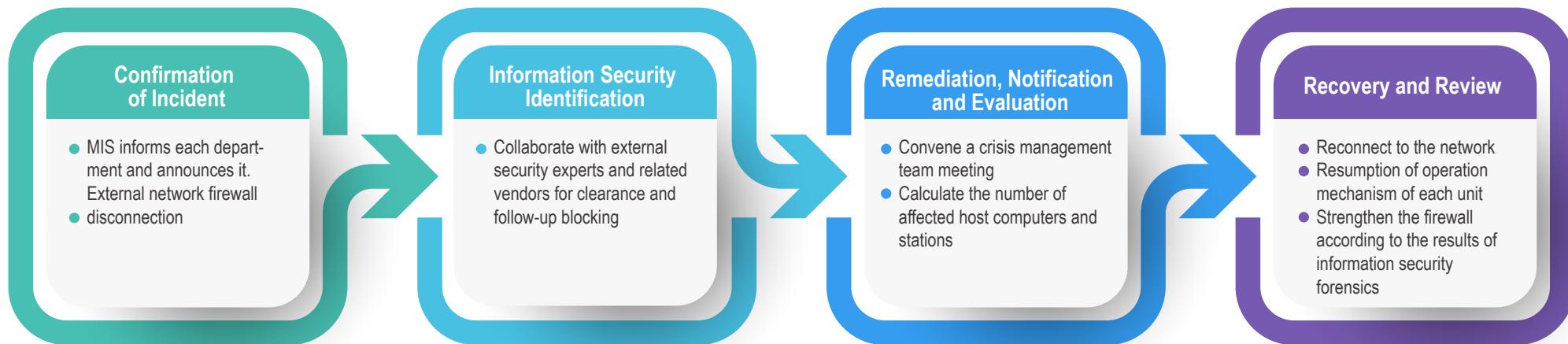
► 6.6.2 Implementation of Information Security Protection

In the Information Security Committee, designated representatives from each relevant unit will discuss and make decisions on information security-related issues, covering human resources, physical security and information security, and will convene meetings on an ad hoc basis when major changes or information security incidents occur. Each year, we continue to educate and communicate with our employees about information security through educational training and internal announcements to implement information security policies.

Powerchip Semiconductor Manufacturing Corporation attaches great importance to internal information security education and promotion, and requires all employees to receive annual education and advocacy training on "Information Security Control Measures", and incorporates relevant information security advocacy into new employee training, in order to strengthen the Company's internal information security awareness and ensure the Company's information security. In 2022, 100% of all employees (excluding overseas employees) completed the "Information Security Control Measures" educational training, demonstrating the importance the Company places on information security education and advocacy.

Business Continuity Management Exercise

PSMC continues to strengthen its information security management by regularly scanning servers for vulnerabilities and patching them, and repairing any major deficiencies in real-time to ensure that the Company's operations are protected from any threats. In addition, regular drills are conducted to ensure that the Company can respond quickly and effectively in the event of a crisis. A single ransomware disaster recovery drill was conducted in 2022 to identify deficiencies in each department's operations continuity management plan through a scenario planning exercise. The scenario exercise simulates a ransomware attack on the Company's intranet through a third-party component vulnerability, resulting in the encryption of personal and machine files and the temporary unavailability of some systems and communication tools. The results of the exercise were used to continuously improve the Company's information security line of defense and to implement information security measures to protect corporate assets, employees' lives, reputation, and the interests of customers and investors.



Privacy and Personal Information Protection

PSMC attaches great importance to the protection of personal information and privacy, and has established a privacy policy in accordance with Taiwan's Personal Data Protection Act and other relevant regulations, covering all employees, partners and users, and has incorporated the management of privacy-related issues into the scope of legal compliance management to strengthen privacy control. We respect the rights and interests of the parties involved, ensure that the collection practices are legitimately and reasonably related to the intended purpose, and ensure data security through reasonable measures. We scrupulously abide by the established privacy protection and relevant regulations regarding personal data protection, as well as implementing relevant protection measures. We conduct yearly internal audits, risk assessments, customer audits, supply chain security audits, and biennial certified external RBA audits, and regularly track compliance with external regulations on a quarterly basis. Through transparent and open information about our privacy policy, we enhance stakeholders' autonomy in deciding on privacy information, and thus implement sustainable business operations.

The Company has already initiated an internal trade secrets control program several years ago. By strengthening access control and monitoring, managing access to information systems, maintaining and reviewing access records, and strictly controlling employee access to the facilities as well as access to data, the Company has effectively prevented improper access to and tampering with Company information, and prevented theft or leakage of trade secrets and intellectual property. In 2022, there were no incidents of "confirmed infringement of customer privacy" or "complaints of loss of customer data", demonstrating the effectiveness of the Company's personal data management and privacy protection.

► 6.6.3 Partner Information Security Enhancement

In addition to deepening its own information security capabilities, Powerchip Semiconductor Manufacturing Corporation is also committed to promoting the requirements and importance of information security among suppliers in order to maintain the technological development of the semiconductor industrial chain. Each year, we regularly send out self-assessment questionnaires for suppliers to conduct self-assessments (the scope of assessment is defined by the procurement department as being Tier 1 suppliers of raw materials with semi-annual turnover of NT\$5 million or more and are also considered Grade A suppliers, and there were 56 such suppliers in 2022), and suppliers are required to conduct self-assessments on various information security management indicators, including information security management practices, regular information security training, network antivirus control, information security incident emergency contingency process, recovery plan, and risk management. The questionnaire issued in 2022 was coordinated by the Information Security Office and the suppliers' detailed responses were reviewed to ensure that the information security management practices and objectives of the suppliers were 100% consistent with those of PSMC.



Appendix

About this Report



► About this Report

The Powerchip Semiconductor Manufacturing Corporation 2022 Sustainability Report is PSMC's fifth sustainability report, the contents of which were provided and compiled by various units of the Company. This report is intended to serve as a collaborative approach to address the concerns of stakeholders and to provide more transparency regarding the Company's sustainability plans, implementation history, and the status of its performance achievement, with the hope that the Company will drive more positive changes for the society.

Scope of Reporting

The reporting period is from January 1, 2022 to December 31, 2022, which coincides with the financial reporting period. The report covers the 12-inch (P1/2 and P3 sites) and the 8-inch (8A, 8AD, and 8B sites) plants, which are located within the jurisdiction of the Hsinchu Science Park Bureau, National Science and Technology Council, except subsidiaries. The report covers the stakeholders' concerns about PSMC's implementation of various major economic, environmental, and social initiatives. The financial figures quoted herein are based on the audited annual financial statements, and are expressed in New Taiwan Dollars. There is no restatement of information in this sustainability report.

Standard of Reporting

The criteria followed and referred to in this report are listed below:

Standards Issuing Organization	Standards Guidelines
The Global Reporting Initiative (GRI)	GRI Universal Standards 2021
Sustainability Accounting Standards Board (SASB)	Industry Standards - Semiconductor Industry
Financial Stability Board (FSB)	Task Force on Climate-related Financial Disclosures (TCFD)
Taiwan Stock Exchange (TWSE)	Code of Practice for Sustainable Development of Public Traded Companies Procedures for the Preparation and Filing of Sustainability Reports by Publicly Traded Companies
United Nations (UN)	Sustainable Development Goals (SDGs) United Nations Global Compact
International Organization for Standardization, ISO	ISO 26000: 2010 Guidance on Social Responsibility

Management Process

This report has been prepared in accordance with the Code of Practice for Sustainable Development and the relevant procedures for verification, wherein the relevant processes are expressly stated. The report shall be released to the public after approval by the internal departments at Powerchip Semiconductor Manufacturing Corporation.

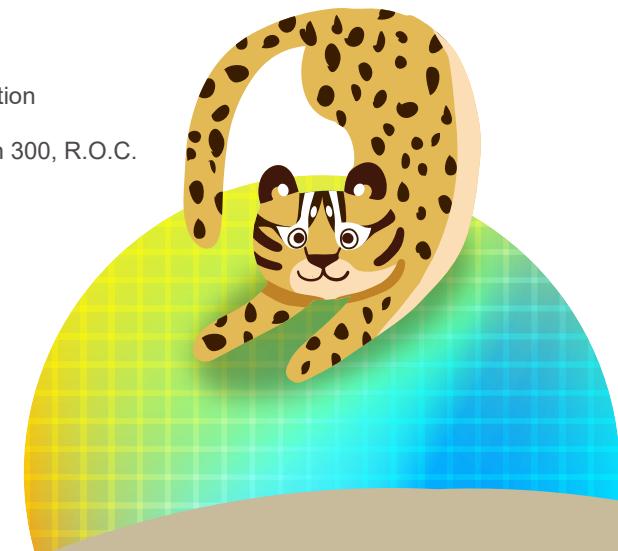


Release Date

- Previous Year' s (2021) Sustainability Report Issue Date: June 2022
- Current Year' s (2022) Sustainability Report Issue Date: June 2023
- Next Year's (2023) Sustainability Report is Scheduled for Release: June 2024

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► Sustainability Information Disclosure Guidelines

► Schedule I. GRI Sustainability Reporting Standards Content Index Table

Terms of Use	Powerchip Semiconductor Manufacturing Corporation has reported the content for the period of 2022 (January 1, 2022 to December 31, 2022) in accordance with GRI standards.
GRI 1 used	GRI 1: Foundation 2021
Applicable GRI Industry Standards	No applicable GRI industry standards were published at the time of this sustainability report.

GRI Standards Categories / Topics	Number	GRI Standards Disclosure Content	Corresponding Chapters	Page Number	Omitted/Remarks
General Disclosure					
GRI 2: General Disclosure 2021	2-1	Organizational Details	Company Profile	P.5	
	2-2	Entities included in the organization's sustainability reporting	About this Report	P.174	The scope of this annual sustainability report does not cover the Japanese subsidiaries.
	2-3	Reporting frequency, period, and contact point	About this Report	P.174	
	2-4	Restatements of information	About this Report	P.174	
	2-5	External assurance/reliability	Sustainability Information Disclosure Guidelines	P.176	
	2-6	Events, Value Chains, and Other Business Relationships	Company Profile	P.5	
	2-7	Employees	4.1 Talent Attraction & Retention	P.102	
	2-8	Workers who are not employees	4.1 Talent Attraction & Retention	P.102	
	2-9	Governance Structure and Composition	6.1 Corporate Governance	P.151	
	2-10	Nomination and selection of the highest governance body	6.1 Corporate Governance	P.151	
	2-11	Chair of the highest governance body	6.1 Corporate Governance	P.151	

GRI Standards Categories / Topics	Number	GRI Standards Disclosure Content	Corresponding Chapters	Page Number	Omitted/Remarks
General Disclosure					
GRI 2: General Disclosure 2021	2-12	Role of the highest governance body in overseeing the management of impacts	Commitment to Sustainability Management	P.13	
	2-13	Delegation of responsibility for managing impacts	Commitment to Sustainability Management	P.13	
	2-14	Role of the highest governance body in sustainability reporting	Commitment to Sustainability Management About this Report	P.13 P.174	
	2-15	Conflicts of interest	6.1 Corporate Governance	P.151	
	2-16	Communication of critical concerns	Commitment to Sustainability Management	P.13	
	2-17	Collective knowledge of the highest governance body	6.1 Corporate Governance	P.151	
	2-18	Evaluation of the performance of the highest governance body	Company Profile 6.1 Corporate Governance	P.5 P.151	
	2-19	Remuneration policies	6.1 Corporate Governance 4.1 Talent Attraction & Retention	P.151 P.102	
	2-20	Process to determine remuneration	6.1 Corporate Governance	P.151	
	2-21	Annual total compensation ratio	4.1 Talent Attraction & Retention	P.102	
	2-22	Statement on sustainable development strategy	Message from the Chairman and President	P.4	
	2-23	Policy Commitments	4.3 Human Rights 6.2 RBA Column	P.120 P.159	
	2-24	Embedded policy commitments	Economic Performance 6.5 Risk Management	P.9 P.164	
	2-25	Processes to remediate negative impacts	Economic Performance Materiality Assessment 1.3 Customer Relationship Management 6.5 Risk Management	P.9 P.20 P.51 P.164	

GRI Standards Categories / Topics	Number	GRI Standards Disclosure Content	Corresponding Chapters	Page Number	Omitted/Remarks
General Disclosure					
GRI 2: General Disclosure 2021	2-26	Mechanisms for seeking advice and raising concerns	Stakeholder Communication 6.5 Risk Management	P.18 P.164	
	2-27	Compliance with laws and regulations	6.3 Regulatory Compliance	P.161	
	2-28	Membership associations	Economic Performance	P.9	
	2-29	Approach to stakeholder engagement	Stakeholder Communication	P.18	
	2-30	Collective bargaining agreements	4.2 Talent Nurturing and Development	P.113	
Material Topics					
GRI 3: Material Topics 2021	3-1	Process to determine material topics	Materiality Assessment	P.20	
	3-2	List of material topics	Materiality Assessment	P.20	
	3-3	Management of material topics	Materiality Assessment	P.20	
Economic and Governance Aspects					
Material Topic – Economic Performance					
GRI 3: Material Topics 2021 GRI 201 Economic Performance Topic-Specific Disclosures 2016	3-3	Management of material topics	Materiality Assessment Economic Performance	P.20 P.9	
	201-1	Direct economic value generated and distributed	Economic Performance	P.9	
	201-3	Defined benefit plan obligations and other retirement plans	4.1 Talent Attraction and Retention	P.102	
	201-4	Financial assistance received from government	-	-	The Company received a total of NT\$238,112,000 in financial assistance from the government this year

GRI Standards Categories / Topics	Number	GRI Standards Disclosure Content	Corresponding Chapters	Page Number	Omitted/Remarks
Material Topic — Credibility Management					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Assessment 6.2 Credibility Management	P.20 P.155	
GRI 205 Anti-corruption Topic-Specific Disclosures 2016	205-2	Communication and training about anti-corruption policies and procedures	2.1 Sustainable Supply Chain 6.2 Credibility Management	P.56 P.155	
	205-3	Confirmed incidents of corruption and actions taken	6.2 Credibility Management	P.155	
GRI 206 Anti-competitive behavior Topic-Specific Disclosures 2016	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	6.3 Regulatory Compliance	P.161	
Material Topic — Regulatory Compliance					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Assessment 6.3 Regulatory Compliance	P.20 P.161	
Material Topic — Product Responsibility and Quality					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Assessment 1.2 Product Responsibility and Quality	P.20 P.44	
GRI 416 Customer Health and Safety 2016	416-1	Assessment of the health and safety impacts of product and service categories	-	-	All products and services provided to customers have no significant impact on health and safety
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	-	-	There were no such incidents during the year
GRI 417 Marketing and Labeling 2016	417-2	Incidents of non-compliance concerning product and service information and labeling	-	-	There were no such incidents during the year
	417-3	Incidents of non-compliance concerning marketing communications	-	-	There were no such incidents during the year
Material Topic — Information Security					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Assessment 6.6 Information Security	P.20 P.170	
GRI 418 Customer Privacy 2016	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	6.6 Information Security	P.170	

GRI Standards Categories / Topics	Number	GRI Standards Disclosure Content	Corresponding Chapters	Page Number	Omitted/Remarks
Material Topic — Corporate Governance					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Assessment 6.1 Corporate Governance	P.20 P.151	
GRI 205 Anti-corruption 2016	205-1	Operations assessed for risks related to corruption	6.2 Credibility Management	P.155	
	205-2	Communication and training about anti-corruption policies and procedures	2.1 Sustainable Supply Chain	P.56	
	205-3	Confirmed incidents of corruption and actions taken	6.3 Regulatory Compliance	P.161	
GRI 206 Anti-competitive Behavior 2016	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	6.3 Regulatory Compliance	P.161	
Material Topic — Sustainable Supply Chain					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Assessment 2.1 Sustainable Supply Chain	P.20 P.56	
GRI 308 Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria	2.1 Sustainable Supply Chain	P.56	
	308-2	Negative environmental impacts in the supply chain and actions taken	2.1 Sustainable Supply Chain	P.56	
GRI 414 Supplier Social Assessment 2016	414-1	New suppliers that were screened using social criteria	2.1 Sustainable Supply Chain	P.56	
	414-2	Negative social impacts in the supply chain and actions taken	2.1 Sustainable Supply Chain	P.56	
Material Topic — Customer Relationship Management					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Assessment 1.3 Customer Relationship Management	P.20 P.51	

GRI Standards Categories / Topics	Number	GRI Standards Disclosure Content	Corresponding Chapters	Page Number	Omitted/Remarks
Other Disclosures					
GRI 203 Indirect Economic Impacts 2016	203-1	Development and impact of infrastructure investments and services supported	5.1 Social Values and Arts Education	P.136	
GRI 204 Procurement Practices 2016	204-1	Proportion of spending on local suppliers	2.1 Sustainable Supply Chain	P.56	
	207-1	Approach to taxes	6.4 Responsible Taxation	P.162	
GRI 207 Tax 2019	207-2	Tax governance, control, and risk management	6.4 Responsible Taxation	P.162	
	207-3	Stakeholder engagement and management of concerns related to taxes	6.2 Credibility Management 6.4 Responsible Taxation	P.155 P.162	
Environmental Aspect					
Material Topic - Energy Management					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Assessment 3.2 Energy Management	P.20 P.80	
GRI 302 Energy 2016	302-1	Energy consumption within the organization	3.2 Energy Management	P.80	
	302-3	Energy intensity	3.2 Energy Management	P.80	
	302-4	Reduction of energy consumption	3.2 Energy Management	P.80	
Material Topic - Climate Strategy					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Assessment 3.1 Climate Strategy	P.20 P.67	
GRI 201 Economic Performance 2016	201-2	Financial implications and other risks and opportunities due to climate change	3.1 Climate Strategy	P.67	

GRI Standards Categories / Topics	Number	GRI Standards Disclosure Content	Corresponding Chapters	Page Number	Omitted/Remarks
GRI 305 Emissions 2016	305-1	Direct (Scope 1) Greenhouse Gas (GHG) emissions	3.1 Climate Strategy	P.67	
	305-2	Energy indirect (Scope 2) Greenhouse Gas (GHG) emissions	3.1 Climate Strategy	P.67	
	305-3	Other indirect (Scope 3) Greenhouse Gas (GHG) emissions	3.1 Climate Strategy	P.67	
	305-4	Greenhouse Gas (GHG) emissions intensity	3.1 Climate Strategy	P.67	
	305-5	Reduction of Greenhouse Gas (GHG) emissions	3.1 Climate Strategy	P.67	
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	3.5 Air Pollution Emissions Management	P.96	

Other Disclosures

GRI 303 Water and Effluents 2018	303-3	Water withdrawal	3.3 Water Resources Management	P.84	
	303-4	Water discharge	3.3 Water Resources Management	P.84	
	303-5	Water consumption	3.3 Water Resources Management	P.84	
GRI 304 Biodiversity 2016	304-1	Operational sites owned, leased, managed in, or adjacent to protected areas and areas of high biodiversity value outside protected areas	3.6 Biodiversity Management	P.99	
GRI 306 Waste Material Topic-Specific Disclosures 202	306-1	Waste generation and significant waste-related impacts	3.4 Waste Management	P.90	
	306-2	Management of significant waste-related impacts	3.4 Waste Management	P.90	
	306-3	Waste generated	3.4 Waste Management	P.90	
GRI 308 Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria	2.1 Sustainable Supply Chain	P.56	
	308-2	Negative environmental impacts in the supply chain and actions taken	2.1 Sustainable Supply Chain	P.56	

GRI Standards Categories / Topics	Number	GRI Standards Disclosure Content	Corresponding Chapters	Page Number	Omitted/Remarks
Social Aspect					
Material Topic — Talent Attraction & Retention					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Assessment 4.1 Talent Attraction and Retention	P.20 P.102	
GRI 401 Employment Topic-Specific Disclosures 2016	401-1	New employee hires and employee turnover	4.1 Talent Attraction and Retention	P.102	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	4.1 Talent Attraction and Retention	P.102	
	401-3	Parental leave	4.1 Talent Attraction and Retention	P.102	
	403-1	Occupational health and safety management system	4.4 Occupational Health and Safety	P.122	
	403-2	Hazard identification, risk management, and incident investigation	4.4 Occupational Health and Safety	P.122	
	403-3	Occupational health services	4.4 Occupational Health and Safety	P.122	
	403-4	Worker participation, consultation, and communication on occupational health and safety	4.4 Occupational Health and Safety	P.122	
	403-5	Worker training on occupational health and safety	4.4 Occupational Health and Safety	P.122	
	403-6	Promotion of worker health	4.4 Occupational Health and Safety	P.122	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked to business relationships	4.4 Occupational Health and Safety	P.122	
GRI 403 Occupational Health and Safety 2018	403-8	Workers covered by the occupational health and safety management system	4.4 Occupational Health and Safety	P.122	
	403-10	Work-related illnesses	4.4 Occupational Health and Safety	P.122	
GRI 405 Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	4.1 Talent Attraction and Retention 6.1. Corporate Governance	P.102 P.151	

GRI Standards Categories / Topics	Number	GRI Standards Disclosure Content	Corresponding Chapters	Page Number	Omitted/Remarks
Material Topic — Occupational Health and Safety					
GRI 3: Material Topics 2021 GRI 403 Occupational Health and Safety 2018	3-3	Management of material topics	Materiality Assessment 4.4 Occupational Health and Safety	P.20 P.122	
	403-1	Occupational health and safety management system	4.4 Occupational Health and Safety	P.122	
	403-2	Hazard identification, risk management, and incident investigation	4.4 Occupational Health and Safety	P.122	
	403-3	Occupational health services	4.4 Occupational Health and Safety	P.122	
	403-4	Worker participation, consultation, and communication on occupational health and safety	4.4 Occupational Health and Safety	P.122	
	403-5	Worker training on occupational health and safety	4.4 Occupational Health and Safety	P.122	
	403-6	Promotion of worker health	4.4 Occupational Health and Safety	P.122	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked to business relationships	4.4 Occupational Health and Safety	P.122	
	403-8	Workers covered by the occupational health and safety management system	4.4 Occupational Health and Safety	P.122	
	403-10	Work-related illnesses	4.4 Occupational Health and Safety	P.122	
Other Disclosures					
GRI 402 Labor/Management Relations 2016	402-1	Minimum notice periods regarding operational changes	4.2 Talent Nurturing and Development	P. 113	
GRI 404 Training and Education 2016	404-1	Average hours of training per year per employee	4.2 Talent Nurturing and Development	P. 113	
	404-3	Percentage of employees receiving regular performance and career development reviews	4.2 Talent Nurturing and Development	P. 113	
GRI 406 Non-Discrimination 2016	406-1	Incidents of discrimination and corrective actions taken	4.3 Human Rights	P.120	
GRI 408 Child Labor 2016	408-1	Operations and suppliers at significant risk for incidents of child labor	2.1 Sustainable Supply Chain 4.3 Human Rights	P.58 P.120	
GRI 409 Forced or Compulsory Labor 2016	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	2.1 Sustainable Supply Chain 4.3 Human Rights	P.58 P.120	
GRI 411 Rights of Indigenous People 2016	411-1	Incidents of violations involving rights of indigenous peoples	4.4 Human Rights	P.120	
GRI 415 Public Policy 2016	415-1	Political contributions	6.2 Credibility Management	P.155	

► Schedule II: SASB Sustainability Accounting Standards Comparison Table

Disclosure Topic	Indicator Number	Disclosure Indicators	Characteristics	Description or Corresponding Chapter	Page Number
Greenhouse Gas Emissions	TC-SC-110a.1	<ul style="list-style-type: none"> • Total Global Emissions (Scope 1) • Total emissions from perfluorinated compounds 	Quantitative	<p>(1) Direct greenhouse gas emissions from Scope 1 were 89,694 tons of CO₂e.</p> <p>(2) Perfluorinated greenhouse gas emissions were 33,193 tons of CO₂e</p> <p>Please refer to Chapter 3.1, Climate Strategy.</p>	P.67
	TC-SC-110a.2	<ul style="list-style-type: none"> • Discuss the long-term and short-term strategies or plans for managing Scope 1 emissions, emission reduction targets and their performance assessment 	Discussion and Analysis	<p>In order to align with the international trend of carbon reduction, the Company has set reduction targets for Scope 1 and for fluorocarbons. Note: Please refer to Chapter 3.1, Climate Strategy.</p> <p>Note: The treatment and destruction of the gas from the intensification process covers the control of perfluorinated compounds.</p>	P.67
Energy Management During the Manufacturing Process	TC-SC-130a.1	<ul style="list-style-type: none"> • Total energy consumption • Percentage of total energy consumption drawn from the electric grid • Percentage of total energy consumption utilizing renewable energy 	Quantitative	<p>(1) Total energy consumption was 4,713,291.81 GJ</p> <p>(2) Total electricity use was 4,209,221.17 GJ, accounting for 86.31% of total energy use.</p> <p>(3) The Company is continuously evaluating measures such as renewable energy development; currently there is no use of renewable energy.</p> <p>Please refer to Chapter 3.2, Energy Policy and Management</p>	P.80
Water Resources Management	TC-SC-140a.1	<ul style="list-style-type: none"> • Total water withdrawal and percentage of high water pressure areas • Total water consumption and percentage of high water pressure areas 	Quantitative	<p>The total amount of water withdrawn was 6,359.99 thousand cubic meters, and the total amount of water consumed was 2,000.98 thousand cubic meters. None of the Company's plants are classified as high risk areas for water resources.</p> <p>Please refer to Chapter 3.3, Water Resources Management</p>	P.84
Waste Management	TC-SC-150a.1	<ul style="list-style-type: none"> • Hazardous waste generated during the manufacturing process and the percentage recycled 	Quantitative	<p>The total amount of hazardous waste generated was 6,204.18 tons, of which 84% was recycled and reused.</p> <p>Please refer to Chapter 3.4, Waste Treatment</p>	P.90

Disclosure Topic	Indicator Number	Disclosure Indicators	Characteristics	Description or Corresponding Chapter	Page Number
Employee Health and Safety	TC-SC-320a.1	<ul style="list-style-type: none"> Describe how to assess, monitor, and reduce employee exposure to hazardous environments 	Discussion and Analysis	Please refer to Chapter 4.4, Occupational Health and Safety	P.122
	TC-SC-320a.2	<ul style="list-style-type: none"> Total monetary loss due to legal incidents related to violations of employee health and safety 	Quantitative	No such incidents occurred during the year, and there were no monetary losses.	P.122
Recruitment and Management of Global Professional Talents	TC-SC-330a.1	<ul style="list-style-type: none"> Describe the percentage of (1) foreign employees and (2) overseas employees 	Quantitative	(1) Foreign employees accounted for 5.13% of all employees (2) The company has no overseas presence and no overseas employees. Please refer to Chapter 4.1, Talent Attraction and Retention	P.102
Product Lifecycle Management	TC-SC-410a.1	<ul style="list-style-type: none"> Percentage of revenue from products containing IEC 62474 substances 	Quantitative	The percentage of revenue from products containing IEC 62474 substances was 0%	-
	TC-SC-410a.2	<ul style="list-style-type: none"> Total system-level energy efficiency of processors: (1) servers (2) desktops (3) laptops 	Quantitative	Not applicable	-
Raw Material Procurement	TC-SC-440a.1	<ul style="list-style-type: none"> Describe the Risk Management approach to using critical materials 	Discussion and Analysis	Please refer to Chapter 2.1, Sustainable Supply Chain	P.58
Intellectual Property Protection and Competitive Behavior	TC-SC-520a.1	<ul style="list-style-type: none"> Total monetary losses resulting from legal incidents related to anti-competitive behaviors 	Quantitative	No such incidents occurred during the year, and there were no monetary losses.	-
Activity Indicator	TC-SC-000.A	<ul style="list-style-type: none"> Total production 	Quantitative	132,679 (cm ² /year)	-
Activity Indicator	TC-SC-000.B	<ul style="list-style-type: none"> Percentage of self-owned plant production 	Quantitative	The percentage of self-owned plant production was 100%.	-

► Schedule III: TCFD Climate Related Financial Disclosure Framework Comparison Table

Level	Disclosure Item	General Industry Metrics	Corresponding Chapter	Page Number
Governance	a	Describe the Board's oversight status of climate related risks and opportunities.	3.1 Climate Strategy	P.67
	b	Describe management's role in assessing and managing climate-related risks and opportunities.	3.1 Climate Strategy	P.67
Strategy	a	Describe the short-term, medium-term, and long-term climate-related risks and opportunities identified by the organization.	3.1 Climate Strategy	P.67
	b	Describe the impacts of climate related risks and opportunities on the organization's business, strategic, and financial planning.	3.1 Climate Strategy	P.67
	c	Describe the organization's strategic resilience, taking into account physical climate risks for different climate-related scenarios, including 2° C or even more severe scenarios.	3.1 Climate Strategy	P.67
Risk Management	a	Describe the organization's process for identifying and assessing climate-related risks.	3.1 Climate Strategy	P.67
	b	Describe the organization's process for managing climate-related risks.	3.1 Climate Strategy	P.67
	c	Describe how the identification, assessment and management processes for climate related risks are integrated into the organization's overall risk management system.	3.1 Climate Strategy	P.67
Targets and Objectives	a	Disclose the metrics used by the organization to conduct climate related risk and opportunity assessments in accordance with the strategy and the risk management process.	3.1 Climate Strategy	P.67
	b	Disclosure of greenhouse gas emissions and associated risks in Scope 1, Scope 2 and Scope 3 (where applicable).	3.1 Climate Strategy	P.67
	c	Describe the objectives being used by the organization to manage climate related risks and opportunities, and the performances in achieving those objectives.	3.1 Climate Strategy	P.67

► **Schedule IV: Comparison of “The Operating Procedures for the Preparation and Filing of Sustainability Reports by Publicly Traded Companies” of the Taiwan Stock Exchange**

Schedule 1.8 - Sustainability Disclosure Indicators - Semiconductor Industry

No.	Indicator Description	Description or Corresponding Chapter	Page Number
I	Total energy consumption, percentage of purchased electricity and renewable energy usage rate	Total energy consumption: 4,713,291.81 GJ Percentage of purchased electricity: 100% Renewable energy usage rate: 0%	-
II	Total water withdrawal and total water consumption	Total water withdrawal: 6,359.991 thousand cubic meters Total water consumption: 2,000.984 thousand cubic meters	-
III	Weight of hazardous waste generated and percentage recycled	Total amount of hazardous waste: 6,204.18 tons Percentage of waste recycled and reused: 84%	-
IV	Explain the type, number of people, and percentage of occupational disasters	Please refer to Chapter 4.4, Occupational Health and Safety	P.122
V	Disclosure of product lifecycle management: weight and percentage of recycling, including scrapped products and electronic waste (Note 1)	Total waste generation of approximately 17,066 metric tons in 2022, with a recycling rate of 90.98%	-
VI	Description of risk management related to the use of critical materials	Please refer to Chapter 2.1, Sustainable Supply Chain	P.58
VII	Total monetary loss due to lawsuits related to anti-competitive behavior regulations	No such incidents occurred during the year, and there were no monetary losses	-
VIII	Production of major products by product category	132,679 (m ² /year)	-

Schedule II – Climate Related Information for Publicly Traded Companies 1-1 - Greenhouse Gas Inventory and Confirmation Status

Basic information of the company	Companies with NT\$10 billion or more in capital	According to the Sustainability Development Roadmap for publicly traded companies, at least the following should be disclosed		Parent Company Individual Audit
Scope I	Total emissions (Metric tons CO ₂ e)	Intensity (Metric tons CO ₂ e /NT\$1000)	Confirmation Agency	Confirmation Status Explanation
Parent Company	89,694	0.0012	The British Standards Institution (BSI)	Please refer to our official website for ISO 14064-1 certificate .
Scope II	Total emissions (Metric tons CO ₂ e)	Intensity (Metric tons CO ₂ e /NT\$1000)	Confirmation Agency	Confirmation Status Explanation
Parent Company	581,994	0.0076	The British Standards Institution (BSI)	Please refer to our official website for ISO 14064-1 certificate .
Total	671,688	0.0088		
Scope III (to be voluntarily disclosed)	213,668	0.0028	The British Standards Institution (BSI)	Please refer to our official website for ISO 14064-1 certificate .

► Schedule V. United Nations Global Compact (UNGC) Comparison Table

Item Number	Article of Principle	Corresponding Chapter	Page Number
Human Rights Area			
1	Support and respect international human rights within the scope of corporate influence.	Company Profile	P.5
2	Businesses should ensure that human rights are not violated within the company.	Company Profile	P.5

Item Number	Article of Principle	Corresponding Chapter	Page Number
Labor Area			
3	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.	4.1 Talent Attraction and Retention 4.2 Talent Nurturing and Development	P.102 P.113
4	The elimination of all forms of forced and compulsory labor.	4.1 Talent Attraction and Retention	P.102
5	The effective abolition of child labor.	4.1 Talent Attraction and Retention	P.102
6	The elimination of discrimination in respect of employment and occupation.	4.1 Talent Attraction and Retention	P.102
Environmental Area			
7	Support a precautionary approach to environmental challenges.	3.1 Climate Strategy 3.2 Energy Management 3.3 Water Resources Management 3.4 Waste Management 3.5 Air Pollution Emissions Management 3.6 Biodiversity Management	P.67 P.80 P.84 P.90 P.96 P.99
8	Undertake initiatives to promote greater corporate environmental responsibility.	3.1 Climate Strategy 3.2 Energy Management 3.3 Water Resources Management 3.4 Waste Management 3.5 Air Pollution Emissions Management 3.6 Biodiversity Management	P.67 P.80 P.84 P.90 P.96 P.99
9	Encourage the development and diffusion of environmentally friendly technologies.	3.1 Climate Strategy 3.2 Energy Management 3.3 Water Resources Management 3.4 Waste Management 3.5 Air Pollution Emissions Management	P.67 P.80 P.84 P.90 P.96
Anti-corruption Area			
10	Businesses should work against corruption in all its forms, including extortion and bribery.	6.2 Credibility Management	P.155

► Schedule VI. ISO 26000 Guidance on Social Responsibility Standards Comparison Table

Core Subjects	Clause	Corresponding Chapter	Page No.	Comment
Organizational Governance	A system for making and implementing decisions for the execution of the organization's objectives	Company Profile	P.5	
	Verification of compliance with regulations and avoidance of risks caused by human rights issues	6.3 Regulatory Compliance	P.161	
	Human rights risk situations	6.5 Risk Management	P.164	
	Avoidance of complicity — direct, beneficial, and silent conspiratorial relationships (avoidance of complicity)	6.2 Credibility Management	P.155	
	Resolving grievances (resolving gripes and complaints)	4.3 Human Rights	P.120	
	Discrimination and vulnerable groups	4.3 Human Rights	P.120	
	Civil and political rights	4.1 Talent Attraction and Retention	P.102	
	Economic, social, and cultural rights	4.1 Talent Attraction and Retention	P.102	
	Fundamental principles and rights at work	4.1 Talent Attraction and Retention 4.2 Talent Nurturing and Development	P.102 P.113	
	Employment and employment relationships	4.1 Talent Attraction and Retention 4.2 Talent Nurturing and Development	P.102 P.113	
Human Rights	Conditions of work and social protections	4.1 Talent Attraction and Retention 4.2 Talent Nurturing and Development	P.102 P.113	
	Social dialogue	4.1 Talent Attraction and Retention 4.2 Talent Nurturing and Development	P.102 P.113	
	Health and safety at work	4.4 Occupational Health and Safety	P.122	
	Human resources development and training in the workplace	4.2 Talent Nurturing and Development	P.113	
Labor Practices				

Core Subjects	Clause	Corresponding Chapter	Page No.	Comment
The Environment	Prevention of pollution	3.2 Energy Management 3.3 Water Resources Management 3.4 Waste Management 3.5 Air Pollution Emissions Management	P.80 P.84 P.90 P.96	
	Sustainable resource use	3.2 Energy Management 3.3 Water Resources Management 3.4 Waste Management	P.80 P.84 P.90	
	Climate change mitigation and adaptation	3.1 Climate Strategy	P.67	
	Protection of the environment, biodiversity, and restoration of natural habitats	3.6 Biodiversity Management	P.99	
	Anti-corruption	6.2 Credibility Management	P.155	
	Responsible political involvement	6.2 Credibility Management	P.155	
	Fair competition	6.2 Credibility Management	P.155	
Fair Operating Practices	Promoting social responsibility in the value chain	6.1 Corporate Governance 6.2 Credibility Management 6.3 Regulatory Compliance 6.4 Responsible Taxation	P.151 P.155 P.161 P.162	
	Respect for property rights	1.1 Innovation and Intellectual Property Management	P.31	

Core Subjects	Clause	Corresponding Chapter	Page No.	Comment
Consumer Issues	Fair marketing, factual and unbiased information, and fair contractual practices	2.1 Sustainable Supply Chain	P.56	
	Protecting consumers' health and safety	1.3 Customer Relationship Management	P.51	
	Sustainable consumption	2.1 Sustainable Supply Chain	P.56	
	Consumer service, support, and complaint and dispute resolution	1.3 Customer Relationship Management	P.51	
	Consumer data protection and privacy	6.6 Information Security	P.170	
	Access to essential services	1.3 Customer Relationship Management	P.51	
	Education and awareness	4.2 Talent Nurturing and Development	P.113	
	Community involvement	5.1 Social Values and Arts Education	P.136	
	Education and culture	5.1 Social Values and Arts Education	P.136	
	Employment creation and skills development	4.2 Talent Nurturing and Development	P.113	
Community Involvement and Development	Technology development	1.1 Innovation and Intellectual Property Management	P.31	
	Wealth and income creation	Economic Performance 1.1 Innovation and Intellectual Property Management	P.9 P.31	
	Health	4.4 Occupational Health and Safety	P.122	
	Social investment	5.1 Social Values and Arts Education	P.136	

► Appendix VII. Independent Third Party Verification Statement



INDEPENDENT ASSURANCE OPINION STATEMENT

Powerchip Semiconductor Manufacturing Corporation 2022 Sustainability Report

The British Standards Institution is independent to Powerchip Semiconductor Manufacturing Corporation (hereafter referred to as PSMC in this statement) and has no financial interest in the operation of PSMC other than for the assessment and verification of the sustainability statements contained in this report. This independent assurance opinion statement has been prepared for the stakeholders of PSMC only for the purposes of assuring the statements relating to its sustainability report, more particularly described in the Scope below. It was not prepared for any other purpose. The British Standards Institution will not, in providing this independent assurance opinion statement, accept or assume responsibility (legal or otherwise) or accept liability for or in connection with any other purpose for which it may be used, or to any person by whom the independent assurance opinion statement may be read. This independent assurance opinion statement is prepared on the basis of review by the British Standards Institution of information presented to it by PSMC. The review does not extend beyond such information and is solely based on it. In performing such review, the British Standards Institution has assumed that all such information is complete and accurate. Any queries that may arise by virtue of this independent assurance opinion statement or matters relating to it should be addressed to PSMC only.

Scope

The scope of engagement agreed upon with PSMC includes the following:

1. The assurance scope is consistent with the description of Powerchip Semiconductor Manufacturing Corporation 2022 Sustainability Report.
 2. The evaluation of the nature and extent of the PSMC's adherence to AA1000 Accountability Principles (2018) and the reliability of specified sustainability performance information in this report as conducted in accordance with type 2 of AA1000AS v3 sustainability assurance engagement.
 3. The assessment of disclosure to be in conformance with the applicable SASB industry standard(s) in this report as conducted in accordance with type 1 of AA1000AS v3 sustainability assurance engagement.
- This statement was prepared in English and translated into Chinese for reference only.

Opinion Statement

We conclude that the Powerchip Semiconductor Manufacturing Corporation 2022 Sustainability Report provides a fair view of the PSMC sustainability programmes and performances during 2022. The sustainability report subject to assurance is materially correct without voluntary omission and based on the limitations of the scope of the assurance, the information and data provided by the PSMC and the sample taken. We believe that the performance information of Environment, Social and Governance (ESG) are correctly represented. The sustainability performance information disclosed in the report demonstrate PSMC's efforts recognized by its stakeholders. Our work was carried out by a team of sustainability report assures in accordance with the AA1000AS v3. We planned and performed this part of our work to obtain the necessary information and explanations we considered to provide sufficient evidence that PSMC's description of their approach to AA1000AS v3 and their self-declaration in accordance with GRI Standards and SASB Standard(s) were fairly stated.

Methodology

Our work was designed to gather evidence on which to base our conclusion. We undertook the following activities:

- a review of issues raised by external parties that could be relevant to PSMC's policies to provide a check on the appropriateness of statements made in the report
- discussion with managers on PSMC's approach to stakeholder engagement. Moreover, we had sampled 2 external stakeholders for product interview
- interview with 40 staff involved in sustainability management, report preparation and provision of report information were carried out
- review of key organisational developments
- review of the extent and maturity of the relevant accounting systems for financial and non-financial reports
- review of the findings of internal audits
- the verification of performance data and claims made in the report through meeting with managers responsible for gathering data
- review of the processes for gathering and ensuring the accuracy of data, followed data trials to initial aggregated source and checked sample data to greater depth during site visit
- the consolidated financial data are based on audited financial data, we checked that this data was consistently reproduced
- review of supporting evidence for claims made in the report
- an assessment of the organization's reporting and management processes concerning this reporting against the principles of Inclusivity, Materiality, Responsiveness and Impact as described in the AA1000AP (2018)
- an assessment of the organization's use of metrics or targets of SASB Standard to assess and manage ESG-related risks and opportunities.

Conclusions

A detailed review against the Inclusivity, Materiality, Responsiveness and Impact of AA1000AP (2018) and sustainability performance information as well as GRI Standards and SASB Standard(s) is set out below:

Inclusivity

In this report, it reflects that PSMC has continually sought the engagement of its stakeholders and established material sustainability topics, as the participation of stakeholders has been conducted in developing and achieving an accountable and strategic response to sustainability. There are fair reporting and disclosures for the information of Environment, Social and Governance (ESG) in this report so that appropriate planning and target-setting can be supported. In our professional opinion the report covers the PSMC's inclusivity issues and has demonstrated sustainable conduct supported by top management and implemented in all levels among organization.

Materiality

The PSMC publishes material topics that will substantively influence and impact the assessments, decisions, actions and performance of PSMC and its stakeholders. The sustainability information disclosed enables its stakeholders to make informed judgements about the PSMC's management and performance. In our professional opinion the report covers the PSMC's material issues.

Responsiveness

PSMC has implemented the practice to respond to the expectations and perceptions of its stakeholders. An Ethical Policy for the PSMC is developed and continually provides the opportunity to further enhance PSMC's responsiveness to stakeholder concerns. Topics that stakeholder concern about have been responded timely. In our professional opinion the report covers the PSMC's responsiveness issues.

Impact

PSMC has identified and fairly represented impacts that were measured and disclosed in probably balanced and effective way. PSMC has established processes to monitor, measure, evaluate and manage impacts that lead to more effective decision-making and results-based management within an organization. In our professional opinion the report covers the PSMC's impact issues.

Performance information

Based on our work described in this statement, specified sustainability performance information such as GRI Standards disclosures disclosed in this report, PSMC and BSI have agreed upon to include in the scope. In our view, the data and information contained within Powerchip Semiconductor Manufacturing Corporation 2022 Sustainability Report are reliable.

GRI Sustainability Reporting Standards (GRI Standards)

PSMC provided us with their self-declaration of in accordance with GRI Standards 2021 (For each material topic covered in the applicable GRI Sector Standard and relevant GRI Topic Standard, comply with all reporting requirements for disclosures). Based on our review, we confirm that sustainable development disclosures with reference to GRI Standards' disclosures are reported, partially reported or omitted. In our professional opinion the self-declaration covers the PSMC's sustainability topics.

SASB Standards

PSMC provided us with their self-declaration of in accordance with SASB Standard(s) (Semiconductors Sustainability Accounting Standard). Based on our review, we confirm that the sustainability disclosure topics & accounting metrics of SASB Standard(s) (Semiconductors Sustainability Accounting Standard) are reported, partially reported or omitted. In our professional opinion the self-declaration covers disclosure topics, associated accounting metrics and activity metrics for applicable SASB industry standard(s).

Assurance level

The high level assurance provided is in accordance with AA1000AS v3 in our review, as defined by the scope and methodology described in this statement.

The moderate level assurance provided is in accordance with AA1000AS v3 in our review of SASB Standard(s).

Responsibility

This sustainability report is the responsibility of the PSMC's chairman as declared in his responsibility letter. Our responsibility is to provide an independent assurance opinion statement to stakeholders giving our professional opinion based on the scope and methodology described.

Competency and Independence

The assurance team was composed of Lead auditors experienced in relevant sectors, and trained in a range of sustainability, environmental and social standards including AA1000AS, ISO 14001, ISO 45001, ISO 14064 and ISO 9001. BSI is a leading global standards and assessment body founded in 1901. The assurance is carried out in line with the BSI Fair Trading Code of Practice.



AA1000
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Statement No: SRA-TW-2022050
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for and on behalf of BSI:


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