



PSMC

2023 Sustainability Report
ENVIRONMENT, SOCIAL AND GOVERNANCE

Powerchip Semiconductor Manufacturing Corp.



C O N T E N T S

Message from the Chairman and President

4

About Powerchip Semiconductor Manufacturing Corporation

6

Company Profile	6
Economic Performance	9
Sustainability Performance and Honors	10

Commitment to Sustainability Management

12

Organizational Structure for Sustainable Development	12
Sustainable Development Strategy	13
Stakeholder Communication	17
Materiality Analysis	19

1 Dedicated to Sustainability

Innovation, Quality and Customers

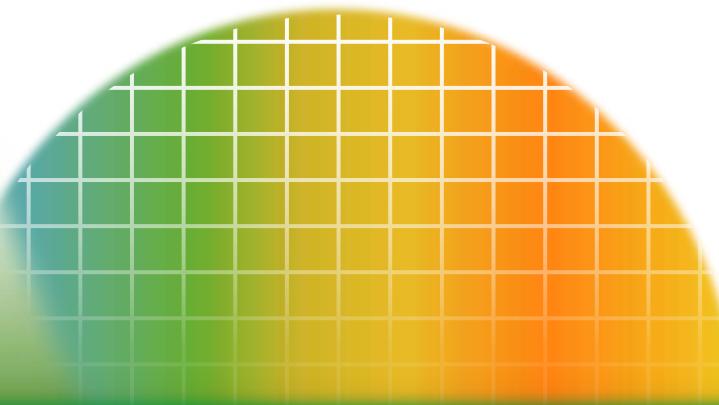
1.1 Innovation and Intellectual Property Management	33
Column - Strengthen AI Deployment and Develop Wafer on Wafer (WoW) Technology Process of 3D AI Accelerator	42
Column - Navigator for Intelligent and Innovative Manufacturing	44
1.2 Product Liability and Quality	49
Column - Continuous Improvement Process (CIP) Competition	56
1.3 Customer Relationship Management	59

2 Synergized Sustainability Supply Chain

2.1 Supply Chain Overview	65
2.2 Sustainable Supply Chain Management	68
2.3 Conflict Mineral Management	71

3 Commitment to Sustainability Environment

3.1 Climate Strategy	75
3.2 Energy Management	89
3.3 Water Resources Management	93
3.4 Waste Management	98
3.5 Air Pollution Emissions Management	104
3.6 Biodiversity Management	106



C O N T E N T S

4 Collaborative Sustainability

Talent

4.1 Talent Attraction and Retention	110
Column - Pre-employment Internship Program	114
Column - Semiconductor Academy Program	115
4.2 Talent Nurturing and Development	121
4.3 Human Rights	129
4.4 Occupational Safety and Health	131

5 Integrating Sustainability Society

5.1 Social Influence	143
5.1 Social Co-Prosperity Development	144

6 Efficient Sustainability

Corporate Governance

6.1 Corporate Governance	156
6.2 Integrity Management	160
Column - Implement RBA Core Spirits and Fulfill Integrity Management Culture	164
6.3 Regulatory Compliance	165
6.4 Responsible Taxation	166
6.5 Risk Management	168
6.6 Information Security	176

Appendix

About this Report	180
Sustainability Information Disclosure Guidelines	182



Message from the Chairman and President

The spirit of sustainability lies in seizing future opportunities while mitigating future risks. In an era where applications of technology are increasingly intertwined with sustainable development, the iterative innovation demanded in semiconductors not only creates enormous business opportunities but also brings greater possibilities for the evolution of human societies. However, the risks hidden behind these opportunities add instability to enterprises' sustainable operations. In 2023, the world experienced major socio-economic changes, including conflict in the Middle East, the Russia-Ukraine war, stricter environmental regulations, weak consumer market demand, and inflation, all of which made corporate governance more challenging. Faced with this ever-changing macroeconomic situation, Powerchip Semiconductor Manufacturing Corporation (PSMC) maintains our responsibility to promote sustainable development. PSMC is committed to collaborating with our partners in all the Environmental, Social, Governance (ESG) domains to launch low-carbon transformation initiatives. With integrity, service, quality, and innovation as our core values, PSMC hopes to inject more energy into technology innovation and social value creation.

To integrate management resources and capabilities, deepen supervisory responsibilities, and enhance management effectiveness, the Board of Directors has decided to change our sustainable governance framework. The Audit Committee will assist the Board in supervising the Company's sustainable development initiatives, and the former ESG Committee is renamed as the Sustainable Development Committee, establishing a more comprehensive sustainable governance mechanism. In the past year, we also established the Nominating Committee, approved by the Board of Directors, to ensure the suitability of directors and senior executives. In 2023, operating under the three major execution strategies of "Low-Carbon Operations & Innovative Development", "Employee Participation & Community-Building", and "Diverse Values & A Friendly Workplace", we made efforts to integrate ESG elements into the core of our corporate governance. Through tangible action, we have demonstrated our commitment to sustainable development and wholeheartedly worked toward realizing the sustainable vision of "creating mutual-benefit cycles between our enterprise, environment, and society".



Low-Carbon Operations & Innovative Development

The intensification of climate-change impacts has reinforced our belief that carbon reduction can no longer be a possible scenario discussed on paper, but rather a necessity for our present survival. In September 2023, we alongside members of the Taiwan Semiconductor Industry Association declared our medium to long-term climate goals: Aiming to achieve a 10% absolute reduction in greenhouse gas emissions by 2030 as compared to our 2020 baseline (a 40% reduction over baseline (BAU, Business As Usual) emissions), and reach net-zero emissions by 2050. In the future, we will combine industry-government-academia technical resources to jointly promote carbon reduction efforts toward achieving the net-zero goal. We are also actively increasing our use of renewable energy. Through self-generated, self-used renewable energy, green energy wheeling, and purchasing renewable energy certificates (RECs), our renewable energy utilization rate increased in 2023 from zero to 1.75%, indicating steady progress toward our RE30 goal. In the process of low-carbon transformation, we have implemented a comprehensive product life cycle assessment (LCA) mechanism to deeply understand the environmental impacts of every stages of manufacturing. We have also verified the carbon and water footprints of our 12-inch wafer foundry products. Each fab has proposed energy-saving and -reduction plans for resource utilization hotspots in the production process. We provide necessary resources for all research projects that contribute to process improvements, continuously delivering high-added-value and environmentally-friendly green manufacturing and services to our customers. These efforts and initiatives have led us to participate in CDP's Climate Change and Water Security questionnaires for the first time, for which we received the honor of an A-(Leadership level) rating.

To grasp future trends in technology applications, we have defined three key strategic roles that PSMC will play in technology and low-carbon transformation. First, the fourth-generation oxide semiconductor indium gallium zinc oxide (IGZO) has the capacity to significantly reduce data transportation and enhance computational efficiency. This technology will greatly improve display resolution for virtual reality applications. Second, the logic and DRAM wafer stacking (3D wafer on wafer, WoW) technology offers advantages such as increased bandwidth, reduced latency, high performance, and low power consumption, meeting the requirements of AI chips. Last, we are focusing on automotive electronic chips, including gallium nitride (GaN), silicon carbide (SiC), and power management integrated circuits (PMIC), targeting the electric vehicle consumer market that has rapidly grown in recent years to create competitive advantages in the industry.



Employee Participation ♦ Community-Building

Sustainable business operations depend on long-term support from the local community to create flourishing of corporate social responsibility initiatives. In order to demonstrate our appreciation for the land that nurtured PSMC's growth, we have established a Public Welfare Committee. This committee integrates internal and external resources and influences in collaboration with the Powerchip Cultural Foundation to focus on the core strategies of "Environmental Conservation", "Philanthropic Investment", and "Arts & Cultural Feasts" for social prosperity. We continue to deepen our efforts in environmental conservation, community revitalization, and arts & cultural industry development, ensuring the continuity of our social investment programs. To enhance the effectiveness and impact of our social investments, we have chosen to collaborate with non-profit organizations. In our collaborations, PSMC provides funding and volunteers, combining our resources with the environmental conservation expertise of external organizations. This year, we and our partners have jointly invested in the restoration of the Gaoping River artificial wetlands and forest conservation tree-planting efforts in Houlung, Miaoli. Through division of specialized labor, we aim to maximize capacity in conservation and cultivation of ecological species. Additionally, in anticipation of the completion of our new Tongluo fab in 2024 and considering its potential impacts on the local environment when it goes into full production, we have conducted in-person mountain cleaning education activities. Through these activities, we inform stakeholders about our rigorous monitoring of ecological impacts as part of environmental assessments and our conservation measures for leopard cat habitats. This demonstrates PSMC's commitment to biodiversity conservation; we actively seek a balance between corporate operations and social-environmental development through tangible actions. In addition, by providing paid volunteer leave to all employees, we aim to inspire more employees and the general public to actively engage in charitable activities, becoming a significant force for driving social advancement and development.



Chairman

黃崇仁

President

謝再居



Diverse Values ♦ A Friendly Workplace

At PSMC, every transformation relies significantly on the contributions of our employees. They will play crucial roles in the next stage of our sustainability transformation. Guided by the PSMC Labor and Human Rights Policy, we are committed to creating a diverse, open, equal, non-infringing-of-human-rights, and right-talent workplace environment. To enhance employee welfare, we provide maternity leave that, both in terms of number of days and type, exceeds legal requirements; we have established a flexible work hour system; and have introduced an electronic voucher platform for diverse festival gift options. This creates a welfare system that better meets employee needs. Additionally, in 2023, after approval by the Board of Directors, we implemented an employee stock ownership plan to share in the Company's growth with all employees. PSMC has also been honored with a 2023 Happy Enterprise Gold Award by 1111 Job Bank, recognizing our comprehensive welfare system. As part of our strategic global development, we continue to actively attract international semiconductor specialists through diverse recruitment channels such as the Pre-Employment Program and Semiconductor Academy Program. We hope to stimulate innovative energy and shape a diverse and inclusive workplace culture through professional exchanges among multinational talents.

As the global semiconductor industry continues to evolve, we deeply understand PSMC's critical role in technological innovation. In the future, we will continue to innovate and expand the scope of our business through strategic partnerships, aiming to meet the needs of both society and the market while maintaining a responsible attitude toward the environment and society. We remain steadfast in our commitment to sustainable values, moving forward together with all stakeholders to create a better future.

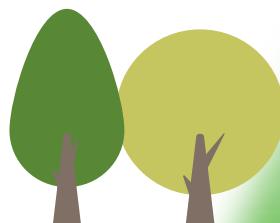


About Powerchip Semiconductor Manufacturing Corporation

Company Profile

After business transformation and organizational restructuring, Powerchip Semiconductor Manufacturing Corporation (PSMC) has ascended to become the eighth largest professional wafer foundry company in the world. Currently, PSMC operates two 8-inch and three 12-inch wafer fabs. The newly built 12-inch wafer fab located in Tongluo, Miaoli, is expected to commence small-scale production in early 2024 and officially begin mass production in the second half of 2024.

Company Overview	
Company Name	Powerchip Semiconductor Manufacturing Corporation
Company Headquarters	No. 18, Li-Hsin 1st Road, Hsinchu Science Park, Hsinchu, Taiwan
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	A total of approximately 8,164 employees worldwide
Capital	NT\$40.859 billion
Operating Income	About NT\$44.023 billion of 2023



Hsinchu Science Park



8AD



P3



Zhunyan Science Park



Tongluo Science Park

Fab P5





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. PSMC adheres to continuous improvement in technology, strict quality control, and efficient manufacturing. The Company continues to promote international cooperation strategies, introduce cutting-edge technology, develop independent technology, and expand into new markets. PSMC is committed to providing specialized wafer foundry services and creating win-wins with customers. The Company also follows the highest international environmental, social, and governance (ESG) standards, establishing itself as a responsible corporate citizen committed to sustainable and profitable operations.

External Public Association Participation

In the rapidly changing semiconductor industry, PSMC continuously improves production technology, and also participates actively in a variety of industry guilds and associations, holding important positions such as chairman, director, and supervisor. This involvement allows PSMC to collaborate with peers in promoting industry environment and policy optimization, thereby precisely staying on top of industry dynamics. PSMC has also taken the initiative to call for the establishment of industry 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, PSMC 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 to clarify the issue and express its position. If it is determined that the issue at hand is inconsistent with the Company's position, PSMC will choose to withdraw from the relevant association or activity.

In 2023, 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 Semiconductor Industry Association	<p>PSMC participates in the Taiwan Semiconductor Industry Association (TSIA) to show concern for industry development. Through the association's activities and consensus-building with peers, PSMC facilitates cooperative efforts amid competition. This collaboration aims to promote the sound development of the industry as a whole, and to strengthen the overall competitiveness of the industry, with the hope that the Company can maintain its advantage in the ever-changing international environment.</p> <p>In September 2023, the chairman of TSIA led the members in publicly to declare the goal of net-zero emissions and disclose the net-zero target of carbon reduction plan to mitigate climate change. The TSIA directors and supervisors unanimously approved the TSIA Carbon Reduction Pathway and held a declaration ceremony. This initiative aims to encourage the industry and relevant units to cooperate with national policies in reducing carbon emissions by reducing greenhouse gas emissions, promoting green energy industries, and developing energy-saving and carbon-reducing technologies in order to achieve the goals of the Paris Agreement.</p>	Executive Director
The Allied Association for Science Park Industries	<p>PSMC participates in the Allied Association for Science Park Industries, to broaden the communication with those in the industry and manufacturers of other industries in the Science 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.</p> <p>In July 2023, PSMC participated in the White Paper on industrial development strategy proposed by the association for Taiwan's science park. The White Paper outlined five major visions, described eleven key issues, and proposed twenty-seven development strategies for science parks. Additionally, in response to the risks posed by climate change leading to extreme weather events and the industry's challenges with energy and water resource shortages, the Hsinchu Science Park Bureau collaborated across government departments. They utilized green technology to drive a circular economy, encouraged companies to develop energy-saving and low-carbon measures, and collaborated publicly and privately to construct a smart green ecological science park. This effort aimed to optimize the entrepreneurial and sustainable environment within the park and lead Taiwan's industries in accelerating the achievement of net-zero carbon emissions goals.</p>	Executive Director



Domestic Associations - Industry Development and Technology Innovation		
Organization Name	Sustainability Action	Role
Taiwan Internet of Things Technology and Industry Association	<p>By joining the Taiwan IOT Technology and Industry Association (TwIoTA) and taking on management roles, PSMC gains decisive influence in setting standards and applications in the IoT industry. This ensures that the Company's existing technologies can be widely applied across a variety of sectors within the IoT industry, further enhancing PSMC's core competitiveness in the application of emerging industries.</p> <p>In response to the global trend toward achieving net-zero emissions by 2050, and to comply with ESG and green supply chain standards, industries are transitioning their energy sources. The development of new and renewable energy sources has become an international consensus, combining new energy technologies with industry applications and demands. This not only enhances the energy resilience of companies but also reduces carbon emissions through a variety of measures and technologies.</p> <p>Due to the fact that achieving net-zero emissions development, in November 2023, representatives from five major associations including the TwIoTA, Taiwan Advanced Automotive Technology Development Association (TADA), Taiwan Hydrogen and Fuel Cell Partnership, Taiwan Battery Association, and Taiwan Green Energy Association, jointly signed a memorandum of cooperation. They collaborated with the Taipei Computer Association to organize the Outlook on Taiwan's New Energy Applications and Development forum. This forum delved into exploring cross-domain opportunities for new energy applications in Taiwan's industrial development, in preparation for the future trend of ESG and carbon reduction.</p>	Chair Executive Director Director Supervisor
Taiwan Advanced Automotive Technology Development Association	<p>Through the participation in the Taiwan Advanced Automotive Technology Development Association (TAATDA), PSMC 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.</p> <p>In September 2023, to help relevant manufacturers understand the characteristics of the automotive semiconductor industry and prepare for the net-zero emission policies worldwide, thereby assisting Taiwan's ICT industry in entering the trillion-dollar industry chain of smart cars and electric vehicles, the TwIoTA and TADA jointly organized the "Auto IC, Driving the Future" forum as part of SEMICON Taiwan.</p>	Chair Executive Director Supervisor

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
Hsinchu City Human Resource Management Association (HCHRMA)	Member	The General Assembly of Chinese Culture	Member
Cross-Straight 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	



Economic Performance

In 2023, PSMC reported a consolidated revenue of NT\$44 billion, with an after-tax net loss of NT\$1.644 billion and a full-year loss per share was NT\$0.4. This is mainly because the semiconductor industry is facing a recession in the two major markets of smartphones and personal computers in 2023. As well as the prolonged inventory adjustment time in the consumer electronics industry chain, PSMC's overall revenue declined by 42% to NT\$44 billion. Although operating costs also dropped proportionally, due to low capacity utilization, the company recognized approximately the loss of idle production capacity of NT\$10.3 billion and the start-up costs of the Tongluo factory before mass production were approximately NT\$2.4 billion, resulting in an after-tax loss of NT\$1.6 billion.

Looking ahead to 2024, as semiconductor inventories gradually lower and AI applications continue to expand, PSMC expects to improve our revenue performance by implementing AI technology in conjunction with operational testing and fault troubleshooting. This initiative aims to increase capacity utilization and shorten manufacturing cycles. Additionally, the new 12-inch fab in Tongluo is expected to commence small-scale production in early 2024 and officially begin mass production in the second half of 2024, with a monthly production capacity of approximately 8,500 wafers. The Tongluo fab will also serve as a development

and production base for advanced logic processes and Wafer on Wafer integration technology. Depending on market demand and product portfolio, PSMC plans to gradually increase the Tongluo fab's capacity to its full capacity of 50,000 wafers per month.

Despite the financial performance in 2023 falling short of expectations due to market demand fluctuations, PSMC continues to adhere its belief in environmental friendliness and giving back to society. Through sound corporate governance, PSMC seeks to balance the interests of stakeholders, fulfill its commitment to sustainable development, and adhere to the values of integrity, service, quality, and innovation in its corporate culture. PSMC aims to achieve stable profitability and set a benchmark for ESG sustainability by fostering relationships of coexistence with customers, society, and the environment.

Please refer to the Company's financial report for detailed financial data:

https://www.powerchip.com/en-global/financials/quarterly/quarterly-year-2023?d_target=bottom-link-title

Unit: NT\$ in thousands

Category	Item	2021	2022	2023
Economic Value Generated	Operating income	65,622,945	76,086,619	44,022,552
	Operating Costs	38,038,331	40,507,654	38,730,581
	Employee Salaries and Benefits (Operating Expenses)	5,253,129	6,058,260	4,202,513
	Distribution of dividends to shareholders	3,739,245	7,124,836	1,216,676
	Interest on Loans	454,720	415,151	386,024
	Payments to the government	3,122,441	5,538,058	0
	Total	50,607,866	59,443,959	44,535,794

Note 1: Total amount of social investments in 2023 was NT\$155,486 thousand.

Note 2: Total amount of allocated economic value plus social investment in 2023 was NT\$44,691,280 thousand. However, due to an after-tax net loss in 2023, there was no retained economic value.

Sustainability Performance and Honors



Sustainability Performance and Honors



Hsinchu Science Park's Outstanding Award for Industrial Waste Reduction and Circular Economy Performance

Special Merit Award



Hsinchu Science Park's Outstanding Award for Industrial Waste Reduction and Circular Economy Performance

Excellence Award



Chemicals Administration of Ministry of Environment's 3rd Green Chemistry Application and Innovation Award

Chemical Substances Management Category



Hsinchu Science Park's Excellent Occupational Safety and Health Unit

Special Merit Award



1111 Job Bank's 2023 Happy Business

Gold Award



Ministry of Labor 17th Construction Golden Safety Awards

Excellence Award



Ministry of Labor's 2023 Excellent Performance in Occupational Safety and Health Management System

Special Merit Award



Received Certification for Cleaner Production Assessment from the Ministry of Economic Affairs' Industrial Development Administration



Commitment to Sustainability Management

Organizational Structure for Sustainable Development

To practice corporate sustainable development and promote progress in the economy, environment, and society, beginning in 2022, PSMC established the Sustainable Development Committee and ESG Committee as dedicated departments for driving sustainable development. In order to deepen supervision and review responsibilities and enhance the effectiveness of sustainable governance, the 3rd meeting of the 9th term Board of Directors, held on September 25, 2023, approved the restructuring of the sustainability governance framework. The Audit Committee assist the Board of Directors in supervising the Company's sustainable development initiatives. Additionally, the former ESG Committee has been renamed to Sustainable Development Committee, to play a role in formulating and executing sustainability strategies.

The Sustainable Development Committee oversees three major implementation teams in environmental, social, governance (ESG), comprised of department heads appointed by the President. These teams report annually to the Audit Committee and the Board of Directors on sustainable development goals, execution effectiveness, and plans for the next year. In 2023, the Sustainable Development Committee held four meetings; they also submitted reports to the Board of Directors on August 8, 2023, and December 19, 2023 respectively, detailing implementation status. The reports included communication with stakeholders, the effectiveness of sustainable development plans, and material topics identified through materiality assessments (including relevant management policies, short-term, medium-term, and long-term goals, and performance tracking and review mechanisms).

PSMC Sustainable Development Committee Organizational Chart





Sustainable Development Strategy

Sustainable Development Commitment

PSMC follows the Sustainable Development Best Practice Principles as the highest guiding principle for sustainable development within the Company. With the vision of Innovation in Technology and Service to Society, the Company aims to use innovative technological advancements to serve society as its mission. In 2023, PSMC continued to implement three major implementation guidelines set by the Sustainable Development Committee, focusing on strengthening corporate governance, pursuing a balanced interest of stakeholders, implementing environmental protection and energy conservation efforts, and contributing to society.



Vision
Innovation in
Technology
Service to Society



Mission
Environmental
Sustainability
Social Co-Prosperity
Corporate Perpetuity



Corporate Culture



Integrity



Service



Quality



Innovation

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

UN SUSTAINABLE DEVELOPMENT GOALS





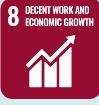
Sustainable Development Goals

Goals	Corresponding Chapters	Action and Effectiveness
Goal 3 	Commitment to Sustainability · Environment	<ul style="list-style-type: none"> Based on the annual health examination results of colleagues, we promote a series of health promotion activities including ultrasound examinations, vaccinations, low-calorie healthy meals and health professional consultations, and set up a Powerchip clinic in the factory to provide 24-hour services of professional health and safety care to all employees and non-employees. (SDG 3.4 achieved) In order to effectively manage air pollution emissions, it has passed the ISO 14001 environmental management system verification, and aims to continuously reduce pollutant emissions and improve best available technologies. (SDG 3.9 achieved)
Goal 4 	Collaborative Sustainability · Talent	<ul style="list-style-type: none"> PSMC collaborated with domestic universities to implement the Pre-employment Internship Program, providing internship opportunities during the semester and summer for graduating students interested in joining the Company. In 2022 and 2023, a total of 14 students obtained pre-employment qualifications, with 11 of them becoming formal employees of PSMC. The onboarding rate reached nearly 80%, allowing students to familiarize themselves early with the working environment and team atmosphere at PSMC, understand the operations of a wafer foundry fab, and receive practical training (SDG 4.4 achieved). Continuing our collaboration with semiconductor academies, PSMC is one of the few companies among major sponsors to fully participate and contribute funds. In 2023, we collaborated on a total of 49 research projects with four semiconductor academies in Taiwan. Investment exceeded NT\$40 million. Additionally, we disbursed scholarships totaling NT\$3.16 million for the year. (SDG 4.4 achieved).
Goal 5 	Collaborative Sustainability · Talent	<ul style="list-style-type: none"> The recruitment and compensation systems of PSMC adhere to the principles of fairness and equity, without differentiation based on race, class, language, religion, political stance, marital status, nationality, birthplace, gender, sexual orientation, age, or affiliations. During the performance evaluation period in 2023, all employees who have served for more than three months must undergo regular performance evaluations, with a 100% participation rate. (SDG 5.5 achieved)

Goals	Corresponding Chapters	Action and Effectiveness
Goal 6 	Commitment to Sustainability · Environment	<ul style="list-style-type: none"> Continuing our commitment to technological improvements and equipment investments, PSMC has increased water recovery rates and process water efficiency. We became the first semiconductor company in the Hsinchu Science Park to commit to a process water recovery rate of 85% or better. In 2023, the water recovery rates across all fabs reached 88% (SDG 6.4 achieved). After the establishment of the park water reclamation plant, the Company will use 750 m³/day (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) Process wastewater is pre-treated by the wastewater treatment plant in the factory, and then discharged into the park sewage treatment plant for subsequent treatment and discharge. The wastewater is divided into recyclable and non-recyclable wastewater according to different characteristics such as the type, concentration, and conductivity of the wastewater, etc. at the process side, there are a total of 20 different water system treatments. In addition to increasing the water recovery rate, some waste acid liquids, organic waste liquids, etc. have economic value for recovery. Separate diversion can not only reduce the dosage of wastewater plants, but also reduce the difficulty of back-end waste treatment and environmental load. (SDG 6.4 achieved)





Goals	Corresponding Chapters	Action and Effectiveness
Goal 7 	Dedicated to Sustainability · Innovation, Quality and Customers	<ul style="list-style-type: none"> The development of 24nm NAND Flash and 1.2V NOR Flash technology platforms has significantly reduced the number of photomasks by 16% and the total number of processes by 9% while continuing to increase output per unit area by 14%, effectively reducing production energy consumption and meeting the future low-power product market needs. (SDG 7.3 achieved) Developed at both the 8-inch and 12-inch wafer fabs, the separated MOSFET, Bipolar-CMOS-DMOS (BCD), and Ultra-High Voltage (UHV) technologies have enabled the end product applications to stabilize power supply and reduce energy loss. In 2023, PMIC wafer production reduced greenhouse gas emissions by 750 million kg CO₂e . (SDG 7.3 achieved)
	Commitment to Sustainability · Environment	<ul style="list-style-type: none"> The implement of the ISO 50001 energy management system to analyze the efficiency of energy consumption through energy management, seeks the effective use of energy and improves the energy efficiency . (SDG 7.3 achieved) PSMC has implemented a variety of energy-saving measures, such as reviewing and improving energy efficiency, planning for the replacement of old equipment, and developing renewable energy sources. The goal was set to achieve an annual energy savings rate of over 1%. In 2023, the overall energy savings rate reached 1.88%. (SDG 7.3 achieved)
Goal 8 	Dedicated to Sustainability · Innovation, Quality and Customers	<ul style="list-style-type: none"> In 2023, PSMC strengthened our AI deployment by developing wafer stacking technology to create AI accelerators. These accelerators provide a large number of connection channels between logic chips and memory, reducing data transmission distances. This development significantly lowers data access power consumption and enhances computational efficiency. (SDG 8.2 achieved)
	Collaborative Sustainability · Talent	<ul style="list-style-type: none"> PSMC has implemented ISO 45001 Occupational Health and Safety Management Systems, and formulated the Environmental Safety and Health Management Manual to effectively manage internal and external issues related to activities, products and services, as well as the operation of environmental safety and health at the plant site. The scope of application covers stakeholders relevant to company operations, including all employees, customers, suppliers/contractors, and competent authorities. (SDG 8.8 achieved)

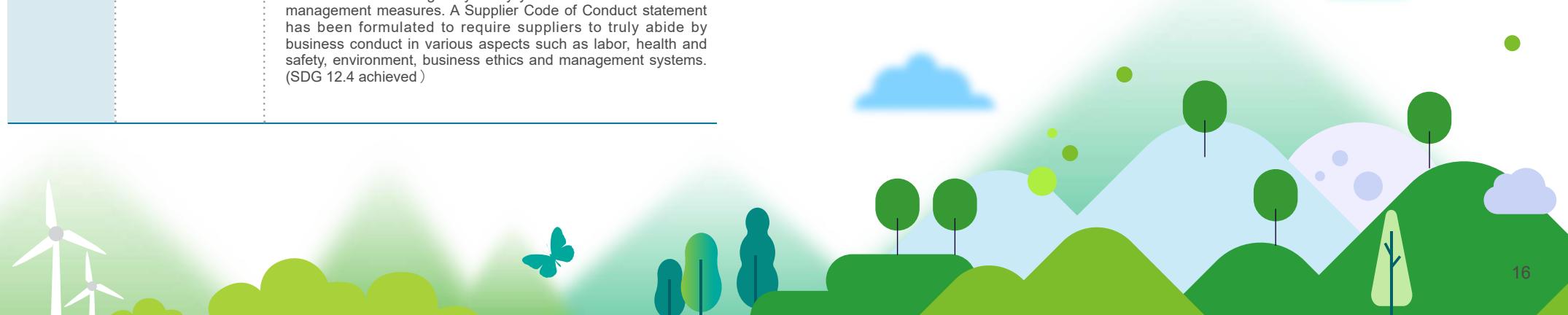
Goals	Corresponding Chapters	Action and Effectiveness
Goal 9 	Dedicated to Sustainability · Innovation, Quality and Customers	<ul style="list-style-type: none"> The IGBT products launched by PSMC are produced on 0.4-micron 8-inch wafers, which are applied in electric vehicles and variable-frequency home appliances. They are essential components in energy-saving products, featuring high input impedance, high voltage endurance, and low on-state voltage drop. These products enable customers to produce advanced, energy-efficient, and environmentally friendly products. In 2023, they contributed to reducing greenhouse gas emissions by 34.9 billion kgCO₂e collectively for customers, representing an increase in the Company' s total revenue contribution from 3% to 5%. (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) The Company strictly controls the emission of pollutants through the best available technology of a multi-phase treatment system for pollution prevention. In 2023, the overall average removal rate of volatile organic compounds (VOCs) reached 97.14%, exceeding the standards set by the Air Pollution Control and Emissions Standards for the Semiconductor Industry. (SDG 11.6 achieved)





Goals	Corresponding Chapters	Action and Effectiveness
Goal12 	Commitment to Sustainability · Environment	<ul style="list-style-type: none"> 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)
	Dedicated to Sustainability · Innovation, Quality, and Customers	<ul style="list-style-type: none"> To understand the environmental impacts of semiconductor foundry products across raw material acquisition and manufacturing stages, identify environmental impact hotspots at each stage, facilitate performance improvement strategies, and communicate with customers, a comprehensive product lifecycle assessment mechanism was implemented in 2023. (SDG12.2 achieved)
	Synergized Sustainability · Supply Chain	<ul style="list-style-type: none"> The 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) In 2023, the total amount of green procurement reached NT\$213 million, including domestic and international environmental/energy-saving certifications. Procurement of goods and services primarily focused on local sources, with approximately 96% of procurement locally. (SDG 12.b achieved) According to the Raw Materials and Parts/Suppliers Management Regulations, new suppliers of raw materials and key parts and components are required to fill in a preliminary questionnaire and are evaluated regularly every year in accordance with the management measures. A Supplier Code of Conduct statement has been formulated to require suppliers to truly abide by business conduct in various aspects such as labor, health and safety, environment, business ethics and management systems. (SDG 12.4 achieved)

Goals	Corresponding Chapters	Action and Effectiveness
Goal13 	Commitment to Sustainability · Environment	<ul style="list-style-type: none"> To ensure the ability to resume normal operations within the shortest possible time in the event of a major accident or crisis, PSMC has established business continuity plans for specific crisis events such as prolonged power supply interruptions or disruptions in raw material supply. (SDG 13.1 achieved)
Goal16 	Efficient 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 Board of Directors is the highest corporate governance unit of the Company, the all directors are elected by a vote of all shareholders. (SDG 16.6 achieved) PSMC has established the Whistleblower Protection and Retaliation Management Procedures to safeguard the rights of employees, suppliers, and other internal and external whistleblowers to exercise their whistleblowing rights in accordance with the law. (SDG 16.6 achieved)
Goal17 	Integrating Sustainability · Society	<ul style="list-style-type: none"> PSMC has established three major social co-prosperity strategies: Environmental Conservation, Public Welfare Investment, and Arts & Cultural Festivals, supporting social welfare activities through donations, sponsorships, and strategic partnerships. The Company contributed 491 volunteers, totaling 1,715 hours. (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, government/competent authorities, shareholders/investors, suppliers/contractors, and society/local communities. To further understand each stakeholder and assess the impact of each sustainability issue, PSMC 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 2023
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"> • Product Liability and Quality • Regulatory Compliance • Information Security • Integrity Management • Human Rights 	<p>[Regularly]</p> <ul style="list-style-type: none"> • Health Consultation with Health Service Physicians and Occupational Specialists (Weekly) • Occupational Safety, Health and Environment Committee Meetings (Quarterly) • Quarterly Meeting (Quarterly) • Labor-management meetings (Quarterly), welfare committee meetings (Quarterly); to make suggestions and negotiate with the company <p>[Irregularly]</p> <ul style="list-style-type: none"> • Announcements and inquiries on the PSMC official website (in real-time) • Partner's Words /employees care network (at any time) • Grievance hotline (at any time): Assist and handle issues raised by and received from employees • Employee feedback (at any time) and setting up suggestion boxes • Human Resources Recruiting Line on the PSMC official website (at any time) (https://www.powerchip.com/zh-tw/contact) • Human Resources Interviewer Phone/e-mail (at any time) 	<ul style="list-style-type: none"> • Accepted total of 541 "Partner's Words" • Accepted 7 cases through "Grievance hotline" • Received 1 case of "Employee Feedback" <p>(The above all response rate are 100%)</p>
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"> • Information Security • Customer Relationship Management • Product Liability and Quality • Integrity Management • Sustainable Supply Chain 	<p>[Regularly]</p> <ul style="list-style-type: none"> • Customer Satisfaction Survey (Annually) <p>[Irregularly]</p> <ul style="list-style-type: none"> • Customer service telephone/mailbox (at any time) • Participate in relevant product exhibitions to gain first-hand knowledge of our customers and the direction of market development (at any time) • Marketing and sales colleagues visit customers (at any time) 	<ul style="list-style-type: none"> • Customers satisfaction score of 98
Government/ Authorities	The competent authorities are the supervisors of company operations related to regulations, and compliance governance is the primary responsibility of corporate management.	<ul style="list-style-type: none"> • Integrity management • Regulatory compliance • Information security • Innovation and intellectual property management • Responsible taxation • Waste management • Air pollution emissions management • Talent development • Occupational safety and health • (9 topics have the same score) 	<p>[Irregularly]</p> <ul style="list-style-type: none"> • Maintain good interaction with competent authorities and actively participate in seminars and workshops organized by the competent authorities (at any time) • Management System Regulations Identification (at any time) • Correspondence, project meetings, public information (at any time) • Participate in the operation of the functional organizations of the Hsinchu Science Park and the Hsinchu Science Park Administration (at any time) 	<ul style="list-style-type: none"> • Won many awards from the competent authorities for environmental safety and health • No major incidents of violations occurred • Participated in conferences organized by the competent authorities

Stakeholders	Importance of Stakeholder	Top five impact issues (Total positive and negative impacts)	Communication channel and frequency	Effectiveness of communication in 2023
Shareholders / Investors	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"> • Integrity Management • Information Security • Economic Performance • Product Liability and Quality • Regulatory compliance 	<p>[Regularly]</p> <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 • Financial information, stock information, and annual reports <p>[Irregularly]</p> <ul style="list-style-type: none"> • A special area for investors is set up on the official website (in real time) (https://www.powerchip.com/zh-tw/staticpage/ir_contact) • Set up dedicated contact window and mailbox for shareholders (at any time) • A spokesperson contact window is available (at any time) 	<ul style="list-style-type: none"> • Held regular shareholders' meeting on May 30, 2023 • No incidents of corruption occurred
Suppliers / Contractors	As a global team of professionals, PSMC maintain the quality of our supply chain through the evaluation of our supplier management system. The contractors are cooperative partners of PSMC, and share the prosperity with PSMC in terms of business promotion and work quality.	<ul style="list-style-type: none"> • Integrity Management • Information Security • Regulatory Compliance • Customer Relationship Management • Occupational Safety and Health 	<p>[Regularly]</p> <ul style="list-style-type: none"> • Toolbox Meeting (Daily) • Contractor Agreement Meeting (Quarterly) • Supplier Evaluations (Semiannually) • Contractor Appraisal (Annually) <p>[Irregularly]</p> <ul style="list-style-type: none"> • Supplier Conferences (irregularly) • E-Supplier System (at any time) • Sustainability Management Self-Assessment Questionnaire (Implemented for the first time in 2023) 	<ul style="list-style-type: none"> • 100% completion of raw material supplier evaluations • 100% completion of preliminary survey and audit of new suppliers • 100% use of conflict-free minerals • 100% of critical suppliers signed the Responsible Business Alliance (RBA) pledge
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"> • Information Security • Product Liability and Quality • Air Pollution Emissions Management • Social Influence • Integrity Management • Regulatory Compliance • (Last 2 topics have the same score) 	<p>[Irregularly]</p> <ul style="list-style-type: none"> • Weekday Visits and Telephone Communication (at any time) • Official Company Website (at any time) • Participate in Association Group Activities or Symposiums (at any time) • Participate in External Guild /Association Functions (at any time) 	<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

Every year, PSMC regularly uses the "Double Materiality" principle proposed by the European Union to conduct materiality analysis of sustainability issues, and follows the four-stage materiality identification process of the new version of GRI Standards (2021), and invites internal senior management and external stakeholders to evaluate the actual and potential positive and negative impact of sustainability issues, using "impact level" as the evaluation principle. After comprehensively assessing the impact on "company value" and "on the economy, environment, human and human rights", a total of 15 major themes were identified in 2023. In addition, PSMC also incorporates the results of materiality assessments and sustainability issues that have a significant impact on the company's operations into the company's corporate risk management processes and systems, and reviews them regularly.

1. Understanding the Organizational Context

22 Sustainability Issues

(11 Governance and Economic Issues, 6 Environmental Issues, 5 Human and Human Rights Issues)

With reference to international sustainability criteria and standards (GRI standards, SASB, TCFD, SDGs), 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.

2. Identify the Actual and Potential Impacts

- Internal Impact Assessment Survey (39 responses)
- Stakeholder Concerns Survey Questionnaire (369 responses)
- External Stakeholders including customers, investors/shareholders, suppliers/contractors: 290 responses; PSMC employees: 79 responses

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.
Discuss the potential impacts of various sustainability issues internally within the Company, and distribute a stakeholder concern survey questionnaire to internal and external stakeholders.

3. Assessing the Significance of Impact

Internal managers within the Company assess and quantify the impact of all sustainability issues on corporate value and sustainable development.
Internal and external Stakeholders evaluate the level of concern and impact of sustainability issues.

4. Sort and Prioritize the Most Significant Impacts

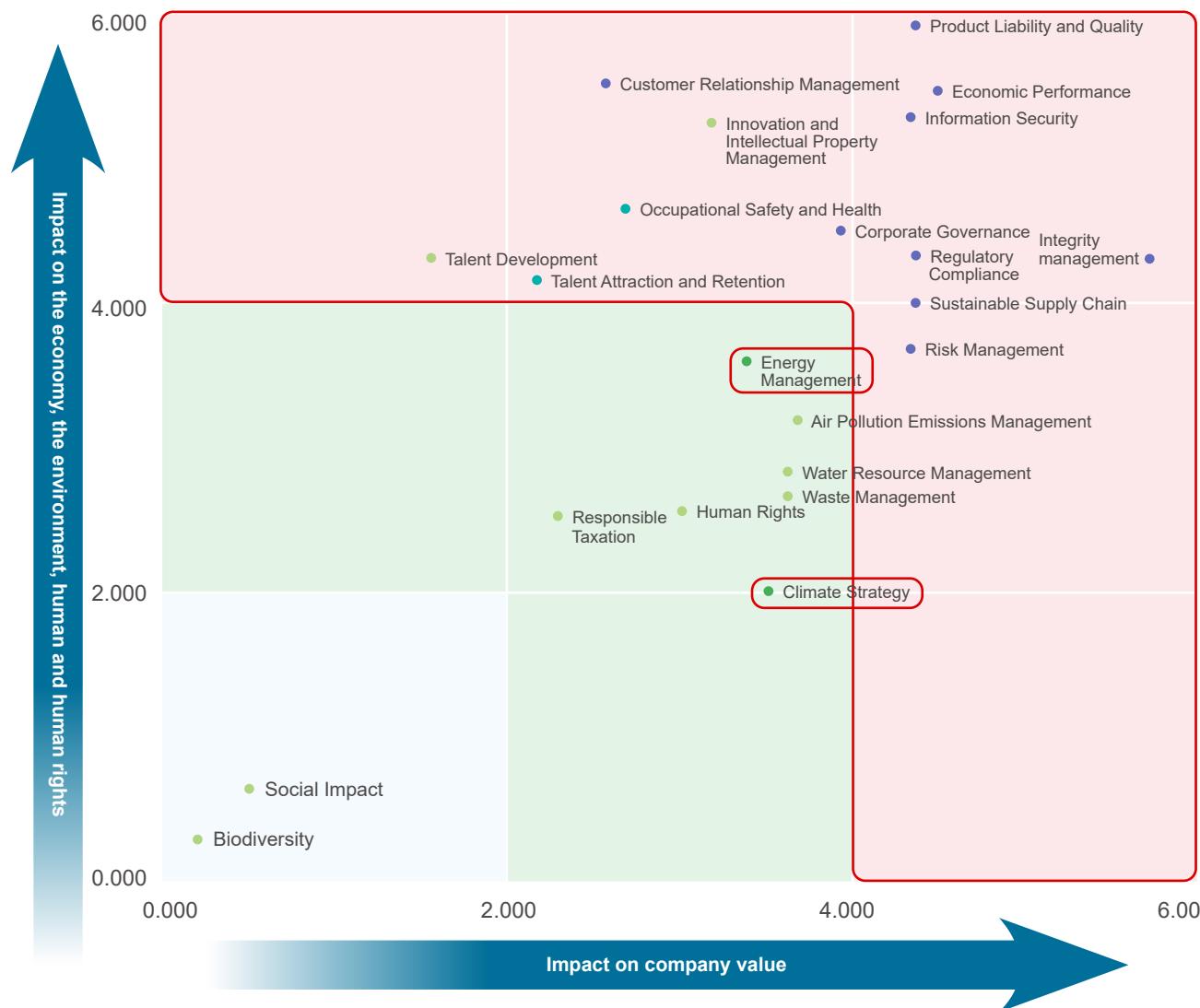
15 Material Topics

- Consolidate the impact assessment of all sustainability issues on the Company's operations and sustainable development as evaluated by internal managers, internal and external stakeholders, and create a double-materiality matrix. Conduct a comprehensive assessment of the impact on corporate value, economics, environment, and human rights, identifying 15 material topics and providing impact explanations.
- Implement the management and continuous monitoring of material topics, ensuring effective responses to internal and external stakeholder concerns.





Matrix of Material Topics Analysis for 2023

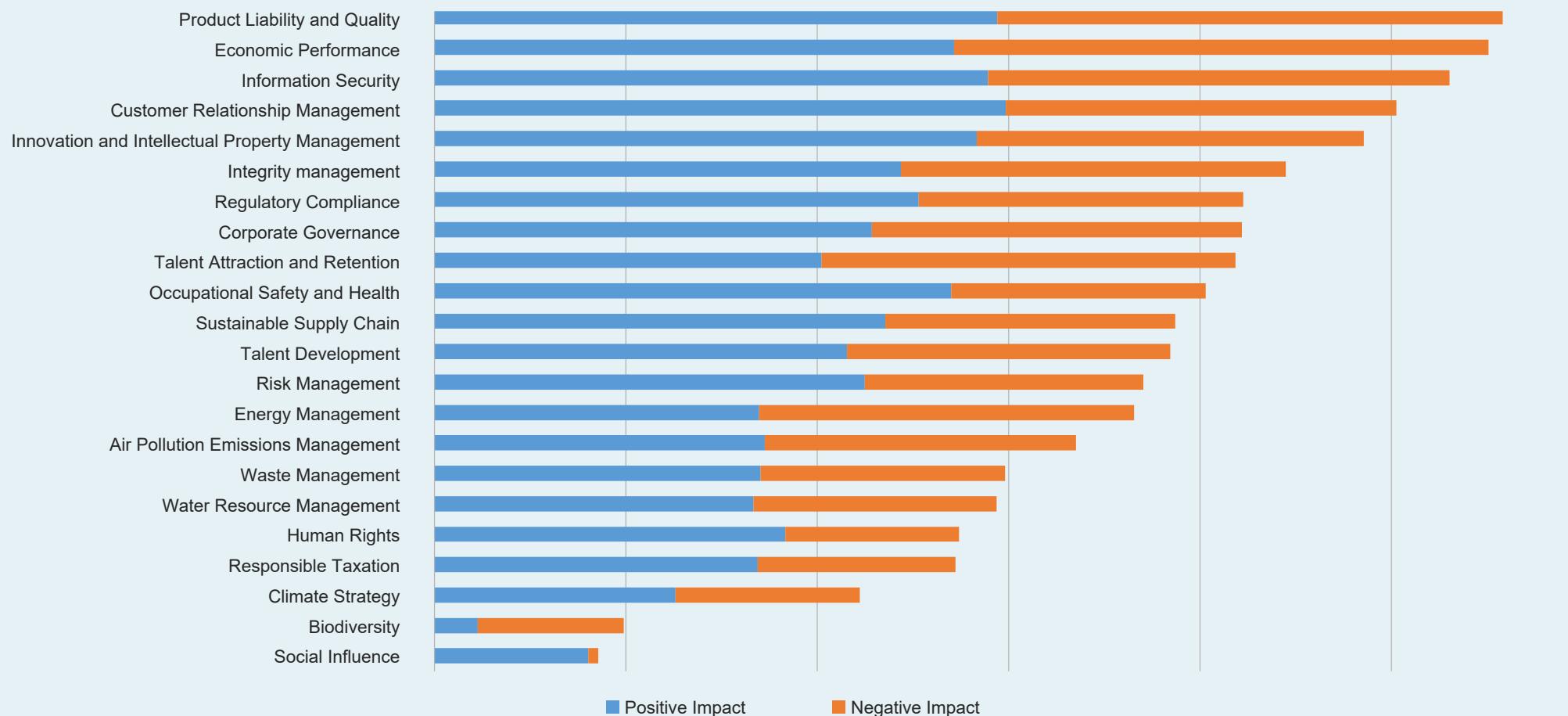


Material Topics for 2023



When assessing the positive and negative impact of sustainability issues, the impact indicators of sustainability issues on PSMC's operating income, operating costs, supply chain management, corporate image, goodwill, and legal liability will be taken into consideration. The comprehensive assessments on the management of sustainability issues will have positive and negative impacts on PSMC's operating value and ESG development. Then, we conduct an impact assessment on the identified material topics and specifically measure their impact, which serves as an important basis for PSMC's issue management.

Ranking of impact of sustainability issues





Management of Material Topic Impact

● : Direct impact ▲ : Indirect impact

Material Topics Categories	Material Topics	Positive, Negative Impacts Statement	Corresponding GRI, SASB Standards, Topic-Specific Items, and TCFD Framework	Value Chain Impact Hotspots			Management results in 2023 (please refer to the following chapter)
				Upstream	PSMC Operation	Downstream	
				Suppliers / Contractors	PSMC and Subsidiaries	Customers	
Environmental Sustainability	Energy Management	<p>Positive impact :</p> <ul style="list-style-type: none"> Examine corporate energy policies, management practices, goals and achievements. Effective energy management will help the company reduce carbon emission. <p>Negative impact :</p> <p>The company may face high electricity and carbon emission costs, which will affect the amount of investment and the number of customers.</p>	GRI 302-Energy TC-SC-130a.1 (1) Total energy consumed (2) Percentage of grid electricity usage in total energy consumption (3) Percentage of using renewable energy in total energy consumption		●	▲	3.2 Energy Management
	Climate Strategy	<p>Positive impact :</p> <p>The company should establish a climate change governance structure and carbon reduction-related strategies, assess climate-related risks and opportunities, and formulate corresponding strategies, and reduce the impact of climate change on business while exploring new business opportunities to increase corporate revenue.</p> <p>Negative impact :</p> <p>Facing the risks and challenges brought about by climate change, if mitigation measures are not formulated, it will have a significant impact on the overall operation.</p>	GRI 305- Emissions TC-SC-110a.1 (1) Gross Global Scope 1 emissions (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.		●	●	3.1 Climate Strategy
Social Co-Prosperity	Occupational Safety and Health	<p>Positive impact :</p> <p>Healthy and safe working conditions can prevent physical and mental injuries, promote the health of workers and maintain the health and safety of colleagues.</p> <p>Negative impact :</p> <p>The company lacks employee physical and mental health care and related services, resulting in employee turnover. Failure of the Company to safeguard the health and safety of its employees may also lead to occupational disasters.</p>	GRI 403-Occupational Health and Safety 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		●		4.4 Occupational Safety and Health



Material Topics Categories	Material Topics	Positive, Negative Impacts Statement	Corresponding GRI, SASB Standards, Topic-Specific Items, and TCFD Framework	Value Chain Impact Hotspots			Management results in 2023 (please refer to the following chapter)
				Upstream	PSMC Operation	Downstream	
				Suppliers / Contractors	PSMC and Subsidiaries	Customers	
Social Co-Prosperity	Talent Attraction and Retention	<p>Positive impact : In response to changes in the employment environment, continuous adjustments in talent recruitment and employee salaries, etc., it can attract more talent to join the company and increase retention rates.</p> <p>Negative impact : If the company does not continuously adjust salaries and benefits, it will affect talent recruitment decisions, and the company will be unable to recruit outstanding talents and reduce retention rates.</p>	GRI 401-Employment GRI 403-Occupational Safety and Health GRI 405-Diversity and Equal Opportunity TC-SC-330a.1 Percentage of employees requiring a work visa		●		4.1 Talent Attraction and Retention 4.4 Occupational Safety and Health
	Talent Development	<p>Positive impact : Planning comprehensive foundational training for talent and developing their specialized skills, as well as providing assistance for employee career development.</p> <p>Negative impact : If relevant cultivation or training is not provided, the company will face the problem of declining retention rates, which will affect the operations.</p>	GRI 404-Training and Education		●		4.2 Talent Training and Education
Corporate Posterity	Product Liability and Quality	<p>Positive impact : The company should manage and supervise product quality to ensure that customers receive the best quality products.</p> <p>Negative impact : The quality of defective product will affect the company's reputation, reduce customer loyalty, and ultimately lead to the risk of operational disruptions.</p>	GRI 416-Customer Health and Safety GRI 417-Marketing and Labeling TC-SC-410a.1 Percentage of products by revenue that contain IEC 62474-Declarable Substances		●	●	1.2 Product Liability and Quality
	Integrity Management	<p>Positive impact : The company demonstrates the commitment to integrity and responsible governance management strategies.</p> <p>Negative impact : Dishonest and illegal behavior will face penalties and will also affect the company's reputation.</p>	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.	●	●	▲	2.2 Sustainable Supply Chain Management 6.2 Integrity Management 6.3 Regulatory Compliance
	Economic Performance	<p>Positive impact : Good economic performance steadily can create values for the company through the growth of operating income and the continuous improvement of profitability.</p> <p>Negative impact : The financial difficulties in a company can lead to operational disruptions.</p>	GRI 201-Economic Performance	●	●	▲	About PSMC



Material Topics Categories	Material Topics	Positive, Negative Impacts Statement	Corresponding GRI, SASB Standards, Topic-Specific Items, and TCFD Framework	Value Chain Impact Hotspots			Management results in 2023 (please refer to the following chapter)
				Upstream	PSMC Operation	Downstream	
				Suppliers / Contractors	PSMC and Subsidiaries	Customers	
Corporate Posterity	Information Security	<p>Positive impact : Establishing information security mechanisms, protective measures, and emergency response procedures ensures the security of operational information and protects assets.</p> <p>Negative impact : The information security of enterprises, customers or suppliers will not be protected and the risk of information leakage will be increased, thus affecting the reputation of enterprises.</p>	GRI 418-Customer Privacy TC-SC-410a.2 Processor energy efficiency at a system-level for: (1) Servers (2) Desktop Computers (3) Laptops	●	●	●	6.6 Information Security
	Regulatory Compliance	<p>Positive impact : Compliance with government regulations, policies and procedures, and the requirement for all employees to comply with all business-related laws and regulations.</p> <p>Negative impact : Violation can lead to penalties and affect the reputation of the company.</p>	Self-Declared Topic		●	▲	6.3 Regulatory Compliance
	Sustainable Supply Chain	<p>Positive impact : Establishing supply procurement policies and mechanisms with suppliers, the comprehensive supply chain policies and audits will effectively ensure product quality.</p> <p>Negative impact : If the company fails to establish procurement-related policies, it will not be able to guarantee the quality of purchased products, which will affect the company's reputation and cause the company to face financial losses.</p>	GRI 204: Procurement Practices 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 Supply Chain Overview 2.2 Sustainable Supply Chain Management
	Corporate Governance	<p>Positive impact : Establishing an effective corporate governance framework will maintain the effective operation of the Board of Directors and all functional committees, strengthen corporate governance, and protect shareholders' right.</p> <p>Negative impact : The rights and interests of shareholders, investors and stakeholders will not be protected and the competitiveness of the enterprise will be reduced.</p>	Self-Declared Topic		●	▲	6.1 Corporate Governance 6.2 Integrity Management





Material Topics Categories	Material Topics	Positive, Negative Impacts Statement	Corresponding GRI, SASB Standards, Topic-Specific Items, and TCFD Framework	Value Chain Impact Hotspots			Management results in 2023 (please refer to the following chapter)
				Upstream	PSMC Operation	Downstream	
				Suppliers / Contractors	PSMC and Subsidiaries	Customers	
Corporate Posterity	Innovation and Intellectual Property Management	<p>Positive impact : Considering the rapid changes in the global market, in order to meet the needs of applications in various fields, it is necessary to continue to strengthen technological innovation and internal intellectual property management, and ensure product quality to enhance competitiveness. At the same time, establishing the mechanism of intellectual property protection and management will ensure to protect the company's intellectual property.</p> <p>Negative impact : In the process of innovative research and development, the increase of product prices will cause financial burdens on customers. In addition, the company may face an increase in operating costs due to application and maintenance costs for intellectual property rights.</p>	Self-Declared Topic		●	●	1.1 Innovation and Intellectual Property Management
	Risk Management	<p>Positive impact : In order to reduce corporate operational risks, the company identify the types of risks that may be encountered and establish risk management capabilities, including risk control mechanisms, monitoring, early warning, and stop-loss mechanisms, and identify possible improvement opportunities.</p> <p>Positive impact : If the company fails to manage the identified risks, it will need to spend more time, financial and manpower costs in the future to resolve unexpected risks.</p>	Self-Declared Topic		●	●	6.5 Risk Management
	Customer Relationship Management	<p>Positive impact : Communicating services, product information and service markets with customers, understanding their needs, and establishing good relationships will bring positive economic performance to the company.</p> <p>Positive impact : Customer loyalty will be significantly reduced, which will damage the company's reputation and further affect the company's revenue.</p>	Self-Declared Topic		●	●	1.3 Customer Relationship Management

Note: In response to the requirements of the GRI Guidelines (2021) to investigate and analyze material topics, three new material topics have been added compared to 2022: Innovation and Intellectual Property Management, Risk Management and Talent Development.





Material Topics Development Objectives

✓ Indicates that the 2023 target has been achieved

✗ Indicates that the 2023 target was not achieved and formulated relevant improvement plans

Aspect	Material Topic	Policy and Management	2023 Target and Implementation Results	2024 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"> ✓ Electricity consumption per unit wafer area of 8,967 kWh/m², 13% reduction in electricity consumption or a total annual power saving of 11GWh.(base year 2015) ✓ Average annual power saving rate more than 1% 	<ul style="list-style-type: none"> • 14% reduction in electricity consumption per unit wafer area or cumulative electricity savings of 99GWh by 2024(base year 2015) • Install renewable energy facilities /purchase green electricity ratio exceeding 8% • Average annual power saving rate more than 1% 	<ul style="list-style-type: none"> • 15% reduction in electricity consumption per unit wafer area or cumulative electricity savings of 110 GWh by 2025.(base year 2015) • Install renewable energy facilities /purchase green electricity ratio exceeding 8%. • Average annual power saving rate more than 1% 	<ul style="list-style-type: none"> • 20% reduction in electricity consumption per unit wafer area or cumulative electricity savings of 160 GWh by 2030.(base year 2015) • RE30 (renewable energy utilization rate of 30%) • Average annual power saving rate more than 1%
	Climate Strategy	Establish a “Sustainable Development Committee” that is responsible for formulating climate change strategies and reviewing the compliance and appropriateness of the strategies and objectives. 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.	<ul style="list-style-type: none"> ✓ Promote energy saving /carbon reduction programs to reduce greenhouse gases by an average of 1% per year. ✓ 8.4 % reduction of total perfluorinated compound emissions from the manufacturing process. 	<ul style="list-style-type: none"> • Promote energy saving /carbon reduction programs to reduce greenhouse gases by an average of 1% per year. • 84.5 % reduction of total perfluorinated compound emissions from the manufacturing process. 	<ul style="list-style-type: none"> • Promote energy saving /carbon reduction programs to reduce greenhouse gases by an average of 1% per year. • 10% reduction in direct greenhouse gases emissions per unit of product (base year 2015) • 8.5 % reduction of total perfluorinated compound emissions from the manufacturing process. 	<ul style="list-style-type: none"> • Promote energy saving /carbon reduction programs to reduce greenhouse gases by an average of 1% per year. • 30% reduction in greenhouse gases emissions per unit of product (base year 2015) • 20% reduction in direct greenhouse gases emissions per unit of product (base year 2015) • 9.0 % reduction of total perfluorinated compound emissions from the manufacturing process.
Social Co-Prosperity	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"> ✓ Improved the effective number of health proposals by 10% (baseline of 55). ✓ Zero cases of occupational illnesses caused by chemical exposure ✓ Total health improvement achievement rate of ≥ 55% for key groups^{Note} 	<ul style="list-style-type: none"> • Improve the effective number of health proposals by 10% (baseline of 55). • Zero cases of occupational illnesses caused by chemical exposure • Total health improvement achievement rate of ≥ 65% for key groups^{Note} 	<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 ≥ 70% for key groups^{Note} 	<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 ≥ 80% for key groups^{Note}
	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 suggestion as the basis of reference for system revisions to create a friendly workplace where employees can work safely.	<ul style="list-style-type: none"> ✓ Completion rate of 94% for the training programs. ✓ 100% response rate on Partner's Words/ employees care network ✗ Employee work engagement survey ≥ 4.5 points (Improvement Plan: Encourage supervisors and team members in each department to communicate and interact more frequently.) 	<ul style="list-style-type: none"> • Connection rate of compensation with employee performance ≥ 90% • 100% response rate on Partner's Words/ employees care network • Employee work engagement survey ≥ 4 points 	<ul style="list-style-type: none"> • Connection rate of compensation with employee performance ≥ 95% • 100% response rate on Partner's Words/ employees care network • Employee work engagement survey ≥ 4 points 	<ul style="list-style-type: none"> • Connection rate of compensation with employee performance ≥ 95% • 100% response rate on Partner's Words/ employees care network • Employee work engagement survey ≥ 4.5 points





Aspect	Material Topic	Policy and Management	2023 Target and Implementation Results	2024 Short-Term Objectives	2025 Mid-Term Objectives	2030 Long-Term Objectives
Social Co-Prosperity	Talent Development	Establish a comprehensive and transparent promotion mechanism, and organize related courses and seminars to assist employees in their career development within the company.	<ul style="list-style-type: none"> ✓ Conducted 80 in-person courses, and approximately 18,000 participants in online courses. 	<ul style="list-style-type: none"> • Conduct 2 sessions of senior executive courses and workshops. • Establish a mechanism for recommending successor candidates at all levels of management to effectively cultivate and promote suitable candidates. 	<ul style="list-style-type: none"> • Conduct 2 sessions of senior executive courses and workshops. • Succession planning and implementation for managers and supervisors at all levels (including divisions, departments and sections) 	<ul style="list-style-type: none"> • Conduct 2 sessions of senior executive courses and workshops. • Succession planning and implementation for managers and supervisors at all levels (including divisions, departments and sections)
	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 Six Sigma certification holders yearly decreased by 2 to a total of 96 (Improvement plan: Promote the Life certification model to enhance employee certification willingness.) ✓ CIP competition yearly proposals increased by 40 to a total of 287 	<ul style="list-style-type: none"> • 98% of Stop & Fix registration rate • Number of Six Sigma certification holders reaches 93. • Total number of entries for the CIP competition reaches 300. 	<ul style="list-style-type: none"> • 99% of Stop & Fix registration rate • Number of Six Sigma certification holders reaches 115. • Total number of entries for the CIP competition reaches 310. 	<ul style="list-style-type: none"> • 100% of Stop & Fix registration rate • Number of Six Sigma certification holders reaches 140. • Total number of entries for the CIP competition reaches 320.
	Integrity Management	With the belief of "integrity, service, quality, and innovation", the company has established the "Integrity Management Code", 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"> ✓ Added the Integrity Management Risk Assessment and Management Procedures. ✓ Conducted company-wide integrity management compliance audits ✓ Maintained a record of zero corruption incident for the entire year and a zero tolerance attitude toward integrity management practices. 	<ul style="list-style-type: none"> • Obtain RBA certification in accordance with the company's RBA project. • Maintain ranking among the top 6%~20% of listed companies 	<ul style="list-style-type: none"> • Obtain ISO 37001 certification for bribery prevention management system in accordance with the company's policy. • Corporate governance assessment score ranks in the top 5% 	<ul style="list-style-type: none"> • Adhere to the law and business ethics to build up the Company's image of integrity and fulfillment of social responsibility. • Corporate governance assessment score ranks in the top 5%
	Economic Performance	Continuously improve corporate governance evaluation scores and participate in international competitions to enhance corporate visibility and economic performance.	<ul style="list-style-type: none"> ✓ Obtained the usage license of Tongluo P5 fab. ✓ Achieved a target assessment score of 90 or more, ranking among the top 6%~20%. ✓ TCSA sustainability report assessment scores were higher than the previous year ✓ DJSI assessment scores were higher than the previous year 	<ul style="list-style-type: none"> • Maintain ranking among the top 6%~20% among listed companies. • Maintain Category 1 Gold Grade for the TCSA sustainability report assessment ranking in the Electronics Manufacturing industry. • Maintain DJSI assessment ranking in the top 10 in the semiconductor industry. 	<ul style="list-style-type: none"> • Corporate governance assessment score ranks in the top 5%. • Maintain Category 1 Gold Grade for the TCSA sustainability report assessment ranking in the Electronics Manufacturing industry. • Maintain DJSI assessment ranking in the top 10 in the semiconductor industry. 	<ul style="list-style-type: none"> • Corporate governance assessment score ranks in the top 5%. • Maintain Category 1 Platinum Grade for the TCSA sustainability report assessment ranking in the Electronics Manufacturing industry. • Maintain DJSI assessment ranking in the top 10 in the Semiconductor industry.





Aspect	Material Topic	Policy and Management	2023 Target and Implementation Results	2024 Short-Term Objectives	2025 Mid-Term Objectives	2030 Long-Term Objectives
Corporate Posterity	Information Security	Regularly conduct information security campaigns, purchase additional information security analysis software, and develop communication checking systems to ensure information security is implemented.	<ul style="list-style-type: none"> ✓ No significant information security incidents occurred. ✓ Critical information systems must establish a backup & recovery mechanism and implement backup & recovery exercises. ✓ Obtained ISO 27001 certification. 	<ul style="list-style-type: none"> • Continuously enhance employee education and training to improve information security awareness. • Strengthen drills to shorten the time required for restoration. • Precisely identify and audit trade secrets. 	<ul style="list-style-type: none"> • Introduce red team drills to enhance defense against hacker attacks. • Strengthen trade secret management. 	<ul style="list-style-type: none"> • Cultivate a red team drill team to continuously enhance defense capabilities. • Develop a trade secret registration system.
	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"> ✓ Achieved a completion rate of 100% for participation in courses related to regulatory risk. 	<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.
	Sustainable Supply Chain	Comply with PSMC's procurement policy to ensure seamless supply from suppliers.	<ul style="list-style-type: none"> ✓ Achieved a 100% completion rate for Responsible Business Alliance (RBA) Commitment Statement signed by Tier 1 critical suppliers, along with a regular semi-annual assessment. ✓ Achieved a completion rate of 100% for Tier 1 critical suppliers in conducting the Sustainability Management Self-Assessment Questionnaire and Sustainability Management on-site Audit. ✓ Achieved a completion rate of 100% for regular semi-annual assessment of Tier 1 critical suppliers. 	<ul style="list-style-type: none"> • Achieve a completion rate of 100% for CSR questionnaire survey of the Tier 1 suppliers. • Select 50 suppliers annually for the Sustainability Management Self-Assessment Questionnaire, with a target completion rate of 100%. • Select 50 contractors annually for the Sustainability Management Field Audit, with a target completion rate of 100%. • Achieve a completion rate of 100% for regular semi-annual assessment of suppliers. • Achieve a completion rate of 100% for regular annual assessment of contractors. 	<ul style="list-style-type: none"> • Expand to 100% signing of the Responsible Business Alliance (RBA) Commitment Statement by Tier 2 suppliers. 	<ul style="list-style-type: none"> • Expand to 100% completion rate for Tier 2 suppliers to sign the Sustainability Management Self-Assessment Questionnaire.
	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.	<ul style="list-style-type: none"> ✓ Completed the annual self-assessment and external organization's 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 to address ESG evaluation indicators and the latest international sustainability trends. • Continuously conduct annual self-assessment of the Board of Directors and functional committees to enhance 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. • Continuously conduct annual self-assessment of the Board of Directors and functional committees, and entrust external organizations to conduct evaluations every three years to enhance 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. • Continuously conduct annual self-assessment of the Board of Directors and functional committees, and entrust external organizations to conduct evaluations every three years to enhance the functions of the directors.





Aspect	Material Topic	Policy and Management	2023 Target and Implementation Results	2024 Short-Term Objectives	2025 Mid-Term Objectives	2030 Long-Term Objectives
Corporate Posteriority	Innovation and Intellectual Property Management	In accordance with the Patent Management Regulations and following the TIPS Intellectual Property Management System, the company operate in alignment with the company's intellectual property strategy to ensure the protection of R&D achievements and gradually achieve short, medium, and long-term intellectual property goals.	✓ Introduced the TIPS Intellectual Property Management System.	<ul style="list-style-type: none"> Develop product and technology blueprints and collaborate on industry-academia projects, proposing complementary technological improvements and innovations through relevant patent applications. Dynamically adjust the countries and numbers of annual patent applications, and create patent maps for key technologies Maintain Taiwan Intellectual Property Management System (TIPS) A-level certification. Achieve a total of 120 patents. 	<ul style="list-style-type: none"> In alignment with the company's intellectual property strategy, the company continue to optimize the company's intellectual property management capabilities, achieve the company's operating goals and improve R&D innovation efficiency through risk management thinking 	<ul style="list-style-type: none"> Enhance the management of the company's R&D achievements and the results of industry-academia collaborative projects. Integrate global patent strategies to avoid patent infringement litigation, ensure comprehensive intellectual property protection for R&D achievements, and provide customers with more advanced and complete foundry services.
	Risk Management	Following the "Risk Management Policies and Procedures" and through a comprehensive risk management structure, the company consider and manage various risks that may affect the achievement of goals to achieve corporate goals, improve management efficiency, provide reliable information and effectively allocate resources	<ul style="list-style-type: none"> ✓ The Risk Management Policies and Procedures have been approved and implemented by the Board of Directors as the highest guiding principle for risk management. ✓ The Risk Management Committee has been established to formulate risk control mechanisms, monitoring systems, early warning systems, and stop-loss mechanisms, and identify potential improvement opportunities. ✓ Operational and implementation status of risk management : Completed the risk knowledge base - identified 165 risks and 762 risk scenarios, completed the risk map, and reported the 2023 risk report to the Audit Committee and the Board of Directors. 	<ul style="list-style-type: none"> Implement the risk management system, and continuously nurture the concept of risk management. Integrate the risk management process of P5 fab. Implementation and execution of risk management : Focus on 2024 risk issues, conduct risk identification, analysis, assessment, and develop response action plans. Convene the Risk Management Committee meetings every semi-year to consolidate and report on the Company's risk management implementation status. Report the annual risk management implementation results to the Board of Directors for the year in the fourth quarter. 	<ul style="list-style-type: none"> Continuously follow up on the medium-term action plans related to risk management issues. Continuously improve processes and update the risk database to enhance risk awareness among employees of the company. Regularly review the effectiveness of the risk management mechanism, identify deficiencies, and continue to strengthen and enhance it. Continuously cultivate more employees with correct risk management knowledge and concepts. Implementation and execution of risk management : Continuously monitor annual risk issues, conduct risk identification, analysis, assessment, and develop response action plans, consolidate and report on the company's risk management implementation status. Report the annual risk management implementation results to the Board of Directors for the year in the fourth quarter. 	<ul style="list-style-type: none"> Continuously follow up on the long-term action plans related to risk management issues. Continuously improve processes and update the risk database to enhance risk awareness among employees of the company. Systematic management approach to enhance operational efficiency. Implementation and execution of risk management : Continuously monitor annual risk issues, conduct risk identification, analysis, assessment, and develop response action plans, consolidate and report on the company's risk management implementation status. Report the annual risk management implementation results to the Board of Directors for the year in the fourth quarter.
	Customer Relationship Management	Communicate with customers regarding services, product information, and the service market to understand their needs, thereby maintaining customer relationships and enhancing customer satisfaction.	✓ Achieved an average customer satisfaction score of over 88.	<ul style="list-style-type: none"> Maintained a total average customer satisfaction score of 88. 	<ul style="list-style-type: none"> Maintained a total average customer satisfaction score of 90. 	<ul style="list-style-type: none"> Maintained a total average customer satisfaction score of 92.

Note: key groups refer to general employees with abnormally high health examinations and special operations level three or above reported by the hospital.



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

By adopting the Open Foundry model based on the open foundry platform concept, PSMC has established an innovative collaboration model where customers are engaged in the provision of manufacturing facilities for PSMC to deploy production capacity in advance, with which customized services can be provided to build high customer stickiness for the Company. With the huge demand for chips arising from the rise of generative AI, PSMC took the lead in integrating the Wafer-on-Wafer (WoW) technology into the manufacturing of 3D AI Accelerator to build a more innovative and competitive AI chip foundry platform. In addition to meeting customers' needs, PSMC also endeavors to reduce the impact of its products on the environment and human society to provide the highest quality green and innovative manufacturing services.

Innovation and
Intellectual Property
ManagementProduct
Liability and
QualityCustomer
Relationship
Management

Corresponding United Nations Sustainable Development Goals (SDGs)



Corresponding Material Topics

Innovation and
Intellectual Property
ManagementProduct
Liability and
QualityCustomer
Relationship
Management

Material Topics GRI Standards

GRI 416 : Customer Health and Safety

GRI 417 : Marketing and Labeling

Stakeholders who have priority reading

Customers, Shareholders/Investors, Suppliers/Contractors





2023 Sustainability Performance Highlights

162

Number of valid
patent acquisitions

100%

Obtain ISO9001 Quality
Management System
Certification of the entire
factory



Level-A Certificate

Introduce the Taiwan Intellectual
Property Management System
(TIPS)

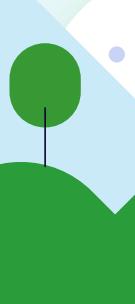
98 points

The average score of
Customer Satisfaction
Survey



Reduced by 96.39%

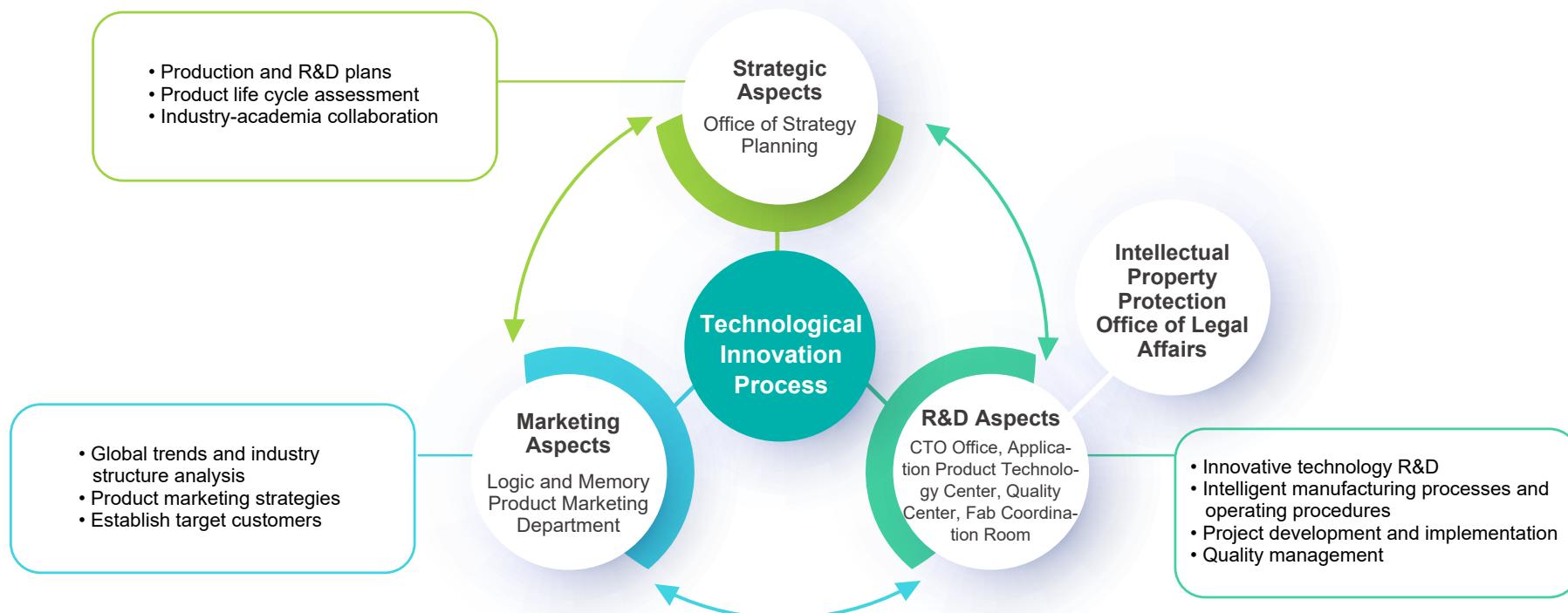
Implement Hazardous Substance
Substitution Program to reduce the use
of NMP substances





1.1.1 Innovation and Intellectual Property Management

PSMC takes "Strategy", "R&D" and "Marketing" as the three pillars of the technological innovation process. It formulates production and R&D plans through the strategic planning office, and collects and analyzes product market intelligence and customer needs in conjunction with the marketing business department., formulate product layout strategies, and have the technical R&D team develop projects and implement them to carry out quality management and optimization of manufacturing processes and operating procedures. The smooth triangular interaction relationship enables the sustainable development of PSMC's technology R&D innovation.



1.1.1 Innovative Research and Development Breakthroughs

PSMC has been deeply committed to memory/DRAM foundry services for many years. The Company's products have been applied in wireless communication, consumer electronics, automotive electronics, and a variety of electronic applications. It can not only provide advanced process services for niche DRAM products, but also acts as the only manufacturer in the world that can provide 12-inch foundry services for a full range of DRAM products. PSMC also provides customized foundry services for logic and special application products. By integrating customers' special process needs, PSMC can build up more complete product lines to achieve more upgraded service quality, and provide customers with more competitive solutions. By extensively collaborating with the world's industrial, governmental, and academic research institutions in developing process technologies, PSMC can grasp cutting-edge technologies in advance, thereby effectively

shortening R&D project timeline and reducing costs for patent and technology transfer.

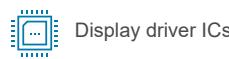
In response to the rapid rise of the Internet of Things and artificial intelligence, PSMC has developed diverse solutions ranging from those for cloud operations to general applications to meet rapidly expanding market needs. In 2023, PSMC took the lead in launching the AIM-200 3D AI Accelerator technology platform combined with 40 nm logic and 25nm DRAM process technologies to apply the Wafer-on-Wafer (WoW) technology in the manufacturing of 3D AI Accelerator. The accelerator's efficiency is comparable to that of the 7nm systems available in the market with its cost being lowered to only one-tenth of the cost of the 7nm system, which will provide a more innovative and competitive AI chip foundry platform for the IC design industry.



By extending the Open Foundry service model, PSMC has collaborated with strategic partners and industrial/academic organizations to establish an "Open Foundry Project" open-source platform, which helps engineers to efficiently develop prototypes through repeated attempts in the initial stage of technology development. This will not only save the resources invested in the process, but will also shorten a project's development time to three quarters (nine months). In addition, the Company also conducts regular technology transfer and related training programs with business partners to exchange technological knowledge and practical experiences with each other, thereby maximizing the progress of innovation and R&D process, and solving the technical problems encountered in heterogeneous 3D IC packaging to achieve the goal of low power consumption and high efficiency for products.

The current development model with company's business being focused on both logic & special application products and DRAM product foundry services can help PSMC flexibly deploy its production capacity when faced with economic fluctuations to improve capacity utilization rate, and continue to maintain competitive advantages based on the stable development of new-generation DRAM processes.

Significant Innovative Results



Display driver ICs



Consumer electronic products



5G 5G communication



CMOS image sensor IC products



Artificial Intelligence(AI)



Network communication



Power management ICs



Mobile application devices



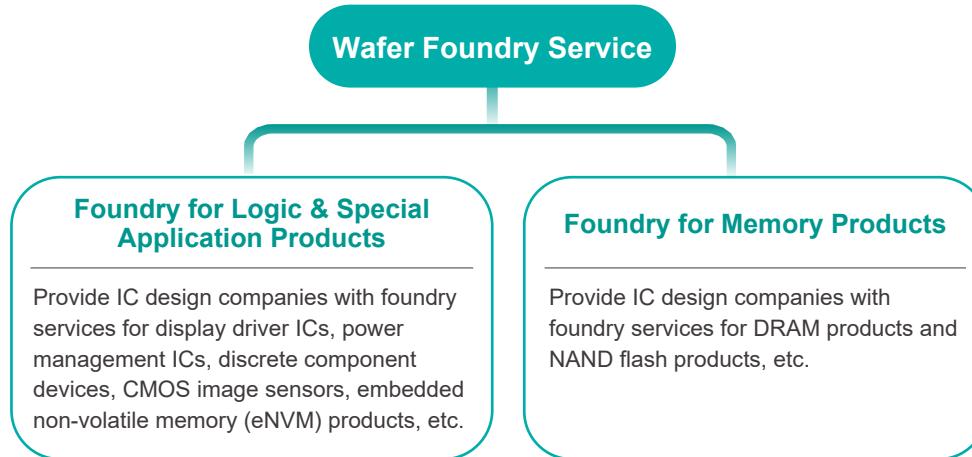
Communication and Computer Products

Process Technology	Product Applications	Breakthroughs	Future Goals
80 nano crystallite		The back-end copper process has been successfully developed, which can reduce power consumption (I ₂ R) by 30% compared with the aluminum process.	Continuous improvement of 55nm, 40nm, and 25nm efficiencies
21nm DRAM Yield Improvement		The yield rate has been successfully enhanced to 75%, the product also has passed the reliability verification, and the NTO mode collaboration with customers has been started.	1 XnmDRAM 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		The per unit area output has been increased by 14%, and the reliability has been improved to the same level as that of 28nm NAND FLASH.	Continuously improve 24nm yield rate and capacity, and assist customers to expand into the 5G cellular base station and related applications
3D Interchip Wafer-on-Wafer Technology		Compared with the flip-chip packaging technology, the memory bandwidth has been increased by 8 times, and the performance has been improved by 80%.	Continue with product technical development and improve efficiency and yield rate in order to expand into more AI-related applications in the future.
Fourth Generation Oxide Semiconductor Material IGZO (Indium Gallium Zinc Oxide)		Display power consumption has been reduced by 50%.	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		A Double Gate MOSFET (discrete MOSFET) that can operate at 200V with a specific on-resistance (R _{sp}) of 280 mΩ-mm ² has been successfully developed.	Continue development of components for higher operating voltages such as 150V, 200V, 250V



PSMC Primary Services

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



PSMC 2023 Technology Development Blueprint



(一) Foundry Services - Logic and Special Application Products

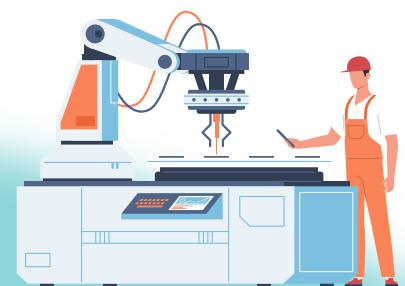
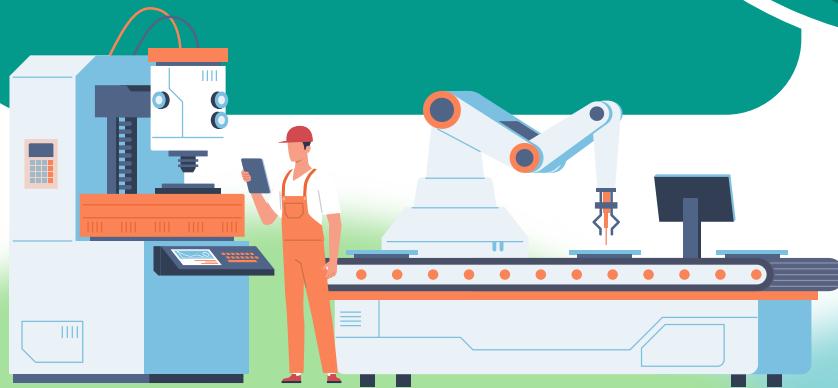
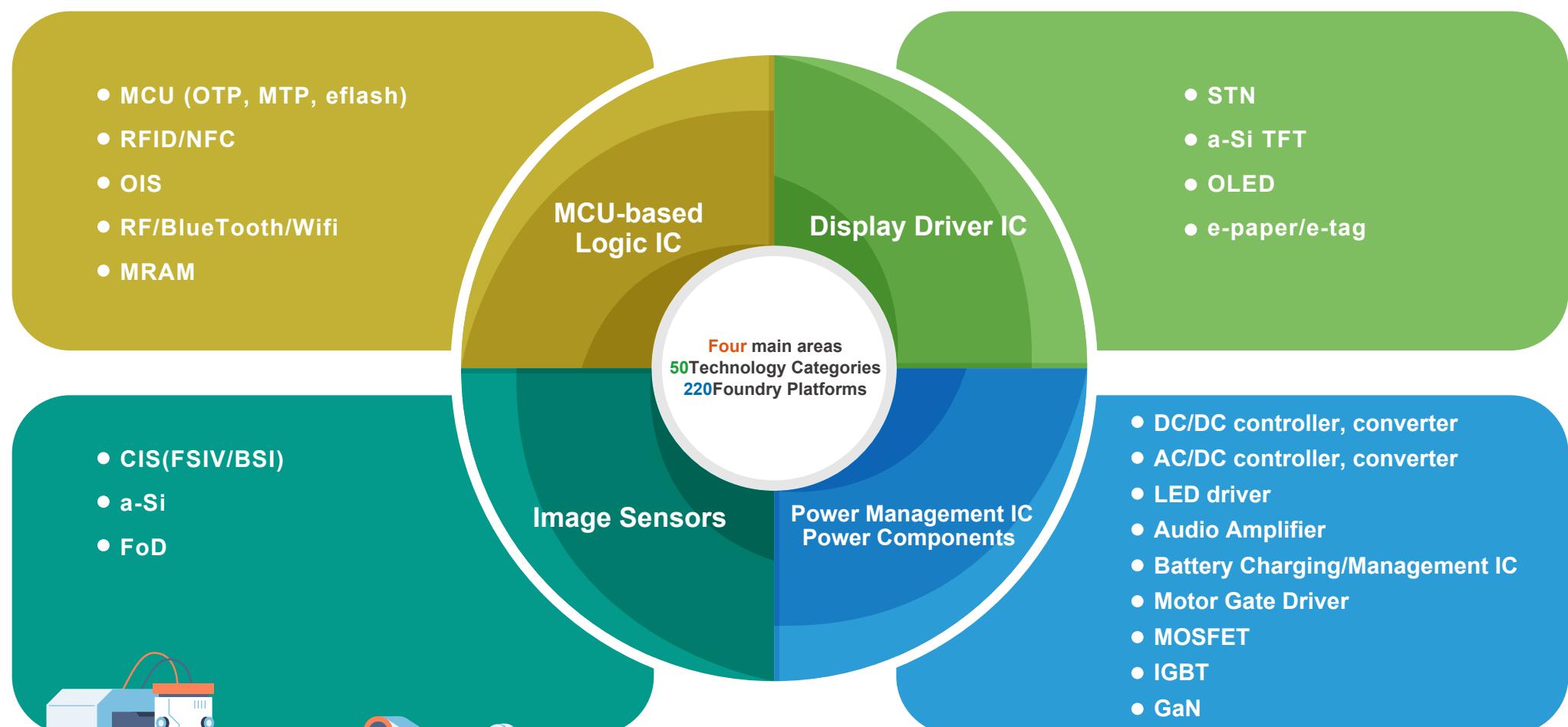
Foundry Business

As Moore's Law stalls or slows down at the 28 nm node, it suggests that the advanced logic process is not the only direction for the market to move towards. In response to this trend, PSMC has turned to the more profitable special application product market based on its excellent logic processes and techniques to provide a variety of customized special application processes (applications for the manufacturing of display driver ICs, power management ICs, discrete devices, CMOS image sensors, and embedded non-volatile memory (eNVM) products), and diverse foundry collaboration models to effectively shorten the production process and enhance customers' competitive advantages. Meanwhile, the market demand for mature processes at 28nm or higher, including 5G, industrial applications, automotive electronics, and other related applications has also been focused. In contrast to the 12-inch standard logic wafer foundry services commonly available in the market which are carried out mainly based on copper processes, PSMC can provide lower-cost 12-inch aluminum process platforms, with which the cost can be significantly reduced by 30% compared with the 8-inch aluminum process with the same technology node to enhance the competitiveness of customers' products.

Main Logic & Special Application Products	Product Application Areas
1. Thin Film Transistor LCD Driver IC (TFT-LCD Driver IC)	Mobile phones, tablets, laptops, monitors, TVs, AR/VR, and automotive electronics
2. Power Management IC	Mobile phones, tablets, laptops, PCs, industrial control, and automotive electronics
3. Discrete Devices	Mobile phones, tablets, laptops, PCs, industrial control, and automotive electronics
4. Memory (DRAM, Flash)	Mobile phones, tablets, laptops, PCs, industrial control, and automotive electronics
5. CMOS Image Sensor	Mobile phones, cameras/monitors, and fingerprint recognition
6. Integrated Memory Chip	Voice control, SIM card
7. RF Chip and Bio-tech Chip	Bluetooth、WiFi control、RFID、DNA sensing



Wafer Foundry Service- Main Product Lines of Logic and Specialty Application Products Foundry Business





Integrating storage and computing to improve display resolution: The Fourth Generation Oxide Semiconductor Material IGZO

With the bursts of AI applications, the integration of data storage and computing can effectively reduce data transfer and improve computing efficiency. In 2023, PSMC collaborated with Japan's Semiconductor Energy Laboratory (SEL) in developing storage-computing-integrated chips manufactured with the fourth-generation oxide semiconductor material IGZO (indium gallium zinc oxide). The content of the collaboration project has been cited and reported by IEEE Journal & Magazine. The fourth-generation oxide semiconductor materials can be used to produce Metaverse display driver ICs with a resolution exceeding 3,200 ppi. They can also be applied in AR/VR products to greatly increase the display resolution. The IGZO storage-computing-integrated chips can effectively meet the need for large-scale data processing in machine learning, artificial neural networks (ANNs), biological systems, and more. The technological features of the IGZO storage-computing-integrated CPU developed by PSMC are listed as follows:

1. Metaverse Display Driver ICs with a resolution exceeding 5,000 ppi
2. It is a new-type storage-computing-integrated memory (Analog in Memory) with extremely low cut-off leakage current and ultra-low power consumption.
3. The CPU performance can reach 143.95 tera-operations per second per watt (TOPS/W).
4. The Analog-in-Memory-Compute (AIMC) solutions can distinguish 64 conditions

In terms of customized services for logic and special application products, PSMC successfully developed 40nm LCD Driver IC high voltage process and 80nm BCD G1 process in 2023, and has collaborated with several customers on the development of 40nm AMOLED Panel Driver IC process.

Current Status

- Successfully developed 40nm LCD driver IC high voltage process
- Successfully completed the development of 80nm BCD G1 process

Short-term Goals

- Get 8" GaN 200V process ready
- Get 12" PMIC 80nm BCD G2 process ready
- Get the development of backside illumination technology (90nm BSI) process for 12" CMOS image sensor products ready
- Continue to introduce 12" 55nm RF product lines to P5 Fab (Wi-Fi, Bluetooth, low power consumption)
- Actively collaborate with the world's major manufacturers to develop more diverse products such as power management IC 150nm, 110nm, and 55nm BCD processes

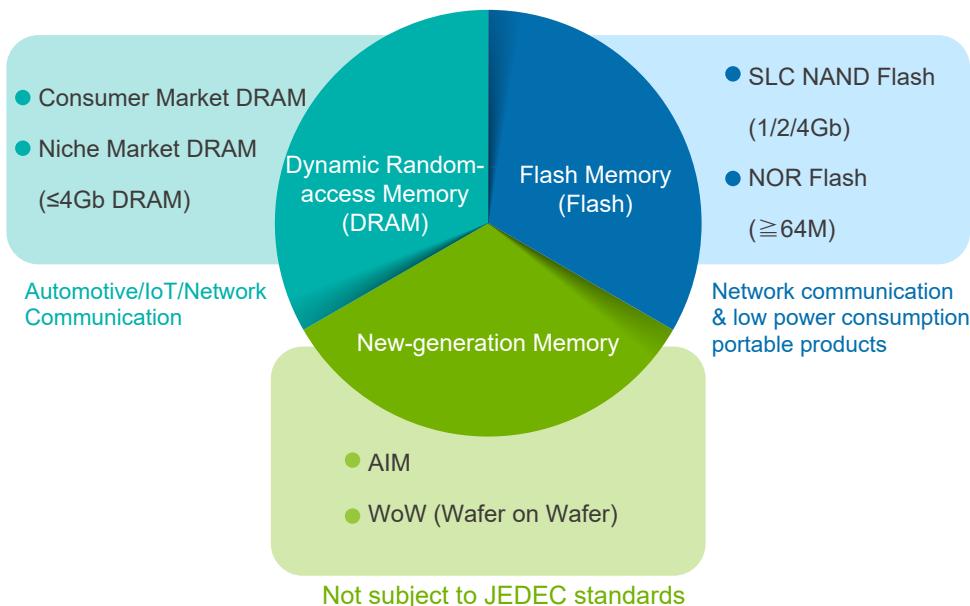
Long-term Goals

- Accelerate the establishment of a professional logic product foundry platform and the development of silicon intellectual property (FOT)
- Strive for world-class manufacturers to introduce their proprietary technologies into PSMC for production and manufacturing (COT)
- Provide the Open Foundry and other diversified foundry model concepts for operations management.
- Provide customers with product planning for seamless transition from 8-inch to 12-inch products
- In response to the 5G and electric vehicle markets, deploy BCD, IGBT, GaN, RF, and IPD related processes.
- Provide a full range of modularized power management IC BCD processes
- Provide diversified embedded systems for industrial automotive products



(二) Foundry Services - Memory Wafer Foundry

Memory Foundry Major Product Lines



Continuous optimization of high efficiency and low power consumption process technologies in response to the needs for performance, thinness and energy efficiency

In consideration of the trends where endpoint electronic product specifications develop toward performance improvement, thinness, energy efficiency, and more, chips should be designed with integrated functions, among which the needs for high efficiency and low power consumption should be supported through advanced process memory products. PSMC has introduced the 25nm process into its niche DRAM foundry services, and will accelerate the development of platforms for processes below 20nm. In the meantime, the development will also focus on the In Memory Computing (IMC) technology needed for AI's neural network computing systems and new memory products that can be combined with logic chip Wafer-on-Wafer (WoW) technology to meet different customized DRAM needs.

New-generation Flash processes: Capacity improvement, cost reduction, and quality guarantee

Our Flash products are targeted at mobile applications, consumer electronics and industrial applications, providing low-power, energy-efficient and highly reliable products. And Low-capacity NAND Flash with low-power DRAM is the main memory solution for entry-level wireless communication products. Currently the 28nm NAND Flash process has successfully entered the mass production stage. Being benefited from the rising demand for memory products such as AMOLED panels, True Wireless Stereo (TWS), 5G base station facilities, etc., the global NOR Flash market has been driven to expand. Currently PSMC's new-generation 48nm NOR Flash process has entered the mass production stage, through which Flash products with higher-level capacity, cost competitiveness, and upgraded quality reliability can be provided in the future.

After the success of 30/25nm memory processes mass production, PSMC continued to complete the development of 25E nm process, and has successfully assisted customers in introducing the 25E nm process. In terms of new memory, the Wafer-On-Wafer technology for logic wafers is continuously being advanced to further enhance the performance of memory products.

Current Status

- 30nm and 25 nm memory processes matured for mass production
- Assist customers in successfully introducing the 25E nm process
- New type of memory products based on logic chip Wafer-on-Wafer (WoW) technology
- Mass production of 28nm NAND Flash and new-generation 48nm NOR Flash

Short-term Goals

- Develop a technology platform for DRAM process below 20nm
- Develop a technology platform for NAND Flash process below 28nm

Long-term Goals

- Collaborate with customers in producing customized products to expand products' life cycle
- Closely collaborate with customers or other suppliers in developing highly demanded AI-related products
- Continue the development of next-generation NOR/NAND Flash advanced process technology
- Actively explore the new market and new customers in the Greater China region.





Green Product Development and Technology Breakthrough

PSMC has dedicated itself to promoting advanced process technologies to develop the electronic products with high efficiency and low power consumption. In addition, PSMC continues to improve 24nm NAND Flash's production efficiency, and develop the best power management IC technology to stabilize power supply and reduce power consumption. Moreover, it is committed to reducing greenhouse gas emissions, and keeps improving products' technical characteristics to enhance product quality and efficiency.

R&D Achievements over the Years

2019

PSMC planned for a brand new component framework of 90 nm BCD technology, which integrated 1.2V high density 90 nm logic circuit and 9-100V 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

PSMC developed a brand-new component architecture 80nm BCD technology by integrating 1.2V high-density 80nm logic circuits, combined with a metal interconnect structure formed through a backend aluminum process. The technology R&D was 80% completed. This competitive process technology could provide higher efficiency and lower power consumption solutions for portable devices' power management ICs (PMICs).

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 with a yield rate of over 90%.

2022

PSMC developed a customized 55nm BCD technology based on higher density logic circuits by integrating 1.2V logic circuit and 5-30 V power components, combined with a metal interconnect structure formed through a backend copper process. The technology R&D was 70% completed.

2023

PSMC continued the development of the 2nd-generation brand-new component architecture 80nm BCD technology by integrating 9-40 V power components and embedded Flash IP, combined with a backend copper process to provide an automotive specifications technology platform. The R&D was 60% completed.



Continuous Technology Breakthroughs : Reduce Process Consumption, Strengthen Performance of Product Application

◆ 80nm Technology Process

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.

◆ 24 nm NAND Flash Technology Platform

In 2020, PSMC 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(PMIC) Technology for Optimal Power Efficiency

Power management IC is the core component required for electronic products' power processing. PSMC has developed discrete MOSFET at 8-inch and 12-inch fabs, Bipolar-CMOS-DMOS (BCD) and UHV (Ultra-High Voltage) technologies for endpoint product applications to stabilize power supply and reduce power consumption. PSMC will continue to increase PMIC products' shipment proportion, and develop or co-develop more PMIC-related BCD process technologies to improve BCD technical characteristics and Ron & Qgd efficiency.

Accumulated shipment of high voltage and PMIC products

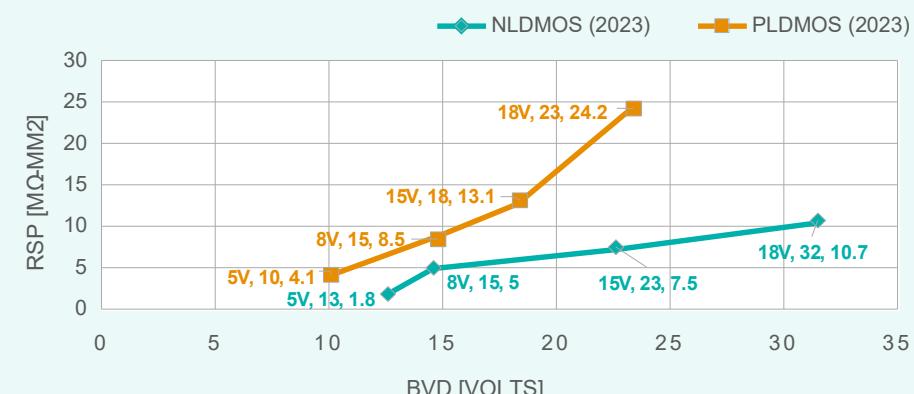
Unit: Thousand 8-inch wafers



◆ 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 [$\text{m}\Omega\text{-mm}^2$], 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.

80NM BCD





BCD technology research and development history

2017

The first-generation technology applied in silicon epitaxy (the technology using silicon as a base is called Epi-A BCD technology platform in contrast to the DNW (Deep N-type Well) technology developed in 2015) could provide more high voltage options for customers.

2019

Completed the development of the third-generation Epi-C BCD technology platform to further improve the Rsp (about 50%) of high voltage components with operating drain voltage (VD) controlled at 24 volts or less.

2020

Started the planning and development of 80nm BCD technology platform to cover the EPI-C technology platform and extend the operating drain voltage (VD) to 100 volts, thereby further lowering the Rsp to reach the world's top standards.

2021

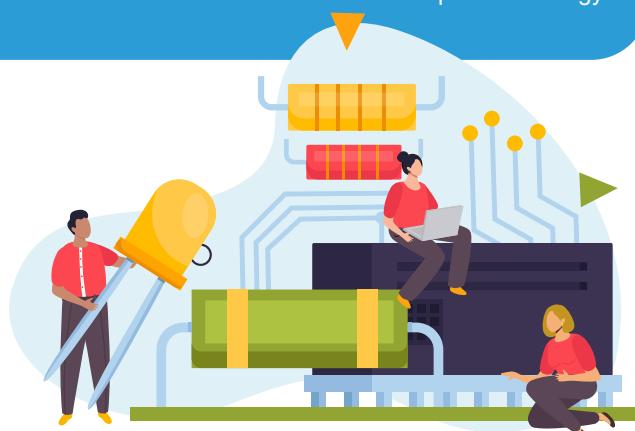
Completed the reduction of discrete MOSFET's specific on-resistance (Rsp), which had reached the target standard, and could be used by customers (60V DG MOSFET: Reduced by 16%; 12V SG MOSFE: 18%)

2022

Continued the development of higher operating voltage (150V, 200V, 250V) 8-inch discrete MOSFET technology components and Rsp optimization

2023

Planned to develop new component architectures in order to meet with the mainstream architectures in the market and reduce process energy consumption.



60V Double Gate MOSFET Technology Discrete MOSFET Technology



Note: Double Gate is a MOSFET with a Double Poly Trench Gate structure.



Note: Single Gate is a MOSFET with a Single Poly Trench Gate structure.

◆ Insulated Gate Bipolar Transistor (IGBT)

The IGBT product launched by PSMC is produced using 8-inch wafers based on the 0.4-micron technology, which is applied in electric vehicles and variable frequency home appliances, and is an indispensable component in energy-efficient products with its advantages of high input impedance, high withstand voltage, and low turn-on resistance. In 2023, we assisted customers to reduce CO₂e greenhouse gas emissions by a total of approximately 34.9 million metric tons, and its share of the company's total revenue will increase from 3% to 5%. In the future, PSMC will continue to increase the proportion of automotive products and introduce products into 12-inch wafer production.



Column

Strengthen AI Deployment and Develop Wafer on Wafer (WoW) Technology Process of 3D AI Accelerator

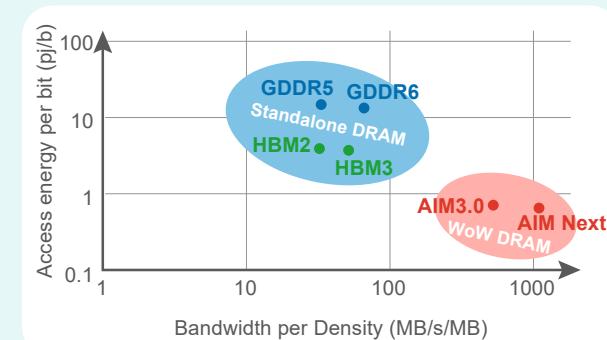
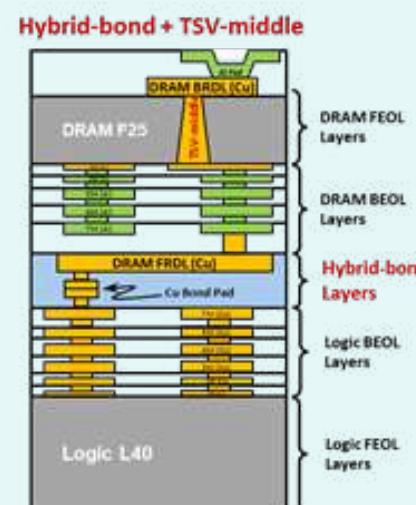
Since the launch of ChatGPT in late 2022, artificial intelligence has been gradually developing toward Large Language Model (LLM) applications, and the model parameter volume has increased from Mega-byte level to Giga-byte level. The increased parameter volume not only needs larger memory capacity but also requires larger memory bandwidth for an LLM to produce Tokens at speed. During the process where frequent data access takes place, significant power consumption will occur due to huge amount of data being moved between logic chips and memory chips. To solve this problem, PSMC's WoW technology provides a large number of interconnects between logic chips and the memory to shorten data transmission distance, through which the power consumption for data access can be significantly reduced, and an LLM's computing efficiency can be greatly enhanced.

PSMC's Key Wafer Stacking Technologies (Wafer-on-Wafer, WoW)

PSMC's WoW adopts Hybrid bonding technology for wafer stacking, which can achieve an extremely fine Pitch in comparison with traditional bonding technology for wafer stacking. Hybrid bonding can provide up to 100,000 interconnects per square millimeter, through which the memory bandwidth between logic chips and memory can be significantly increased. To put it another way, shortened signal distance between logic chips and memory implies that the power consumption for signal transmission between logic chips and memory can be greatly reduced. Taking traditional DDR4 as an example, since signals need to travel a long distance through packaging, circuit boards, etc. to complete transmission, the energy required for each bit(Bit) access is relatively large, which is about 13–15 pJ. As for HBM, it transmits signals through intermediate layers. Although the transmission distance is shorter, it still requires 5–7 pJ. By contrast, the hybrid bonding technology can significantly reduce the energy needed for transmission to less than 1 pJ.



Additionally, PSMC's WoW stacking technology can provide TSV-middle solutions for DRAM wafers, making it an indispensable supporting technology to create interconnects for stacked wafers' outgoing signals. General traditional TSV solutions are produced in logic wafers, which increases logic chips' design complexity and area size, and is not suitable for advanced logic processes. In contrast, PSMC provides TSV-middle on DRAM wafers, eliminating the burden of logic chip processing TSV design, while helping them quickly use high-bandwidth, low-power DRAM to improve product performance and competitiveness.





Column

Strengthen AI Deployment and Develop Wafer on Wafer (WoW) Technology Process of 3D AI Accelerator

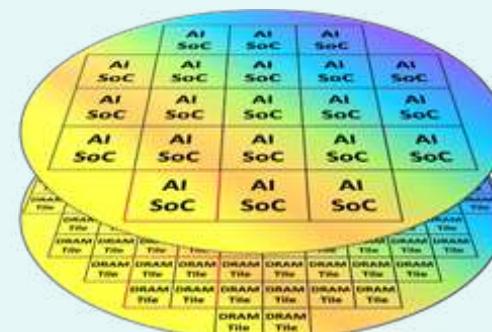


PSMC's New DRAM Architecture Development

When the new DRAM architecture developed and designed by PSMC is applied in AI large language model applications, WoW process technology's characteristics of more interconnects, wide bandwidth, and low power consumption will be fully demonstrated. In the new DRAM architecture, each unit memory capacity can provide ten times the bandwidth of most HBM memory solutions used today. Furthermore, the bandwidth provided by per unit data access power consumption can also be increased by up to ten times. PSMC's new DRAM architecture will fully meet the requirements of modern green environmental protection and sustainable operations.

In addition, since various large-scale language model applications have different memory bandwidth and capacity requirements, in order to meet various different applications, PSMC's new DRAM adopts a Tile structure similar to Lego blocks, which can combine multiple tiles are connected horizontally and vertically to meet bandwidth and capacity requirements respectively. This standardized and flexible design enables a single DRAM design to meet various memory needs, reduces the complexity of customer projects, and helps them more easily adopt high-bandwidth, low-energy DRAM designs, in line with the industry's trend of resource sharing and sustainable operations.

項目	GT/s	Num of I/O	BW (GB/s)	Density (GB)	BW/Capacity (GB/s/GB)
HBM2 (8hi)	2	1024	256	8	32
HBM3 (8hi)	6.4	1024	819	16	51
PSMC 3D AIM3.0 (128Nb x 32tiles)	1	2048	256	0.5	512
PSMC 3D AIM Next (1Gb x 8tiles x 4hi)	1	32K	4K	4	1024





Column

Navigator for Intelligent and Innovative Manufacturing

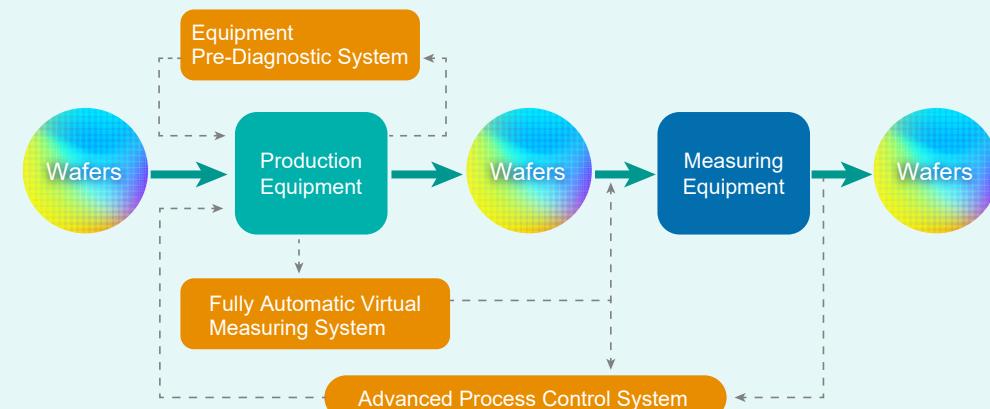
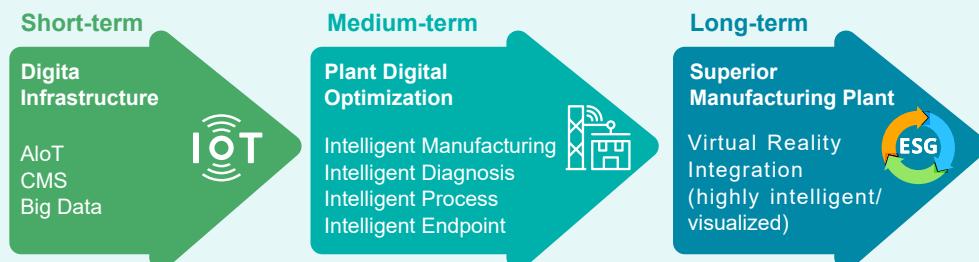
PSMC formally established the “Digital Transformation Committee” and is actively developing smart manufacturing technologies and applications, to focus on production intelligence, process intelligence, terminal intelligence and diagnostic intelligence, combining experts from various fields, paired with a deepened infrastructure. The AIoT project connects machines and subsystem 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, improving personnel efficiency and machine productivity, and product yield quality.

In terms of quality control, the production quality system will use machine parameters (FDC/ED data) to conduct real-time anomaly monitoring and checkpoint control, then measuring machines will be used to confirm product quality. In addition, AI and big data technologies have been introduced into products' pre-production, in-production, and post-production stages to achieve machines' and products' 3P (Prediction, Prevention, and Protection). By flexibly utilizing AI technologies, the anomalous conditions of production machines and product quality can be predicted or controlled in real time for improvement measures to be taken in a timely manner.

PSMC started the implementation of smart-manufacturing-related industry-academia collaborative projects with the semiconductor academies at National Tsing Hua University and National Cheng Kung University in 2023. A total of 19 projects have been presented (including completed ones and those still in development), which will provide great help for the Company's product manufacturing process, quality, and energy efficiency. The concept of ESG green manufacturing is highly emphasized during the development of smart manufacturing technologies. Topics encompassed in the projects included using big data analysis and AI algorithms to construct air compressor prognosis-based maintenance and machine scheduling models, methods to optimize transmission order/allocation under limited transmission resources, and more. The Automatic Virtual Metrology (AVM) and Prognostics and Health Management (PHM) technologies have also been introduced, hoping that the academia's research and technology achievements can be introduced through the collaboration, and on-site empirical verification opportunities can be provided to cultivate more professional and research talents, and help the Company build a comprehensive smart factory environment.



PSMC Digital Transformation Roadmap





2023 Highlight Intelligent Projects

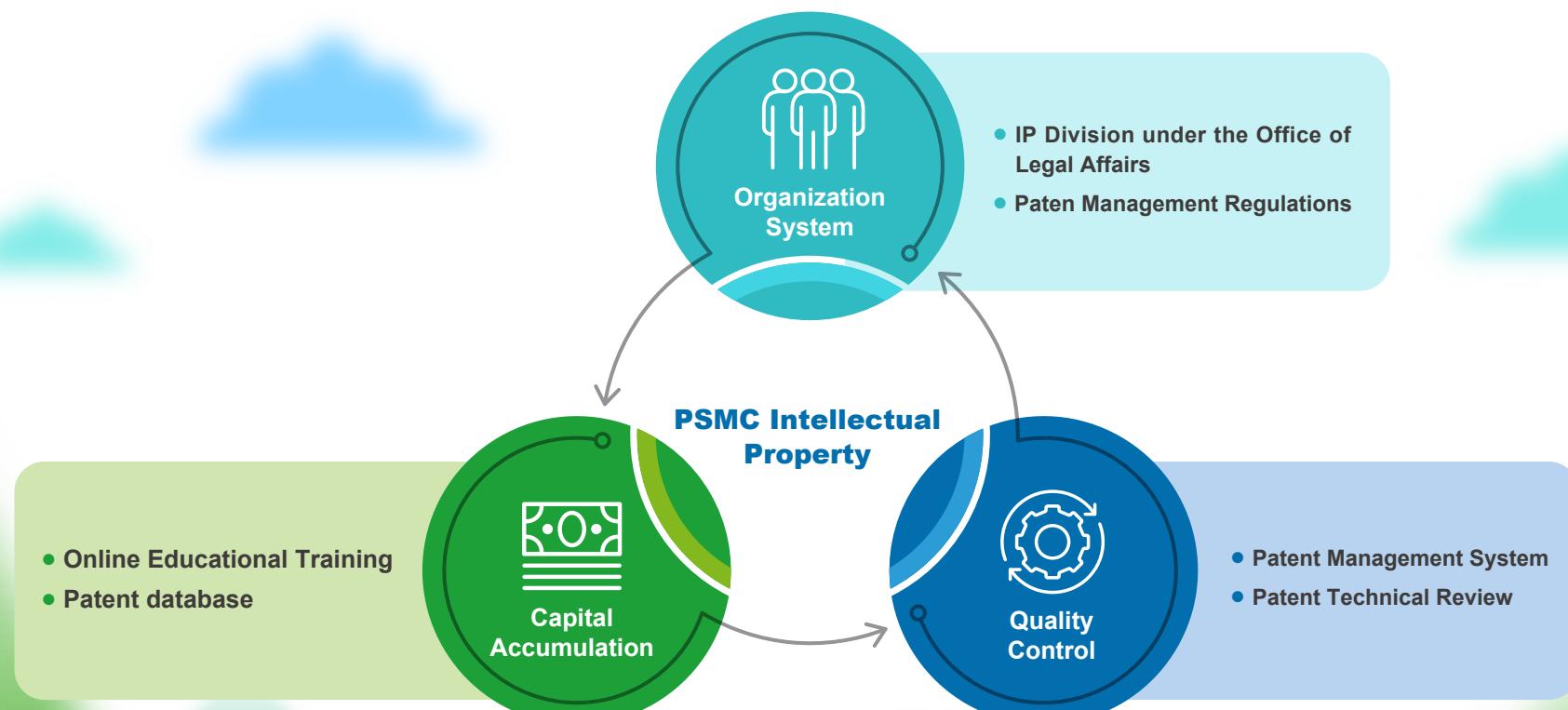
Capacity Anomaly Management System (TC/EPT)	Photoresist Analysis System	Production Artificial Intelligence (ProAI)
<p>Purpose To solve the problem of overcomplicated query process</p> <p>Current status Currently the TC query process needs to rely on different query systems, and tests need to be conducted at machine side's every position. The whole process lacks effective TC detection systems, and the average TC test time is as long as 2 hours.</p> <p>Solution To solve the problem of overcomplicated query process, PSMC established a TC/EPT Smart Report Statement System in 2023, through which the machine with anomalous production efficiency can be located, and the machine's anomalous position can be quickly identified for the station's engineers to take action to improve it.</p> <p>Improvement benefits Through weekly outlier machine monitoring, and daily/weekly monitoring on the machines' variations, the time required for engineer testing has been shorten to 10 minutes. As of November 30, 2023, the accumulated production increase volume benefited from improved production efficiency in P1/2/3 Plants was 165,555 wafers.</p>	<p>Purpose To build a photoresist analysis system to provide machines with photoresist product WIP information so that users can determine the post-processing procedures for small amounts of WIP photoresist.</p> <p>Current status There used to be numerous photoresists and photolithography production machines used in fabs, and the numbers of photoresist thickness measurement categories and machine test items were as many as 215 and 1137 respectively. Engineers needed to manually analyze and organize expired photoresist information and allocate production capacity based on related photoresist information, which had hampered effective operations.</p> <p>Solution In 2023, PSMC introduced a intelligent photoresist analysis system to efficiently screen out and analyze low-usage photoresist machines and invalid photoresist machine test items, which can not only reduce human calculation errors and engineers' work load, but can also help engineers quickly optimize photoresist pipeline layout and machine test items.</p> <p>Improvement benefits 1. PM test items reduced by 18% 2. Equipment engineer labor investment reduced by 0.3 people/day 3. Average machine uptime increased by 0.1% 4. Photoresist expiration analysis efficiency effectively improved by 1.2 hours/per analysis 5. Photo Daily Move increased by 345 wafers/day 6. Amount being saved: NT\$29.75 million </p>	<p>Purpose Guide employees to adapt to the changes in working patterns brought by intelligent processes</p> <p>Current status ProAI 1.0 incorporated AI into production management in early 2023, and provided related units' personnel with training sessions and user-friendly operation interfaces. In response to major changes in the market, ProAI has been used to conduct scenario simulations to help evaluate the impact on output, and to effectively give timely feedback to customers and supply chain partners.</p> <p>Solution ProAI 2.0 was launched in late 2023 to strengthen the consideration of on-site production requirements (such as daily targets, bottleneck points, incoming goods delivery time range, and Qtime) to provide on-site personnel with results of modularized calculation as a reference for setting machines' daily production targets. In addition, it is scheduled to introduce more functions to strengthen fab operations and job scheduling mechanisms in 2024. Through automation, digitization, and intelligent and innovative production management to implement stable, accurate, and forward-looking strategizing mechanisms. Moreover, with strengthened, intelligent production management, the Company can provide customers with more flexible and complex Open Foundry services, and meanwhile maintain and even enhance the quality level for delivery required by customers.</p> <p>Improvement benefits 1. Shipment visibility improved by more than one quarter (up to 475 days) 2. Prediction accuracy of the next two months' output lot number >90% 3. Time for interdepartmental data collection shortened by 60% 4. Software outsourcing costs being saved: US\$780,000; Annual maintenance charges being saved: US\$156,000 5. The production simulations conducted in response to changes in the market have helped reduce strategic tape-out quantities (3K per month), and significantly save costs of production material consumption (about 4% per month) with the revenue target still being achieved. 6. By providing prognosis bottleneck machine information, production lines are able to be prepared for response in advance, which has effectively helped increase output for 1K. 7. Reasonable allocation of production capacity based on preset targets has enabled CLIP prediction accuracy to increase by 23%. 8. Help enhance revenue forecast accuracy (taking HV products as an example, the ASP accuracy rate has increased by 3%). </p>



1.1.2 Intellectual Property Rights Management

By focusing on memory and logic circuit wafer foundry services and the Open Foundry operating model, PSMC has developed two major strategies, which are "Technological innovation" and "Patent Deployment". In accordance with the strategies, IP management plans are developed based on the Company's operating goals and technical goals. Additionally, resources are continuously invested for patent R&D, and a global patent deployment network is established to ensure that all PSMC R&D achievements are comprehensively protected by intellectual property rights, and customers can be provided with more advanced and complete foundry services. PSMC has formulated its "Patent Management Regulations" to systematically manage the invention proposals involving technologies related to the Company's R&D, production, and operations through the Company's internal "Patent Management System". All patented technologies have been strictly reviewed by internal technical reviewers to maintain PSMC's intellectual property quality.

With the aim of accumulating intellectual capital for continuous innovation and technical development, PSMC has organized online intellectual property rights training sessions to strengthen employees' IP-related legal consciousness, and adopted incentive mechanisms to encourage innovative technology proposals and patent acquisitions to create a high-quality R&D environment in the Company. In addition, with the aid of the Derwent Innovation patent database, the Company can conduct development trend analysis of specific technologies in the global market, check a patent proposal's novelty, keep track of competitors' patent information, and so on. PSMC's internal R&D personnel have also formed a Patent R&D Team to be responsible for the formulation of annual goals for internal patent proposal submission and external patent application. In 2023, PSMC successfully introduced the Taiwan Intellectual Property Management System (TIPS), and combined it with the existing patent management system to establish a systematic management system which can connect IP management with the Company's operating goals. It is worth mentioning that PSMC passed the TIPS Level-A verification in 2023 as well.





Short-term Goals

- Successfully obtain the second year's TIPS verification
- Number of patents passed internal patent review reaches 120



Medium-/Long-term Goals

- Diversify product technologies and high gross profit production-marketing portfolios, and upgrade process technologies to enhance profitability, including 5G, automotive products, big data, AIoT, and AI Chips. In addition, consult the Patent Map and use innovative analysis approaches to formulate patent deployment strategies, and follow R&D technical blueprint to explore innovative technologies for patent application to ensure that the critical technologies achieved in R&D results can be protected through patent acquisition.

IP Management Measures

Corresponding Strategy

Strengthen Education and Training:
 1. Engineers retake basic patent courses every 3 years
 2. Provide advanced patent lectures for colleagues to take as elective courses

Management Objectives

Increase Employee Patent Proposal Rate



PSMC

Internally
(e.g. employees)

Externally
(e.g. customers)

Management Objectives

- Improve productivity and meet customer production capacity needs
- Avoid infringement of 2nd source machines

Corresponding Strategy

- 100% achievement rate of non-infringement statement signed by 2nd source machine supplier

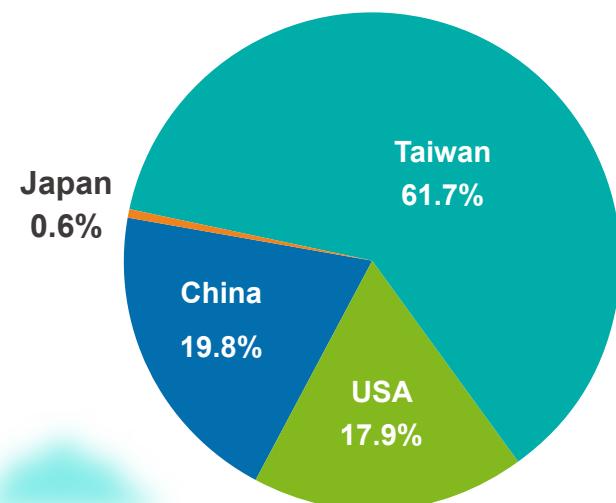
2023 Employee IP Management Educational Training

Course Title	Course format (online/in-person)	Participants	Number of participating employees	Training completion rate (%)	Participating hours
Innovative Proposal's Patentability Analysis(Advanced)	Online	Elective for employees	172	-	1.9
Patent Infringement and Design around Existing Patents(Advanced)	Online	Elective for employees	9	-	2.2
Basic Patent-themed Lectures	Online	Required for employees	65	100	1.8

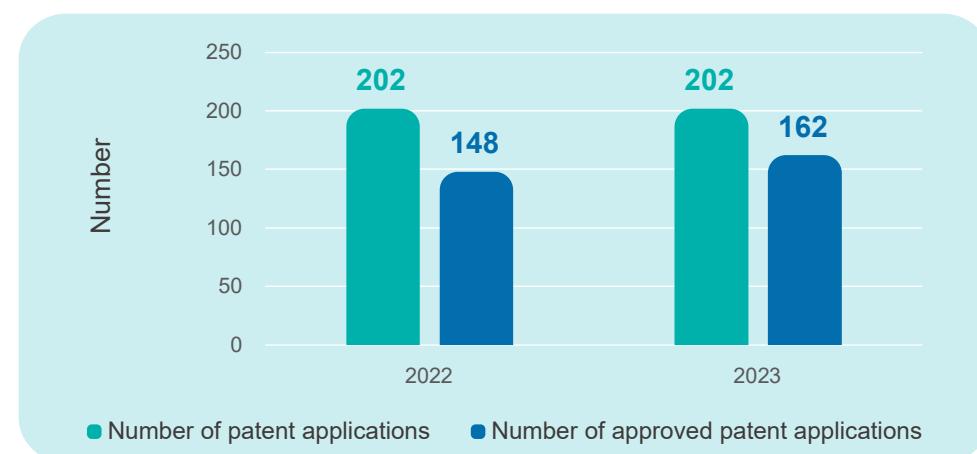


In the face of increasingly fierce competition in semiconductor technology, PSMC focuses on enhancing its key technological capabilities in order to maintain its technological leadership. In addition to continuous technological breakthroughs, PSMC also places great emphasis on patenting to ensure the protection of technological intellectual property rights. The number of patent applications in 2023 was 202, which has achieved the 2023 goal. As of 2023, PSMC has obtained 1,277 valid patents, of which 162 were granted in 2023. These patents not only provide a strong intellectual property barrier, but also offer complete technical support for the company's manufacturing processes.

Number of Patent Acquisitions in 2023



Patent Statistics in the past two years



Patent Incentive System

PSMC has specified patent incentive measures in its "Patent Management Regulations". There were 352 patent applications being granted financial incentives in 2023, with the incentive amount totaling to NT\$4.16 million, which exceeded the 2023 preset budget NT\$3.5 million, and highlighted employees' overall efforts in technical R&D and innovation.

Obtain an official
application number granted
by an external agency

- ◆ Awarded a bonus of NT\$10,000

Patent acquisition

- ◆ U.S., Japan, EU: NT\$40,000
- ◆ Taiwan, China: NT\$20,000



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 through the introduction of various management systems and clear processes to control all aspects of production, and 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

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 no doubt.





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, PSMC 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 process 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.

2023 Annual Certification Record

Management System	Plant passed Certification
ISO 9001 Quality Management Systems	P1/2、P3、P5、8A、8B
IATF 16949 Automotive Quality Management System	P1/2、P3、8A、8B
IECQ QC 080000 Hazardous Substance Process Management System	P1/2、P3、8A、8B
ISO/IEC 17025 General requirements for the competence of testing and calibration laboratories	P1/2
ANSI ESD S20.20 Electrostatic Discharge Prevention and Control Verification	P1/2、P3

Product Quality Management Objectives

In order to ensure that the products provided meet the expectations and needs of all stakeholders, PSMC has formulated five quality management review objectives to maintain a high level of stability and consistency in internal product quality. Through quarterly statistics on the performance of quality control projects, deficiencies can be discovered in a timely manner and corresponding improvement measures can be taken. Quality management review meetings are held every six months to review various indicators and track improvement progress. Under the operation of PSMC's strict and high-standard quality control mechanism, no product recalls have occurred in the past four years as of the end of 2023.





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 operating environment and related policies. To this end, PSMC 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 operating environment and to encourage the discovery of problems in daily operations to improve the operating environment and personnel safety.

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

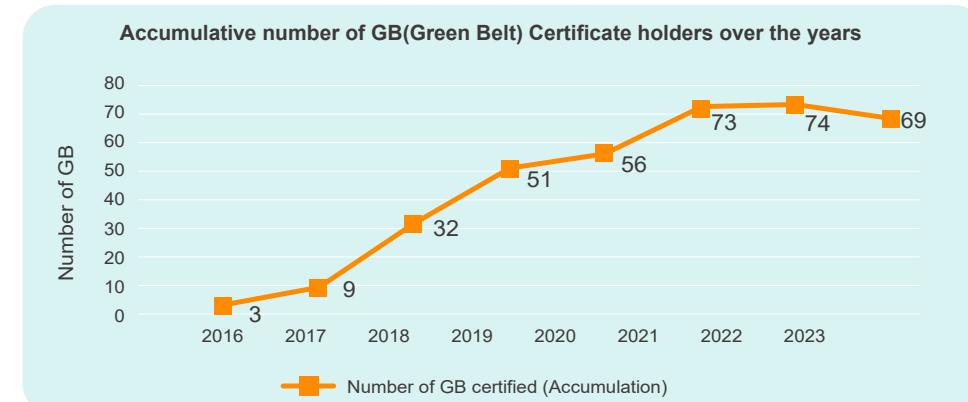
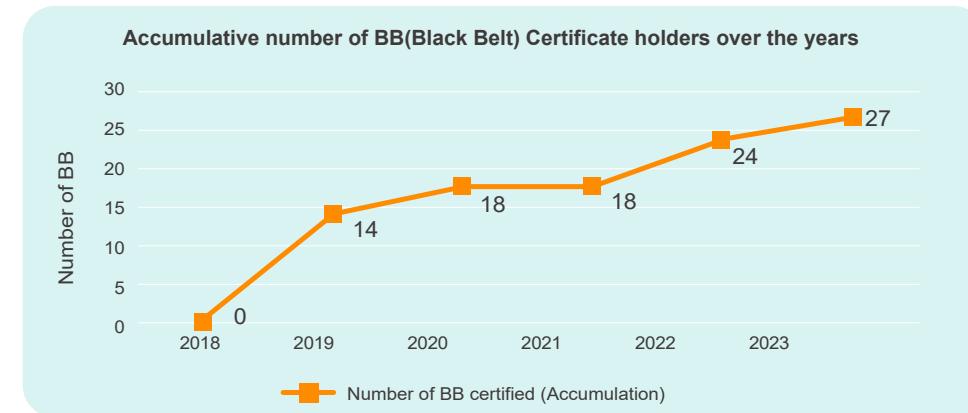
In order to implement the 6S management goal, the 8-inch fab incorporated the spirit of 6S into the daily production auditing specifications, and the items found in the audits were included in the quality discipline deficiencies. In addition, the "Wafer Garden" evaluation was conducted every six months and has been implemented for the 48th 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. On the other hand, the 12-inch factory established a 6S management promotion group to implement on-site 6S management methods and implementation details, formulate 6S competition methods to enhance colleagues' motivation to participate, and provide competition bonuses as incentives. In the management review meeting held every quarter combined with the environmental, safety and health(EHS), the improvement results of the 6S participating departments and related implementation content and performance are announced. All competition department scores set to meet the standards in 2023 have been achieved 100%, and the customer has not found any major deficiencies in the FAB audit.

Six Sigma Training

Six Sigma is a set of systematic scientific management approaches aimed at reducing product defect rate and maintaining product quality. With the aim of establishing the basis for problem analysis and solving, PSMC has required employees of engineering, R&D, and quality-related departments to participate in Six Sigma training courses to enhance team members' problem-solving skills and work performance. The training courses are delivered by professional lectures appointed from external institutions. Participants who pass the training courses can obtain professional certificates issued by the external institutions. The training is classified into three levels, which are Yellow Belt (YB), Green Belt (GB), and the highest Black Belt (BB) level. Certificate is not given for YB Level. It takes 1-2 years to obtain the GB Certificate, and 2-3 years to obtain the BB Certificate. All certificates are valid for 3 years.

PSMC organizes two sessions of YB courses every year, which have been listed as required

courses for employees of engineering units. However, because consulting companies have certain requirements for the difficulty of external certification, analytical techniques, and rigorous reporting logic, colleagues often report that executing certification reports is very time-consuming. Based on this consideration, in 2023, PSMC has discussed the Life certificate certification method, and entrusted external organizations to target those who meet certain qualifications (GB Life certification has completed 3 consecutive GB certification project reports and has been externally verified; BB Life certification has completed 4 consecutive BB certification project report and external certification) issuance of Life certification, and combined with completing the GB/BB project again, accumulating 30 total points or ability test in additional competition activities, these three-choice supporting measures can maintain the GB/BB ability qualification. As of the end of 2023, the cumulative number of obtained GB certificates holders at PSMC is 69, and the number of BB certificates holders is 27. The GB/BB permanent certificate conversion rates in 2023 are 18.8% and 48.1% respectively.

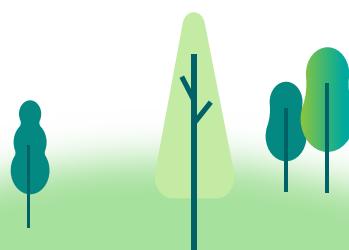




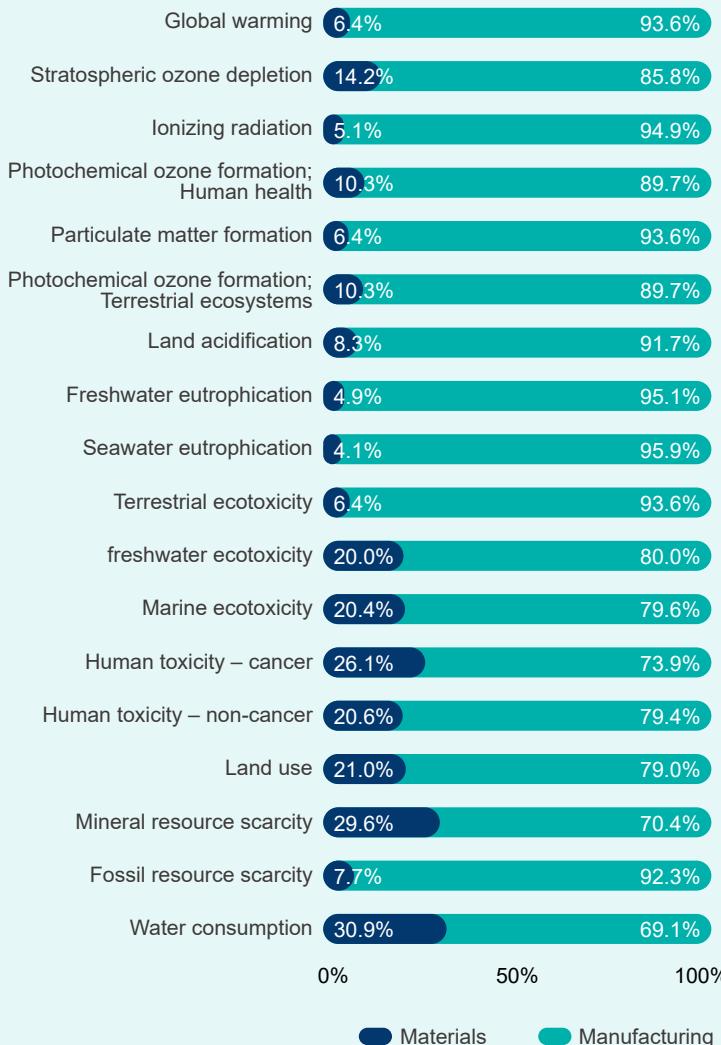
Life Cycle of Product

PSMC supports customers in developing green products related energy-saving with a sustainable management mindset. In order to understand the environmental impact of OEM wafer products at each stage of raw material acquisition and manufacturing, identify environmental impact hot spots at each stage, and facilitate the formulation of strategies to complete performance improvement and communicate with customers, PSMC has introduced complete products in 2023 Life cycle assessment.

The 12-inch product life cycle assessment is based on the requirements of ISO 14040 and ISO 14044, using LCA SimaPro 9.5.0.0 software analysis. The inventory is divided into two stages, raw material stage and manufacturing. The system boundary is set as cradle to customer gate (Cradle to Gate) to check the collected data, input it into the life cycle assessment software program and complete the record. At the same time, the process data is also allocated to each life cycle stage, the product life cycle environmental impact assessment results are indicated in the figure below.



Environmental Impact Assessment Chart of Product Life Cycle



The assessment results provide R&D developers with an understanding of the sensitivity to the potential impacts of various design decisions, including material selection, packaging use, and the relevance of manufacturing to the use of renewable energy for that manufacturing. During the manufacturing stage, it probably should be made to reduce the use of materials, minimize the number of equipment used, and maximize the utilization of production equipment. In addition, in view of the importance of the manufacturing stage to the overall potential impact, PSMC will continue to increase the use of renewable energy in the manufacturing stage, reduce process waste, and improve production yield through process improvement to reduce material use in the raw material stage. It can also reduce the environmental impact of raw material transportation.

Impacts Encompassed in Life Cycle Assessment

Impact Category	Impacts
Resource consumption	Abiotic resource depletion (fossil fuels, minerals), land use, water resource depletion
Ecological consequences	Acidification, dust and particulate matter, ecotoxicity, eutrophication, global warming, ozone depletion, photochemical ozone formation, species richness
Human health	Human toxicity, Ionizing radiation



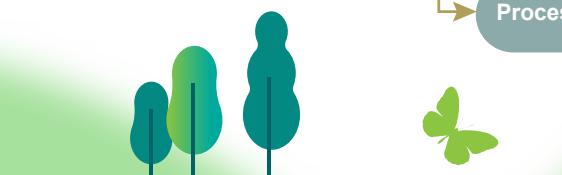
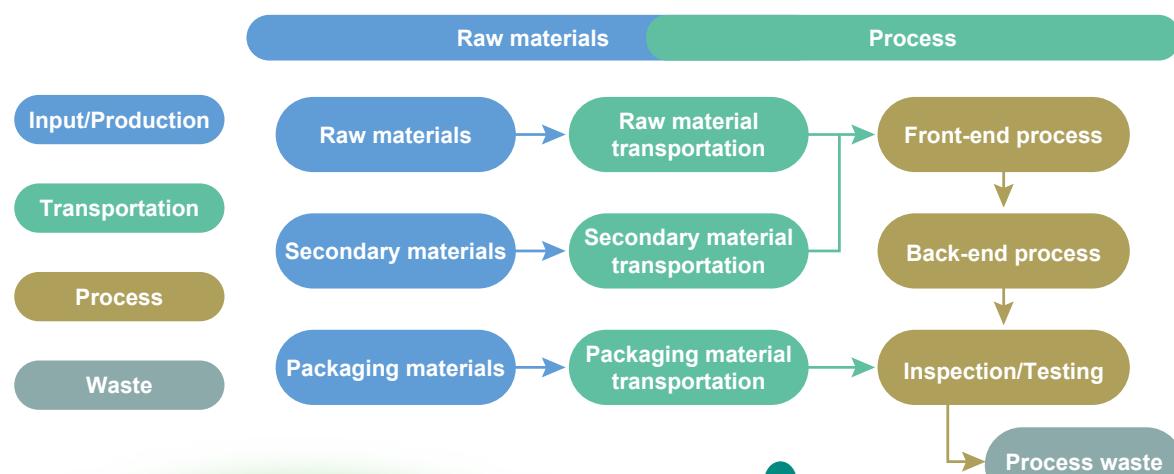
Life Cycle Stage	Friendly Environment Considerations	Improvement Program & Action
Product R&D Raw material procurement	Green Products Hazardous substances Green supply chain	<ul style="list-style-type: none"> Material selection, use of packing materials, and production/manufacturing of renewable energy and the use of renewable energy during manufacturing Collaborate with customers in developing low power-consumption products Comply with environmental laws and regulations, and monitor & manage the use of hazardous substances to reduce the impact on the environment Implement green procurement by choosing eco-friendly suppliers Optimize delivery batch quantities and frequencies to reduce transportation energy consumption
Product manufacturing	Reduce carbon emissions Reduce energy and material consumption Reduce water consumption Increase recycling and reuse	<ul style="list-style-type: none"> Increase the use of renewable energy Promote equipment energy-saving projects Implement manufacturing process water recovery, recycling, and reuse to reduce wastewater discharge Save materials usage and reduce waste output Process waste recycling and reuse Improve production yield through process improvement to reduce raw material consumption
Product Packaging & Transportation	Reduce carbon emissions Increase recycling	<ul style="list-style-type: none"> Use green packaging materials Reuse the wafer cassettes originally used for wafer raw material packaging in outsourcing transportation or final product packaging
Waste Treatment & Disposal	Increase recycling Reduce all stages' packaging materials	<ul style="list-style-type: none"> Improve the recycling and reuse rate of suppliers' packaging materials Suppliers' packaging material reduction design to reduce waste

Product Carbon Footprint/Water Footprint

PSMC produces advanced, energy-saving and environmentally friendly products for customers and continues to promote new process technologies to reduce chip power consumption and save resources. In order to implement the "Net Zero by 2050" goal, PSMC actively promotes product carbon footprint and water footprint inventory projects

The carbon footprint inventory of 12-inch products has been conducted through the SimaPro 9.5.0.0 software analysis in accordance with ISO 14067 requirements to inventory and calculate the greenhouse gases emissions in each stage of energy resource consumption from raw material manufacturing, raw material transportation, product manufacturing, etc. At the same time, a water footprint inventory is conducted in accordance with the ISO 14046 standard to inventory and calculate the amount of water used in raw material production and manufacturing processes. The inventory boundaries of both carbon footprint and water footprint are set as Cradle to Gate, including the two stages of raw materials and manufacturing. In order to improve the credibility and reliability of product carbon footprint and water footprint inventory information and reports, PSMC entrusted external verification unit TÜV Rheinland to conduct verification operations and obtained a certificate.

The product carbon footprint inventory results will help to clearly identify the greenhouse gas emissions of products at each stage of the life cycle, thereby seeking opportunities to improve supply chain efficiency, save energy and reduce carbon emissions, and serve as a reference for future planning of activities to reduce greenhouse gas emissions. The results of the product water footprint inventory can help identify hot spots of water use, and regard reducing water footprints as an environmental protection and operational goal. PSMC will continue to strengthen water conservation and wastewater recycling, and use water footprints to conduct value chain analysis through cooperation with suppliers, to improve the water efficiency of the overall supply chain.

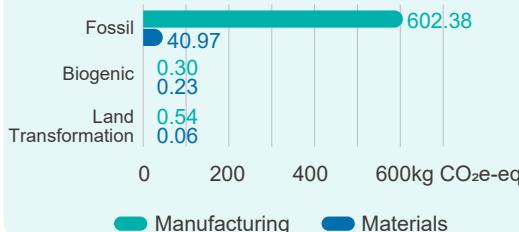




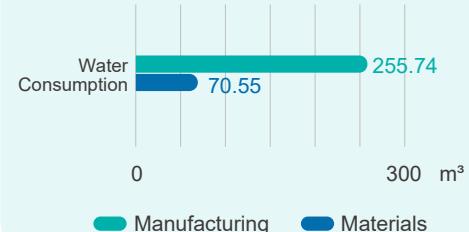
2023 Product Carbon Footprint and Water Footprint Implementation

Category	Product Line	Improvement Strategies and Actions
12-inch Foundry Product	Logic Product	<ul style="list-style-type: none"> 1. Increase the use of renewable energy 2. Promote facilities energy-saving projects 3. Implement process water reclamation (recycling and reuse) to reduce wastewater discharge 4. Implement process waste recycling and reuse 5. Collaborate with suppliers to conduct value chain analysis based on water footprint inventory results to enhance supply chain of the overall water efficiency

Product Carbon Footprint



Product Water Footprint



1.2.2 Hazardous Substance Management

PSMC upholds great importance to environmental protection and social responsibility, and promotes existing factories to pass IECQ QC 080000 certification by complying with regulations, reducing risks and improving hazardous material process management, and establishes a hazardous material management mechanism based on this standard. , and subsequently promotes the P5 factory to complete the IECQ QC 080000 certification.

In addition, in accordance with EU RoHS hazardous substances control regulations and other laws and regulations, PSMC automatically manages raw materials to comply with Hazardous Substance Free (HSF) regulations during the incoming quality control (IQC) stage, strictly controls test reports of the supply and the validity of declarations to minimize the risk of misuse of hazardous substances.

If substances controlled by regulations must be used due to process research and development needs, internal reviews will be implemented to ensure that environmental protection, safety and health and other related risks are effectively controlled, and the user unit will be required to evaluate alternative chemicals, and at the same time provide on-site operators with strong Protective equipment, and conduct regular operating environment risk analysis in accordance with the "Environmental Safety and Health Risk Assessment Operation Methods" to fully ensure the safety of colleagues at the work site. Under the operation of the hazardous substances management mechanism, no violations of relevant laws and regulations such as product quality or the use of hazardous substances occurred in 2023.

Legal/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)



Hazardous Substance Substitution Plan

In recent years, global attention has increased on the potential harm of perfluoroalkyl substances (PFASs) to human health and the environment. PSMC has fully completed the perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) replacement project in 2019, resolutely no longer use related substances. In addition, regarding the chemical substance N-methylpyrrolidone (NMP, 1-methyl-2-pyrrolidone), which is used in the cleaning of semiconductor parts and the dilution of photoresist, it has been confirmed

to cause damage to human reproductive health. Since 2021, the company has been cooperating with suppliers to evaluate and develop alternatives to hazardous substances in process raw materials, and formulated a year-by-year replacement plan in response to the future of international regulatory. In 2023, the cumulative reduction ratio of the hazardous materials substitution plan implemented by PSMC is 96.39%, which does not reach the original set reduction ratio of 97.75%. The main reason is that the adjustment of the customer's production plan has resulted in the Resistor B substitution plan (the reduction accounted ratio 1.36%) will be deferred to the second quarter of 2024.

Indicates that the 2023 target has not been achieved

Material Name	NMP Concentration (%)	Process / Application	Substitution Status	Year of Substitution Plan	Target of Accumulated Hazardous Substance Reduction Percentage (%)
Implemented hazardous substance substitution program					
Resister A	75	Cleaning	Stop using		
Resistor B	100	Cleaning	Substitute Material B1	2023	97.75
Chemical A	40	Cleaning	Substitute Material A1		
Future planning of hazardous substance substitution program					
Polyamide A	45-55	Protection		2027	97.86
Polyamide B	50-60	Protection	R&D in progress	2029	98.18
Polyamide C	1-3	Protection		2030	100.00





Column

Continuous Improvement Process (CIP) Competition

Upholding a corporate culture pivoting on "Integrity, Service, Quality, and Innovation", PSMC firmly believes that the spirit of continuous improvement is the driving force for the Company's technical progress and quality upgrade. The purpose of CIP Competition is to help employees internalize the DNA of continuous improvement, and further build up a culture and habit aimed at making tireless effort for continuous progress. The CIP Competition was launched in 2019 with five competitions having been held so far. Two competitions were held in 2023. The competitions are always actively responded by employees, and demonstrate remarkable achievements obtained through departments' teamwork. PSMC believes that the CIP Competition can not only help trigger employees' creativity and competitiveness, but can also improve the overall quality, efficiency, innovation, and service standard for the Company to provide better products and services to customers, and make more contributions to society.



Quality Improvement

Improvement projects for Wafer Yield, Wafer Defect, Wafer Acceptance Test (WAT), Process capability (Cpk), and Margin of error.

Efficiency Improvement

Projects for the efficiency of processes, systems or equipment, or for the timely management of online raw materials and parts inventory, automation, reduction, etc.

Innovative Thinking

Projects to achieve quality or workflow improvement through the introduction of new concepts, ideas or processes.

Service Improvement

Listen and understand the needs and feedback of internal and external customers, improve service quality and enthusiasm through improvement projects, and develop service processes that make customers more satisfied

Stop & Fix

Detecting phenomena different from the usual baseline through visual, olfactory, auditory, tactile and other sensory alerts or through data analysis.

Equipment Improvement

Improvement projects to improve quality or production capacity through machine equipment maintenance and software and hardware optimization (for equipment/factory colleagues)





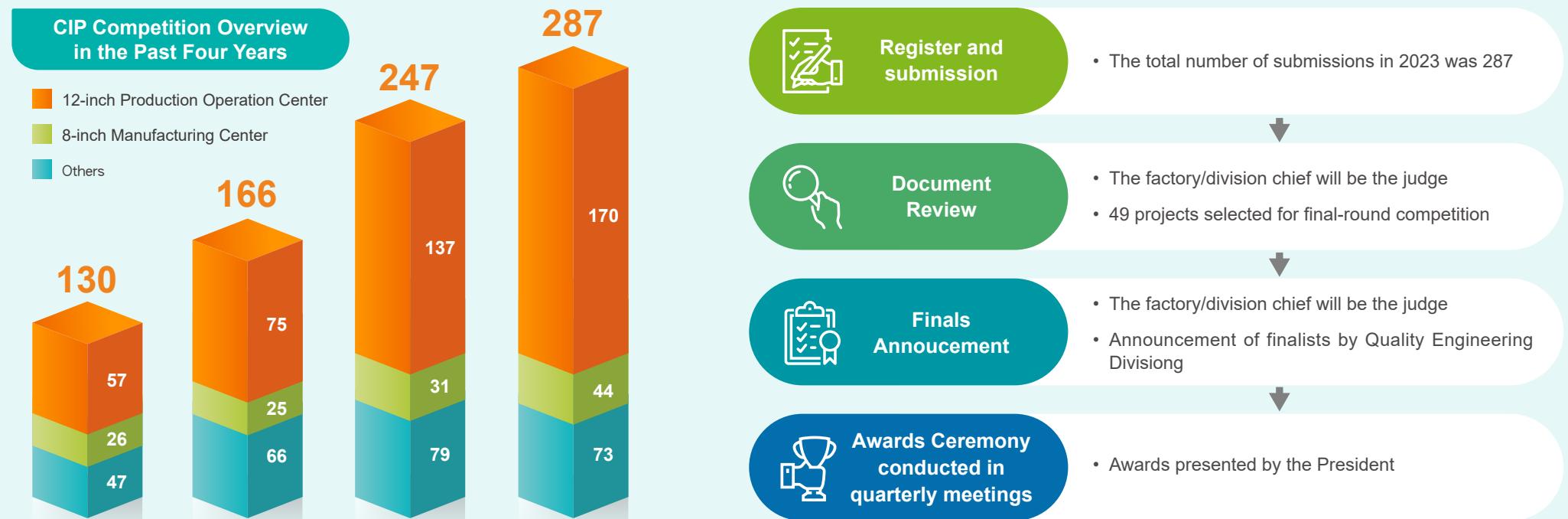
Column

Continuous Improvement Process (CIP) Competition



CIP Competition Status

There were 287 projects in total participating in the 2023 competitions. The participating units included 12-inch Production Operation Center, 8-inch Manufacturing Center, Quality Center, Advanced Technology R&D Center/Module Technology Center, Technology Development Center, Memory Development Center, etc., showing an increase of 16.19% compared with last year. Among them, the number of pieces with the theme of 12-inch production operation center was the largest, accounting for 59.23% of the total number of participating projects.





Column

Continuous Improvement Process (CIP) Competition



2023 CIP Competition Final-round Projects

Item	Aegis Photolithography Digital Integration Platform	DKA 300Zac Flow IMP_I improvement	Introduce WAT Prober Intelligent Manufacturing
Project Description	A platform applied in the photolithography process for the Company to establish a system integration platform to improve employees' work efficiency, integrate different systems' data sources, customize employee needs and simplify complex workflows in order to save working time for other matters	Establish a work-driven team to identify key factors for the RF loop, set control points for the three key factors, and optimize adjustment methods to avoid wasting time and manpower caused by repeated actions and simplify the work process.	Applied to WAT manufacturing, automated production and systematic risk management of Prober machines, establishing a WAT manufacturing Prober management platform to improve production management efficiency. Through automatic product dispatch, production transfer, and verification machine AD3, it helps save manpower and avoid MO, and the saved working time can be used for other matters.
Overview of project Content	<ul style="list-style-type: none"> 1. ToolBox: Quickly retrieve product transit data, check abnormal conditions and handle them immediately 2. Management interface: Integrate photolithography machinery information, product parameters, process layout and output data, and summarize rework information. 3. Overlay drawing: automatically capture data and calculate formulas, sort and present drawings 4. Machine Log: Automatically back up machine logs; enter Lot numbers to quickly obtain files for analysis 	Apply Six Sigma training to quickly find the optimal parameter settings to solve problems through quality tools and experimental arrangement and analysis.	<ul style="list-style-type: none"> 1. Management platform: The production unit can manage ProbeCard status through PCMS (Probe Card Management System). 2. Product definition: The integration unit defines the correlation between the product and ProbeCard through Siview for reference by the dispatch system and production system. 3. Machine improvement: Customize machine communication mechanism, obtain ProbeCard information of Prober machine for other information reference. 4. Production control: After the measurement is completed, the machine automatically pauses, and the WMS verification AD3 Result notifies the execution and dispatch system to continue production.
Project Effectiveness	<ul style="list-style-type: none"> 1. Save 36 photolithography engineers' working time for 2 hours per engineer per day 2. Save working time and use it for Path expansion, demonstrating a growth of 55%. 	<ul style="list-style-type: none"> 1. Reduce uptime loss: The original loss was 6% per month and subsequently was improved to 1.2% per month 2. Reduce downtime loss: The original loss was 145 hrs. per month and subsequently was improved to 29 hours per month 	<ul style="list-style-type: none"> 1. Provide automation system services and process management tools that meet WAT smart manufacturing standards 2. The lead time for each lot has been reduced by 86% 3. Annual labor costs reduced by 63%



1.3 Customer Relationship Management

Customer Communication

In order to deeply understand customers' needs, PSMC has established diversified communication channels to ensure that customers can receive immediate solutions.

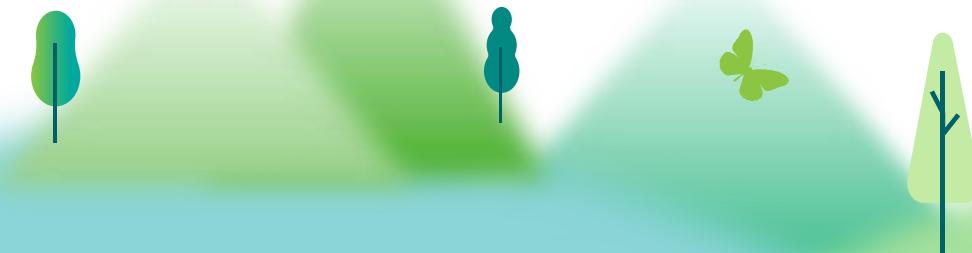
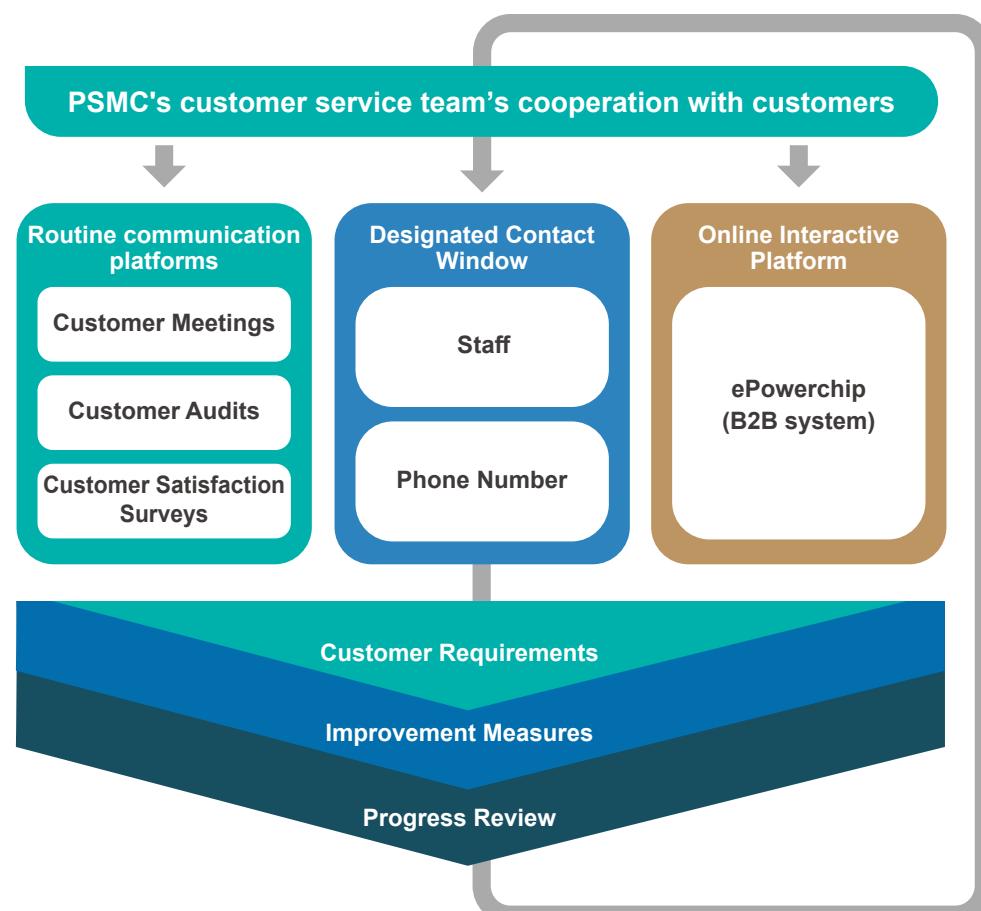
Each channel has a dedicated person/line real-time communication and coordination window, and customer needs and feedback are obtained through customer meetings, customer satisfaction questionnaires and customer audits. The survey results will be discussed at internal business performance meetings to further plan accordingly. Improvement plans include building B2B product yield feedback data with customers and combining it with customer production information. A dedicated department is responsible for data analysis and product failure analysis, thereby improving production yield.

In addition, PSMC implements relevant improvement work through integrated analysis of quarterly product performance and regular discussions with customers to achieve the goal of improving product yield.

2023 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	24	
Audit Meetings	26	Annual audits, ISO9001/IATF16949 audits, Automotive Supply Chain Quality Control System (VDA6.3) audits

ePSMC Platform

The ePSMC platform provides customers with a channel for data upload and download. Various types of communication can be carried out on this platform. The communication content covers the distribution status of production lines, product research and development, process changes, engineering experiments, and customer satisfaction, etc. at each production stage.





Pteam Customer-Manufacturer Collaborative Communication Platform

To shorten the distance among customers, suppliers and employees, and at the same time to secure business secrets, PSMC has developed its own Pteam Business Collaboration Platform for customers, suppliers, and employees to carry out remote video conferencing, voice calls, message exchange, remote desktop connection, and AR/MR (mixed reality) communication (collaboration with HoloLens) to improve communication efficiency, reduce communication costs, and effectively solve on-site problems such as equipment installation, borrowing-device testing, maintenance, and more. Through this platform, the communication and collaboration with stakeholders can be more effectively facilitated, and more collaboration and development opportunities can be brought to the Company.

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



Improve work efficiency



Optimize cost effectiveness



Secure business secrets

- 170,000 online meetings were held through the Pteam Business Collaboration Platform in 2023, with a total of 1.51 million participants engaged, and which including 4,000 of online meetings with customers/vendors.
- Although there will be no need to work from home due to the epidemic in 2023, Pteam is still a very convenient communication tool between employees/vendors/customers, which is very helpful in improving work efficiency. P1/2 Director Lin Yiliang gave feedback to Pteam that it has indeed improved the communication efficiency within FAB. Cross-department/cross-level communication becomes smoother and faster
- Pteam can provide customer/vendor exclusive APPs starting in 2022, which can directly conduct collaborative work with employees such as text, voice, conferencing, remote desktop connections, etc., bringing employees closer to customers/vendors. Currently, customer/vendor sharing has been introduced. 75 stores with 320 users
- Customers can collaborate with remote experts through Pteam (approximately 100 people per month), and employees can cooperate with subsidiaries or customers/vendors within the group through Pteam to conduct product research and development. Under the principle of strictly guarding business secrets, Pteam ensures the quality of employees' work and product development schedule is not limited by time and space and improves work efficiency
- In 2023, the platform functions of information communication and meeting with Japanese subsidiary has been expanded with a total of 1,400 cross-border meetings held and a total of 9,500 participants engaged.

- Self-development saves the cost of outsourced software such as instant messaging, remote platforms and online meetings, totaling approximately NT\$100 million, and the annual maintenance fees of instant messaging and remote platform and online meeting licensing fees are approximately NT\$8.05 million
- The platform supported 170,000 online meetings in 2023, reducing office and meeting room construction costs (including in the newly constructed Tongluo Plant).
- About 100 customers are provided with remote online borrowing-device testing services via the platform every month, reducing customers' transport costs and risks of infection through contact. In addition, with the function of AR/MR (mixed reality) communication (through HoloLens), customers/vendors can directly discuss through remote communication to effectively solve on-site problems.
- This platform uses Open Source software for development, which greatly reduces development costs for the company, and uses it to introduce new software technologies and improve the technical capabilities of software developers. Before deciding which set of Open Source software to adopt, the project team conducted a prudent and comprehensive technical assessment, including considering the functional requirements and business secret protection requirements of each unit of PSMC, and assessing whether it has continuous maintenance capabilities and must not have any concerns about information security vulnerabilities.
- Pteam leads the industry and commercially available software, and can implement detailed authorization control in accordance with its internal, external or information security management policies within the company, maximizing the balance between individual work needs and information security.

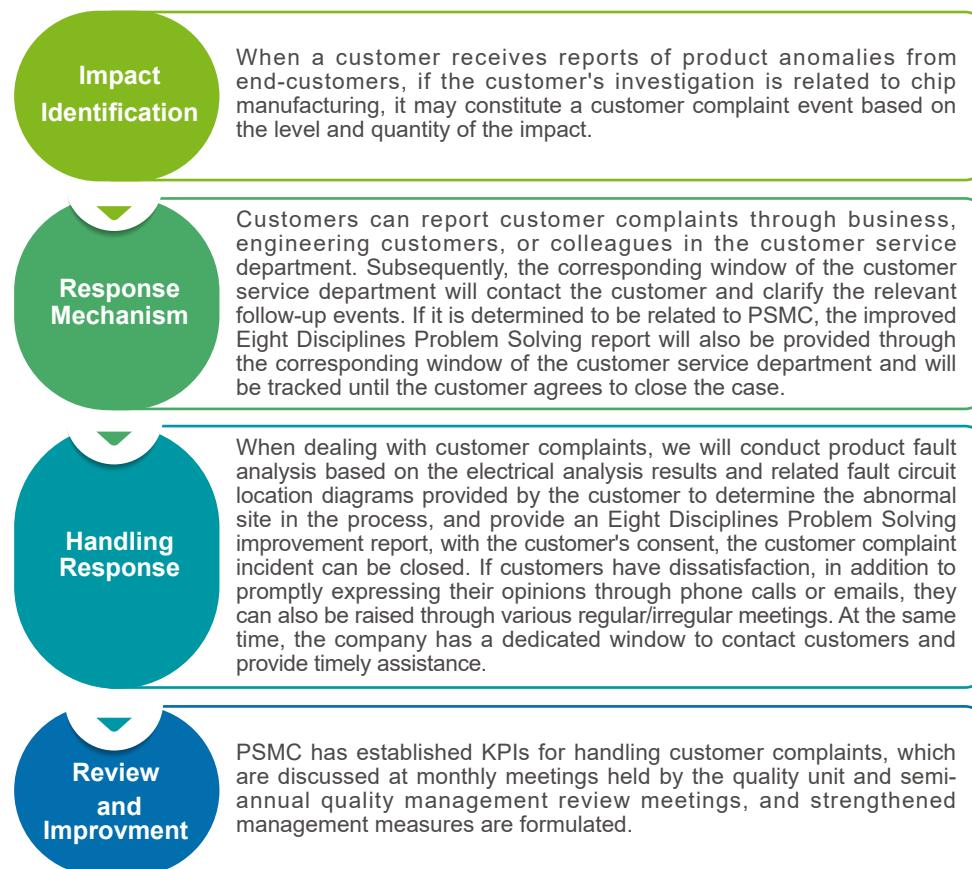
- Pteam provides security protection functions such as password secondary authentication and anti-photography. It can not only detect business secret documents that have been deliberately hidden, altered, and tampered with, but also design drawings, test programs, key intellectual property, etc. for similar business secrets, all can be detected with AI intelligence. Since its launch, Pteam has protected more than 100,000 business secret documents and approximately 62,300 design drawings, taking into account both efficiency and business secret protection.





Response to Customers' Needs

In response to customer complaints, PSMC used the electrical analysis results and related fault circuit location maps provided by customers to conduct product failure analysis to determine the abnormal site of the process, and provided an 8D improvement report. With the customer's consent, the customer complaint case can be closed. In 2023, PSMC has set a customer complaint handling target of 1 case per quarter. In 2023, there are 2 customer complaints in the second quarter and 1 in the fourth quarter. The second quarter is a yield issue, and the fourth quarter is a production control issue. Due to production control issues, only the second quarter failed to meet the quarterly target, and the remaining quarters met the target. A total of 3 customer complaints occurred in 2023, all of which have obtained customer consent and been closed.



Customer Satisfaction Survey

At the beginning of each year, based on the customer's wafer production volume in the previous year, PSMC selects customers whose total wafer production volume is greater than 80% of the chip output as the objects of customer satisfaction survey. The survey coverage rate in 2023 reached 100%. Satisfaction evaluation will be conducted once a month, and the overall evaluation results will be provided at the end of the year and improvements will be discussed. The satisfaction survey covers five major aspects: quality, delivery time, technology, green products and others. PSMC set a customer satisfaction threshold of 88 points in 2023. A total of 28 customers participated in the annual satisfaction survey. Therefore, customer satisfaction in 2023 was 100%, with an average annual score of 98 points, reaching the 2023 customer satisfaction level. The annual goal of satisfaction is above 90%.





2 Synergized Sustainability Supply Chain

2.1 Supply Chain Overview

2.2 Sustainable Supply Chain Management

2.3 Conflict Mineral Management





Synergized Sustainability-Supply Chain

Stable supply chain development is the key to a business's continuous operations. PSMC has been actively committed to sustainable supply chain development based on the core spirit advocated by the Responsible Business Alliance (RBA). With the development of clear supply chain management procedures and due diligence mechanisms, PSMC can ensure that all supplier partners are providing high-quality products and services based on their sustainable operations and responsible practices. It is hoped that through continuous collaboration with supplier partners, diverse and high-value products will be created, and a more resilient and sustainable supply chain will be established.



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 Assessment

GRI 414 : Supplier Social Assessment

Stakeholders who have priority reading

Suppliers / Contractors



2023 Sustainable Performance Highlights

34%
Green procurement
growth rate

96%
Proportion of local procure-
ment from suppliers in
Taiwan

100%
Supplier ESG Self-Assessment
Questionnaire response rate

100%
Free from sourcing of conflict
minerals from conflict-affect-
ed areas

100%
Proportion of critical suppliers
who have signed RBA Commit-
ment Statement



2.1 Supply Chain Overview

PSMC, as a midstream manufacturer in the semiconductor industry chain, is specialized in wafer manufacturing and foundry services. In terms of procurement practices, PSMC divides our suppliers into three major categories: goods, equipment, and labor. All suppliers are required to comply with PSMC's Supplier Code of Conduct and risk assessment management mechanisms to ensure that they can meet the company's various sustainability standards. In addition, with the aim of improving resource management efficiency, PSMC has focused our management resources on the suppliers with whom the annual procurement value has reached a certain level, and transactions are conducted on a continuous basis. Such suppliers are categorized as Tier 1 suppliers. Moreover, different levels of management standards have been set based on the significance of their role in PSMC's operations for the company to effectively manage supply chain risks.

Raw Material Procurement

Focusing on the profound impact of the raw materials used in the manufacturing process on the environment and society, PSMC has formulated a "raw materials policy" to implement the spirit of sustainable raw material use in its procurement practices. Through the supplier risk management process, we evaluate whether the supplier's operation and production of raw materials have negative impacts or potential risks on social and environmental aspects such as labor safety, energy resource consumption, ethics, and quality, and prioritize the procurement of raw materials and use this process to confirm the traceability of raw material sources to suppliers.

In order to reduce the impact of raw material production on the environment and society, in addition to requiring suppliers to sign the Supplier Code of Conduct to comply with environmental and social regulations, PSMC will in the future provide technical support and project cooperation with suppliers to reduce the negative external impacts of raw material production for making substantive contributions. In addition, in order to systematically implement the raw material management plan, PSMC has launched the development of in-plant recycling and remanufacturing technology for some raw materials and is gradually increasing the use of third-party verified sustainable raw materials and the proportion of procurement and use of recycled raw materials to continuously track and report on the progress of procurement targets. And through themed training courses, purchasing personnel can fully grasp the concepts and essentials of sustainable raw material purchasing, so as to achieve phased purchasing goals as scheduled.

Tier 1 Suppliers

	Supplier Category	Asia (including Taiwan)	Europe	America	Subtotal
Goods Category (New Products & Raw Materials)	Number of Tier 1 suppliers	96	0	1	97
	Number of Tier 1 critical suppliers	66	0	1	67
	As proportion of Tier 1 critical suppliers (%)	24.63	0	0.37	25.00
	As proportion of Tier 1 critical suppliers' procurement value (%)	43.35	0	0.15	43.50
Equipment Category (Facilities & Processes)	Number of Tier 1 suppliers	67	3	3	73
	Number of Tier 1 critical suppliers	12	0	0	12
	As proportion of Tier 1 critical suppliers (%)	4.48	0	0	4.48
	As proportion of Tier 1 critical suppliers' procurement value (%)	14.91	0	0	14.91

	Supplier Category	Asia (including Taiwan)	Europe	America	Subtotal
Labor Category (Contracting & Services)	Number of Tier 1 suppliers	98	0	0	98
	Number of Tier 1 critical suppliers	25	0	0	25
	As proportion of Tier 1 critical suppliers (%)	9.33	0	0	9.33
	As proportion of Tier 1 critical suppliers' procurement value (%)	14.66	0	0	14.66
Total	Number of Tier 1 suppliers	261	3	4	268
	Number of Tier 1 critical suppliers	103	0	1	104
	As proportion of Tier 1 critical suppliers (%)	38.44	0	0.37	38.81
	As proportion of Tier 1 critical suppliers' procurement value (%)	72.92	0	0.15	73.07

Note 1: Tier 1 suppliers refer to those whose annual transaction value with PSMC is greater than NTD\$10 million.

Note 2: There are three categories of critical suppliers, which are critical raw material suppliers (wafers used for fabrication), suppliers/contractors for large-quantity parts/components (whose semi-annual transaction value with PSMC is greater than NTD\$5 million), and irreplaceable suppliers or similar.



Local Procurement

In order to establish a closer partnership with suppliers in regions where the company's operating sites are located, PSMC follows the principle of local procurement for our raw material sourcing operations. Local procurement not only helps to reduce greenhouse gas emissions in the overall supply chain, create local employment opportunities, and promote economic development, but also improves PSMC's ability to control product quality and lead times, while helping build a resilient and competitive supply chain. In 2023, local suppliers accounted for 95.99% of PSMC's suppliers, and their procurement accounted for 82.40% of total value. There was also a steady upward trend in these figures.

Local Procurement Performance



Green Procurement

In response to the global trend toward green products, PSMC gives priority to products and services that are Green Label certified, and recognized by governments and international organizations. The green product/service assessment criteria have been incorporated into the company's procurement practices and supplier assessment screening mechanisms. PSMC's total green procurement value in 2023 exceeded NTD\$213 million, an increase of 33.56% over the previous year. The major procurement items were products that have passed Taiwan's Type I environmental labeling certification, and other certifications such as Energy Label, Carbon Label, Green Building Material Label, as well as internationally recognized ENERGY STAR Label, EPEAT (Electronic Product Environmental Assessment Tool) Registry Label, TCO Certified Label initiated by the Swedish Federation of Professional Employees, etc.

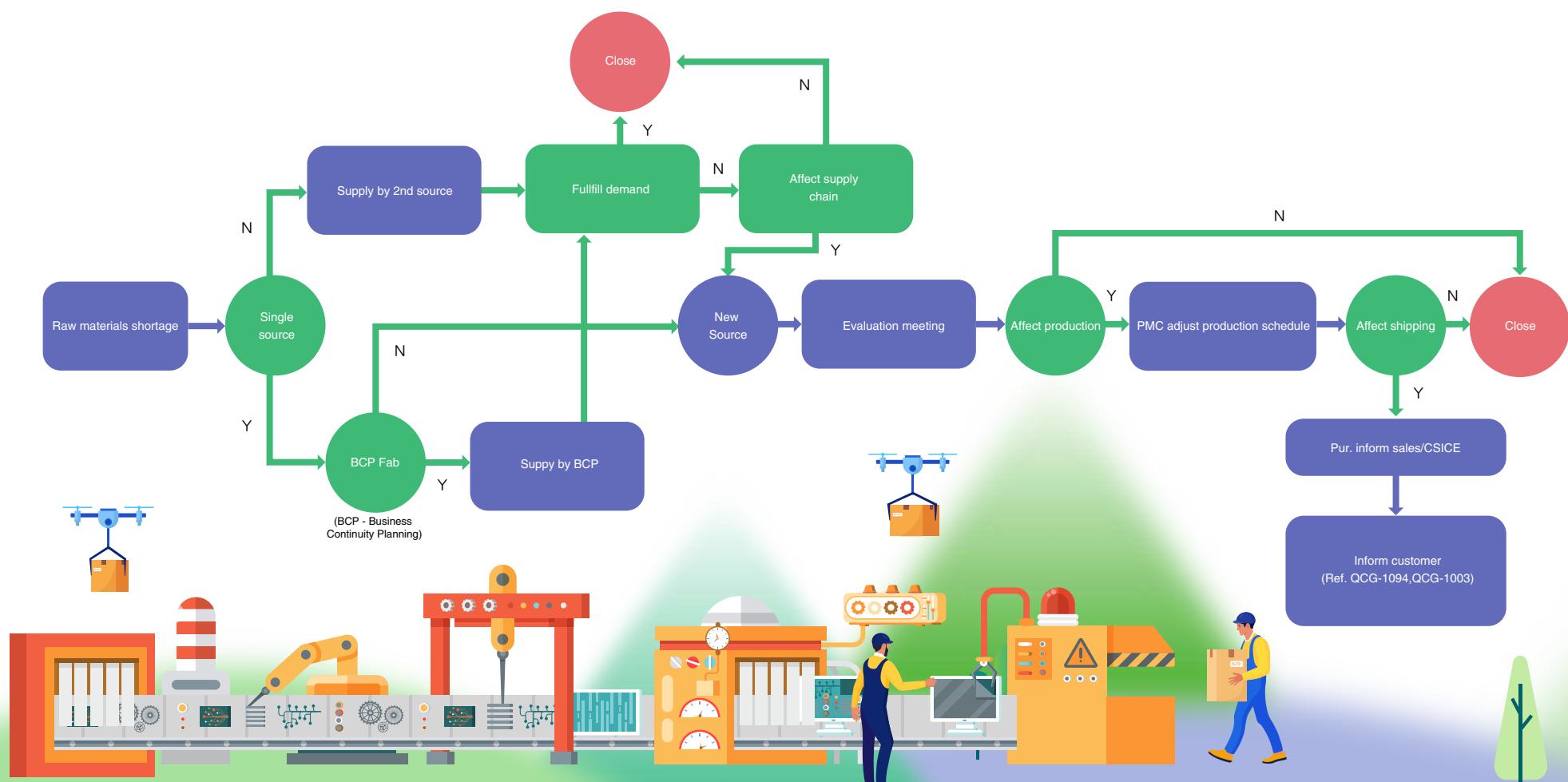
Green Procurement Performance





Business Continuity Plan – Supply Chain Risk Impact Management

The sustainability risks derived from changes in macro environments have urged PSMC to not only consider traditional risks that come from shortage of raw materials and parts in the global market, but also to incorporate emerging sustainability risks into the scope of risk management. By doing so, we establish more comprehensive supply chain response strategies and ESG plans, with the company's board of directors being responsible for supervising the implementation of supplier management affairs. To ensure the supply chain's continuous and stable development, and in accordance with PSMC's Measures for Emergency Response to Shortage of Production-purposed Raw Materials, when the quantity supplied by suppliers is lower than the company's demand quantity, the situation will be considered a significant supply shortage. The procurement department will then immediately initiate an interdepartmental evaluation meeting to discuss response measures. In response to the potential impact of emerging sustainability risks on supply chain stability, PSMC's procurement-related units have carried out related advocacy, and implemented sustainable supply chain management measures to ensure suppliers' compliance with PSMC Supplier Code of Conduct, and avoid the potential impacts arising from conflicts with ESG index requirements. Moreover, PSMC has provided training courses focusing on the company's Supplier ESG Program for dedicated procurement personnel and internal stakeholders to raise the awareness of risk management among related personnel so that they can apply risk management principles in daily procurement operations.





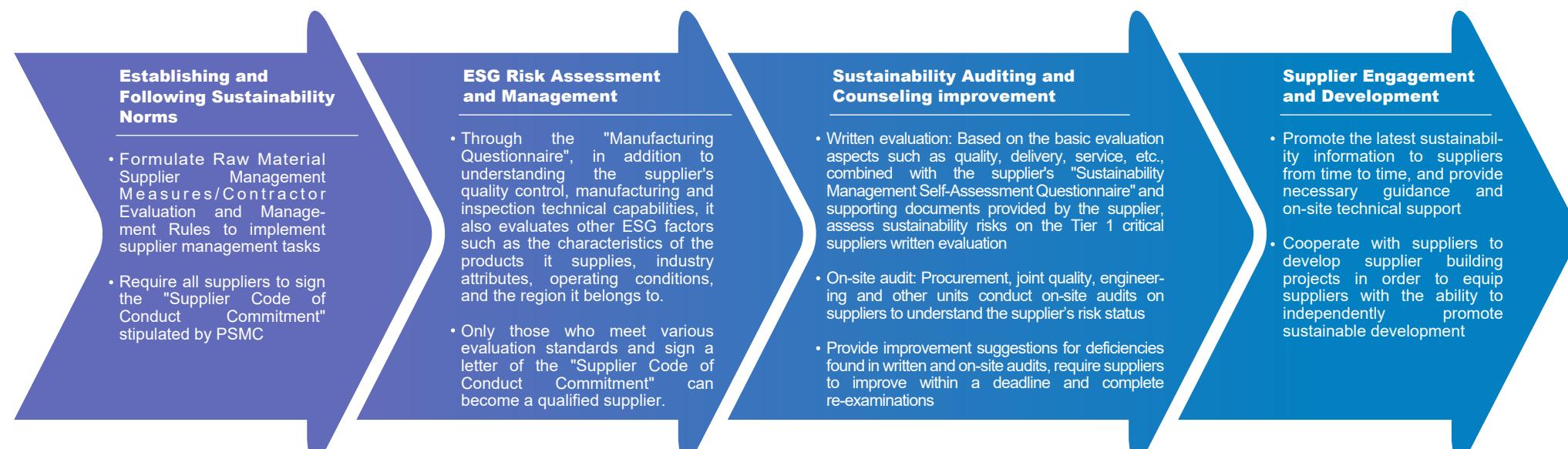
2.2 Sustainable Supply Chain Management

Sustainable Supply Chain Development Strategy

Strategic Dimension	Guidelines for Strategy Implementation
Strengthening diversified strategic partnership	<ul style="list-style-type: none">Maintain at least two suppliers of the same raw materials to ensure a stable supply of raw materials.Adhere to the principle of local procurement and strengthen the proportion of local suppliers.Cooperate with suppliers on ESG projects to build suppliers' sustainable development capabilities.
Strengthening diversified strategic partnership	<ul style="list-style-type: none">Establish supplier screening and risk assessment mechanisms to strengthen supply chain resilience.Enhance the sustainability requirements for suppliers' economic, environmental and social aspects to ensure that PSMC can obtain the best quality of products and services.
Avoiding conflict minerals	<ul style="list-style-type: none">Implement the Conflict Mineral Due Diligence and management to ensure use of non-conflict minerals from qualified smelters.

Sustainable Supply Chain Management Process

PSMC has constructed a four-stage sustainable supply chain management process, using a dual-track parallel model through independent supplier assessment and active investigation by the company's procurement unit, and introduced an evaluation system covering ESG indicators to ensure that suppliers meet PSMC's various procurement standards and requirements.





Establishing and Following the Sustainability Regulatory

To improve supply chain resilience, PSMC requires suppliers to meet requirements for quality, cost, lead time, service, and other indicators, and to comply with local regulations. In addition, PSMC has formulated our Supplier Code of Conduct based on the Responsible Business Alliance (RBA)'s Code of Conduct, to further emphasize regulations on labor rights, health and safety, environmental protection, business ethics, management systems, and so on. The Code is also used as a guideline for the company to communicate and promote the concept of ethical management with/to all suppliers, who are then required to sign a Commitment Statement and abide by it. In addition, PSMC also conducts regular supplier risk assessments to ensure that the company's suppliers and contractors are not involved in any issues related to child labor or forced/compulsory labor. If any of the aforementioned violations is identified and the situation is of great concern, the business partnership will be terminated. In 2023, 100% of the company's qualified suppliers (with whom transactions have been conducted) and new suppliers completed signing of the Code of Conduct, and declared their commitment to comply with social and environmental standards. No supplier partnership was terminated in 2023 due to violation of the Code of Conduct.

Signing of Supplier Code of Conduct & Future Goals:

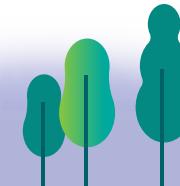
Item	2022		2023		2024	
	Performance	Performance	Goal	Goal		
Qualified suppliers with whom transactions have been conducted	Number of suppliers required for code-signing	113	975	-	-	-
	Proportion of suppliers completing code-signing (%)	100	100	100	100	
New suppliers	Number of suppliers required for code-signing	15	288	-	-	
	Proportion of suppliers completing code-signing (%)	100	100	100	100	

Supplier Code of Conduct: <https://esg.powerchip.com/en-global/staticpage/supplier-and-contractor-management>

ESG Risk Assessment and Management

With the aim of staying on top of suppliers' potential risks, PSMC has formulated our supplier screening standards based on suppliers' product characteristics, industrial and regional attributes, operating conditions, and other ESG assessment factors for the company to conduct proactive screening on new and existing suppliers. Through meticulous preliminary investigation and assessment, the suppliers who cannot meet the minimum ESG requirements before specified deadlines will be weeded out. Moreover, PSMC will take suppliers' ESG performance into consideration when choosing suppliers or contractors. Priority will be given to the suppliers with better comprehensive ESG performance in the hope of reducing the negative impact of inferior suppliers on the overall supply chain.

Aspects of suppliers screening	Assessment Aspects
Environment	Greenhouse gas inventory, water resource use and management, carbon footprint survey, no hazardous substance control documents
Society	Human rights management, labor rights
Governance	Financial status, operational performance, conflict metals investigation, major violation incidents
Operating status	Basic information, major customers, industrial competitiveness, product quality and services, production and equipment status, investment and product continuity planning
Region/Country	Geopolitical relations, local policies/regulations and economic development status, natural and anthropogenic disasters
Industry attributes	RBA Supplier Code of Conduct Survey, industry-specific risks
Product characteristics	Procurement value, categories of products supplied, use of hazardous substances





Sustainability Auditing and Counseling Improvement

Sustainability Risk Questionnaire (Written Assessment)

Based on our existing supplier assessment systems, PSMC has developed our ESG Management Self-Assessment Questionnaire (SAQ), which covers the five dimensions of Labor, Health and Safety, Environment, Ethics, and Management Systems, to carry out in-depth surveys on suppliers' implementation for various related issues. In addition to the questionnaire, suppliers are also required to provide related supporting documents such as management system certifications, etc. for the company's procurement unit to conduct analysis of survey results. Moreover, the unit will also examine suppliers' comprehensive performance in terms of quality, lead time, service, etc. to identify high-risk suppliers and formulate subsequent response measures. 100% of PSMC's Tier 1 critical suppliers took a written-format risk assessment survey in 2023. Of these, suppliers for five raw materials (chemical substances, special gases, photoresist, CMP slurry, and target materials) and contractors for related factory expansion operations under contracting companies, for a total of 24 companies, were further selected to complete the ESG Management Self-Assessment Questionnaire. The actual response rate was 100%.

2023 SAQ Results

Compliance rate	Risk Level	Improvement Actions	Number of Suppliers
Compliance Rate > 80%	Low Risk	-	19
70% < Compliance Rate < 80%	Moderate Risk	For non-compliant items, suppliers were required to propose improvement plans and complete rechecks	5
Compliance Rate < 70%	High Risk		0
Total			24

On-site Audits and Deficiency Improvement

With reference to the ESG Management Self-Assessment Questionnaire survey results and PSMC's Raw Material Supplier Management Measures/Contractor Evaluation and Management Rules, a sample of critical suppliers are selected as auditees for the current year's on-site audits based on indicators such as transaction frequency, procurement value, etc. and raw material suppliers' biannual evaluation results. ESG audits are carried out in forms including but not limited to on-site audits conducted by PSMC's procurement and related units, second-party audits (supplier audits/consultants), and third-party audits, or audits conducted based on the industry's accepted standards. For points of non-compliance, PSMC will analyze the deficiency causes with the suppliers, and propose suggestions for improvement. Suppliers are required to improve deficiencies and complete rechecks before specified deadlines. PSMC will also provide necessary guidance and on-site technical support in a timely manner. In terms of the written-format supplier assessments and on-site audits conducted in 2023, the goal achievement rate for auditees was 100%. Through PSMC's guidance, deficiencies identified in audits were all improved and rechecked before the specified deadlines and there was no major violations incidents occurred.

Item	2023 Performance
Total number of suppliers audited by written evaluation and on-site	104
Percentage of critical suppliers evaluated (%)	100
Number of suppliers assessed to have significant actual/potential negative impact	3
Percentage of suppliers with significant actual/ potential negative impacts that have discussed corrective actions/improvement plans (%)	2.88
Number of suppliers with significant actual/potential negative impact and consequent termination of cooperation	0

Supplier Engagement and Development

Based on our experiences in promoting sustainability (ESG) plans, PSMC always provides suppliers with suggestions on directions for ESG task implementation and required practical guidance. This helps them be aware of peer companies' ESG development status, so that they can continuously enhance their ability to achieve sustainable development. In addition, with such suggestions and guidance, suppliers can fully understand the plans and processes that PSMC has adopted for supplier ESG management. PSMC plans to work with suppliers in the future to initiate different projects that will help build up suppliers' ability to facilitate ESG tasks, thereby reinforcing PSMC's connection with suppliers' business development.

Item	2023	Target of 2023
Number of suppliers with building capacity	24	24
Percentage of critical suppliers (%)	23.08	-



2.3 Conflict Mineral Management

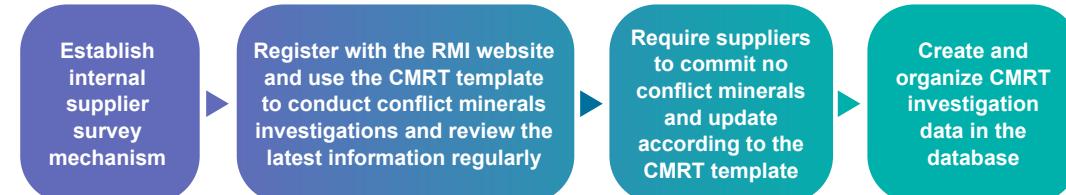
Tantalum, tin, tungsten, gold, and cobalt are essential minerals required for the manufacturing of electronic products. However, most of these minerals come from the Congo region and neighboring countries, where armed conflicts constantly occur, these minerals are thus called conflict minerals. To avoid using minerals from conflict-affected areas in product manufacturing processes, PSMC conducts precise supplier due diligence investigations, and also requires all suppliers for target materials and gases, with whom transactions have been conducted, to commit not to use materials or gases from upstream vendors/origin countries located in conflict-affected areas, in order to achieve the goal of 100% freedom from use of conflict minerals. PSMC also calls on all supplier partners who have business dealings with PSMC to declare that they will "not accept the use of metals from conflict-affected areas", as promoted by the Responsible Business Alliance (RBA). PSMC also requires raw material suppliers to comply with the following regulations to convey PSMC's No Conflict Mineral Use policy to their upstream suppliers and supply chain partners.

- Suppliers must fulfill social and environmental responsibilities
- Suppliers must ensure that their products do not use any minerals from upstream vendors/origin countries located in conflict-affected areas that have not been deemed qualified through third-party verification, nor minerals mined in poor working environment.
- Suppliers must disclose the sources of the metals/minerals they use, including tantalum, tin, tungsten, gold (3T1G), etc., and complete the investigation forms to implement PSMC's mineral origin investigations.

Conflict Minerals Management Measures

Types of Conflict Minerals	Management Measures
Tantalum, tin, tungsten, gold	Conduct Conflict Minerals Due Diligence Investigation and update related data on a yearly basis; irregularly review the Responsible Minerals Initiative (RMI) website for the latest information and require suppliers to complete the Conflict Minerals Reporting Template (CMRT) to ensure no use of conflict minerals.
Cobalt	Although the mineral has not yet been included in the scope of RMI's Conflict Minerals Reporting Template, PSMC continued to pay attention to updates to the Conflict Minerals Reporting Template. Once it is listed as a mineral for control and management, PSMC will firmly require our suppliers to implement control measures.

Conflict Minerals Due Diligence Process



PSMC follows conflict minerals reporting procedures in conducting our Conflict Minerals Due Diligence Investigations. We focus on suppliers whose materials contain tantalum, tin, tungsten, gold, or cobalt. In addition to assessing the necessity of such materials using each specific mineral, the investigations also check the origins of the suppliers' raw materials to ensure that they comply with the conflict minerals ethical and legal standards followed by PSMC. To effectively carry out due diligence, PSMC has completed registration on the RMI website, and adopts the Conflict Minerals Reporting Template (CMRT) for investigations. Detailed information about suppliers' raw material origins and manufacturing processes collected through the investigations can not only be used as a basis for mineral origin country checks, but can also be used for risk identification and guarantee of 100% of No Use of Conflict Minerals. Moreover, PSMC also provides the results obtained through the Conflict Minerals Reporting Template to customers as proof to confirm that PSMC's products do not use any minerals from upstream vendors or origin countries located in conflict-affected areas that have not been deemed qualified through third-party verification. The company also pays regular attention to updates on regulations and information released by RMI, to ensure the validity of our investigation procedures and their compliance with international standards. In 2023, a due diligence investigation on conflict minerals was conducted on 55 major suppliers. The investigation results were all in compliance with the requirements, confirming that 100% of PSMC's products do not use minerals from conflict areas.

Conflict Minerals Due Diligence Investigation



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 Management





Commitment to Sustainability · Environment

The direct and indirect impacts of climate change cannot be ignored. PSMC has set a variety of environmental management goals and plans; we continue to invest resources in research on energy/resource reuse efficiency improvement, and in reducing greenhouse gas emissions, chemicals use, and waste generation, all while expanding our business operations. The Company has a firm commitment to actively reducing the impact of our operations on the environment, and to providing eco-friendly green manufacturing services to customers.

Corresponding United Nations Sustainable Development Goals (SDGs)



Material Topics GRI Standards

GRI 201 : Economic Performance

GRI 302 : Energy

GRI 305 : Emissions



Energy
Management



Climate
Strategy

Corresponding Material Topics



Energy
Management



Climate
Strategy

Stakeholders who have priority reading

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





2023 Sustainability Performance Highlights

Two Leadership Scores

Earned two A- scores (Leadership) from CDP in the Climate Change Disclosure Project and the Water Security Disclosure Project

8,193 metric tons CO₂e

The overall carbon reduction in all fabs was 8,193 metric tons of CO₂e. More than 90 energy saving measures have been implemented, with energy consumption reduced by a total of 69,023.21 GJ.

23.41%

Total waste was 13,071 metric tons, showing a decrease of 23.41% compared with the previous year.

0

Number of violations of environmental regulations

88%

The overall average process water recovery rate in all fabs reached 88%. Five water use efficiency improvement projects have been implemented.

97.14%

The average removal rate of VOC exhaust reached 97.14%. Six air pollution improvement projects have been implemented.

12.16%

Total Scope 1 and 2 emissions were 589,995-metric tons CO₂e, showing a decrease of 12.16% compared with the previous year.

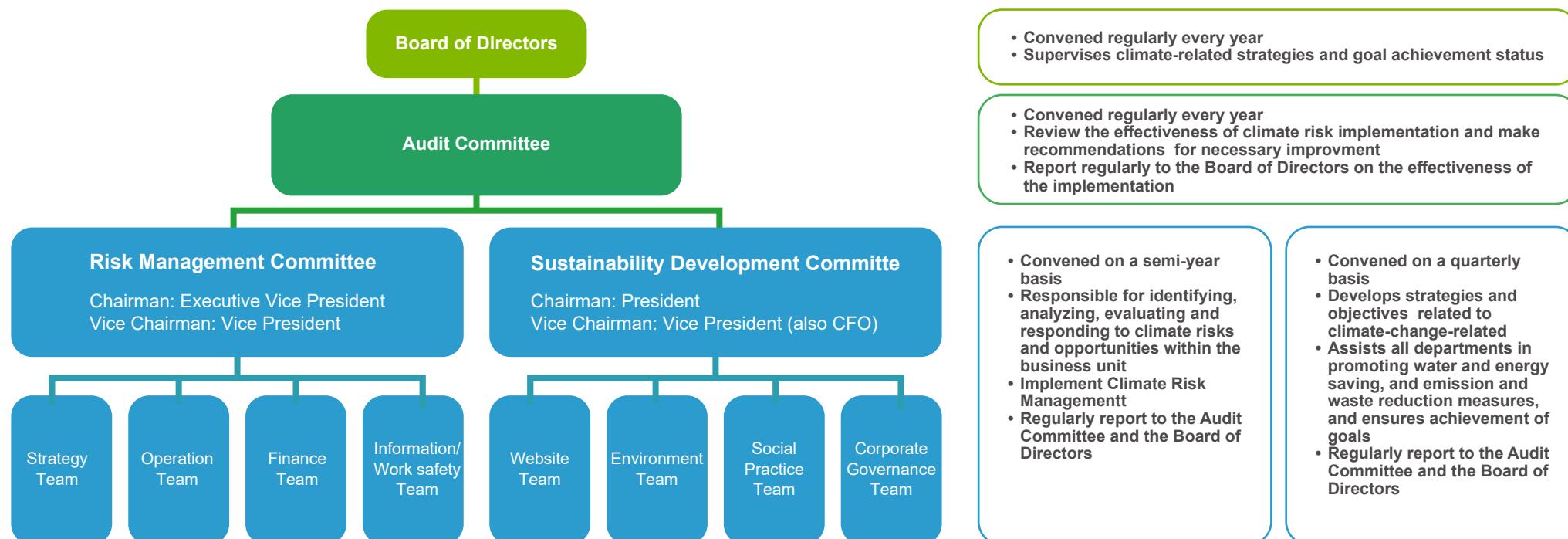


3.1 Climate Strategy

3.1.1 Climate Action

PSMC has introduced the Task Force on Climate-related Financial Disclosures (TCFD) framework to build a management structure to respond to climate risks and opportunities based on four major aspects: governance, strategy, risk management, indicators and goals, and identify potential risks and opportunities arising from climate change, and assess the actual impact and impact of climate issues on the company's business.

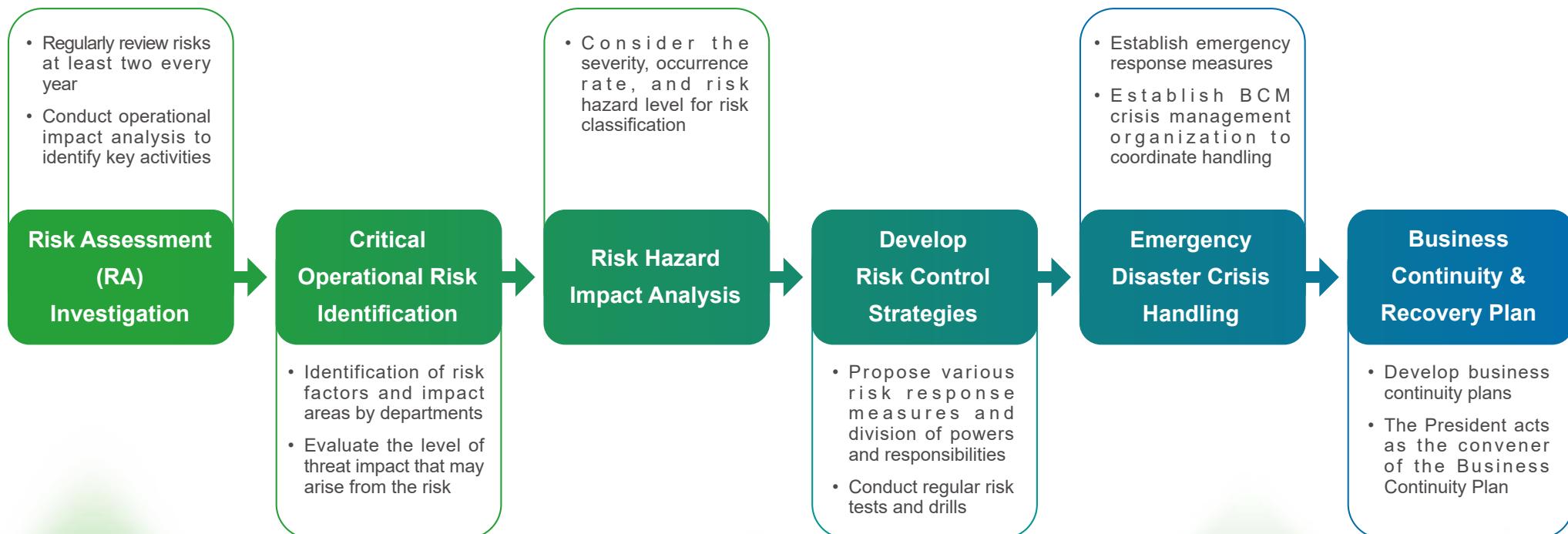
TCFD Governance Framework



Climate Risk Management Process

In order to reduce the impact of climate change risks, PSMC uses a risk assessment form to conduct risk assessments by key operating units of each department. Based on the risk identification results, the three aspects of potential impact degree, vulnerability and probability of occurrence are considered, and key encountered risks at the occurrence stages are sorted. At the same time, in order to reduce the impact of risks, corresponding risk control strategies are also developed, and risk assessments are clearly standardized and should be coordinated with the adjustment of the company's business and personnel, and must be reviewed at least every two years. In addition, through "establishing emergency response measures", when a risk disaster occurs, the heads of the responsible departments will carry out notification work in accordance with the factory disaster emergency response measures, and the crisis management team will coordinate the crisis handling and subsequent recovery work to maintain the company's continuous operations.

Risk Identification and Management Flow Chart

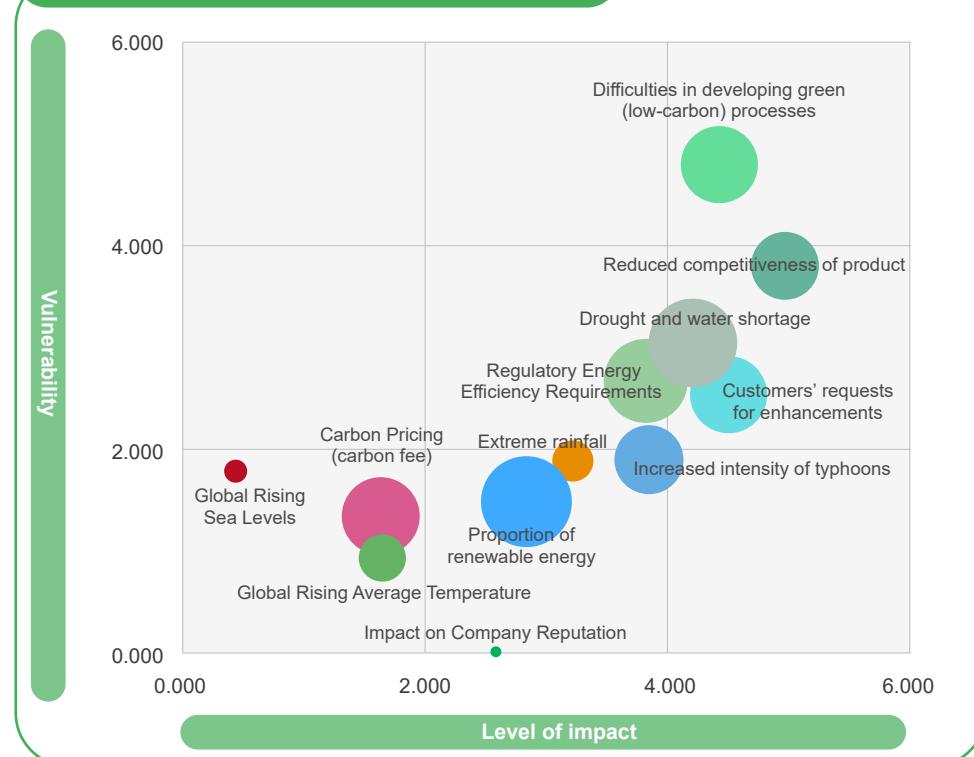




Climate Strategy

PSMC 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 level of impact of climate related risks and opportunities. The evaluation covers the entire value chain of PSMC. Based on the level of impact, vulnerability, control, and probability of occurrence that each risk and opportunity, and the characteristics of the scale for short-middle-long term period 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 PSMC's revenue or operations; vertical axis - vulnerability: PSMC'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 PSMC.

Climate Risk List

Type	Risk Items	Possible time of occurrence	Criticality	Risk assessment impact value chain scope		
				Upstream (Supply chain)	Operation	Downstream (Customer)
Physical Risk	Increased Intensity of Typhoons	Short Term	Medium	V	V	V
	Extreme Rainfall	Short Term	Low		V	V
	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 (Including current and emerging regulation)	Short Term	High		V	
	Proportion of Renewable Energy	Short Term	Medium		V	
	Carbon Pricing (carbon fee)	Medium Term	Medium		V	V
Transformation Risk	Customers' Requests for Enhancements	Medium Term	Medium		V	V
	Reduced Competitiveness of Products	Medium Term	High	V	V	V
	Difficulties in Developing Green (low-carbon) Processes	Medium Term	High		V	
	Impact on Reputation	Long Term	Low		V	V
Market						
Technology						

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

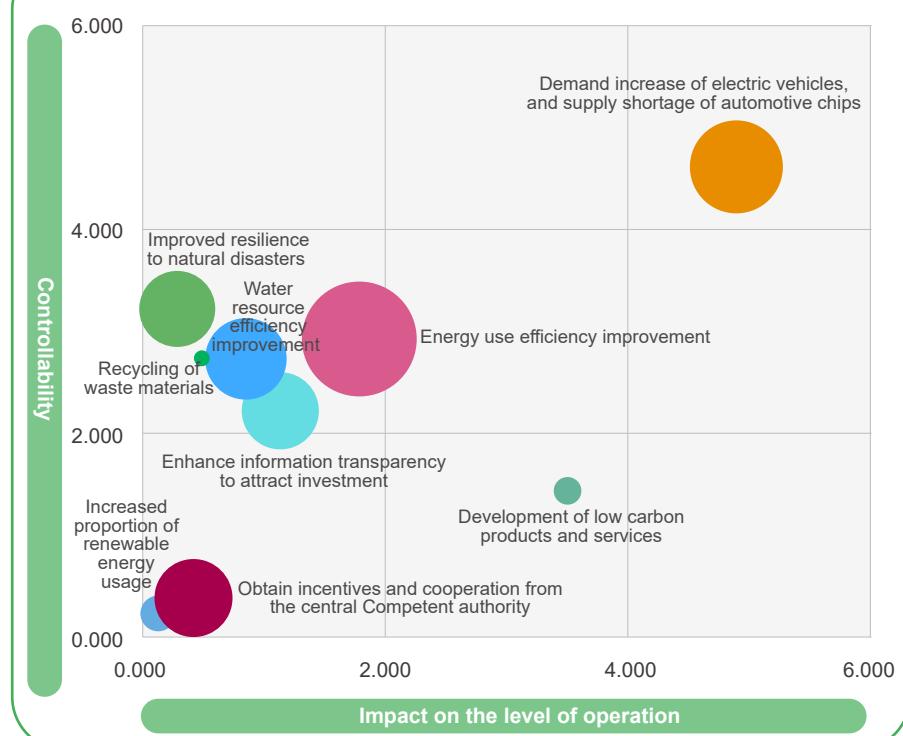




Key Climate Risks and Response Strategies

Risk Factor	Risk Description	Area of Impact (Service/strategy that will affect the company)	Response Strategy (Service/strategy that will affect the company)
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.	<ul style="list-style-type: none"> Increase of Operating Costs Operational Disruption Risk 	<ul style="list-style-type: none"> The plant can withstand about a 20% of water restriction, 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.	<ul style="list-style-type: none"> Increase of Operating Costs 	<ul style="list-style-type: none"> By the implement of the ISO 50001 energy management standard, PSMC 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).	<ul style="list-style-type: none"> Increase of Operating Costs Increase of Investment Costs 	<ul style="list-style-type: none"> Establish 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.	<ul style="list-style-type: none"> Decrease of Revenue 	<ul style="list-style-type: none"> Continuously understand customers' preference to switch to low-carbon products. Gather information on low-carbon product markets or technologies to develop response strategies.
Difficulties in developing green (low-carbon) processes	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.	<ul style="list-style-type: none"> Increase of Operating Costs Increase of Investment Costs 	<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	Risk assessment impact value chain scope		
				Upstream(Supply Chain)	Operation	Downstream(Customer)
Resource Efficiency	Water resource efficiency improvement	Short Term	High		V	
	Energy use efficiency improvement	Short Term	High		V	
	Recycling of waste materials	Medium Term	Medium	V	V	
Energy Sources	Increase the share of renewable energy	Medium Term	Medium		V	
	Obtain incentives and cooperation from the central Competent authority	Short Term	Medium		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 increases, and automotive chips are in short supply	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

Risk Factor	Risk 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.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> Operating Cost Savings 	<ul style="list-style-type: none"> Set a 1% of electricity savings usage reduction target each year, and continuously adjust the energy savings target on a rolling basis. 13% of reduction in electricity consumption per wafer area compared to the base year
Demand for electric vehicles increases, and automotive chips are in short supply	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	<ul style="list-style-type: none"> Increase revenue 	<ul style="list-style-type: none"> Customer planning for electric vehicle chip market technology products Development of process technology for power management chips related to electric vehicles Stabilize future revenue momentum by signing long-term prepaid automotive chips supply contracts with automotive manufacturers.



Scenario Analysis

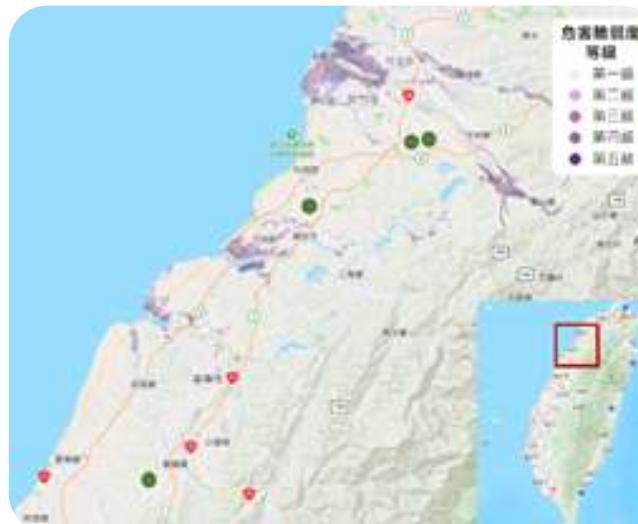
1. Physical Risk Scenario Analysis: Flooding & Landslide Disasters

(Operational Locations)

The frequency of extreme rainfall events has increased due to climate change. Heavy rainfall in a short period of time may contribute to floods as the volume of rainfall exceeds the capacity of public drainage systems, resulting in factory buildings and facilities being flooded. In addition, extreme rainfall may also cause landslides, mudslides, and other natural disasters. PSMC currently has two 8-inch fabs, three 12-inch fabs and one 12-inch fab that will be inaugurated in 2024. These fabs are all located in Taiwan's Hsinchu City and Miaoli County. According to the mid-century (2036–2065) RCP 8.5 climate scenario's flood and slope-land disaster risks, as simulated on the Climate Change Disaster Risk Adaptation Platform provided by the National Science and Technology Center for Disaster Reduction, all PSMC fabs will be faced with the lowest (level one) flood risk in that scenario (on a 40m grid scale). However, when the global temperature rises by 4°C under the RCP 8.5 scenario, based on the risks interpreted by the Geological Survey and the MOEA's Mining Management Agency, in the event of rock falls, clast-slides, rock mass-slides, and dip slopes, all PSMC fabs will be subject to level one to level three slope-land disaster risks

in that scenario (aerial inspection scale selection grid 5 kilometers)PSMC has considered the risks of extreme-climate-caused heavy rainfall and slope-land disasters as selecting sites for fab construction. The selected sites are all relatively high above areas subject to potential slope-land disasters, that is, at 100.8 meters above sea level; buildings' entrance floors have also all been elevated 1.2 meters above the surrounding road surface. Rainwater interception ditches have been set around buildings. There are also sump pits and pumps under the fab structures. When necessary, the lowest underground floor can be closed and used as a temporary water reservoir or flood detention layer to cope with flash floods. In addition, PSMC has formulated corresponding crisis event management plans and regulations to respond to a variety of possible emergencies, and carries out drills every year to review the effectiveness of the adopted countermeasures. An Emergency Response SOP has also been established, based on which emergency response taskforces will be activated in the event of disasters, to reduce impacts caused.

RCP8.5 Scenario Flooding Risk



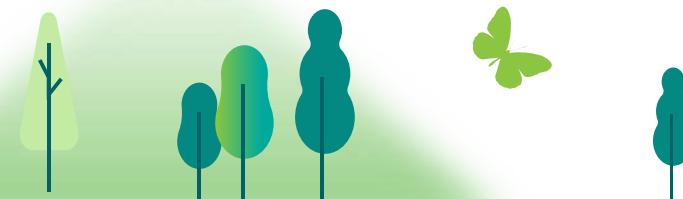
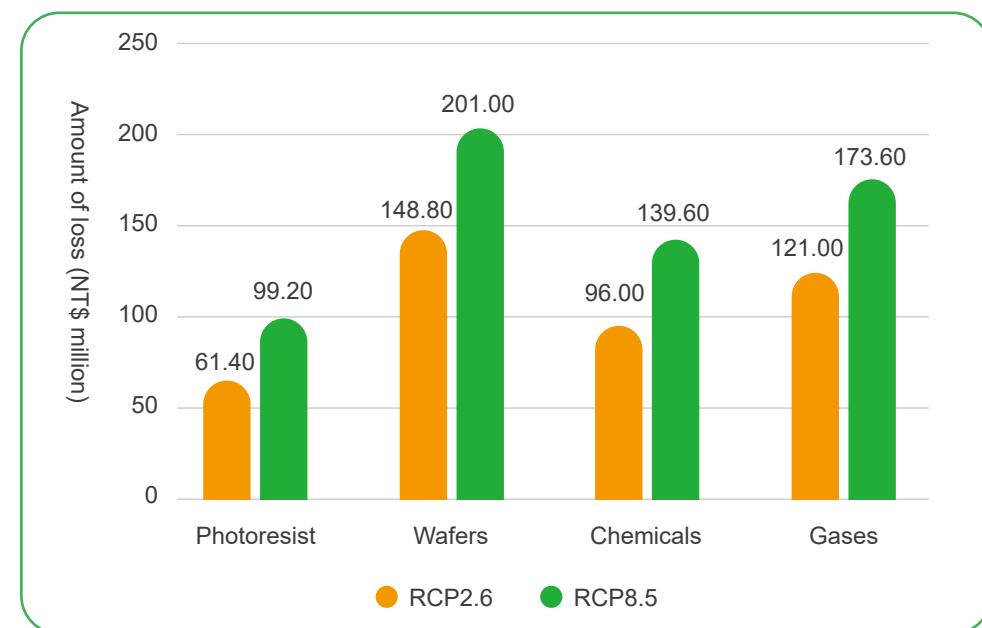
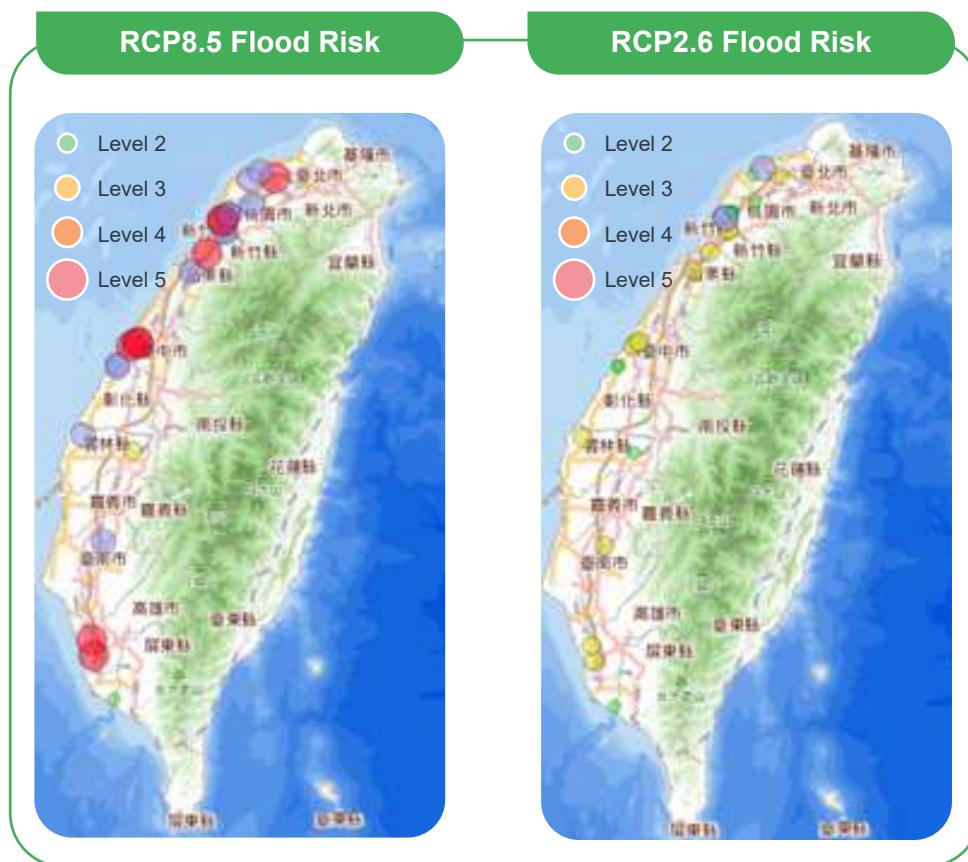
RCP8.5 Scenario Slope Disaster Risk



2. Physical Risk Scenario Analysis - Flood Disasters: Suppliers' Operating Sites

To assess the likelihood of supply chain disruption caused by impacts arising from suppliers' exposure to climate risks, PSMC has conducted identification of potential physical risks and disasters faced by our suppliers in Taiwan (including suppliers of photoresists, chemicals, packaging materials, wafers, and gases). According to the mid-century (2036–2065) RCP 2.6 and RCP 8.5 climate scenarios' flood and slope-land disaster risks simulated through the Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP) provided by the National Science Council, the preliminary identification results showed that currently none of PSMC's suppliers will be faced with slope-land disaster risks under those scenarios. In terms of flood risks under the RCP 2.6 scenario, the main risk

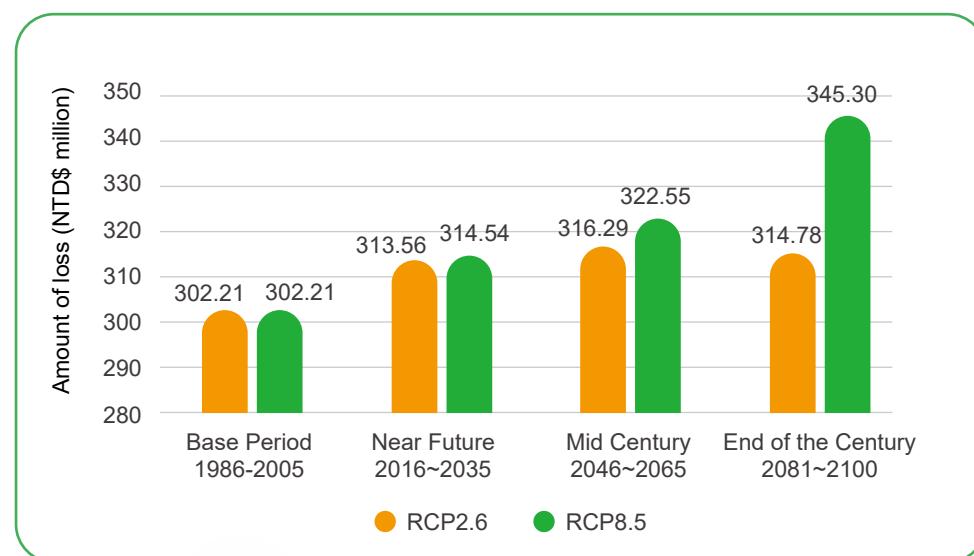
level is level three; no highest-level (level five) risk will occur. When it comes to the RCP 8.5 scenario, the main risk level is level four; nine suppliers will be faced with the highest-level (level five) risks. PSMC has estimated the possible risk exposures under a variety of scenarios, based on the degree of hazards, vulnerability, and possible impact when floods occur. The results are shown in the graph below. With the aim of reducing the risk of supply interruptions and in the hope of mitigating the risk of raw material shortages, PSMC has introduced a substitute supplier system for critical suppliers. Statistics show that among current suppliers in Taiwan, the risk impact among suppliers with low substitutability, their risk impact accounts for about 15% of the total supplier interruption risk exposure value.





3. Physical Risk Scenario Analysis: Drought and Water Scarcity

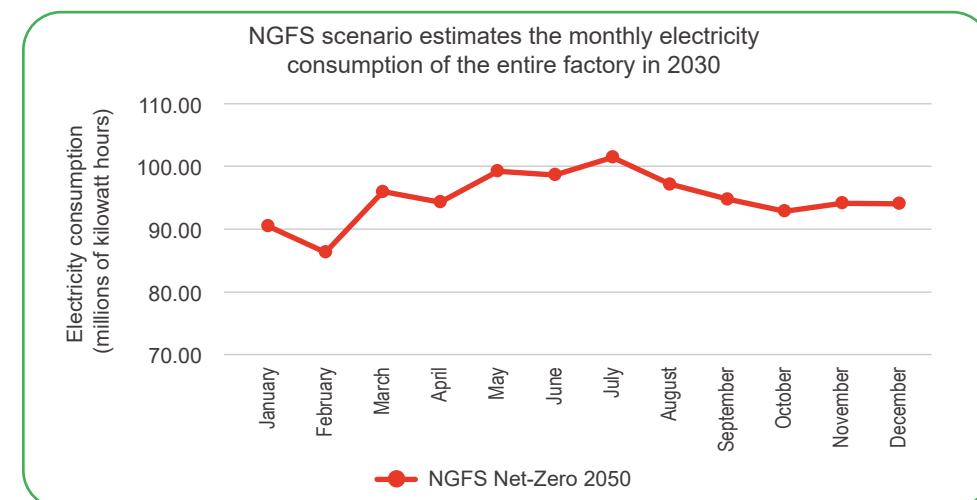
With uneven distribution of precipitation caused by extreme climate, a long-term lack of rainfall will not only contribute to water shortages, but will also put businesses under water restrictions enforced by the government. This will pose significant impacts on PSMC's manufacturing processes and shipping schedules. PSMC collects statistics on the maximum water shortage in past water restriction events to estimate the possible impact of water shortage events. It also conducts simulations based on the "Taiwan Climate Change Estimation Information and Adaptation Knowledge Platform Project" (TCCIP) of the National Science Council. The daily change rate of continuous rainfall without rain in the near future, mid-century and end of the century in the RCP 2.6 and RCP 8.5 scenarios is used to estimate the production capacity reduction and financial losses that may be caused by changes in water shortage risk for each scenario in the future.

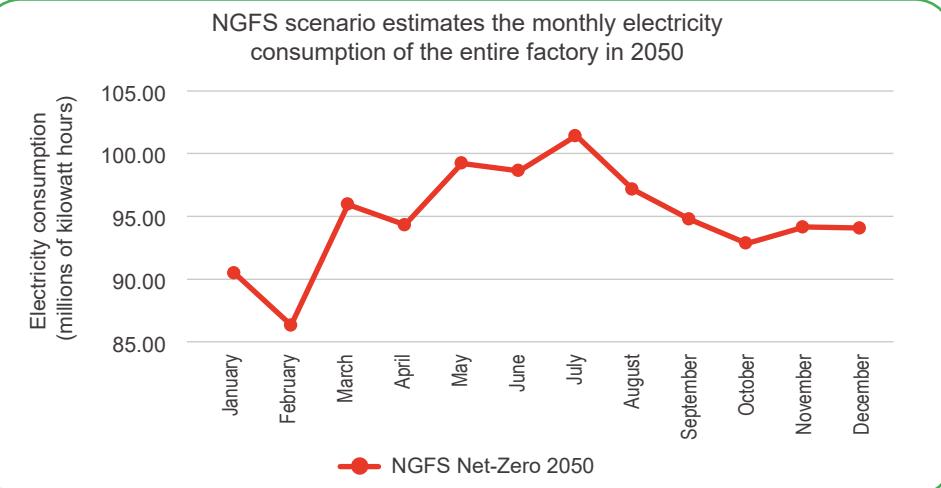


4. Physical Risk Scenario Analysis: Rising Global Temperatures

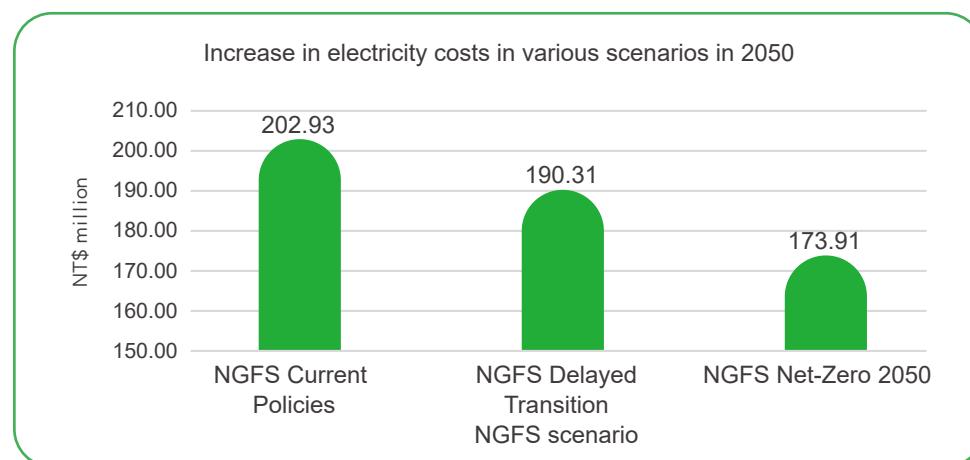
In 2023, PSMC's energy use is mainly electricity, accounting for about 88.40% of the total energy use. Further analysis of the electricity consumption data found that direct air conditioning electricity consumption accounts for about 1/3 of the entire plant's electricity consumption, and other electricity consumption is for manufacturing processes, fixed electricity consumption and the other static factors. To this end, PSMC will continue to promote various power-saving programs to improve the energy efficiency of air-conditioning and process equipment and reduce dependence on electricity use.

PSMC selected the climate scenarios of the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) to evaluate the three scenarios: Current Policies, Delayed Transition, and Net Zero 2050 for Taiwan's greenhouse gas emission path and future average temperature rise in each month. In addition, based on the power consumption data of the entire factory from 2017 to 2021, PSMC used model simulation to evaluate the correlation between the increase in the current average outside air temperature and power consumption, and selected the direct correlation dynamic variable outside air average temperature and production capacity INPUT chip. After using the multiple regression equation, the simulated factory power consumption change equation is obtained as the average outside air temperature increases. Combined with the NGFS scenario, the increase in electricity consumption in 2030 and 2050 compared to 2020 in each month under different scenarios is estimated. The estimated electricity consumption of the entire plant in 2030 and 2050 is as follows.





Under the Current Policies scenario, which is the most severe heating scenario, the electricity cost of PSMC in 2030 is estimated to increase by approximately NT\$25 million compared with the electricity cost in the base year of 2020 based on current electricity charges and the electricity costs in 2050 will increase by approximately NT\$203 million.



5. Transformation Risk Scenario Analysis: Carbon Fee

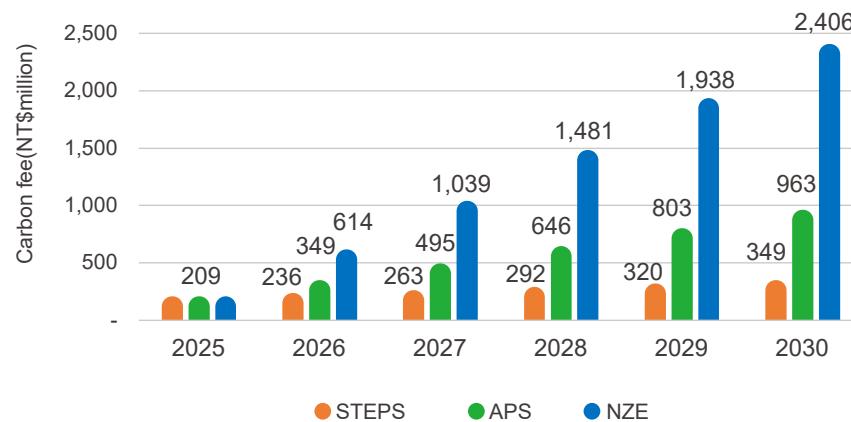
Net-zero emissions have become an important goal of climate change, and Taiwan is also expected to impose a carbon fee in 2025. In order to assess the impact of future carbon fee collection on PSMC and under the IEA World Energy Model the Stated Policy Scenario (STEPS), the Commitment Target Scenario (APS) and the 2050 Net Zero Emissions Scenario (NZE), PSMC calculate the carbon fee and evaluate the carbon reduction path in each scenario to understand the company's future greenhouse gas emissions and carbon fee changes in each scenario before setting the carbon reduction target and after setting the company's target scenario (please refer to the details below) picture). Among them, the company goals set by PSMC include the emission intensity of greenhouse gas Scope 1 and 2, the company's production targets and the expected introduction period of green electricity.

Scenario	Scenario I - STEPS	Scenario II - APS	Scenario III - NZE
Scenario Description	Development under established policies, global average temperature in 2100 will be 2.6°C higher than pre-industrial.	All the commitments made by various countries were fulfilled as scheduled, and the global average temperature in 2100 will be about 2.1°C higher than pre-industrial.	Assess global progress towards achieving the 1.5°C goal and other energy-related sustainable development goals.
Carbon Fees	2030: NT\$300/ton (Taiwan is expected to impose a carbon fee) 2050: US\$53/ton	2030: US\$40/ton 2050: US\$160/ton	2030: US\$90/ton 2050: US\$200/ton
Carbon Reduction Path	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%

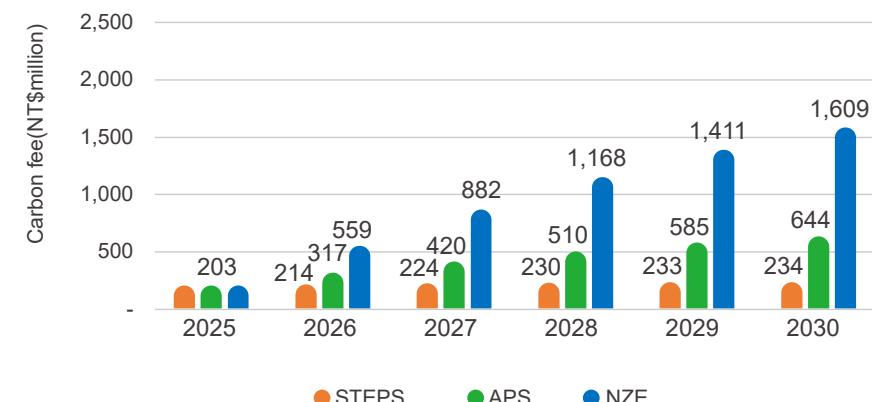


PSMC's greenhouse gas emissions are mainly Scope 2 indirect energy emissions. In response to the trend of net-zero emissions, the company continues to promote a number of energy-saving measures every year, and is committed to improving production line efficiency and reducing carbon emissions per unit product. In green energy promotion, it aims to reach RE30 by 2030, reduce indirect energy emissions through the introduction of green electricity, and assesses that it will continue to increase the use of renewable energy in the future to gradually achieve the net-zero emission goal. Looking at the NZE scenario with the highest carbon fee collection, after the company sets a carbon reduction target, it is expected to pay approximately NT\$797 million less in carbon fees in 2030 than if it had not set a reduction target. The analysis results make PSMC realize the importance of setting carbon reduction targets and actively taking carbon reduction actions. It will plan more aggressive reduction targets and corresponding actions to reduce the substantial financial impact of carbon fee collection.

Carbon fee for each scenario
before the company sets carbon reduction targets



Carbon fee for each scenario
after the company sets carbon reduction targets





Indicators and Objectives

In order to effectively manage implementation progress and effectiveness in climate change management plans, PSMC has developed a variety of climate management indicators, and consults trends and policies/regulations around the world to make adjustments on a rolling basis. Moreover, by regularly checking goal achievement status, the potential impacts of climate change on the organization's operations are continuously reduced, and the organization's climate resilience is improved.

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 calculate the emissions and disclose the related data in accordance with ISO 14064-1, refer to Chapter 3.1.2 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, refer to Chapter 3.2, Chapter 3.3 and Chapter 3.4 for details.

Climate Related Aspects	Indicators	Objectives
Resources Usage	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	Total power consumption Power consumption per wafer area	<ul style="list-style-type: none"> Save 1% of electricity per year 13% (short-term), 15% (medium-term), 20% (long-term) reduction in electricity consumption per wafer area compared to the base year (2015)
Renewable Energy Usage	Proportion of renewable energy facilities Proportion 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) Construction of renewable energy facility >8% (medium-term) 30% reached in renewable energy usage (long-term)
Greenhouse Gas Emissions	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	Waste recycling rate Number of waste reduction cases	<ul style="list-style-type: none"> Waste recycling rate ≥ 91% (short-term); ≥ 92% (medium-term); ≥ 93% (long-term) Waste reduction projects: 35 projects/year (short-term); 40 projects/year (medium-term); 50 projects/year (long-term)

Note: Short Term - 2024, Medium Term - 2025, Long Term - 2030



3.1.2 Greenhouse Gas Emissions and Management

Greenhouse Gas Inventory and Reduction

PSMC conducts greenhouse gas inventory every year in accordance with the ISO 14064-1 procedure, among the Taiwan factory has been verified by a third-party impartial inspection unit to fully understand the overall greenhouse gas emission sources and emissions, and set various reduction targets and management measures accordingly in order to improve greenhouse gas reduction efficiency. The total emissions of greenhouse gas scope 1 and 2 in 2023 are 589,995 metric tons of CO₂e, a decrease of 12.16% compared to 2022, achieving the annual reduction target of 1%, of which direct emissions are 49,145 metric tons of CO₂e, a 45.21% decrease compared to 2022. However, in 2023, emissions per unit product increased due to a decline in capacity utilization. From the results of the 2023 annual greenhouse gas inventory, it can be seen that the overall emission hot spots of PSMC focus on the fluorine-containing greenhouse gases used in the scope 1 process and the use of purchased electricity in scope 2. The aforementioned two scopes accounted for 94.71% of the total emissions. Therefore, PSMC has listed the reduction of fluorine-containing greenhouse gases and the reduction of purchased energy as key projects in its greenhouse gas reduction plan.

Scope 1 and 2 greenhouse gas emissions

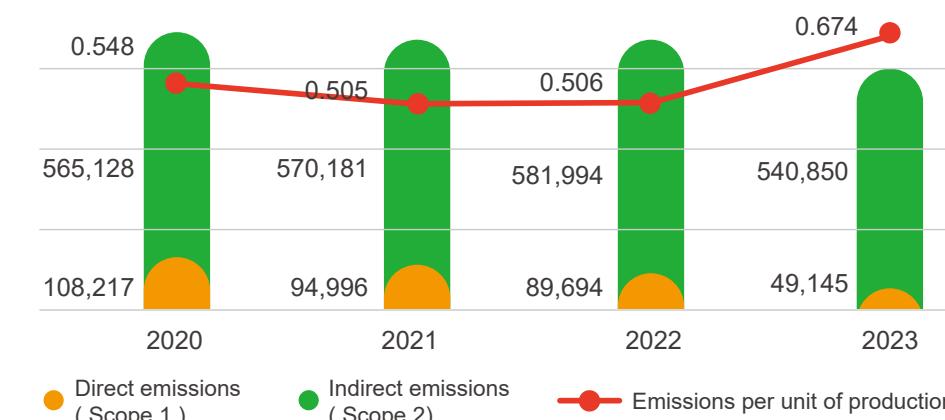
Unit: metric tons CO₂e

Method	Year	2020	2021	2022	2023
Regional Coefficient Method		673,345	665,177	671,688	589,995
Market Coefficient Method		673,345	665,177	671,688	583,499

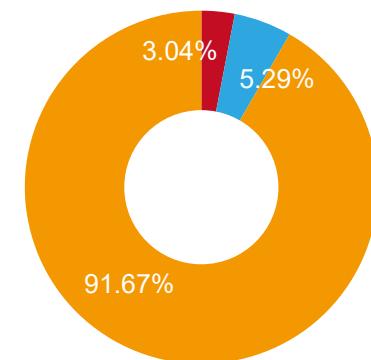
Note: The greenhouse gas emissions in 2023 cover PSMC and its consolidated financial reporting subsidiaries.

Scope 1 and Scope 2 greenhouse gas emissions

Emission Unit: Metric tons of CO₂e
Unit output emissions: kg CO₂e / cm²



Proportion of Scope 1 and 2 greenhouse gas emissions



Scope 1
● Fluorinated greenhouse gases used
in the manufacturing process
● Other

Scope 2
● Indirect greenhouse gas emissions
from purchased energy sources

Note 1: The greenhouse gas emission coefficient mainly refers to the Greenhouse Gas Emission Coefficient Management Table Version 6.0.4 published by the Climate Change Agency of the Ministry of Environment. The electricity carbon emission coefficient is calculated using 0.495kg CO₂e/kWh as 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 Fifth Assessment Report (2013)" edition.

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 order to expand the completeness of greenhouse gas inventory and understand the emission situation of the value chain other than its own operations, PSMC also follows the procedures of ISO 14064-1:2018 to conduct Scope 3 inventory and obtain third-party external verification. The total emissions of greenhouse gas Scope 3 in 2023 was 171,863 metric tons of CO₂e, a decrease of 19.57% compared to in 2022, achieving the annual reduction target of 1%. The inventory results show that in Scope 3, fuel and energy-related activities and purchased goods and services are the main emission hotspots. In the future, PSMC will continue to strengthen discussions with value chain partners through the greenhouse gas inventory process, expand the influence of climate strategies and create cooperation opportunities, and realize the sustainable vision of a low-carbon value chain.

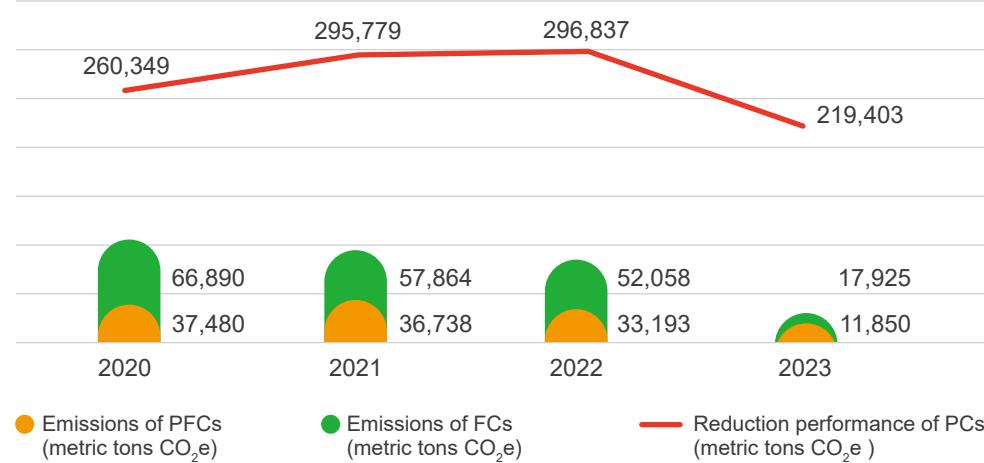
Indirect greenhouse gas emissions in Scope 3 for 2023

Item	Source of calculation	Greenhouse gas emissions (metric tons CO ₂ e)
Upstream Transportation Distribution	Carbon emissions from the transportation of raw materials from the suppliers to the plant.	470
Downstream Transportation Distribution	Carbon emissions generated from the transportation of produced wafers from the plant to the customer's designated location.	6
Staff Commute	Carbon emissions from company transportation vehicles.	485
Business Travel	Carbon emissions from staff travel by public transportation.	38
Purchased Goods and Services	Carbon emissions from purchased primary raw materials and auxiliary raw materials in the manufacturing process.	57,194
Fuel and energy-related activities (not included in Scope 1 or Scope 2)	Carbon emissions from the use of fuels and energy sources at the plant calculated by subtracting the usage from the entire life cycle.	112,782
Waste generated from business operations	Carbon emissions from waste treatment and transportation at the plant.	888
Total		171,863

Note: Coefficients are quoted from Carbon Footprint Information Platform of the Ministry of Environmental, and business travel are additionally quoted from the High Speed Rail Transit Service Carbon Footprint.

In order to reduce the fluorine-containing greenhouse gases used in the manufacturing process, in addition to continuous source management and evaluation of material replacement, we are also committed to improving the processing efficiency of end-of-pipe pest control devices or replacing old equipment, hoping to achieve the reduction of perfluorinated compound emissions in the manufacturing process with a rate of 90% by 2030 for the long-term goal. In 2023, all units will actively promote the replacement of old process exhaust gas treatment equipment with new ones, increase the treatment range of process exhaust gas, and install high-efficiency process exhaust gas treatment equipment in new machines and other actual reduction plans. The total greenhouse gas emissions of fluorine (PFCs) are 11,850 metric tons CO₂e, and the total greenhouse gas emissions of fluorine-containing (FCs) are 17,925 metric tons CO₂e. The emissions of both compared with 2022, have decreased by 60%.

Emissions and reduction performance of Perfluorinated (PFCs) and fluorinated (FCs)



Note 1: Reduced gas emission types include hydrofluorocarbons, perfluorocarbons, SF6, and NF3.

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	2020	2021	2022	2023
PFCs emissions (kg PFC)	5,088	4,997	4,539	1,809
PFCs emissions (metric ton CO ₂ e)	37,480	36,738	33,193	11,850
Unit product PFCs emissions (kg PFC/metric ton of production)	23.2	21.3	19.2	11.6

2023 Fluorinated Greenhouse Gas Reduction Effectiveness Statement

Fab	Program Name	Implementation Method	Reduction Effectiveness (metric tons CO ₂ e)
P1/2	Increase the treatment range of process exhaust gas	The adsorption process exhaust gas treatment equipment is connected in series to the PFC process exhaust gas treatment equipment to improve the PFC exhaust gas treatment efficiency.	582
P3	Newly installed process machines using fluorine-containing gas in the factory are equipped with high-efficiency process exhaust gas treatment equipment	The newly installed fluorine-containing gas processing machines in the factory are all equipped with high-efficiency process exhaust gas treatment equipment, and the number installed is 2.	1,444
8A	Replacement of on-site process exhaust gas treatment equipment	For etching production machines, a total of 5 combustion process exhaust gas treatment equipment were added after the production machines shared the process exhaust gas treatment equipment.	8,334
8B	Newly installed fluorine-containing gas processing machines in the factory are equipped with high-efficiency process exhaust gas treatment equipment	The newly installed process machines using fluorine-containing gas in the factory are all equipped with high-efficiency process exhaust gas treatment equipment. The number of installed machines is 2.	453
Total			10,813

3.1.3 Environmental Return on Investment

In order to measure the investment benefits of environmental protection, PSMC calculates the return on environmental investment every year and sets a target of more than 6%. In recent years, the return on environmental investment has remained stable at above 6%. However, due to the addition of new P5 Tongluo plant equipments in 2023, the amount of capital investment has increased significantly, resulting in a decrease in the return on environmental investment to 1.43% in 2023.

Unit: NT\$

Item	2020	2021	2022	2023
Capital Investment	417,001,265	206,513,454	229,373,276	4,178,491,273
Operation Expenses	517,151,715	496,423,956	637,849,901	661,360,764
Total Expenses(=Capital Investment+ Operating Expenses)	934,152,980	702,937,410	867,223,177	4,839,852,037
Cost Savings、Cost Avoidance、Income、Tax Incentives, etc.	58,411,271	53,945,581	52,385,332	69,355,194
ROI (%)	6.25%	7.67%	6.04%	1.43%
Operation Site Coverage Rate (%)	100%	100%	100%	100%



3.2 Energy Management

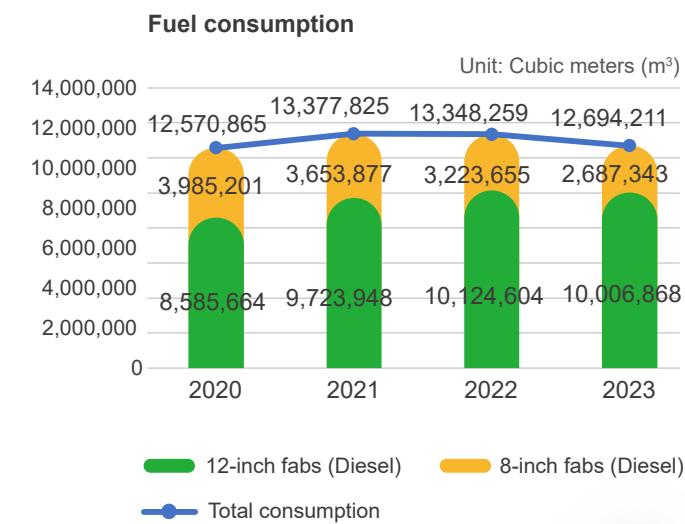
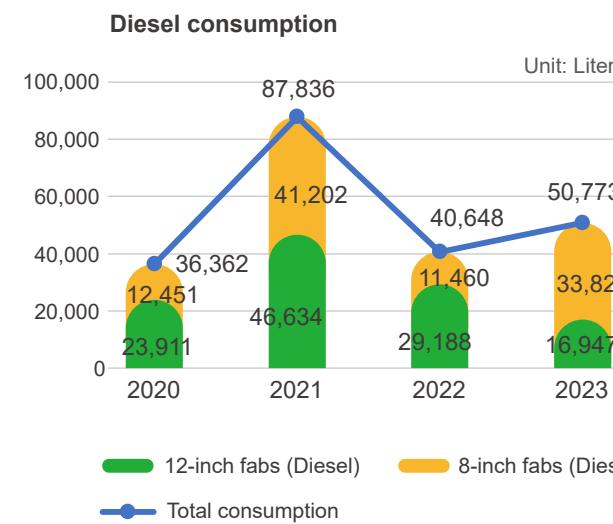
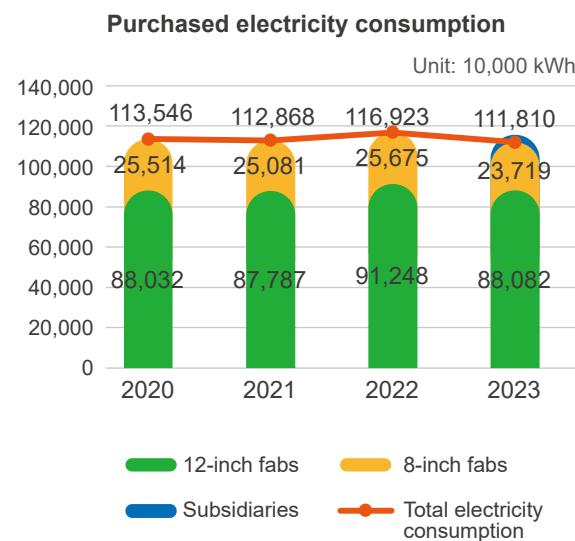
3.2.1 Energy Policy and Management

PSMC has an "Environmental Safety and Health Policy" in terms of energy management and has passed the ISO 14001 environmental management system verification. In addition, in order to comply with the introduction time and the new edition announcement, it has fully introduced the ISO 50001 energy management system in 2021 to analyze energy consumption efficiency and pursue the effective use of energy, and implement regular verification operations by third-party impartial inspection agencies to ensure the effectiveness of the management system, so that the performance and culture of energy management can gradually become deeper and stronger. In addition, PSMC has set an annual energy saving target of 1% or more, and provides incentives through the proposed improvement system and CIP competition to encourage employees to take the initiative to propose recommendations around energy savings, climate response measures, productivity improvements, and work efficiency. At the same time, PSMC is committed to continuously carry out and improve the following tasks and promote management plans based on this 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
- Provide employees with education and training related to energy systems and energy efficiency to enhance their awareness of energy conservation and equip them with the ability to discover and continuously improve energy efficiency.

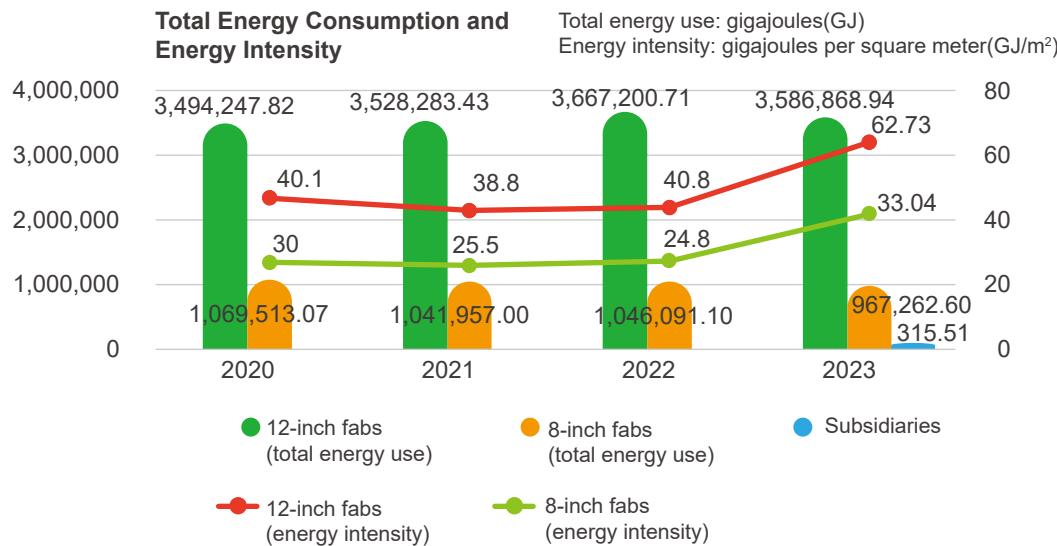
Energy Resources Consumption

PSMC's energy usage is mainly composed of purchased electricity, accounting for approximately 88.38% of the overall energy consumption. The usage statistics of various energy resources are as follows:





Unit: Gigajoules (GJ)

Total Energy Consumption and Energy Intensity**Energy Consumption in 2023**

Electricity	Purchased electricity	4,025,176.07
	Purchased renewable electricity	47,250.00
	Self-generated renewable electricity	1,993.97
Natural Gas		478,241.71
Diesel		1,785.30
Total Energy Consumption		4,554,447.05

Note 1: Energy heating value: The heating value of purchased electricity: 3,600 gigajoules/million degrees; converted using the coefficients in the "Greenhouse Gas Emission Coefficient Management Table Version 6.0.4" of the Climate Change Administration of the Ministry of Environment. The coefficients used for natural gas and diesel are 9,000 kcal/cubic meter and 8,400 kcal/liter respectively.

Note 2: Calculated as 4.186 kilojoules per kilocalorie

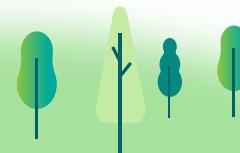
Note 3: The scope of coverage is PSMC and its consolidated reporting subsidiaries, and the subsidiaries only use purchased power for energy.

Note 4: Renewable electricity is solar photovoltaic.

Annual Energy Consumption Statistics

	Item	2020	2021	2022	2023
Non-Renewable Energy Consumption	Non-renewable fuels	132,255	140,831	140,088	133,341
	Purchased non-renewable energy (electricity)	1,135,456	1,128,680	1,169,228	1,118,104
	Total	1,267,711	1,269,511	1,309,316	1,251,445
Renewable Energy Consumption		0	0	0	13,679
Data coverage rate (%)		100%	100%	100%	100%

Note: Data statistics covers PSMC and its consolidated reporting subsidiaries.



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. 2023 saw the implementation of about 90 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 69,023.21 gigajoules (including electricity, diesel and natural gas) and 8,193 metric tons of CO₂e compared to the previous year. The energy saving rate of the entire plant is 1.90%, 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
P1/2	31,188.47 GJ	1.24%	<ul style="list-style-type: none"> Clean the plate heat exchangers of the Process Cooling Water (PCW) system to reduce chiller units' energy consumption. Adjust water temperature of cooling towers to reduce water chillers' energy consumption. Turn off not-in-use Nova measuring instruments to save energy consumption. Replace old air compressor centrifugal units with new ones to improve efficiency.
P3	12,724.59 GJ	1.10%	<ul style="list-style-type: none"> Since the plant facilities can supply cooling water for equipment/machinery units, the TEL Chiller has been shut down. In order to reduce the standby power consumption of the leakage protection circuit breaker (ELCB), it is closed for use. Add variable-frequency drives (VFDs) to high-vacuum units to reduce electricity consumption.
8A	14,883.44 GJ	2.33%	<ul style="list-style-type: none"> Replaced old pumps in Chiller Compressor 1000RT No. 3, 7, and 9 to improve efficiency. Replaced Chiller Compressor 250RT No.1/2 with a new Level 1 energy-consuming machine Replaced equipment machines of Dry Pump with high-efficiency ones to save energy consumption. Installed solar power generation equipment on the top of floor.
8B	10,226.71 GJ	2.93%	<ul style="list-style-type: none"> Lowered MAU (Make-up Air Unit) system's outlet air temperature to reduce hot water volume and cleanroom heat load. The thin film machine MGX53/MIX01/DCXG1 Dry Pump was replaced with an energy-saving pump Static pressure adjustment in clean room by reducing the frequency of windmill operation to reduce power consumption. The temperature of the air outlet from the outside air conditioning box is lowered to reduce the amount of hot water and electricity usage.

Invest in innovation · reduce energy consumption

Intelligent Chiller Water System Operation Management

In order to effectively manage energy usage efficiency, PSMC has also actively expanded intelligent energy management in recent years. Taking 8A fab as an example, it has introduced the ISO 50001 energy management system in 2021 and installed Digital Panel Meter for major energy-consuming equipment in the factory in the following year through the power monitoring system combined with system big data to promote relevant energy-saving measures. The electricity consumption of the chiller water system accounts for 32% of the total electricity consumption of the facility system. Therefore, in order to improve the intelligent management of the chiller water system, and with the power consumption of the facility accounting for 55% of the total power consumption of the whole plant, the newly developed chiller system optimization technology is used to assess and improve energy-saving for the existing factory machines of chiller compressor, chiller water pump, cooling water pumps, warm water pumps and related existing software and hardware. Through intelligent management and use of renewable energy, low-carbon manufacturing services are provided to customers, and sustainable production continues to move towards the goal of net-zero emissions.

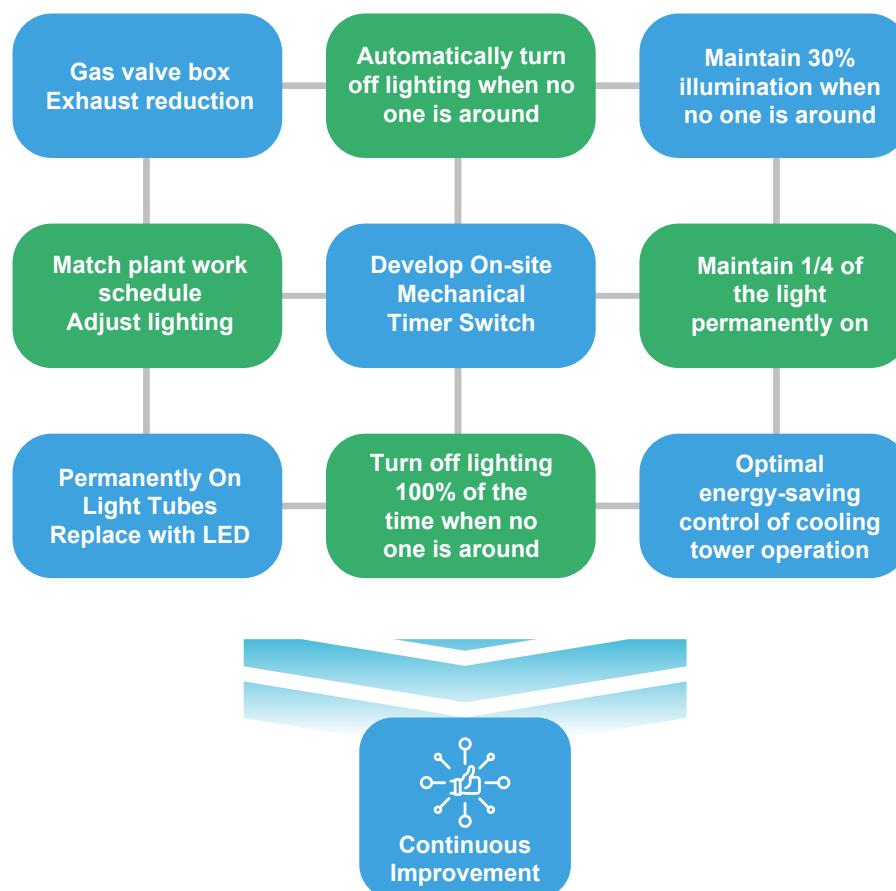
Intelligent Air Compressor Operation Management

In addition to the intelligent chiller water system, PSMC has also developed and introduced AI technology in an industry-university cooperation model with Professor Zhang Guohao of Tsinghua University starting in 2022, and apply it to energy-consuming factory air compressor systems, in addition to health-predictive air compressors to avoid excessive energy consumption, it can also flexibly and intelligently schedule the operation of multiple air compressor units to achieve overall energy saving effects. After importing the AI model, the health of the air compressor can be monitored in real time, and the machine maintenance can be performed more accurately to avoid abnormal energy consumption. In the energy saving part, we aim at optimal energy consumption and construct an optimal model of air compressor unit configuration, which can make optimal energy consumption adjustments in real time and create a new intelligent control system for air compressor units. The energy saving performance will be improved significantly.



Basic Energy Saving Solutions for Factory Area

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 2022, PSMC established a Green Energy Team, in charge of green energy procurement planning and solar power generation facility construction to diversify energy use, reduce greenhouse gas emissions, and fully prepare for future legal requirements. In 2023, the construction of 0.5MW solar photovoltaic system and the purchase of 10.5MW green power certificates for the P1/2 plant and the 8A plant have been completed, generating a total of 13,373 renewable energy certificates.

Renewable Energy Goals

Short Term Goals (2024)

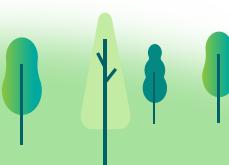
- Completed 2024 green power certificate purchase of 10.5MW
- 0.4MW solar photovoltaic system installation at P5 plant (expected to be completed in November 2024)

Medium Term Goals (2025)

- The installation capacity of large electricity users will achieve with the early bird special of 8% (11 megawatts (MW)).

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 process water, there is also air-conditioning water to maintain the operation of the clean room, washing water required to treat process waste gas, and the rest is water for domestic use in the factory.

Due to the special needs of the semiconductor manufacturing process, tap water or process recycled water must be obtained through appropriate treatment procedures to meet usage standards. The usage of ultrapure water in 2023 will be 8,215,560 cubic meters, and the reduction rate of pure water usage is 6.75%. , has achieved its annual commitment to reduce the target by 1%, and the ultrapure water usage data covers 100% ultrapure water usage in all factories. After the establishment of the reclaimed water plant in the park, the entire company will use 750 cubic meters per day (CMD) of reclaimed water (P1/2: 500CMD, P3: 250CMD), in response to the government's policy of actively promoting the recycling and reuse of reclaimed water.

In order to improve the efficiency of water resource use and ensure the stability of water intake, PSMC has promoted various management plans with the following work items as the core, and deepened the management results year by year:

- The Manufacturers Association held a water resources communication meeting with the Water Resources Department to ensure the consistency of management objectives between management authorities and enterprises.
- 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 Hsinchu City Keya Water Resources Center to carry reclaimed water
- Provide employees with water resource efficiency improvement and other water resource-related education and training to enhance employees' awareness of water conservation and equip them with the ability to optimize process water efficiency

Total Water Intake Volume

Subsidiaries
210
3%

8-inch fab
1,769
27%

12-inch fab
4,603
70%

Unit: million liters

Total Discharge Volume

Subsidiaries
210
5%

8-inch fab
1,185
27%

12-inch fab
3,004
68%

Unit: million liters

Water Intake Statistics

Unit: Million liters

Item		2020	2021	2022	2023
Water Intake Volume	Taken from a third party - Taiwan Water Corporation	6,156.25	6,030.55	6,359.99	6,582.31
Discharge Volume	Discharged to a third party	4,011.90	4,040.84	4,359.01	4,399.70
Total Water Consumption		2,144.35	1,989.71	2,000.98	2,182.61

Note1: Total water intake = tap water + recycled water (condensate, rainwater), tap water intake is based on the water bill.

Note2: The discharge volume is the actual volume of water measured by the flow meter in the plant.

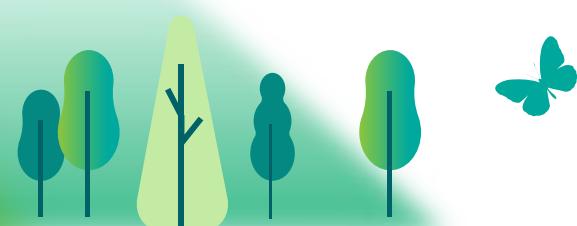
Note3: Data covers PSMC and its subsidiaries included in the consolidated financial statements.

Note4: The water resources pressure in the covered areas are all Low-Medium, and the water quality is fresh water ($\leq 1,000 \text{ mg/L}$ total dissolved solids).

Ultrapure Water Usage Statistics

Unit: Cubic meter

Ultrapure Water	2020	2021	2022	2023
Ultrapure Water Usage	8,740,283	8,765,869	8,810,525	8,215,560
Data Coverage Rate	100%	100%	100%	100%



3.3.2 Water Reclamation Management

In recent years, climate change has affected the normal water supply in factories. PSMC has continued to improve water recovery rates and process water efficiency through technological improvements and equipment investments. In 1996, it became the first semiconductor company in the Science Park to commit to a process water recovery rate of more than 85%. The process water recovery rate in 2023 has reached an average of 88%, which has reached the set water recovery rate target of 85%, and the water volume of the 12-inch factory is controlled below 95% of the permitted water consumption.

Average Annual Water Recovery Rate for the Manufacturing Process Recovery Program

Unit: million liters

Fab	Item	2020	2021	2022	2023
12 inch	Annual manufacturing process water recovery volume	7,682.07	7,856.44	8,039.70	10,107.04
	Average annual manufacturing process water recovery rate	87%	87%	88%	89%
8 inch	Annual manufacturing process water recovery volume	2,901.18	2,949.50	3,845.32	3,819.94
	Average annual manufacturing process water recovery rate	87%	87%	87%	87%
Total	Annual manufacturing process water recovery volume	10,583.25	10,805.95	11,885.01	13,926.98
	Average annual manufacturing process water recovery rate	87%	87%	89%	88%
	Number of times each drop of water used	3.43	3.53	3.41	3.67

Water Efficiency in 2023

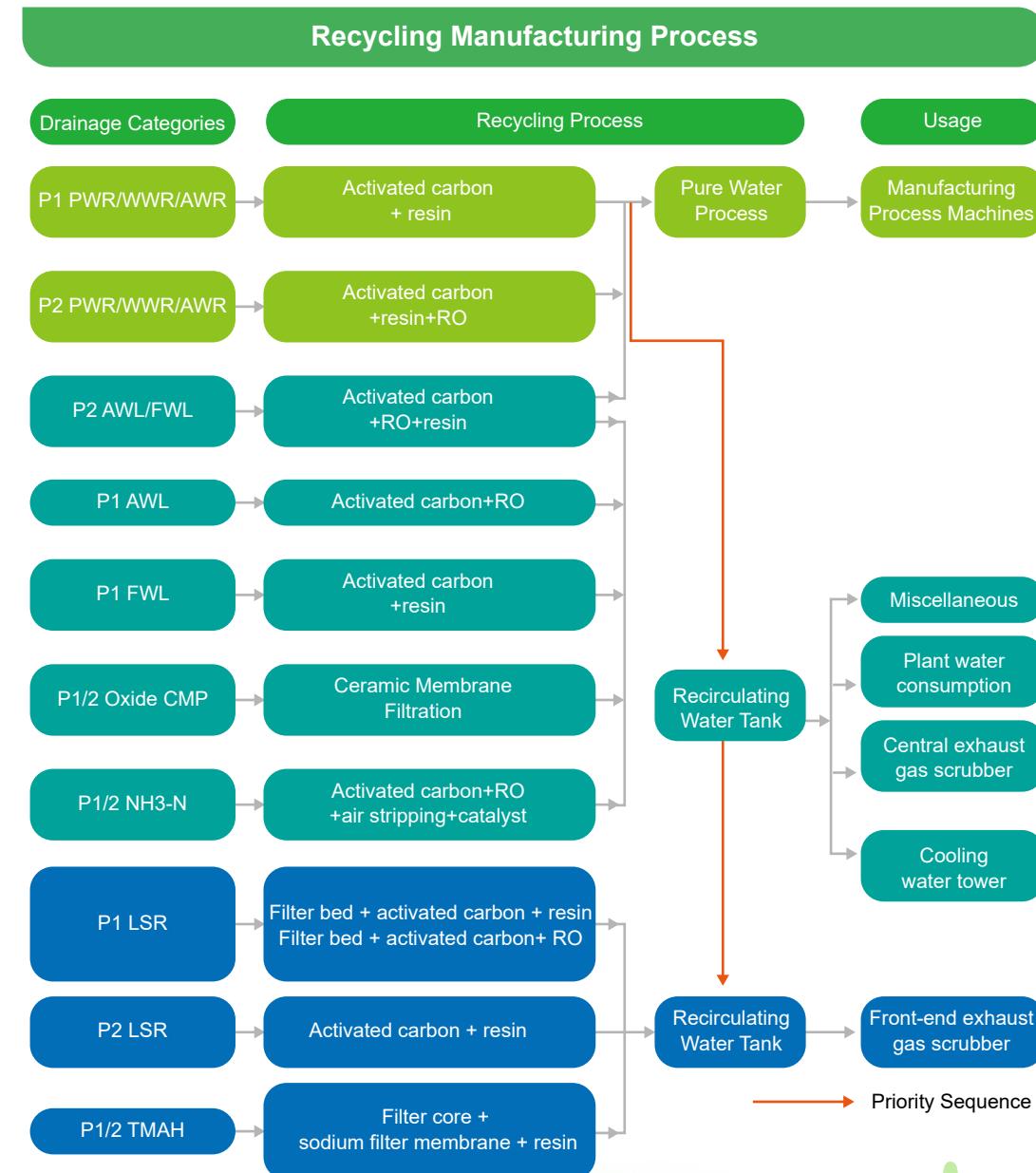
Fab	Improvement Program	Improvement Effectiveness
P1/2	Changed model of Stage 1/2 strong acidic cation exchange resin	Reduced water consumption by 15,000 m ³ per year
	Extended water intake interval for Stage 3 strong acidic cation exchange resin.	Reduced water consumption by 840 m ³ per year
P3	Adjusted water volume for machine with organic waste exhaust treatment equipment	Reduced water consumption by 7,008 m ³ per year
	Added water-saving mode to exhaust gas treatment equipment.	Reduced water consumption by 6,438.6 m ³ per year
8A	Improved MAU (Make-up Air Unit) system's chemical filter pressure difference setting.	Reduced water consumption by 21,900 m ³ per year



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 hydro fluoride/ammonium fluoride) and organic waste liquids (isopropyl alcohol/photoresist/de-photoresist/ photographic solution) still have economic value for recovery. Also 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 backend and the burden on the environment. PSMC 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



Effluent Water Quality Monitoring

Item	Unit	2020	2021	2022	2023
Ammonia Nitrogen NH ₃ -N	mg/L	9.4	11.1	8.3	5.9
Chemical Oxygen Demand (COD)	mg/L	74.1	73.9	67.4	45.5
Total Suspended Solids (TSS)	mg/L	24.5	33.8	28.6	21.3

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.

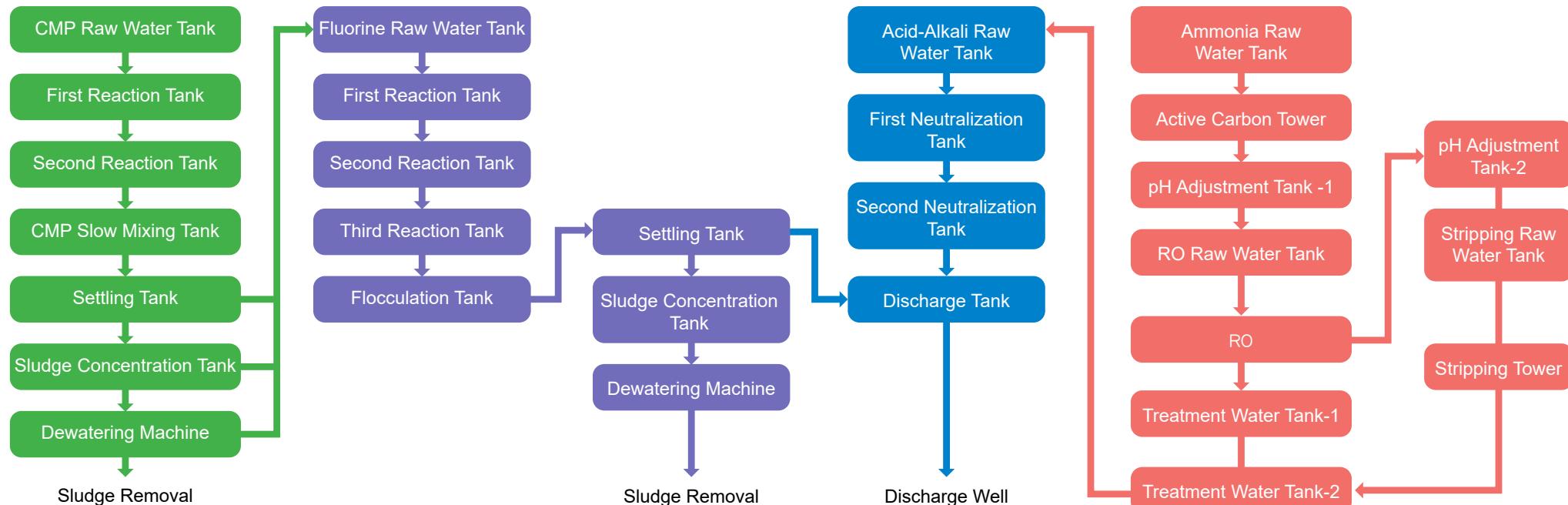
Note 3: The ammonia nitrogen (NH₃-N) values are not listed in the Science Park where Fab 8B is located.

Note 4: PSMC'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, fluoric acid, grinding, 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's plants over the years, and also 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	P5 fab	8A fab	8B fab
Wastewater ammonia nitrogen reduction (%)	>90%	>95%	>95%	>90%	>85%
Treatment Technology	Air stripping + Catalyst	Air stripping and catalytic conversion	Air stripping + Catalystic	Air stripping + sulfuric acid washing	Air stripping + sulfuric acid wet scrubber
Final product	None	Nitrogen	None	Ammonium sulfate	Ammonium sulfate
Wastewater ammonia nitrogen reduction benefits	Reduce sewage charges by NT\$230 million per year	Reduce sewage charges by NT\$110 million per year	-	Reduce sewage charges by NT\$44.7 million per year	Reduce sewage charges by NT\$40.55 million per year

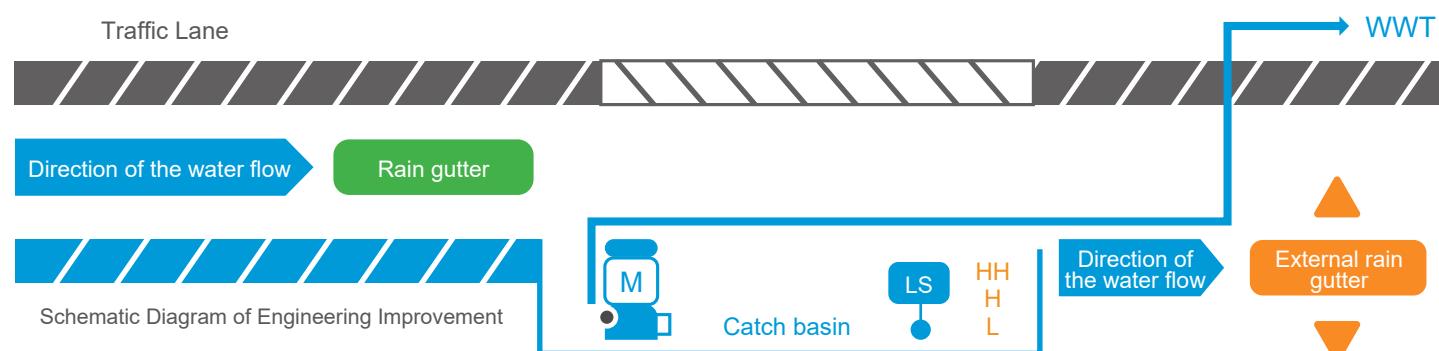
Storm water System

PSMC 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 storm water 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 storm water drainage practices.

Water Resource Sharing

In addition to independently conducting internal water resources management, PSMC also actively participates in vendors' cooperation and provides water-saving guidance and technology sharing through its employees as representatives of industry associations. As of the end of 2023, PSMC has participated in a total of 30 water-saving coaching projects for vendors, with cumulative water-saving results reaching 1.004 million metric tons. The vendors receiving counseling in 2023 are expected to save 407,000 metric tons of water per year, while the 10 vendors participating in the water-saving counseling are tracking to save approximately 396,000 tons of water in 2022, with a water saving achievement rate of 120.6%. In 2023, two water consumption fee briefing sessions and two water-saving education training sessions were also held, with a total of 178 people participating. By sharing experience, PSMC not only help vendors to reduce their dependence on water resources, but also promotes communication and collaboration among science park members.

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 2023 were approximately NT\$97.94 million. The total waste that was generated in 2023 was approximately 13,071 metric tons, and the overall waste generated was approximately 23.41% lower than that in 2022. The total waste recovery rate was 93.11%, achieving the 2023 target of a recovery rate of $\geq 90\%$. The waste landfill rate was 0.33%, also achieving the 2023 target of a landfill rate of $\leq 0.5\%$. In the future, PSMC will continue to adopt measures to monitor, verify, or replace machines, pipeline valves, etc., to reduce waste generation and achieve the overall waste reduction target.

Short Term Goals (2024)	Medium Term Goals (2025)	Long Term Goals (2030)
<ul style="list-style-type: none"> • Waste recovery rate $\geq 91\%$ • Waste landfill rate $\leq 0.5\%$ • Proportion of on-site audit and counseling for waste vendors $\geq 85\%$ • Waste reduction cases of 35 cases/year 	<ul style="list-style-type: none"> • Waste recovery rate $\geq 92\%$ • 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 $\geq 80\%$ • Waste reduction cases of 40 cases/year 	<ul style="list-style-type: none"> • Waste recovery rate $\geq 93\%$ • Waste landfill rate $\leq 0.3\%$ • 80% Provide guidance to waste vendors to obtain ISO14001 certification $\geq 80\%$ • Waste reduction cases of 50 cases/year

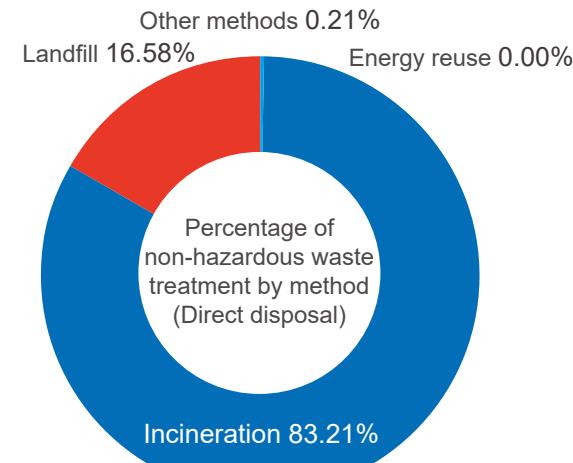
Flow Chart of Waste Generation



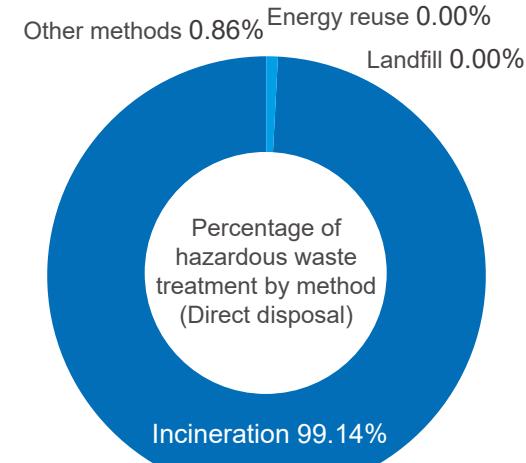
Total Waste Generation



- Total waste from general business (metric tons)
- Total amount of waste from hazardous business (metric tons)
- Unit waste generation (kg/cm²)



- Energy reuse ● Incineration
- Landfill ● Other methods



- Energy reuse ● Incineration
- Landfill ● Other methods



Waste Generation

Unit: Metric tons

	Item	2020	2021	2022	2023
Output	Non-hazardous wastes	10,935.79	11,333.56	10,862.04	8,399.15
	Hazardous wastes	6,246.60	6,454.36	6,204.18	4,672.03
	Total Output	17,182.38	17,787.91	17,066.22	13,071.18
Transfer (Recycle/ Reuse)	Non-hazardous wastes	10,293.84	10,710.90	10,335.53	8,135.98
	Hazardous wastes	5,051.87	5,516.50	5,190.71	4,034.40
	Total Transfer	15,345.71	16,227.40	15,526.24	12,170.38
Direct Disposal	Non-hazardous wastes	Incineration	477.67	448.51	382.51
		Energy Recovery	0.00	0.00	0.00
		Landfill	137.58	127.42	94.31
		Other methods	26.70	46.73	49.69
	Hazardous wastes	Incineration	1,188.50	880.09	1,004.66
		Energy Recovery	0.00	0.00	0.00
		Landfill	0.00	0.00	0.00
		Other methods	6.23	57.77	8.81
	Total Direct Disposal		1,836.50	1,560.54	1,539.98
	Unit waste output (kg/cm ²)		0.0140	0.0135	0.0129
	Data coverage rate (%)		100	100	100

Note 1: "Transfer (reuse)" is done by adopting the reuse flow of the Climate Change Administration Ministry of Environment or entrust and jointly process the flow to adopt a reuse method..

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 quantity of waste disposal is declared in accordance with the relevant regulations.

Note 6: Data covers PSMC and its subsidiaries included in the consolidated financial statements.



3.4.2 Waste Reduction Measures

PSMC diligently attends to the waste generated on site and evaluates the adequacy of the waste disposal market with the concepts of reduction, recycling, and reuse at the core of waste management. PSMC also provides employees with education and training on waste reduction to ensure that employees can correctly handle the waste produced in the factory, reducing waste generation and reducing environmental risks. 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. In line with the four major goals set by PSMC: "Source reduction, End of process waste reduction, Enhancement of waste reuse value, Proper waste disposal and waste flow tracking", we plan and implement various waste reduction plans.

Objective 1. Source Reduction

Item	Description
Replacing isopropyl alcohol (IPA) raw material	Changed the cleaning solution used in transportation mechanisms for some (same-model) Fab 8A equipment. Changed solution used for the last tank's Chuck Wash Clean Function from isopropyl alcohol (IPA) to deionized water (DIW). This lowered manufacturing costs and reduced raw material consumption, cutting about 46,656 liters in materials and NT\$3.12 million in costs.
Reusing concentrated isopropyl alcohol (IPA)	To reduce pipe-end waste solvent disposal costs and raw material consumption, one waste IPA online recycling system and one waste liquid classification & collection system have been installed at Fab 8A. Through these, higher-concentration waste IPA is first classified, then transferred to the online recycling system for re-purification, and finally transferred back to and reused in the process IPA supply system. In 2023, 155,274 liters of IPA raw material was saved, helping reduce raw material consumption and waste solvent disposal as well.
Reducing photoresist usage	Fab 8A has carried out a Same Machine Model, Same Photoresist Reduction Plan for its equipment, reducing photoresist flow amounts required for each wafer coating as much as possible while ensuring the same level of quality. Raw material consumption has been reduced through this plan (reduced from 1 c.c. to 0.9 c.c.; 10% reduction per wafer).
Establishing monitor system	Fab P3 has established a Chemical Monitor System to monitor reasonable usage of chemical raw materials. This helps avoid abnormal usage amounts caused by human error and anomalous conditions.
Extending part cleaning & recycling frequencies	Fab 8B part cleaning and recycling intervals have been extended, to increase part usage duration usage counts, thus reducing demand for new parts. In 2023, after implementation of these adjustments, four new parts were requested and four old parts were scrapped; compared to 2022, in which 42 new parts were requested and 31 old parts were scrapped, this indicates a significant reduction in new part requisitions and old part scrapping. These procedures will continue to be followed for energy savings.

Objective 2. End of Process Waste Reduction

Item	Description
Ammonia Nitrogen Wastewater Treatment	PSMC's 12-inch fabs prioritize eco-friendly approaches in assessing and planning construction of ammonia nitrogen wastewater treatment systems, and incorporate derivative waste disposal into the assessments. For those reasons, we hot air stripping plus catalytic oxidation disposal, which produces no derivative waste, to reduce overall waste generation. As a result, the ammonia nitrogen in water can be reduced by more than 85%. This disposal approach has been recognized by the HSP Bureau with an Award for Outstanding Achievement in Ammonia Nitrogen Wastewater Reduction. In addition, PSMC has worked with the HSP Bureau and other agencies as well as industry peers in HSP to share experience in using this wastewater treatment system, providing reference information for a variety of industries to develop treatment systems that fit their specific scales. Through regular system maintenance and inspections, the replacement cycle of MD film and RO front filter in Fab 8A has been extended; and this has helped reduce waste consumables generation by 92.4 kg per year.
Sludge reduction	Due to processing machine characteristics, the concentration of the hydrofluoric acid waste liquid generated from Fab P3 reaches 20% or more. In order to reduce environmental pollution resulting from the treatment of high-concentration waste liquid, and to avoid wasting usable resources, the fab held discussions with onsite departments then decided to establish a dedicated recycling system to collect waste fluid for separate control and treatment. Legal disposal service providers have also been commissioned to recycle the high-concentration hydrofluoric acid waste liquid generated at the fab, instead reusing it to make fluorite substitutes that can be used as fluxing agents. In addition to improving the fab's waste reuse rate, this approach can also help reduce the amount of waste sludge.
Adjusting chemical mechanical polishing/planarization (CMP) operation mode	Fab P1/2 has adjusted its chemical mechanical polishing/planarization (CMP) operation mode, increasing treatment volume through the ceramic membrane filtration (CMF) system. This helps reduce the sludge system's treatment volume, and lower the frequency of system operation and backwashing. It also reduces waste generation, improves treatment efficiency, and reduces chemical consumption. We estimate that these adjustments can decrease CMP sludge generation by 18 tons per month, and decrease waste sludge generation by about 216 tons per year, while also reducing clearance costs by about NT\$2.27 million.
Activated carbon reduction	Originally, Fab 8B's replaced UWP activated carbon was viewed as waste to be disposed of. However, testing by a commissioned third-party testing company (ACRO) showed that its active iodine value complies with the usage standards for NH3-N (H) ACF 1200L, NH3-N (L) ACF 1500L, and LSR ACF 1200LSR. This means it can be reused, and the fab's waste generation can be reduced.
Landfill treatment for waste reduction	Starting from 2022, PSMC conducted a company-wide feasibility assessment of waste reuse for landfill treatment. After evaluation and review, more qualified reuse vendors have been added to reuse and dispose wastes such as waste quartz, waste thermal bricks, waste zeolite, sand and gravel that were originally treated by landfill. A total of 72.66 tons has been completed in 2023. The relevant cooperative vendors are all removal and treatment agencies qualified by the competent authorities, and some vendors have passed ISO 14001 certification.

Objective 3. Enhancement of Waste Reuse Value

The major constituents of PSMC's waste are waste solvent, waste acid, and sludge. Through improved front-end classification, continued efforts to enhance the value of waste, and collaboration with vendors to carry out recycling and reuse feasibility assessments, we can ensure that there is no concern about backend products' destinations. The actual reuse rate has increased to 93.11% in 2023.

Objective 4. Proper Waste Disposal and Waste Flow Tracking

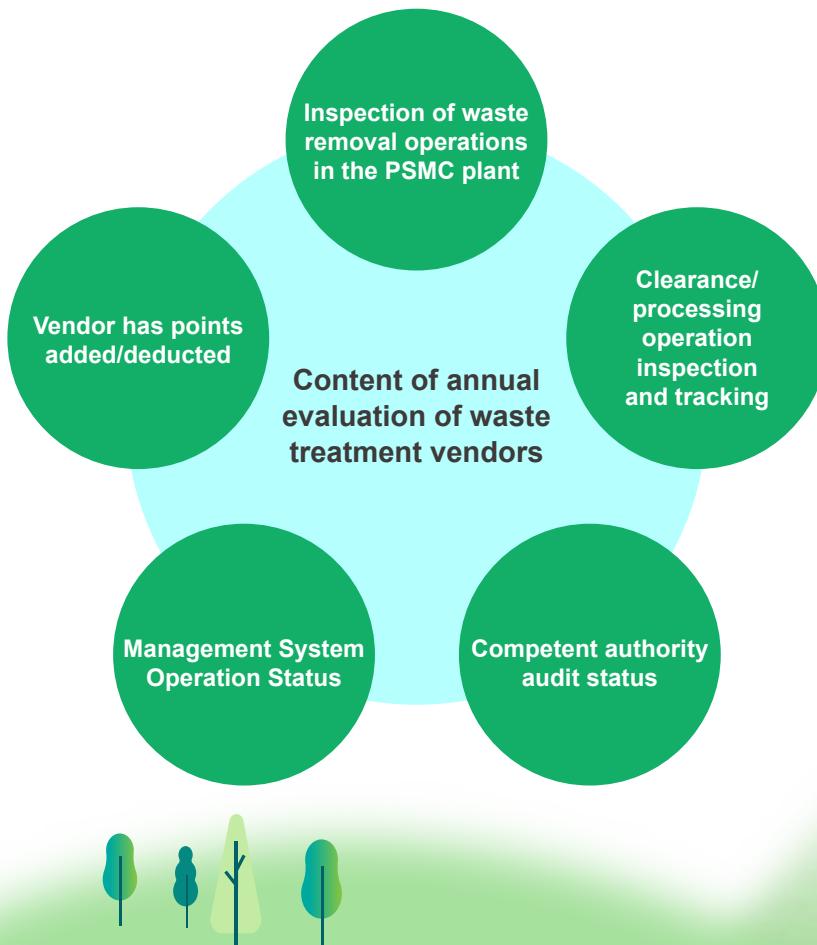
The waste generated at PSMC is accurately classified according to categories and disposal methods, and is entrusted to qualified waste vendors for cleaning and reuse. It is strictly required that waste cleaning should comply with the provisions of the Waste Cleaning Law and international regulations. The nickel-cadmium batteries used in DC chargers and SUPS systems need to be replaced every 3 to 4 years. Therefore, approximately 4.01 metric tons are generated in 2023, accounting for 0.031% of the overall waste volume. All cross-border transfers of waste strictly follow and shall be handled in compliance with the Basel Convention and are transported by sea to advanced countries for recycling.

2023 Waste Recycling Rate and Reuse Methods

Types of Waste	Recycling rate	Fab Area	Reuse Method
Empty barrel containers	100%	P1/2、P3、8A、8B	Recycled and reused by suppliers, cleaned and crushed by manufacturers and made into plastic and glass materials
Sulfuric acid waste	100%	P1/2、P3、8B	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%	P1/2	Refined into copper sulfate powder by the vendors
Activated carbon waste	100%	P1/2、P3、8A、8B	Regenerated by the vendors for secondary use after desorption
Inorganic sludge	100%	P1/2、P3、8A、8B	Recycled by vendors and made into artificial stone granules, alternative raw materials for cement, artificial fluorite
Phosphoric acid waste	100%	P1/2、P3	Purified and reprocessed into industrial grade phosphoric acid by the vendors
Slurry residue	100%	P1/2、P3	Potassium silicate raw material is produced by the vendors after dosing.
Tetramethylammonium sulfate waste	100%	P1/2、P3	Recycled by the vendors into tetramethylammonium hydroxide (TMAH) for use in panel factories
Diluents waste	100%	P1/2、P3、8A、8B	Purified and remanufactured into optoelectronic cleaning fluid (EBR)/paint material by the vendors
Ammonium sulfate waste	100%	8A、8B	Purified and reconstituted into solid ammonium sulfate by the vendors
Waste mercury lamps	100%	P1/2、P3、8A、8B	Dismantled and refined for reuse by the vendors
Hydrofluoric acid waste	100%	P3	Remanufactured into fluorite for use by the vendors
Ammonium fluoride	100%	P1/2、8B	Remanufactured into fluorite for use by the vendors

3.4.3 Waste Treatment Vendors Management

PSMC develops a waste manufacturer audit plan every year, cooperates with industry associations and its own factory audit schedules, regularly visits industrial waste removal and treatment vendors, and takes legality and treatment compliance as the primary audit items. In 2023, PSMC conducted audits on a total of 43 waste vendors (including joint audits by public associations), and found a total of 34 deficiencies to be improved. All of them were tracked and improved through the company's electronic auditing system (E-Auditing) by issuing audit reports, and improvements have been completed within the deadline, and vendors are required to strengthen the implementation and management of environmental, safety and health/fire protection regulations to avoid the risk of illegal cooperation by cooperative vendors.



Evaluation Results of Waste Treatment Vendors

Unit: number, %



● Excellent (>85 points) ● Qualified (70-85 points) ● Unqualified (<70 points)

According to the scoring analysis results, in 2023, there are a total of 20 excellent vendors accounting for approximately 47% (above 85 points), a total of 23 qualified vendors accounting for approximately 53% (70-85 points), and no unqualified vendors (less than 70 points). The annual evaluation results are also provided to the purchasing unit as a reference for the next year's purchase allocation.

In order to accurately record the overall process and flow of waste treatment and reuse, PSMC has signed the "High-tech Industry Waste Cleanup and Self-Discipline Convention" initiated by the Taiwan Semiconductor Association, and continues to cooperate with the association in implementing the "Waste Processing Agents" "Counseling, Assessment and Promotion Plan" appoints a third party to conduct audits of waste vendors to confirm that management and operations comply with the requirements of the self-discipline convention. In recent years, PSMC have not been punished by relevant authority units due to environmental pollution incidents and have not suffered any losses, and there have been no pollution disputes since its establishment.



3.5 Air Pollution Emissions Management

3.5.1 Air Pollution Prevention and Control Policy

PSMC strictly controls pollutant emissions to comply with regulatory standards and protect environmental quality. Air pollutants produced by the semiconductor manufacturing industry are divided into two categories: acid/alkaline gases, and VOC gases. Acid/alkaline waste gases are treated through wet scrubbers and then released. VOC gases, after being adsorbed and concentrated through a zeolite rotor concentrator, are thermally incinerated and then discharged into the atmosphere. The Company adopts the best technologies to prevent pollution, in order to ensure that discharged pollutant content will meet or exceed regulatory requirements.

Treatment of Acid and alkaline exhaust gas

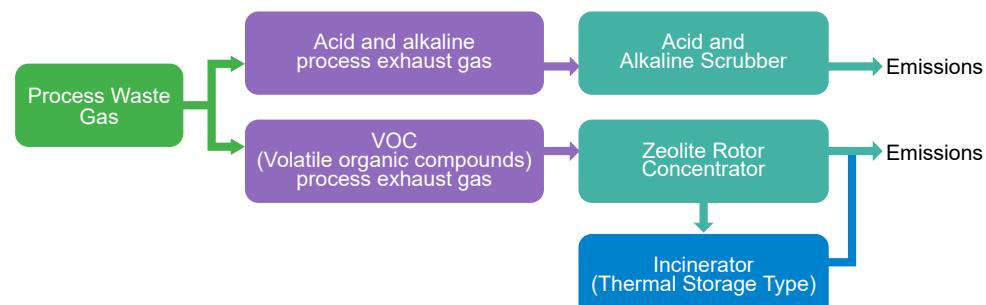
The first stage: the local scrubber equipment is set up at the end of the machine to treat the toxic, flammable and fluorinated greenhouse gases (FG).

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

Flow chart of air pollutants treatment



Treatment of Volatile organic compounds exhaust gas

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.



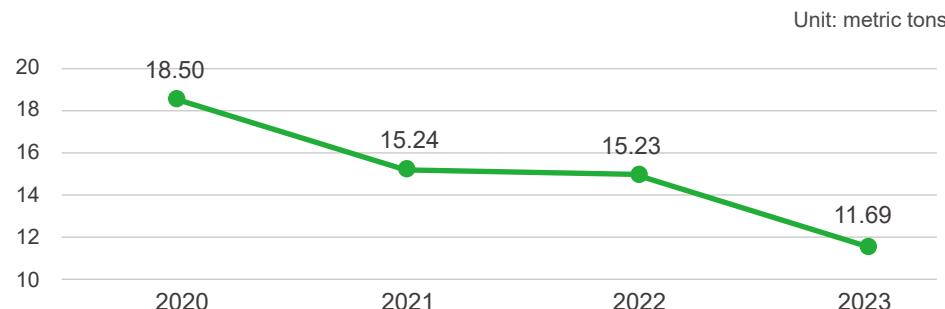
Volatile organic compounds exhaust gas treatment facility



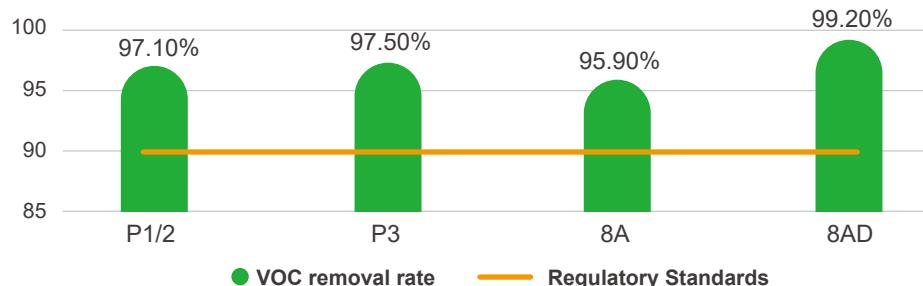


The volatile organic waste gas systems in all factories of PSMC are equipped with zeolite runner treatment equipment. Fab 8A, P1/2 and P3 also each have a set of volatile organic compound treatment and control equipment, so that the removal rate can be more effectively controlled. In 2023, the overall average volatile organic waste gas (VOC) removal rate of PSMC has reached 97.14%, which is better than the best control technology conditions for semiconductor manufacturing processes in the "Best Available Control Technology for Stationary Pollution Sources" ($\geq 92\%$). The Zeolite concentration conversion wheel system reduction rate has also increased year by year.

Directly emitted volatile organic compounds (VOC) emissions



Volatile Organic Compounds (VOC) removal rate of each plant



According to the emission coefficients of sulfur oxides (Sox) and nitrogen oxides (NOx) set by the Climate Change Administration Ministry of Environment for the semiconductor industry, the emissions of sulfur oxides (Sox) and nitrogen oxides (NOx) for PSMC were 15.6 metric tons and 13.3 metric tons respectively in 2023.

3.5.2 Air Pollution Management Measures

In addition to taking measures to strengthen in-factory air pollution control equipment against possible polluting species, PSMC also regularly evaluates whether to add or improve control equipment for the manufacturing process. Relevant improvement plans are carried out in accordance with the planning schedule, including such as Local Scrubber (L/S) operation optimization and treatment efficiency verification, Central Scrubber (C/S) treatment efficiency verification, efficiency improvement, addition or replacement of control equipment, and white smoke improvement projects, etc.

Fab Area	Improvement Projects	Improve Benefits
P3	Adjust organic waste gas (VOC) operating parameters	<ul style="list-style-type: none"> VOC emissions reduced by 704 kg
	Replace the scrubber demister layer	<ul style="list-style-type: none"> Improved scrubber removal efficiency Approximately 62% reduction in stack hydrofluoric acid
8A	Add a digital flow meter to the scrubber tower and replace the pipelines	<ul style="list-style-type: none"> Improved scrubber removal efficiency Reduced the repair, maintenance and replacement costs of traditional float flowmeters
	Add organic waste gas (VOC) exhaust equipment	<ul style="list-style-type: none"> Estimated annual natural gas savings of 146,000 kWh

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, PSMC 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 constructing manufacturing facilities or engaging operations adjacent to globally or nationally protected biodiversity areas
- Avoid relative operating activities to destroy protected forests and creatures
- If operating activities touch on biodiversity and ecological conservation areas, 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 follow the principle of Zero Net Deforestation, so as to avoid deforestation
- 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, enhance public awareness of ecological conservation, and encourage ecological conservation actions

Biodiversity Conservation Initiative

PSMC of P5 Tongluo Factory is located in Tongluo Park, Hsinchu Science Park. This area is one of the important habitats for animals and plants in the green network of national ecological conservation. In particular, the leopard cat, a protected animal, has attracted the most attention. In order to maintain its commitment to maintaining biodiversity and environmental ecological balance, PSMC takes the initiative to obtain and understand the environmental and ecological monitoring content from the Hsinchu Science Park Bureau, NSTC. Among them, the Hsinchu Science Park Bureau, NSTC conducts quarterly environmental quality monitoring (terrestrial ecology) for Tongluo Park, including birds, amphibians, reptiles, mammals, butterflies, etc., and sets up 10-point infrared cameras. In 2023, the land area Ecological monitoring recorded a total of 24 ecological species of 9 orders, 15 families. A summary of the monitoring results is as follows:

- The number of bird species identified ranged from 33 to 47. Due to bird migration effects, the number in autumn and winter was slightly larger than that in spring and summer.
- The number of mammal species identified ranged from 1 to 9; of these, the Pipistrellus abramus (sometimes called the Japanese house bat) was deemed the dominant species.
- Reptiles are ectotherms and were harder to be found.
- The population of amphibians increased sharply during the rainy season, but then decreased within a short period of time.
- Depending on when nectar-providing plants bloom, there were fewer butterflies in winter and early spring, and more in summer and early autumn.

The Hsinchu Science Park Bureau has completed a detailed design for a leopard cat ecological corridor around PSMC's Fab P5 area. The corridor will be set on conservation and park land around the Tongluo park area, in the form of above-ground (both at surface and elevated) or underground passages, thus connecting the habitats located at both ends of the corridor. By making use of existing drainage channels, leopard-cat-friendly facilities such as openings, hanging nets, climbing ramps, etc. will be added. This will reduce interference in native species' ecological environment. The project is scheduled to be completed by the end of 2024.

In addition to keeping track of external environmental ecological monitoring data and cooperatively implementing biodiversity management measures. At the same time, ecological conservation lectures and mountain-cleaning activities were held. A total of 644 people participated in the mountain cleaning activities in 2023, thereby enhancing the thinking of environmental conservation and increasing the concept of biodiversity among employees at PSMC, and continuing to maintain the shared commonwealth and prosperous environment between PSMC and the surrounding ecology.



Infrared automatic camera setting point and P5 factory site diagram



Aerial photo of Mountain Cleaning





4 Collaborative Sustainability

Talent

4.1 Talent Attraction and Retention

4.2 Talent Nurturing and Development

4.3 Human Rights

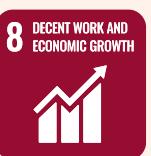
4.4 Occupational Safety and Health



Collaborative Sustainability · Talent

PSMC adheres to the human-oriented business philosophy and is committed to creating a suitable working environment for employees, providing competitive salaries and benefits, comprehensive education and training, performance appraisal and labor-management communication systems, and cooperating with universities and colleges to cultivate high-tech talents for the future. At the same time, through the occupational safety and health risk identification system and health care system, PSMC establish a safe and secure workplace environment to ensure the workplace safety for employees.

Corresponding United Nations Sustainable Development Goals (SDGs)



Occupational Health and Safety



Talent Attraction and Retention



Human Resource Development

Corresponding Material Topics



Occupational Health and Safety



Talent Attraction and Retention



Human Resource Development

Material Topics GRI Standards

GRI 401 : Employment

GRI 403 : Occupational Health and Safety

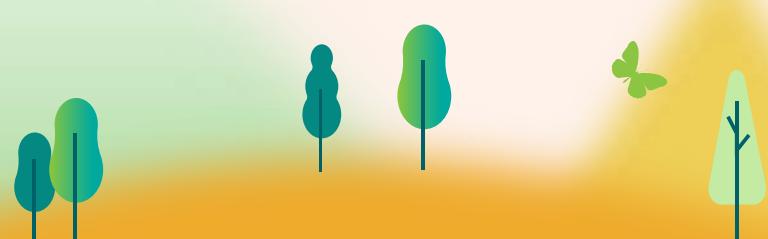
GRI 404 : Training and Education

GRI 405 : Diversity and Equal Opportunity



Stakeholder who have priority reading

Employees, Suppliers/Contractors





2023 Sustainability Performance Highlights

**Tech R&D Category
Gold Award**

1111 Job Bank's Happy
Business Evaluation

**Subsidies of
NT\$1.53 million**

Supported 12 employees to continue their studies and obtain higher academic qualifications, and 762 employees to obtain certificates or licenses required for their jobs.

24,414

participants achieved
Conducted 121 EHS educational trainings

17 students

"Pre-recruitment program for current students" provides fresh graduates with pre-recruitment qualifications

100%

Completion rate of employees' human-rights-related training

**Scholarships of
NT\$3.16 million**

49 collaborative research projects implemented with four universities' semiconductor academies

**No cases of
occupational
diseases**

38 special health examinations held, with 2,411 participants





4.1 Talent Attraction and Retention

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.

PSMC adopts diversified employee recruitment channels, including participating in large-scale recruitment activities such as campus recruitment and employment fairs, and publishing recruitment information through social media. Personnel interviews are flexibly conducted in both physical and video formats to ensure the annual recruitment goals effectively achieved. In recent years, it has actively participated in the semiconductor college program of top universities, expanded and established close cooperative relations with various universities, and strived to fill the talent gap in the semiconductor industry.

4.1.1 Diversified Workforce Composition

As of the end of 2023, PSMC has 8,164 formal employees, all of whom are permanent and full-time employees. There are no employees with unlimited hours guaranteed. The average age is 39.32 years old and the average seniority is 10.68 years, which can help support the company's rapid growth needs and continue to remain competitive. Informal employees will continue to carry out the pre-recruitment and internship system for current students in 2023, and a total of 21 new interns will be hired to help fresh graduates successfully transition into the workplace. In addition, in order to meet the company's operational needs, contractors are responsible for group catering, environmental cleaning, security and maintenance, machine equipment maintenance, and factory facility repair or expansion. There are a total of 15,938 contractors. The significant increase of the contractors compared with the previous year is due to the related demand derived from new construction, and it has caused the industrial safety unit to expand the issuance of contractor admission permits.

With the aim of practicing the policy of employee diversity, and establishing a work environment of diversity, equality and co-prosperity, PSMC has recruited 15 indigenous employees and 54 employees with disabilities, which has met the regulatory requirement for the employment of people with disabilities. Being directed by the corporate group's global deployment plans, PSMC actively participated in the international talent recruitment activities jointly conducted by Ministry of Economic Affairs, Ministry of Foreign Affairs, and National Yang Ming Chiao Tung University's Office of International Affairs in 2023. Through international talent recruitment, PSMC can continuously increase the percentage of foreign employees in the Company, hoping that through multinational cultural and professional exchanges, more foreign employees can exert their strengths and influence to improve PSMC's overall operational efficiency.

Workforce Composition Statistics (by Employment Type)

Employment Type	Category	Number of People	Percentage of total employees (%)
Formal Employees	Female	3,133	38.22%
	Male	5,031	61.38%
	Total	8,164	99.60%
Temporary Staff	Female	16	0.20%
	Male	17	0.20%
	Total	33	0.40%

Note: Temporary employees are those who have signed a fixed-term contract.

Workforce Composition Statistics (by Formal Employees Category)

Formal Employees Category	Category	Number of People	People Percentage of total employees (%)
Gender	Female	3,133	38.38%
	Male	5,031	61.62%
Management Level	Non-managerial general employees	6,869	84.12%
	Junior Management Level	743	9.10%
	Middle Management Level	531	6.50%
Nationality	Senior Management Level	21	0.28%
	Taiwan	7,714	94.49%
	The Philippines	388	4.75%
Age	Japan	44	0.54%
	Others	18	0.22%
	Under 30 years old	1,520	18.62%
	30~50 years old	5,855	71.72%
	older than 50 years old	789	9.66%

Note 1: Junior management level: Production line deputy leader, production line leader, production line supervisor, 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 percentages of formal employees of a variety of nationalities in managerial positions are as follows: Taiwan 98.77%, Japan 1.08%, and others 0.15%.



Distribution of Female Workers

PSMC attaches great importance to the promotion and development of female employees. However, due to the characteristics of the semiconductor industry, the majority of management and professional engineering personnel are male employees, while the majority of technical personnel and administrative personnel are female employees. In order to increase the proportion of female employees participating in decision-making, PSMC promotes communication among female employees from the perspective of career planning and workplace mentality through education, training and themed lectures, comprehensively supports female employees and creates promotion opportunities to promote the innovative value of inclusion. In 2023, we set a goal of reaching 30% of female managerial personnel (including junior-level, middle-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	365	28.21%	929	71.79%
Junior Management Level	294	39.57%	449	60.43%
Middle Management Level	70	13.21%	461	86.82%
Senior Management Level	1	4.76%	20	95.24%
Revenue-Creation-Related unit Managerial	342	27.67%	894	72.33%
Number of employees in science, technology, engineering, and mathematics (STEM) related positions	1,176	20.59%	4,535	79.41%

Note 1: Junior management level: Production line deputy leader, production line leader, production line supervisor, 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 managerial positions in revenue-creation-related units are defined as those in units other than the supporting units (IT, legal affairs, human resources, finance /accounting).

4.1.2 New and Departed Employees

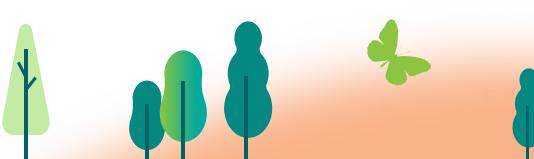
New Hire Overview

516 new employees were recruited in 2023, focusing on talents related to equipment, processes, facilities, R&D, and other related fields, and including younger workers, foreign blue-collar workers, and white-collar workers. The average recruitment cost per full-time employee was NT\$14,026. The significant increase in recruitment costs has demonstrated PSMC's determined action to accumulate energy for the Company's growth.

Type \ Fiscal Year	2020	2021	2022	2023
Number of new employees	964	974	1,397	516
New Hire Rate	13.44%	13.08%	17.14%	6.35%
Average Cost of Recruitment (NT\$)	10,537	7,317	6,853	14,026

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

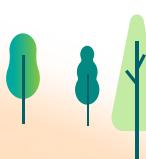
Note 2: Average Cost of Recruitment = Cost of Hiring New Personnel for the Year / Number of New Employees





Statistics of New Formal Employees

Category	Type	2020		2021		2022		2023	
		Number of People	Percentage						
Gender	Female	340	35.27%	324	33.26%	503	36.01%	196	37.98%
	Male	624	64.73%	650	66.74%	894	63.99%	320	62.02%
Age	Under 30 Years Old	612	63.49%	588	60.37%	830	59.41%	360	69.77%
	30~50 Years Old	346	35.89%	375	38.50%	560	40.09%	151	29.26%
	Older than 50 Years Old	6	0.62%	11	1.13%	7	0.50%	5	0.97%
Management Level	Non-managerial Level	953	98.86%	955	98.05%	1,383	99.28%	505	97.87%
	Junior Management Level	1	0.10%	18	1.85%	5	0.07%	5	0.97%
	Middle Management Level	9	0.93%	1	0.10%	9	0.64%	6	1.16%
	Senior Management Level	1	0.10%	0	0.00%	0	0.00%	0	0.00%
Nationality	Taiwan	896	92.95%	937	96.20%	1,235	88.40%	432	83.72%
	The Philippines	64	6.63%	35	3.60%	150	10.74%	78	15.12%
	Japan	2	0.21%	1	0.10%	0	0.00%	0	0.00%
	Others	2	0.21%	1	0.00%	12	0.86%	6	1.16%





Employee Departure and Internal Rotation

PSMC has kept long-term track of employees' resignation statistics. In accordance with turnover rate analysis, the main factors contributing to employees' resignation include remuneration and benefits, work environment, individual career development considerations, and so on. In view of these factors, PSMC has developed a variety of response programs. The overall turnover rate and voluntary turnover rates in 2023 were 6.58% and 6.51%, respectively, showing a significant decrease compared with 2022, and demonstrating the effectiveness of PSMC's programs for workplace environment improvement. To achieve the goal of talent retention, the Human Resources Division has analyzed the reasons for employees' resignation, and provided resignation applicants with reassignment opportunities based on their skills and experiences for them to be reassigned to other positions whose job content, governing department, job location, etc. may suit them.

In terms of the internal rotation mechanism, basically, the staff-requesting unit must submit an internal recruitment request, which shall then be released by the HR unit and be open for current employees' application. After the preliminary review is completed and the qualified candidate is determined, the HR unit shall send the application form to the applicant's home unit and the staff-requesting unit for the form to be signed off. After the consent of the two units are obtained and the form is signed off by the two units, the reassignment can be carried out. In 2023, the internal rotation mechanism was adopted to successfully reduce employee turnover.

Category	Fiscal Year	2020	2021	2022	2023
Number of Departed Employees		668	700	695	537
Turnover Rate		9.30%	9.40%	8.53%	6.58%
Voluntary Turnover Rate		9.20%	9.30%	8.42%	6.51%
Internal Rotation Rate		34.20%	42.50%	38.40%	60.20%

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 Formal Employees

Category	Type	2020		2021		2022		2023	
		Number of People	Percentage						
Gender	Female	286	42.81%	237	33.86%	263	37.84%	211	39.29%
	Male	382	57.19%	463	66.14%	432	62.16%	326	60.71%
Age	Under 30 Years Old	259	38.77%	336	48.00%	256	36.83%	189	35.20%
	30~50 Years Old	394	58.98%	345	49.29%	413	59.43%	309	57.54%
Management Level	Older than 50 Years Old	15	2.25%	19	2.71%	26	3.74%	39	7.26%
	Non-managerial Level	652	97.60%	682	97.43%	669	96.26%	482	89.76%
Nationality	Junior Management Level	4	0.60%	5	0.71%	3	0.43%	22	4.10%
	Middle Management Level	10	1.50%	10	1.43%	20	2.88%	32	5.96%
Others	Senior Management Level	2	0.30%	3	0.43%	3	0.43%	1	0.19%
	Taiwan	622	93.11%	672	96.00%	640	92.09%	452	84.17%
Others	The Philippines	44	6.59%	27	3.86%	53	7.63%	75	13.97%
	Japan	0	0.00%	1	0.14%	1	0.14%	5	0.93%
Others	Others	2	0.30%	0	0.00%	1	0.14%	5	0.93%



Column

Continuous Improvement Process (CIP) Competition



Talent Recruitment Outpost - Pre-employment Internship Program for Current Students

After the COVID-19 epidemic, life and work patterns have changed, such as remote teaching and home working, and the sales of electronic products have increased sharply, resulting in a corresponding increase in semiconductor demand. As a result, major manufacturers have successively launched factory expansion plans and recruited large-scale manpower. The competition for semiconductor talents is fierce, and the low birthrate caused by an aging society has intensified the competition. Therefore, PSMC has proposed a "pre-hired internship program for current students" in 2022 to invite students to join universities and colleges early and provide internship opportunities for students to get early exposure to the workplace, familiarize themselves with the work environment and team atmosphere, understand the operation of the wafer factory and receive practical training.

A total of 382 students applied for internship engineer positions in 2023. After two stages of interviews, a total of 21 interns were admitted. After 2 to 3 months of internship, 17 students obtained pre-recruitment qualifications and were willing to join PSMC after graduation. There are 14 students who have obtained pre-recruitment qualifications and graduated in 2022 and 2023. 11 of them have become full-time employees of PSMC with a registration rate of nearly 80%. It is obvious that most students can feel the company's friendly and pragmatic working environment through internships. The corporate culture and good team atmosphere demonstrate the effectiveness of the pre-recruitment internship project.

In addition, a total of 20 "2024 Pre-recruitment Internship Briefing Sessions" will be held on various university campuses in 2023. Through the briefing, students will understand the contents of the LIMC pre-recruitment internship project and invite students to actively sign up for corporate internships, with a total of 1,037 students attended the briefing session. This year, for the first time, a briefing video has been recorded for students to watch online, hoping that more students will understand and join the pre-employment internship program.

Performance Category	Implementation Results in 2023
Number of Participants in the Program	21
Percentage of People That Qualified for Formal Positions (%)	80.95
Actual Job Conversion Rate (%)	66.67
Amount of Scholarship Awarded (NT\$)	120,000



Pre-recruitment Internship Program Information
Meeting held at Fu Jen Catholic University



Pre-recruitment Internship Program
Information Meeting held at National Taiwan
Normal University





Column

Semiconductor Academy Program



Top Talent Incubator - Semiconductor Academy Program

The global automotive chip shortage has sparked demand for Taiwan's semiconductor chips from around the world. In order to continue to expand Taiwan's semiconductor technology leadership, the Executive Yuan passed the "Innovation Regulations on Industry-Academic Cooperation and Talent Cultivation in Key National Areas" and the "Special Law on Innovation Regulations for Higher Education Sandboxes", spending 9.6 billion over 12 years to establish "semiconductor colleges" at National Taiwan University, National Cheng Kung University, Tsinghua University, and National Yang-Ming National Chiao Tung University, training an additional 400 master's and doctoral students every year. Chairman Huang Chongren believes that Taiwan has become the "Semiconductor Silicon Valley" and the key to maintaining its leading position lies in the cultivation and self-sufficiency of talents. The reason why PSMC invested in the Semiconductor Academy is to train more Taiwanese engineers.

PSMC is one of the few sponsors of the four major semiconductor colleges in China that fully participates and donates funds. It plans to invest NT\$100 million each year to fund the four university semiconductor colleges and hopes to cultivate more than 5,000 semiconductor professionals in Taiwan within 12 years. At the same time, PSMC recruit more talents to join PSMC and contribute to Taiwan's semiconductor industry.

2023 Semiconductor Academies Research Project Achievements:

- Held a presentation conference on the research project results of the School of Industry-Academic Innovation Research of Yang-Ming Jiaotong University and National Taiwan University of Science and Technology, and invited 9 professors from Yang-Ming Jiaotong University to PSMC to explain and exchange the results of the research project, and collaborate with Yang-Ming Jiaotong University on research projects. One of the projects has passed the company's internal review and is in the process of applying for a patent, and the other three have been submitted to IEEE and have been successfully published. Teachers and students from National Taiwan University's Key College of Science and Technology held presentations on the results of 19 collaborative research projects.

Three of the research projects have been reviewed by the Patent Committee of PSMC and one is still under review.

- Collaborating with Tsinghua University, the health prediction research project of P1 factory air compressor has been completed. A patent application has been submitted and a paper has been published on this research.
- The first phase of the National Cheng Kung University Smart Semiconductor and Sustainable Manufacturing Institute's research plan is still in progress. Through the introduction of product quality monitoring (AVM) and machine life prediction (IPM) technologies, PSMC can self-develop more projects internally.

In addition, PSMC also conducts exchanges and discussions with the semiconductor colleges of the four universities from time to time, and arranges for supervisors to give book discussions or lectures at the semiconductor colleges.

Performance Category	2023 Implementation Achievements
Number of collaborative technical R&D projects	49
Project investment cost (NT\$ 10,000)	over 4,000
Total amount allocated for scholarships (NT\$ 10,000)	316



NTU Graduate School of Advanced Technology Achievement Presentation





4.1.3 Compensation System

PSMC'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. PSMC'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 remuneration such as base salary and allowances, PSMC also provides employee incentive bonuses, retention bonuses and employee stock option certificates and other variable remuneration. In 2023, PSMC passed the employee stock subscription plan approved by the supervisory authority. The plan will be released in 2024. The amount of variable remuneration is determined based on individual performance, the company's profit for the year and unit target achievement rate, and does not differ based on gender. PSMC rewards employees for their excellent performance and shares operating results, and encourages colleagues to actively strive for performance and create healthy competition of working environment. In 2023, the annual revenue decreased due to the industrial boom, which reduced the payment of bonuses and employee remuneration. The average salary of full-time employees who are not in supervisory positions was NT\$1.097 million, and the median salary of full-time employees who are not in supervisory positions was NT\$1.045 million. The ratio of the annual salary of the highest individual to the median annual salary of all employees (excluding the individual with the highest annual salary) is 22.99, and the percentage increase of the annual salary of the highest individual to that of all employees (excluding the individual with the highest annual salary) annual median salary increase percentage rate is (3.21).

Average salary, median salary and salary gap of full-time non-supervisory employees

Item	Fiscal Year	2021	2022	2023	Difference between 2023 and the previous year
Average Salary of Full-Time Employee (NT\$10,000)	150.1	167.7	109.7	58.0	
Median Salary of Full-Time Employee (NT\$10,000)	131.5	145.3	104.5	40.8	

Note: The data related to non-supervisory employees was calculated by consulting the definition of "supervisory employees" given by TWSE.

PSMC's 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 2023 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, PSMC provides competitive compensation and benefits to help employees balance career development and family life quality.

Gender Remuneration Indicators

Item	Fiscal Year	2022	2023
Difference in the average salary by gender	15.6%	15.60%	
Difference in the median salary by gender	14.1%	12.20%	
Difference in the average bonus amount by gender	20.1%	21.40%	
Difference in the median bonus amount by gender	19.2%	23.30%	

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 PSMC 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, and 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 PSMC's annual report of 2023.



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%

4.1.4 Employee Benefits and Support Programs

Benefits and Employee Rights

PSMC is committed to providing employees with a LOHAS (“lifestyles of health and sustainability”) work environment. By upholding the principles of benefits, fun, and health, the Human Resources Division and Employee Welfare Committee (below, the Welfare Committee) has developed comprehensive employee benefits systems to provide employees with diverse welfare facilities and activities for employees to enjoy a lifestyle full of creativity and energy both at work and in leisure time. In addition to the basic benefits of gift vouchers for three major festivals and birthday, the Company also provides marriage & baby allowances, hospitalization subsidies, children's scholarships, and other thoughtful subsidies/allowances of different amounts. Moreover, to promote work-life balance, there are diversified employee clubs and a variety of courses for employees to choose, through which employees can expand their social networks, cultivate hobbies, enhance physical fitness, and build connections with more people. Besides, all-embracing activities such as theater appreciation, arts and cultural activities, Family Day, brisk walking, festive (e.g. Christmas) activities, etc. are also frequently held to extend the Company's care to employees' family, thereby creating a sense of belonging among members of the whole PSMC family.

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. If employees need family care leave, they can apply for a flexible work system to help employee more easily achieve a balance between work and life <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. Provide an additional 7 days of flexible leave every year that is better than regulations, and volunteer leave for participating in volunteer activities Provide part-time job options: hire part-time visually impaired employees and provide free shoulder and neck stress relief massage services to full-time employees We establish the 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, etc. and encourage colleagues to have childbirth with a subsidy of NT\$20,000 for each newborn baby 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. Employee stock purchase plan: Individual members can allocate a fixed monthly amount of NT\$2,000 from their salary (self-withdrawal), and the company simultaneously allocates NT\$2,000 as a subsidy. A total of NT\$4,000 is entrusted to a financial institution to purchase the stocks of PSMC which will be transferred to personal CHEP account on the 15th of the following month. 	<ul style="list-style-type: none"> Organize family days and trekking activities to provide employees with outdoor corporate activities with their families, so that employees can relieve stress and maintain physical and mental health, and effectively unite colleagues and strengthen family identification. Organize arts and cultural activities, such as parent-child theater, celebrity lectures, and concerts. On the one hand, PSMC sponsor arts and cultural groups, and on the other hand, we use arts and cultural activities to enhance colleagues' participation in art activities, further optimize the quality of life of employees, and promote parent-child interaction to enable employees to achieve an appropriate balance between work and leisure life 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. Give vouchers for three major festivals and birthday, and gifts for Labor Day, Mid-Autumn Festival, Christmas, and other important festive events. An e-platform was introduced in 2023 to provide employees with more diverse and flexible electronic vouchers options. 	<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, gyms and other sports halls



Arts and Cultural Events

Family Theatre Appreciation and Celebrity Special Lectures

Each year, PSMC 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. There were four theater performances arranged for employees to appreciate in 2023, including All U People Theater's Minister, There's a Wind, Spring River Performing Arts Troupe's Why Is My Mother-in-Law So Cute — Prequel, Funny No Problem's Workman's Life - 8, and Comedians Workshop's Minister Bao, So Many Baddies. 3,619 people participated in the performance events. Through theater appreciation, employees can enjoy warmth and pleasantness with their family.

In addition to theater performance, three arts/cultural lectures were also held in 2023, including How to Change Life and Wealth Status in an Era of Inflation by Yan-Lii Lu, Parent-child Communication Skills for Working Parents by Daddy Tse, and 12 Habits Toward Change — Celebrity Lecture by Shi-Ying Chu. 457 people participated in the lectures. These celebrity lecturers not only shared their life experiences and professional knowledge, but also expanded our colleagues' understanding and exchange in various fields.



All U People Theater's
Minister, There's a Wind



Spring River Performing Arts
Troupe's Why is My Mother-in-
Law So Cute — Prequel



Funny No Problem's
Workman's Life - 8



Comedians Workshop's
Minister Bao, So Many Baddies



Parent-child Communication
Skills for Working Parents by
Daddy Tse



12 Habits Toward Change —
Celebrity Lecture by Shi-Ying
Chu

Leopard-cat-themed Photography Competition

As a part of the Company's ESG promotion plan, a leopard-cat-themed photography competition was conducted in January 2023 to advocate and promote the awareness of Taiwan's rare animal conservation. There were 138 employees engaged in this competition, and 98 photographs were submitted, among which 28 works were selected as the final award-winners. The prize bonus for the first three winners were NT\$6,000, NT\$5,000 and NT\$3,000, respectively. In addition, the first-place winner's work has been used as the main pattern printed on the gift backpacks prepared for participants who arrived earlier at the end of the route assigned for the 2023 trekking event organized by the Company.



1st Place



2nd Place



3rd Place

Powerchip Family Day

Powerchip Family Day is an event exclusively for PSMC members' family. The Family Day was held at Lihpao Resort on July 8 and July 22, 2023. A total of 5,721 employees registered for the event, achieving attendance rates of 85.6% and 80.4%, respectively. Employees together with their family totaling nearly 13,000 people participated in the event, which not only facilitated husband-wife and parent-child interactions, but also encouraged more extensive interpersonal communication among participants. A variety of lovely food, fun facilities, and interesting stage performances were presented in the event for participants to enjoy the cheerful atmosphere together to effectively gather the centripetal force of employees and strengthen the identification of family members.



Powerchip Family Day Photos



Hsinchu Left Bank Grassland Walking Activities

PSMC organized two Hsinchu Left Bank Grassland walking activities in 2023. There were 1,435 employees registering for the event; however, being affected by weather conditions, 668 employees participated in the activities. In addition to trekking, exercising, and other sports activities, there were also food stalls, Breakthrough Game stands, performances and lucky prize draw activities organized onsite for participants to exercise and enjoy themselves with their family.



Hsinchu Left Bank Grassland Walking Activities Photos

Christmas Thanksgiving Music Dinner

Christmas is a time for thanksgiving. For this special event, PSMC collaborated with Miaobei Art Center to hold two Christmas philharmonic concerts in December 2023: the Christmas Good News through Sound of Heaven-Christmas Choral Concert given by the Taipei Philharmonic Chamber Choir, and the National Taiwan Symphony Orchestra's Classic Dialogue between Bizet and Dvorak. 1,550 employees and their family attended the concerts, enjoying the fantastic performances and festive Christmas atmosphere. To help employees understand more about the works performed in the concert, the Company invited Lin Po-chieh, Music Director of Jingo International Records Co., Ltd., to deliver a lecture on the program of the concert Classic Dialogue between Bizet and Dvorak, in which 95 employees participated.

Diverse Clubs and Sports Events

Club Activities and Interdepartmental Competitions

PSMC encourages employees to establish employee clubs and conduct club activities for employees to develop hobbies and extend interpersonal relationships in their time after work. More and more employees have been encouraged to participate in employee clubs in recent years. The clubs can be classified by their attributes into the following categories: ball games, sports and leisure activities, public welfare, music and art, and general studies. Currently there are 14 clubs for employees to choose, which are Badminton Club, Table Tennis Club, Tennis Club, Volleyball Club, Basketball Club, Bowling Club, Softball Club, Rhythmic Exercise Club, Audio & Video Club, Cycling Club, Healthy Mind Club, Agronomy Club, Language Club, and Music Lovers Club. The clubs hold regular and diverse activities to encourage employees to expand their social networks, cultivate hobbies, and enrich lives. The Welfare Committee also

provides funds to support club operations. For example, for PSMC Cup ball games organized by the Company's ball game clubs, the Committee will allocate prize money based on the number of participating teams. Ball game teams also receive funds for their team jerseys and equipment. In addition, if a club represents the Company to participate in an external competition and wins an award, it will be granted an additional incentive subsidy of NT\$32,000. The total subsidy funds for all ball game clubs have reached NT\$1.5 million, and a subsidy of NT\$20,000 has been provided for each general club and study-oriented club to support their activities.

As stipulated in the Regulations Governing Employee Welfare Committee's Club Management, clubs must complete the next year's budget itemization in October every year, and club activities must be carried out by following the planned budget. The operating procedures are as follows:

1. Itemize the next year's budget in October every year, which shall be submitted to the Welfare Committee for approval in the quarterly meetings.
2. Clubs are required to fill out an Activity Application Form before the implementation of club activities. Club activity information and regulations must be announced on the Company's Welfare Bulletin after the application is reviewed and approved by the Welfare Committee.
3. Submit a case-closing report within 15 days after the activity is completed to apply for expense reimbursement.



Healthy Mind Club's tree-planting



Music Lover Club's Veeh-Harfe performance



Floral Art Club's New Year floral exhibition and Dragon Boat Festival hanging decorations



With the slowing down of the pandemic, a variety of PSMC Cup ball game competitions were resumed in 2023. Through club ball game competitions, employees' sense of agreement with the Company has been enhanced, and the collaborative strength brought by teamwork has also been further strengthened. The clubs also continue to win external competitions for the Company. The number of teams and each club's team members that participated in 2023 PSMC Cup ball game competitions and their achievements in external competitions are listed in the table below:

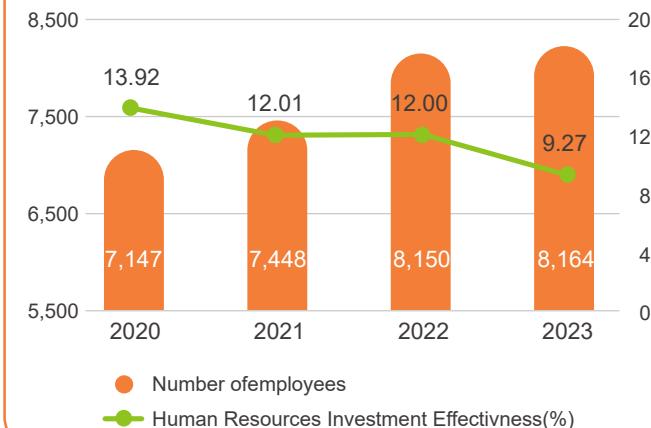
Club Name	PSMC Cup		PSMC Team Achievement
	Number of teams	Number of members	
Softball Club	20	410	Second place in 2023 Cooperative Bank Cup Slow Pitch Softball Invitational Tournament (Healthy Group)
Tennis Club	21	170	
Basketball Club	37	585	Third place in 2023 HSP Cup Men's Basketball Game (Healthy Group) Third place in 2023 HSP Cup Men's Basketball Game (Happy Group) First place in 2023 HSP Cup Women's 3 on 3 Basketball Game
Table Tennis Club	32	320	Third place in 2023 HSP Cup Table Tennis Game (Women's Group)
Badminton Club	49	460	-
Volleyball Club	33	362	-
Bowling Club	102	712	-



Recreational Facilities and Services

PSMC attaches great importance to the balanced development between employees' work and leisure. A multifunctional sports center equipped with basketball court, tennis court, volleyball court, pool table, and ping pong table has been established on the ninth floor of the Company's P1/2 Plant. There are also gym, aerobics classroom, karaoke room, and audiovisual room on the fifth floor. Other plants (P3, 8A, 8B) are also equipped with fitness facilities and aerobics classrooms, providing employees with the best leisure/exercise environment for them to develop regular exercise habits.

Human Resources Investment Effectiveness



Note1: Return on investment in human resources = [operating revenues - (operating expenses - employee salaries and benefits)]/employee salaries and benefits.

Note 2: Due to the industrial boom, annual revenue decreased in 2023, which affected the effectiveness of human resources investment.





Child Care Leave without Pay and Maternity Benefits

PSMC has established a complete unpaid paternity leave system based on the rights that workers are entitled to in accordance with the Act of Gender Equality in Employment. Employees who meet eligibility requirements can apply for unpaid paternity leave to retain their work rights for them to maintain a balance between work and family. The Company has also established breastfeeding (lactation) rooms in accordance with laws and regulations, which female employees in need can use anytime at work. In addition, in response to the government's maternity policy, PSMC 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 2023. 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 2023, the number of employees who were entitled to parental leave was 72, and the actual number of applicants for parental leave was 46. The job reinstatement rate was 71.74%, and the retention rate was 93.94%, 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.

Child Care Leave without Pay Statistics

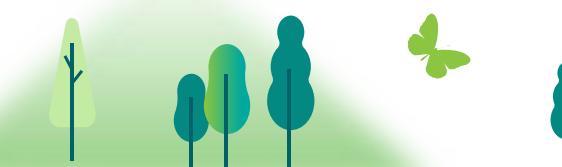
Item	Female	Male	Total
Number of employees entitled to child care leave in 2023	51	21	72
Actual number of employees applying for child care leave in 2023	29	17	46
Number of employees reinstated in 2023	32	14	46
Actual number of employees reinstated in 2023	23	10	33
Actual number of employees reinstated in 2022	32	1	33
Number of employees who are still working 12 months after their reinstatement in 2022	30	1	31
Reinstatement rate (%)	71.88	71.43	71.74
Retention rate (%)	93.75	100.00	93.94

Note 1: Reinstatement rate (%) = (Actual number of staff reinstated in FY2023 / Number of staff to be reinstated in FY2023) * 100%.

Note 2: Retention rate (%) = (Number of employees still working 12 months after reinstatement in FY 2022/ Actual number of employees reinstated in FY 2022) * 100%.

4.2 Talent Nurturing and Development

PSMC spares no effort in creating a comprehensive learning environment for employees by providing a variety of training courses and multiple learning channels as well as systematic training programs to help employees acquire the professional knowledge and skills needed for their work. At the same time, the Company also encourages employees to maintain a habit of self-directed learning after work by establishing online learning resources, providing subsidies for statutory professional license examinations and on-the-job training courses, and other support measures to create a work environment for continuous learning and progress and to inspire employees' potential.





4.2.1 Educational Training Framework

PSMC has formulated its Procedures for Employee Education & Training in which the PDCA methodology has been introduced. By following the PDCA principles, each department's managerial personnel must develop next year's education and training plan by the end of each year based on comprehensive consideration of the Company's vision and business philosophy, medium-/long-term business strategies, and individual unit's training needs. The Human Resources Division, as an implementation unit, is responsible for organizing a variety of in-person and online education and training activities, keeping track of employees' training participation status, and recording feedback from course participants to continuously improve educational training programs' contents.



The education and training system is centered around the three core areas of "New Employee Orientation Training", "Functional Training", and "Knowledge Inspiration", in connection with 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.
On-the-Job Associates	Professionals	Provide professional courses in operation technology and administration to improve the professional skills of our staff.
	Managerial	Provide stage by stage management skills refinement for management/succession to nurture excellent managers and successors.
	General Competency	Provide courses including presentation skills, problem-solving skills, time management, etc. to cultivate soft skills

Employee Development Program

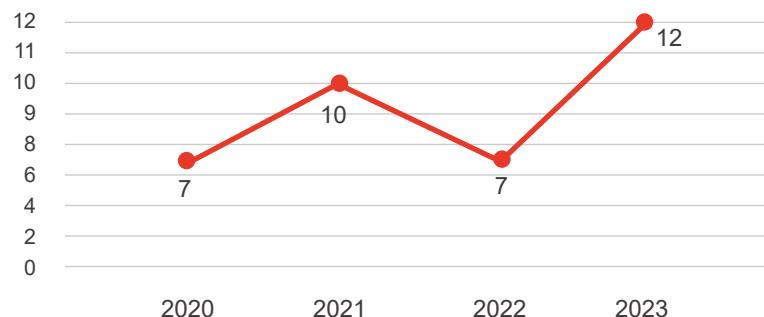
In addition to education and training programs, PSMC plans long-term training programs for technical research and development employees based on the principle of continuous improvement of core functions.

Project Name	Project 1	Project 2
	Senior Executive Workshops	Lectures on Semiconductor Technologies
Project Goals and Business Benefits	<ul style="list-style-type: none"> Through the senior executive workshops, managerial personnel can achieve a consensus, discuss the Company's technical capabilities, and determine the direction for future technical development. Through the lectures, senior executives can grasp the global semiconductor market's development trends, and identify PSMC's market presence and competitiveness so that they can dynamically adjust the Company's business strategies. 	Four lectures on professional semiconductor technologies were conducted in 2023: <ul style="list-style-type: none"> Development and application of automotive semiconductor material technology Digital transformation in manufacturing: Intelligent manufacturing and data science Wafer-level 3D IC packaging technology and future development trends The Development Status of GaN High Electron Mobility Transistors Through the lectures delivered by industrial and academic experts, general employees and managerial personnel can have an understanding of the current development direction and application of industrial technologies, which will help employees continuously upgrade their professional skills and strengthen their knowledge and capabilities related to a variety of semiconductor fields (materials, packaging, manufacturing, etc.) for PSMC to maintain its technical competitiveness.
Quantitative Impact of Business Benefits	<ul style="list-style-type: none"> Stay on top of global semiconductor market trends, determine the Company's future technical development direction, and continuously increase products' market share Externally: Adjust the Company's business strategies on a dynamic basis; Internally: Reinforce cohesion among employees. In 2023, the voluntary turnover rate decreased by 22.86%, and the internal rotation rate increased by 56.77%. By establishing a strategic patent layout, the number of acquired patent approvals increased by 10% in 2023. 	<ul style="list-style-type: none"> Strengthen the ability to introduce IGBTs into automotive semiconductor technology: The revenue share of electric vehicle products increased from 3% to 5% in 2023. Improve fab manufacturing efficiency and reduce labor investment and energy/resource consumption through intelligent manufacturing. Upgrade 3D IC packaging technology, and explore diversified technical development opportunities.
Percentage of full-time staff participation	Participants: Directors ranked above the Office level Percentage: 92%	Participants: R&D and technical development engineers Percentage: 36%

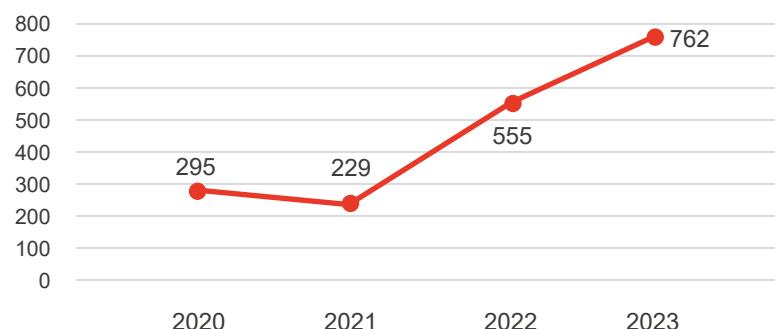


PSMC encourages employees to take professional license or qualification examinations. For employees who need to obtain statutory licenses, the Company will provide full subsidies for exam registration fees and license fees. Employees who need to obtain higher academic qualifications can submit study applications in accordance with the Management Directions for On-the-job Study. 12 employees obtained higher academic qualifications in 2023, among whom 10 employees obtained a master's degree. In addition, three in-plant certificate-related courses were provided in 2023 to help 422 employees obtain the certificates for organic solvent operations, supervisors in charge of specified chemical substance operations, and radiation machine operations. Also, 340 employees received subsidies to participate in training sessions provided by external institutions to obtain the certificates required for their work. The total amount of subsidies allocated in 2023 was about NT\$1.53 million.

On-the-job training



License Subsidy



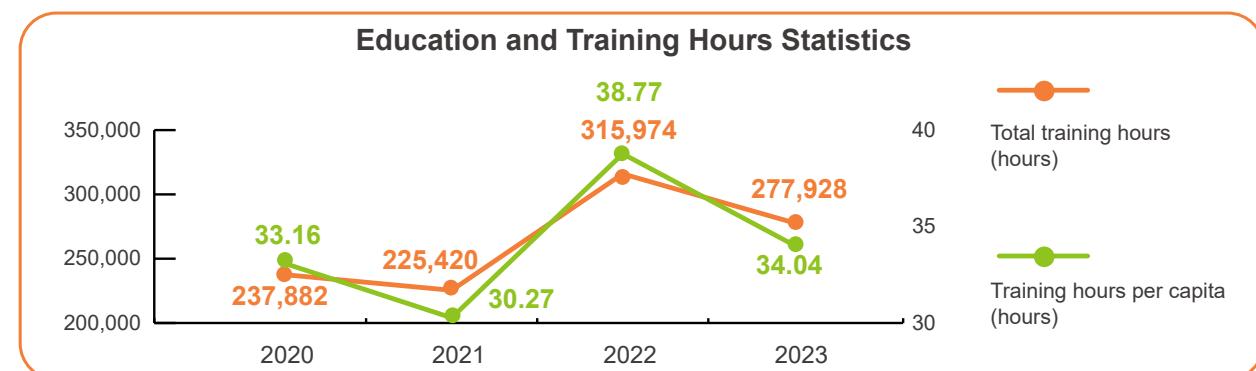
Flexible and Diverse Learning Formats

In order to improve learning willingness and effectiveness, PSMC integrates internal and external training resources of the company and plans a dedicated training website, so that colleagues can master the most up-to-date professional knowledge, regulatory changes and the company's latest decisions through more flexible learning models, multiple channels and other information, etc.. PSMC also uses the online learning platform to grasp the learning status of colleagues in real time and provide timely guidance and support.





In 2023, the total training hours of employees reached 277,928 hours, and the average training hours per employee was approximately 34.04 hours; annual training-related expenses reached NT\$6,322,427, and the average employee education and training expenditure was approximately NT\$774. Through the company's internally developed in-factory communication software Pteam, various online training courses are continuously arranged. The achievement rate of the training plan for 2023 (including the E-Learning system) was 96.87%. A total of 31 physical standard courses were offered, with an average rate of the satisfaction survey was 95%.



Average training hours by job level

	Category	Total training hours (hours)	Number of employees	Training hours per capita (hours)
Non-managerial employees	Female	69,558	2,768	25.13
	Male	177,541	4,101	43.29
	Total	247,166	6,869	35.97
Junior Management Level	Female	6,659	294	22.65
	Male	12,654	449	28.18
	Total	19,247	743	25.99
Middle Management Level	Female	1,312	70	18.74
	Male	9,741	461	21.13
	Total	11,053	531	20.82
Senior Management Level	Female	22	1	22.00
	Male	440	20	22.00
	Total	462	21	22.00

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 operating goals, tap the potential of employees, and ensure team operation efficiency, PSMC has developed a fair and equal performance appraisal system. Supervisors at all levels will review, track and review goals and key performance indicator achievement status and matters to be improved based on the daily work performance of employees affiliated to their departments. Excluding employees who have been on the job for less than three months, 100% of all other employees, regardless of rank or gender, will receive performance appraisals twice a year. The performance appraisal results will be used as an important basis for employee promotions and rewards. For employees with unsatisfactory performance, supervisors will provide coaching and necessary resources according to the situation. If necessary, their job content will be adjusted based on the employee's situation to ensure that their performance output can be improved.

Type of Assessment	Applicable Target	Frequency	Execution Method
Management by objectives	All Employees	Once every half-year	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 and the contribution to the Company's overall goals and other factors, the annual assessment is based on the results of questionnaires for the Employee upward appraisal.
Agile conversations (Conversation & Feedback & Recognition, CFR)	All Employees	Once every quarter/ immediately	The president and employees have quarterly conversations, and department supervisors 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. We actively develop various one-way advocacy and two-way communication channels, 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 respond to employees' needs and direct them back to the right track in a timely manner, an Employee Relations Department has been established under the Human Resources Division to provide employees with the most appropriate and prompt assistance and consultation/referral services in the shortest possible time. Five free-of-charge psychological consultations are offered each year, and information on mental health, emotional stress management, communication skills and other related information from time to time are also provided to strengthen mental health promotion.

Since the establishment of PSMC, labor relations have been harmonious, thus there has been no labor union established. In 2023, there were also 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 "Partner's Word" 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. 587 responses were received from employees through the "Feedback Corner" communication platform in 2023, 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

In accordance with the provisions of the Labor Standards Act, each plant completely holds regular quarterly labor-management meetings in 2023 and additionally holds the extraordinary meeting by the requirement of issues to coordinate various labor-management issues and promote harmonious labor-management relations and the results of the agreement apply to all workers

Employee Feedback Survey

Employee opinion surveys are conducted through questionnaires and interview plans of high/ middle supervisors are executed, the survey results and suggestions 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, we periodically conducted surveys through questionnaires every year 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

Aspects of design considerations for Employee Engagement Questionnaire

Aspect	Question
Satisfaction at work	My salary, bonuses, compensation, stock options, etc. are the main reasons for me to stay in the Company.
Role clarity in the workplace	I know what is expected of me at work
Sense of happiness at work	I have a good working relationship with my colleagues
Stress at work	I do not feel stressed most of the time at work

Survey Results

Number of respondents: 6,479

Questionnaire survey coverage rate: 100%

Questionnaire response rate: 80%

The average score of the 2023 Employee Work Engagement Survey was 4 points (on a 5-point scale). The percentage of actively engaged employees (i.e. those obtained an overall score of 4 or above) was 70%, and the average score for "Recommend Joining PSMC" was 7 points (on a 10-point scale). The results showed that males' average score was slightly higher than that of females, and managerial personnel's average score was higher than that of non-managerial personnel, suggesting that the higher an employee's position rank is, the higher his or her overall engagement score will be.

	Category	2022	2023
Gender	Female	4.5	3.9
	Male	4.5	3.9
Managerial personnel	General employees (non-managerial)	4.5	3.8
	Operative level managerial personnel	4.6	4.0
	Middle level managerial personnel	4.7	4.0
	Higher level managerial personnel	4.7	4.1
Tenure	Less than 2 years	4.5	3.9
	3-5 years	4.4	4.2
	5-10 years	4.5	3.8
	More than 10 years	4.5	3.9
Total		4.5	4.0

Fiscal Year	Questionnaire survey coverage rate	Engagement Index (%)	Target (%)
2022	100	86.3	85
2023	100	70	80

Note 1: Engagement Survey Management Classification including: Junior management level: Production line deputy leader, production line leader, production line supervisor, team leaders or supervisors (excluding technical/project leaders), middle management level: department and division level heads/supervisors, senior management level: Assistant Vice President level or above.

Note 2: As the employee engagement questionnaire was significantly adjusted in 2023 after internal discussions, the survey results did not reach the original target of 80%.

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 in order to manage the direction of improvement of the company's operational development.



4.3 Human Rights

4.3.1 Human Rights Policy Communication

Based on a human-oriented business philosophy, PSMC strictly follows local laws and regulations in employee recruitment, and will never discriminate anyone on account of the individual's race, gender, age, marital status, religious belief, political affiliation, disability status, or other situations, to comply with the international trend that aims to achieve a balance among environmental, social and corporate governance development, and to protect the basic human rights of employees, suppliers, business partners and other stakeholders. PSMC, by following the RBA Code of Conduct, UN Guiding Principles on Business and Human Rights, Declaration of Fundamental Principles and Rights at Work, UN Universal Declaration of Human Rights, and other regulations, formulated its Labor and Human Rights Policy in 2022, which has been signed by the President and announced on the Company's official website and intranet. The Company also implements the human rights policy through education/training, human rights due diligence, and RBA Self-Assessment Questionnaire (SAQ), and requires suppliers and business partners to cooperate in completing questionnaire surveys on their compliance with the RBA Code of Conduct, and on-site audits conducted on an irregular basis to build a friendly workplace of diversity and inclusion.

Power Semiconductor Manufacturing Co., Ltd. promises to strictly prohibit the employment of children. PSMC is committed to strictly prohibiting the employment of child labor, over the age of 15 but under the age of 16, and will not arrange workers under the age of 18 (youth workers) to do work that may endanger health, safety or ethics, including overtime or night work. 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. In 2023, there were no forced or compulsory labor incidents, nor were there any incidents involving the use of child labor or infringement of the rights of indigenous peoples. Therefore, no penalties were imposed by the competent authorities for this reason.

In order to implement the human rights policy, PSMC provides human rights-related training to all employees and security personnel, PSMC conducts five human rights protection related training courses, including Corporate Social Responsibility and Business Ethics and Labor Laws and Regulations, for a total of 7.1 hours, with a total of 16,183 participants and a 100% employee training attendance rate, and achieved a 100% of completion training rate.

Labor and Human Rights Policy:

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





4.3.2 Human Rights Issue Management

PSMC's P1/2 Plant took the lead in undergoing the verification conducted by a third party assigned by the Responsible Business Alliance (RBA) in 2021. The Company also voluntarily adopted a standardized risk assessment template (Self-Assessment Questionnaire, SAQ) designed by RBA to identify its human-rights-related risks (with the scope covering PSMC's own operations, the value chain, and new business partnerships such as merger, acquisition, joint venture, etc.) All Fabs completed the RBA SAQ in 2023, with the scores reaching 85 points or above. In addition to focusing on discrimination, harassment, forced labor, child labor, human trafficking, freedom of association, and other human rights-related issues, emphasis is also placed on the rights of employees, children, women, indigenous people, immigrants, and other related groups. P1/2 Plant successfully passed the RBA Validated Audit Process (VAP) verification in late 2021, and obtained the Gold-level Certificate in Q1 of 2022. P3, 8A, and 8B Plants completed the RBA SAQ in 2022, and underwent the RBA VAP verification in November 2023. P1/2 and 8B Plants have been awarded the Gold-level Certificate, and P3 and 8A Plants awarded Platinum-level Certificate. Moreover, through regular systematic surveys on potential human rights risk issues, the Company can grasp the significant human-rights-related risks of the year, and accordingly develop mitigation and remedial measures and response strategies.

Based on the results of the 2023 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	Contractors
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 	<ul style="list-style-type: none"> Forced labor Work hours
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 	<ul style="list-style-type: none"> Questionnaire surveys on compliance with the RBA Code of Conduct On-site 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 	<ul style="list-style-type: none"> Questionnaire surveys on compliance with the RBA Code of Conduct On-site audits



4.4 Occupational Safety and Health

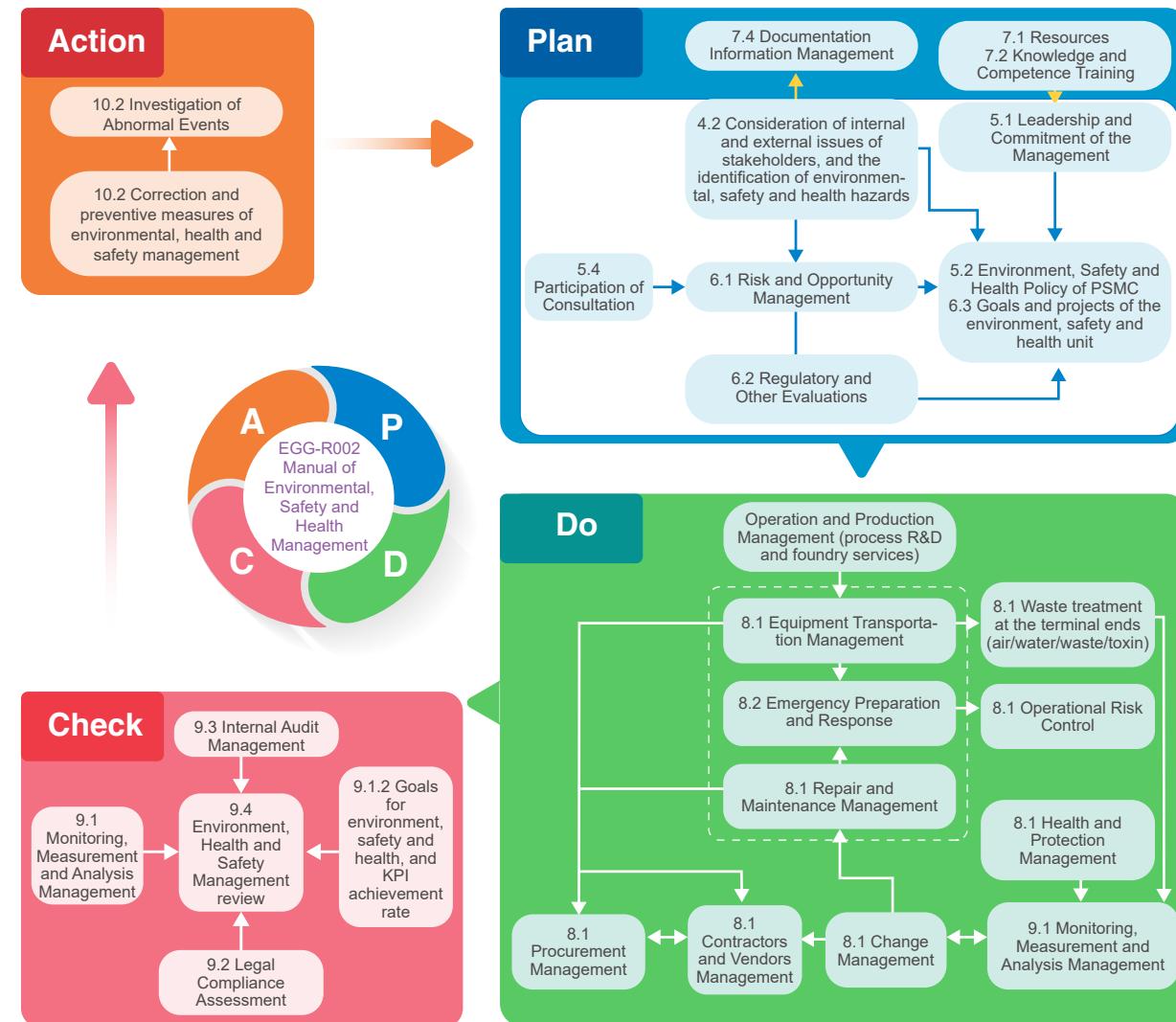
4.4.1 Occupational Safety and Health Management

Environmental Safety and Health Management System

PSMC 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. PSMC has established an inhouse 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 8,164 employees and 15938 non-employee workers, with a coverage rate of 100% (33.78% and 66.22% of total workers for employees and non-employee workers respectively).

PSMC has formulated an "Environmental Safety and Health Policy" signed by the President in 2022 as the highest guiding principle for environmental, safety and health management. The Safety, Health and Environmental Protection Committee, led by the President and composed of legally constituted personnel, serves as the highest review body of the environmental, safety and health management system. The environmental safety and health audit team composed of internal environmental, safety and health auditors in each factory conducts internal environmental, safety and health audits every six months with reference to the "Environmental, Safety and Health Internal Audit Operation Management Measures" and "Internal Environmental, Safety and Health Auditor Recognition and Registration Rules" and other procedures. activities, and at the same time entrust an external Lloyd's Register Verification Company (LRQA) to verify the overall environmental, safety and health management system operation and execution records in compliance with the provisions of the validity, and convene the Safety, Health and Environmental Protection Committee every quarter to review, amend the management plan, and evaluate prevention / Reduce health and track the achievement of safety and health hazard risks for the purpose of continuous improvement. In August 2023, the three-year re-verification of the environmental and occupational safety and health management system has been completed to continue the effectiveness of the management system.

Powerchip Semiconductor Manufacturing Co. Process Flow of ESH Management System





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

Plant (P1/2、P3、8A、8B)

Risk and Environmental Safety Department (Oversees the Following)

Plant Safety, Health and Environment Protection Committee

Plant	HQ	P1/2	P3	8A	8B
Number of labor representatives (persons)	26	11	7	16	9
Total number of committee members (persons)	67	28	20	32	21
Percentage	38.81%	39.29%	35.00%	50.00%	42.86%

Note: Percentage = (number of labor representatives / total number of committee members) * 100%

Employee Consultation and Communication

Questions, opinions or complaints from PSMC's employees' regarding environmental safety and health can be raised through the internal communication channel, 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.

In 2023, the Company held 20 Occupational Safety and Health Committee meetings, 30 contractor consultation and communication meetings, and 12 EHS representative consultation and communication meetings. Related workers and stakeholders were invited to participate in the meetings and join the consultations regarding the Environmental & Occupational Safety and Health Management System's establishment, implementation and assessment to advocate and communicate the information about workers' occupational safety and health.

4.4.2 Occupational Safety and Health Risk Assessment

Environmental Safety Risk Identification and Improvement Measures

In order to control the possible environmental, safety and health risks existing in business activities or product production processes, through process/activity hazard identification and risk assessment, PSMC has identified related environmental safety and health risks and formulated countermeasures in advance to effectively reduce the risks caused by a variety of operations or activities. Individual departments must examine the contents of their operations or information about the activities they are engaged in based on the scope and procedures of related processes/activities, including activities of contractors and visitors in plant areas, and EHS issues arising in the process when products are delivered to customers. Next, the departments must take inventory of the raw materials, parts, cleaning supplies, and personal protective equipment they use, summarize the information about the wastewater/exhaust/waste, etc. they produce, and fill out the Department Process/Activity Step List, which shall serve as a basis for subsequent EHS risk assessments.

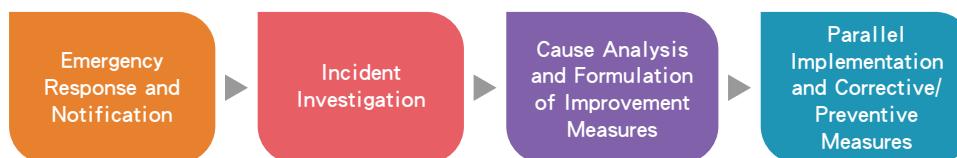
In the implementation of environmental safety and health risk assessment, various assessment techniques such as "machine safety inspection, change management, hazardous workplace process safety assessment, SEMI standard, Hazard and Operability Analysis (HAZOP), Failure Mode and Effects Analysis (FMEA), 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 accordance with the Operational Guidelines for EHS Risk Assessment applicable for in-plant areas, risk identification shall focus on the general chemical, physical, biological and ergonomic hazards. After summarizing worker consultation results, each department must identify its environment, safety and health hazards and risks based on its input and output processes, and confirm potential EHS hazard/risk items. Through the filling-out of the Department Risk Assessment Form, the inherent risk level and control risk level shall be assessed. Three indicators must be adopted for calculation when conducting risk assessment, which are a hazard's probability of occurrence (P), severity (S), and risk weight (W). The most severe level risk (when all soft-service/hard-service protections have failed) must be considered when determining the level of the inherent risk. When determining or changing existing risk control measures, the order of consideration shall be elimination, substitution, engineering controls, redeployment, labeling/warning/administrative controls, and appropriate personal protective equipment. Next, determine the level of control risk after implementing the existing control measures such as operation controls, safety devices/protective measures, emergency response measures, etc., based on which corresponding improvement measures and goals shall be formulated. The implementation progress of the improvement measures shall be reviewed in EHS management & review 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, PSMC 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.



Formulating Environmental Safety and Health Strategy Process and Target

PSMC's environmental safety and health policies, and management 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 target.



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 nonconformities deficiencies, and regulatory impacts".





Contractor Management Mechanism

PSMC has formulated the Contractor Safety, Health and Environment Regulations to ensure that contractors can implement safety management mechanisms when working in the Company's plant areas to achieve the goal of Zero Work-Related Injuries. Currently, PSMC's two 8-inch fabs and three 12-inch fabs in operation all follow the principle of "one work permit, one access card" to control contractor personnel's movements and activities within PSMC's plant areas. A contractor will be given one exclusive contracting work permit and one magnetic access card after passing required course tests. The work permit and access card must be used together with the Contractor Operation Permission Form issued by PSMC's implementation unit for the contractor's personnel to enter/exit the plant area and the job-site of the operation. The implementation of dual control measures through contracting work permit and magnetic access card can more effectively control activities performed in plant areas. Implementation units will receive information released through the Contractor Management Monthly Report on a regular basis. By analyzing the statistics indicated in the report, implementation units will formulate items for further management, and will supervise the contracts with more violations carrying out self-management measures. The contractors' performance shall be reviewed in the quarterly Safety, Health and Environment Committee meetings, and the violation records shall be listed as an important indicator and basis for contractor evaluation.

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 assure that persons of all suppliers, subcontractors and contractors are informed of the PSMC's enforcement requirements related to operational regulations and environmental safety and health laws. To establish a unified standard of contractor evaluation, 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. 176 contractors were selected for evaluation in 2023, 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 nongovernmental organizations.

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, evaluate the progress and results of achieving the goals of preventing and reducing risks of health and safety hazards and deliver the audit results to the management and stakeholders as a point of reference for the improvement and adjustment of the management system. In addition, PSMC 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.

Operating Environment Monitoring and Protection

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, PSMC 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.

The operating environment monitoring results and improvement measures are all described in the Safety, Health and Environment Committee meetings to labor representatives and meeting participants for related employees to be well aware of relevant issues and build up good safety and health protection concepts. The 2023 monitoring results all met regulatory requirements.





Monitoring Items	Monitoring Details	Monitoring pass rates for first/second half of 2023
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 responsible unit 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. 65 applications for potential risks evaluations and improvement proposals were approved by the Risk Safety and Environment Department of each plant in 2023, exceeding the annual target of more than 55 proposed improvements

Item	Highlight Project 1 - Gas Insulated Switchgear Room Image Recognition System	Highlight Project 2 - Machine Safety Director through Messaging
Project Description	<p>The 161KV GIS Room is a high-risk operation area, which will be exposed to the risk of power loss if no real-time monitoring system or personnel's inspection is provided. Therefore, a SF6 pressure and PT temperature real-time monitoring system were introduced in 2023, which can conduct real-time monitoring of SF6 pressure and PT temperature, and will give alerts in the event of anomalies. The Company will continue to use this system to collect equipment and environment data, and upload data to the cloud for analysis to establish a more comprehensive early warning mechanism to enhance disaster response efficiency.</p>	<p>Each fab takes inventory of its machines and equipment. Those with fire detection and alert functions can proactively and immediately notify ERT to shorten the response time gap when a disaster occurs. As of the end of 2023, fab machines equipped with fire detection and alert functions were established with Power Loss Protection (PLP) and Warning Light functions, among which the machines that support the Send Message Now function were also established. Through regular simulation of possible plant area disaster scenarios, drills can be conducted and emergency response mechanisms can be added or modified based on drill review results to minimize disaster severity.</p>
Project Results	<ul style="list-style-type: none"> • Introduce a real-time monitoring system to take early action for equipment anomalies • Substitute for personnel's inspections to improve personnel safety  <p>Historical curve Image recognition analysis results Thermal imaging for temperature monitoring</p>	<ul style="list-style-type: none"> • Introduce equipment's messaging function to shorten the response time gap when a disaster occurs



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, PSMC 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 PSMC'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 PSMC's occupational safety and health education and training.

General Occupational Safety Training

PSMC'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". 159 education and training plans were completed in 2023 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 2023, a total of 192 training sessions were conducted, with 29,440 trainees, including 36 sessions for new personnel training, with 1,394 trainees. As of the end of 2023, there are 1,052 people holding various environmental safety and health positions, all of whom are licensed in accordance with the regulations.

Implementation results of key environmental, safety and health education and training courses

Training Object	Topics	Training Results
Plant engineering, equipment engineering and manufacturing department staff	<ul style="list-style-type: none"> Environmental, safety and health procurement management training General knowledge training on hazardous chemicals 	A total of 10,867 people completed the training sessions
Departmental staff in administrative categories	<ul style="list-style-type: none"> Strengthen sensitivity to work site safety issues Strengthen on-site safety sensitivity in the working environment 	A total of 2,061 people completed the training sessions
Foreign personnel	<ul style="list-style-type: none"> Prevention of drawing-in/trapping hazards 	A total of 389 people completed the training sessions
All Personnel	<ul style="list-style-type: none"> Lecture on a peek into Tongluo Qianshan Ecological Conservation Net Zero Emissions Lecture Lecture on the Impacts and Challenges of Climate Change Biodiversity Lecture Education and Training related to Waste Reduction 	A total of 6,387 participants

Emergency Response and Fire Safety/First Aid Training and Drills

The fire safety training and practical drill programs held in 2023 were divided into ERT (Emergency Response Team) training and ERT drill. Training sessions related to how to wear personal protective equipment and how to use a variety of response equipment are organized every year to help personnel skillfully, correctly and effectively use response equipment in emergencies and avoid ERT personnel injuries during accident rescue. PSMC conducted 117 ERT training sessions in 2023, with 1,151 qualified ERT rescue team members being trained, and 74 members completing the ERT first aid team training (online CPR and AED courses). In addition, PSMC has formulated the Plant Area Disaster Emergency Response Regulations to ensure that in the event of emergencies, the personal injuries, property losses and environmental damage caused by accidents and the degree of impact on the environment can be mitigated through correct, effective, and systematic response procedures. 269 ERT drills were conducted in 2023, including cleanroom evacuation drills, department's self-directed response drills, interdepartmental joint drills, etc.





Contractor Education Training

PSMC continued to implement operations related to contractor work permits in 2023 by providing contractors with course materials focusing on safety, health, and environmental regulations. 7,525 contractor personnel completed the self-directed contractor training sessions, which helped ensure that contractors can have a comprehensive understanding of PSMC's variety of contracting management regulations before plant-entry. In addition, contractors are required to undergo construction capability certification before plant-entry. 890 contractors have been certified by a variety of consultative organizations. The capability certification system can not only effectively ensure operating personnel's ability to identify hazards, but can also reduce the probability of occupational accident occurrence. Long-term in-plant service providing contractor personnel such as staff canteen workers, security personnel, cleaners, cylinder-replacing operators, etc. are required to receive at least 1 hour of safety-health-related educational training every year. There were 391 contractor plant-entry training sessions conducted in 2023 with 4,493 participants.

4.4.5 Occupational Injuries and Illnesses

In the event of occupational accidents, the accident investigation procedures must be followed to give feedback to the management system, through which the accident source can be controlled and improvement measures can be parallelly implemented to avoid the recurrence of same problems. 4 recordable occupational injury incidents happened in 2023, all of which belonged to the category of physical injury incidents where employees were injured because of falling, being gashed, tripping, or being hit by falling objects. The corresponding preventive improvement measures have been parallelly implemented in all plant areas. In addition, PSMC 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). Moreover, screening of potentially hazardous operations and near miss improvement and tracking have also been conducted, and the List of Potentially Hazardous Operations has been updated and incorporated into in-plant monitoring and management systems. In 2023, there were no occupational disease cases as defined by regulations (including non-employee workers).

2023 Injury Index

Item	Category	PSMC	The Subsidiary	Total
Total hours worked (hours)		17,351,168	69,440	17,420,608
Frequency rate (FR) of disabling injuries		0.34	0	0.34
Severity Rate (SR) of Disabling Injuries		10	0	10
Sum of Injury Index (FSI)		0.05	0	0.05

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

Occupational Injury Statistics

Item	Fiscal Year	2022	2023
Total hours worked (hours)		16,900,136	17,420,608
Occupational Injury Type	Number of physical injuries	1	6
	Number of chemical injuries	0	0
	Number of biological injuries	0	0
	Number of human-caused engineering injuries	0	0
Total number of occupational injuries (recordable occupational injuries)		1	6
Work-days lost (Day)		10	187
Work Injury Rate (IR)		0.06	0.34
Work-Days Lost Ratio (LDR)		0.59	10.73

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

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

Note 3: Work-Days Lost Ratio (LDR) = (number of work-days lost / total hours worked) * 1,000,000.

Note 4: In 2023, there were no fatalities or serious occupational injuries caused by occupational injuries.

Note 5: In 2023, no occupational injuries occurred among non-employees.

Note 6: Occupational injury incident statistics do not include employee commuting traffic accidents.





Near Miss Statistics

Near miss category	Incidents in 2023	Improvement Measures
Chemical use hazards	16	Immediately restore the unsafe environment to normal, analyze incident causes, formulate preventive and corrective measures, evaluate the measures' effectiveness, and keep track of improvement status.
Fire hazards	18	
Operating environment hazards	353	
Moving objects	122	
Machine/equipment/system anomalies	65	

Note: A "near miss" is defined as an accident that has a minor impact and does not cause casualties, property losses, or process interruption, but comes as a shock to people onsite.

Absence Rate Statistics

Item	Fiscal Year	2020	2021	2022	2023	2023 Target
Absentee Rate (%)		0.39	0.35	0.71	0.63	0.75
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 Healthy Workplace

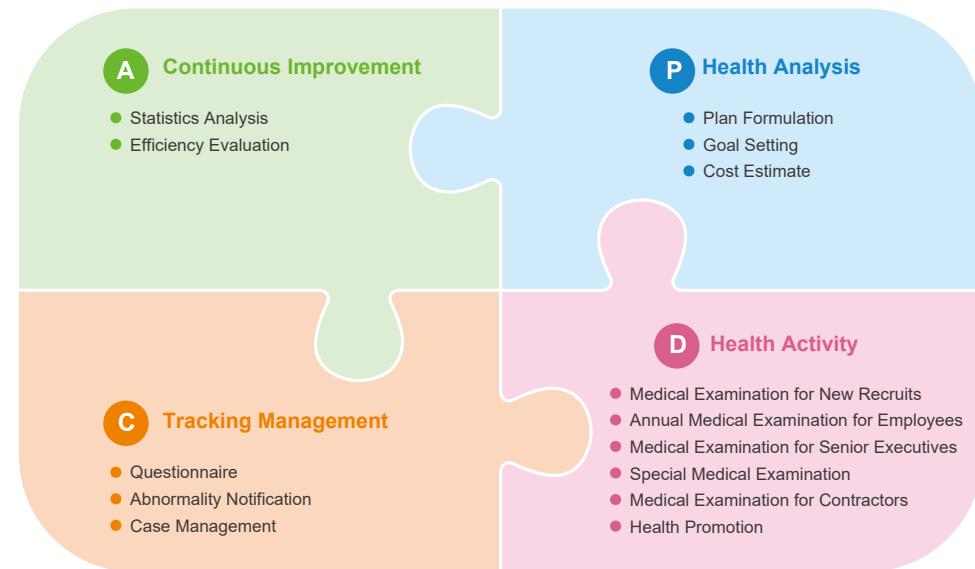
PSMC integrates the results of environmental safety and health risk assessment with the concept of a Three-Sections and Five-Levels prevention, and adheres to the implementation model of PDCA and the spirit of continuous improvement to plan complete health checkups and health promotion activities, and 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 addition, PSMC followed the Operating Rules for Contractor Work Permit Application to compile statistics on the contractor personnel such as outsourced security personnel, cleaners, staff canteen workers, etc. who performed in-plant duties for 3 or more months in the past year and shared the same work environment or had regular work contact with PSMC employees. For such in-plant personnel, contractors have been required to provide their health check reports or a health declaration issued by the contracted companies on a yearly basis so that the

Company can keep track of the in-plant personnel's health status. Those who do not provide health check reports or explain reasons shall be forbidden from entering PSMC plants. The control achievement rate was 100%.

Based on a human-oriented business philosophy, PSMC has established the Three-Sections and Five-Levels Prevention Strategy to develop a full range of health check campaigns and conduct a series of health promotion activities, for which the health management budget and resource investment have been increased year by year to ensure the concrete implementation of the health management system for employees to receive the most timely and appropriate improvement treatment. PSMC's health management system is carried out through "advanced physical examination, general physical examination, physical examination for special operations personnel, new employee physical examination, foreign worker physical examination, and contractor physical examination", which is then reinforced through different levels of health management measures and anomaly tracking and improvement mechanisms for the Company to stay on top of employees' health status. Case tracking shall be conducted for personnel of high-risk groups such as workers engaged in special operations, etc. The cases shall be required to receive rechecks, and will be assisted in visiting Powerchip Clinic or onsite occupational medicine specialists to receive consultations, thereby enhancing their awareness of health management.

Comprehensive Health Management



A Three-Sections and Five-Levels Prevention Strategy

Initial Section of Prevention		Secondary Section of Prevention	Final Section 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 Medical Screening Organized activities for high-risk groups Regular sending 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 Evaluation of work assigned 	<ul style="list-style-type: none"> Referral to appropriate medical institutions

Health Promotion Activities

Based on the results of the employees' annual health checkups, PSMC assess the types of health promotion needs through various activities such as ultrasound examinations, vaccination, low-calorie healthy meals, cardiovascular group care, and 3-point checkup for women. PSMC also hold various seminars and provide health professional consultation services to enhance the employees' cultivate correct health education concepts. The specific coverages 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.
- PSMC 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, PSMC 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 medical checkups of staff and newcomer, 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 Participants
Special Health Screening (including abdominal ultrasound, thyroid ultrasound, breast ultrasound, gynecological ultrasound, prostate ultrasound, Pap smear, bone density test and eye pressure test, etc.)	38	2,411
Health Promotion Lectures	4	331
Blood donation	2	175
Self-paid flu shot	3	308
Low Calorie Healthy Meals	Every working day	1,070

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, the clinic has also appointed on-site occupational medicine specialists to provide health education, guidance and planning, and assist in employees' fitness-for-work arrangement. In view of shift work type (four shifts and two rotations), 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.

5 Integrating Sustainability Society

5.1 Social Influence

5.1 Social Co-Prosperity Development





Integrating Sustainability · Society

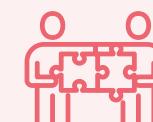
PSMC has collaborated with Powerchip Cultural Foundation to focus on social needs and development opportunities for a long time. By following the three main social participation axes of "Environmental Conservation, Public Welfare Investment, and Art & Cultural Festivals", the company has been engaged in environmental conservation, rural social resource investment, domestic sports and the field of art and cultural performances has been deeply focused on, and it is expected that intangible resources will be made tangible and promote a positive social cycle. PSMC believes that investing in social welfare activities and services can not only unite employees' centripetal force, but also exert corporate influence to arouse the public's attention to social issues, seek solutions through practical actions, and create a corporate development environment that is good together with society.



Corresponding United Nations Sustainable Development Goals (SDGs)



Stakeholders who have priority reading



Society / Local Community





2023 Sustainability Performance Highlights

**491 volunteers;
1,715 hours**

Volunteers and hours committed to
social co-prosperity activities

1,000 trees

Tree-planting and forest
protection effectiveness

617.9kg

Total volume of waste removed
via mountain and beach clean-
ing activities

317,056

persons benefitted

Environmental conservation activities
with 9,000 persons participating; 1,481
persons benefitted from the Company's
public welfare commitment; and 306,575
participants in arts & culture promotion
activities





5.1 Social Influence

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 & cultural festivals. PSMC has extended along these principles to provide the necessary assistance and support to the environment, society, and specific ethnic groups in the public welfare activities 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 jointly in social welfare activities and demonstrate its corporate values through practical actions.

Social Co-Prosperity Strategy Principles and Achievement

Social Co-Prosperity Strategy Principles	Strategy Principles SDGs Alignment	Business Drivers	Action Plans	Business Efficiency and Key Performance Indicator	Social Impact	Social/Environmental Benefits and Key Performance Indicators
Environmental Conservation	 	<p>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, cultivating a philosophy of environmental conservation for stakeholders, and expanding the impact and continuity of social investment.</p>	<p>Animal Care, Environmental Education, Planting trees and protecting forests</p>	<p>Expanded staff participation and enhanced staff dedication</p> <ul style="list-style-type: none"> Recruited 396 employees to participate in environmental conservation educational activities <p>Enhance social recognition and brand image through community interaction</p> <ul style="list-style-type: none"> Conducted Leopard cat conservation and promotion activities, inviting approximately 9,000 local people to participate, strengthening connections with local communities 	<p>Raised awareness of environmental conservation among employees and the public</p> <ul style="list-style-type: none"> Reduced the impact of human activities on the environment 	<p>Number of environmental conservation activities</p> <ul style="list-style-type: none"> In 2023, a total of 8 projects were launched and 12 events were held <p>Employee Volunteer Service Hours</p> <ul style="list-style-type: none"> A total of 1,053 accumulated service hours <p>Total amount of waste removal</p> <ul style="list-style-type: none"> Cumulative 617.9 kg of general waste was removed <p>Area of park cleaning</p> <ul style="list-style-type: none"> Park adoption of 7,088.49 square meters <p>Tree-planting & forest protection and wetland restoration</p> <ul style="list-style-type: none"> 1,000 trees planted Conservation of 80 hectares of constructed wetlands
Public Welfare Investment	 	<p>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.</p>	<p>Community Engagement and Rural Assistance</p>	<p>Expanded staff participation and enhanced staff dedication</p> <ul style="list-style-type: none"> A total of 95 employees participated in volunteer efforts A total of 662 hours that volunteers put in <p>Enhanced corporate reputation and exposure</p> <ul style="list-style-type: none"> News media exposed 13 cases, and high-traffic online videos also provided partners with exposure opportunities 	<ul style="list-style-type: none"> Provided necessary resources and assistance to rural communities, disadvantaged communities and students Supported and promoted the development of Taiwan's sports culture Promoted industry-academia cooperation to cultivate outstanding talents in semiconductor innovation 	<p>Established a positive corporate image</p> <ul style="list-style-type: none"> A total of 1,481 individuals benefited from the community involvement and rural care investment <p>Number of social welfare investment beneficiaries</p> <ul style="list-style-type: none"> More than 13 social welfare organizations, institutions, schools, farmers, and other organizations and individuals benefited
Arts & Culture Festivals		<p>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.</p>	<p>Powerchip's Arts and Cultural Festival, Music Festival, Music Education Series Activities</p>	<p>Enhanced social recognition and brand image through arts and cultural events series</p> <ul style="list-style-type: none"> A total of 306,575 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 	<p>Number of social welfare investment beneficiaries</p> <ul style="list-style-type: none"> In 2023, a total of 45 concerts, 1 music festival and 153 days of art and cultural exhibitions sponsored.



Social Engagement Impact Assessment

In order to specifically evaluate the overall effectiveness of corporate social engagement and commitment, with reference to the B4SI (Business for Societal Impact) Community Investment Measurement Framework, PSMC has divided our social engagement programs in 2023 into three categories: "Charitable Donations"; "Community Investment"; and "Business Initiatives". Through this categorization, we measure the benefits and impact of each public welfare activity and resource investment, and adjust investment and resource allocation plans in a timely manner, so that social investment programs can be closely connected with societal issues. In 2023, PSMC had more than 491 volunteers volunteering for a total of 1,715 hours. We hope that in addition to investment in human, material, and other physical resources, PSMC can also continue our invisible influence on long-term social issues such as the promotion of cultural education, establishment of positive values for school children, elimination of resource shortages in rural area communities, etc. By doing this, we extend our strengths to create positive cycles in public welfare commitment.

2023 Philanthropic Investment Types and Activity Categories

Investment Type	Investment (NTD\$)	Percentage %
Cash Donations	151,542,000	97.46%
Volunteer Costs	1,285,875	0.83%
Physical Material Donations	2,604,800	1.68%
Management Costs	53,113	0.03%
Total	155,485,788	100.00%

Investment Type	Investment (NTD\$)	Percentage %
Charitable Donations	399,750	0.26%
Community Investment	126,782,538	81.54%
Business Initiatives	28,303,500	18.20%
Total	155,485,788	100.00%

5.2 Social Co-Prosperity Development

5.2.1 Environmental Conservation

PSMC realizes that the impact of climate change and biodiversity on corporate operations, the ecological environment, and even human society cannot be underestimated, and specific actions must be taken to mitigate the impact. By responding to the Science Park's "Industrial Safety and Environmental Protection Month" plan, we promote a series of activities with main themes including "environmental protection" and "environmental education", calling on colleagues, family members and the general public to contribute to environmental protection, and cultivate the environmental awareness of colleagues and the public in order to demonstrate the determination to protect the terrestrial and marine ecological environment.

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. PSMC is actively applying the results of these programs to individuals, society, and enterprises, expecting to put environmental conservation actions into practice in everyday life.



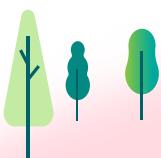


Environmental Protection



Keep the Sea Clean

PSMC gathered 172 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 correct 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 500 meters, and a total of 452.9 kg of various types of waste were removed.



Environmental Protection



Leopard Cat Conservation Promotion Activities and Mountain Cleanup

PSMC expanded our care about and resource investment in local environmental conservation by organizing in-person educational mountain cleaning activities at Fab P5 in Tongluo. 77 employees participated in provided workshops; there, measures adopted at Tongluo Science Park for environmental impact assessment, ecological monitoring, and leopard cat conservation were introduced. After the workshops, participants also helped clean up areas around the Fab. A Leopard Cat Eco-Tote was also launched in 2023, designed to remind employees to make efforts for environmental conservation, and remember the importance of ecological diversity to business development and sustainable coexistence with the environment.





Environmental Protection



Tree-planting and forest protection activities

PSMC collaborated with Tse-Xin Organic Agriculture Foundation (TOAF) for the first time to carry out the Taiwan Green Great Wall Tree-adding Initiative. 100 volunteers contributed their energy to plant 1,000 trees along the coastline, across Houlung Township's Guogang region in Miaoli County, to protect neighboring coastal areas and prevent national land loss.



Environmental Protection



Maintenance of park public toilets and parking lots

With the aim of serving the community, PSMC has cooperated with Hsinchu Science Park Bureau for two years in a row to organize cleaning activities for neighboring parks. The Company's Industrial Safety Department and General Affairs Department work together to arrange cleaning personnel, who carry out park public toilet cleaning, mowing, sidewalk plant trimming, tree debris removal, and other such tasks. The sites where the cleaning and maintenance activities were carried out in 2023 included Zhunan Science Park's Community Park public toilets, Tongluo Skywalk's public toilets and nearby parking lots, and Nanliao Eco Park. Through these activities, relationships with governing agencies and local communities are improved.





Environmental Protection



Constructed wetland protection

PSMC and the Kaohsiung Wild Bird Society collaborated for the first time in 2023, when we conducted a constructed wetland protection program on Earth Day. The wetland protection site is located near the Gaoping River's Dashu Old Railway Bridge section in Kaohsiung. The protection area sponsored by PSMC is 80 hectares in size, and aimed at restoring habitats for the pheasant-tailed jacana and, in zone A5, planting water snowflake (*Nymphoides indica*). A sign indicating PSMC's public welfare commitment has also been erected on the site.



Environmental Education



EHS Communication

Actions taken in 2023 included:

1. Sending 80 EHS messages. Using messages on a variety of topics to enhance employees' sensitivity of pollution prevention, climate change, safety & health, health promotion, disaster prevention and safety awareness, and other EHS-related issues.
2. Organizing a "Let's Plant Plants!" themed activity, encouraging employees to reuse discarded containers as plant pots and create a lovely potted plant garden for mental/physical relaxation and air purification.
3. Holding a Net Zero Emissions Talk, inviting professional lecturers to share key concepts on related topics in a simple and understandable way, thus helping employees understand the path to net zero emissions and enhancing overall awareness of green transition/transformation. 1,598 employees participated in the Company's 2023 environmental education events, showing remarkable effectiveness in raising awareness of sustainability issues.



5.2.2 Social Welfare Investment

Creating mutual-benefit relationships with local communities is the goal for PSMC's local engagement. Following PSMC Public Welfare Committee's planning focused on community building and charitable donations, the Company takes employees to rural areas, campuses, and communities to promote and participate in local public affairs. Through concrete volunteering commitment and resource donations, the Company strives to mitigate urban-rural gaps, support local agricultural products/special products, promote equal educational opportunities for young people, and encourage sports activities. All of this is aimed at using our corporate strengths to achieve collective prosperity, collective benefits, and sustainable development with society.

Community Building



Green Farm: Eat Good Rice, Do Good Deeds, Give 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 has collaborated with Green Farm, located in Zhudong's Ruanqiao area, for 11 years in a row. Together, we spread goodness and love by promoting the Eat Good Rice, Do Good Deeds, Give Good Shoes welfare activity. Employees voluntarily purchase Zhudong Ruanqiao organic rice, and the farm contributes the "Profits Per Share(-cropping)" to a fund used for buying shoes given to Saint Francis Kindergarten at Hsinchu County's Jianshi Township, Hsinchu County's Sacred Heart Kindergarten, Taoshan Elementary School Affiliated Kindergarten, and more. In 2023, the subscription amount for colleagues reached NT D\$709,800.

Community Building



Promoting Badminton and Supporting Local Varsity Teams

With the aim of promoting Hsinchu's local sports development, PSMC has sponsored the Zhudong Junior High School/Tongtex Secondary High School badminton team for three years in a row; the sponsorship fund totals NTDG\$648,000. The Company was also invited to participate in the opening ceremony for Hsinchu County Badminton Tournament. By providing the team with more complete training resources and funds required for competition participation, we hope that an excellent environment can be created to cultivate young badminton talents in Taiwan.





Community Building



Supporting Disadvantaged Groups and Upholding Children's & Youth's Human Rights

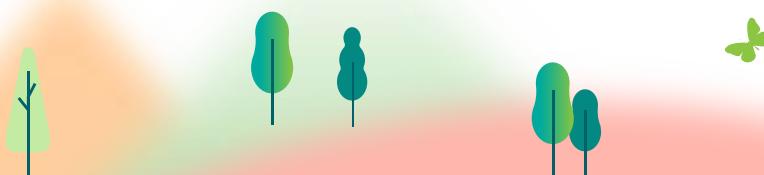
- PSMC has been supporting a charitable store run by Mr. Lin, a survivor of severe burn injury, to provide meals for and donate foods to disadvantaged groups on a long-term basis. The Company also helps pay part of the store rental every month to encourage public welfare actions.
- PSMC was invited to participate in the World Children's Human Rights Concert organized by World Vision Taiwan, demonstrating our practical actions in upholding and promoting disadvantaged group support and children & youth care.

Community Building



Cultivation Project for Folk Sports

PSMC managed to sponsor a total of NT\$200,000 for the Diabolo, one folk sport of the cultivation projects for Houlung Elementary School in Miaoli County, to support students achieving good results in international competition.





Community Building



Establishment of the market stall for charity

PSMC placed service stands at the Touqian River Left Bank Park Charity Fair organized by the Hsinchu Science and Industrial Park Administration, the 2023 Chrysanthemum and Taro Festival organized by the Tongluo Township Farmers' Association, and Christmas charity markets. The PSMC stands provided services that echo event characteristics, including blood pressure measurement, advocating rare animal protection, and more. The Company also invited several organizations that support disadvantaged groups (such as Children Are Us Foundation, Yu'an Children's Home, World Peace Society, and Yu-Cheng Social Welfare Foundation) to set up free-of-charge stands at these events.



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 18, 2023. PSMC gathered its employees to form teams to participate in the charity basketball tournament. PSMC 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 NTD\$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



Donating Used Computers to Charity

After conducting a donation assessment, PSMC sent hundreds of replaced computers to the ASUS Foundation to support the Recycled Computer Project of Hope. Through this, the donated computers were delivered to disadvantaged organizations in need. Two computer donation sessions were carried out by PSMC in 2023.

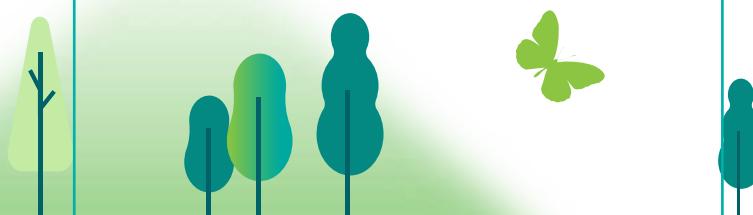


Charitable Donations



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

In order to share the festive atmosphere with students in rural areas, PSMC gathered its employees to visit Chien Shih Elementary School and the Chien Shih Hou Shan Tribe in Hsinchu County on the eve of the Mid-Autumn Festival. PSMC's 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.



5.2.3 Art & Cultural Festivals

PSMC aims to “help arts & culture education take root, and create stages for performing artists”. As part of this, PSMC made a cash donation of NT\$25 million to the Powerchip Cultural Foundation in 2023. In addition, driven by the goals of Encouraging Music Education, and Promoting Arts & Cultural Performances, the Company has collaborated with Powerchip Cultural Foundation for 19 years and counting. Through this partnership, we promote development of arts and cultural activities, and support musicians and symphony orchestras with great potential in Taiwan through hosting/co-organizing cultural events, performances, competitions, and similar activities. PSMC launched new arts and cultural activities in 2023 including the Powerchip 2023 Classic Series, the Music Festival Education Series, the Arts & Cultural Traveling Exhibition, etc., and sponsored other related activities that help achieve the Foundation’s goals. By doing so, we improve the environment for arts and cultural development in Taiwan, and enhance the value of the performing arts industry.

Promoting Music Culture



Powerchip Arts and Cultural Festival

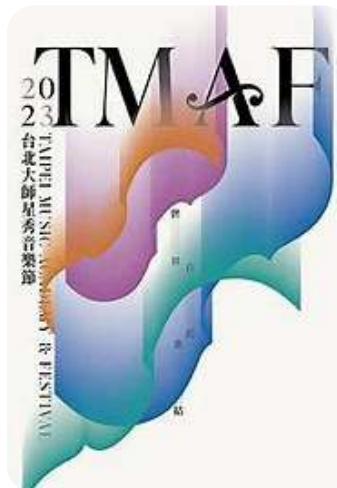
2023 Series Events

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 domestic and foreign countries, 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 2023, we sponsored a total of 45 concerts, attracting more than 181,184 Taiwanese music fans to experience these musical festivities.





Promoting Music Culture



Music Festival Education Series

Rooted in Music Education – 2023 Taipei Music Academy & Festival

The Taipei Masters Music Academy & Festival is the most international classical music festival and educational music camp in Taiwan. The festival entered its fifth year in 2023, with over 12,438 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 18 faculty members and 74 students from Taipei National University of the Arts to participate in the music festival, 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 Performance



Traveling with Hazy Humid Day: 2023 Taiwan traveling exhibition for Yoshitomo Nara's Taiwan-inspired painting

In 2023, Powerchip Cultural Foundation sponsored the Yoshitomo Nara Foundation's Traveling with Hazy Humid Day project; a ten-year traveling exhibition is scheduled to be carried out around Taiwan. Inspired by Taiwan's natural environment and people's friendliness and warmth on several visits to Taiwan, artist Yoshitomo Nara transformed these experiences into his painting Hazy Humid Day. During the 2023 exhibition period, 112,953 people viewed the exhibition.





6 Efficient Sustainability

Corporate Governance

6.1 Corporate Governance

6.2 Integrity Management

6.3 Regulatory Compliance

6.4 Responsible Taxation

6.5 Risk Management

6.6 Information Security



Efficient Sustainability · Corporate Governance

A sound corporate governance framework is an important foundation for an enterprise to move towards the goal of sustainable development. In addition to continuing the reinforcement of board functions, PSMC is also committed to shaping a corporate culture and an environment of ethics and accountability, and carrying out various businesses based on the highest standards to protect stakeholders' rights and interests and practice the core value of ethical management. Moreover, with the aim of strengthening the Company's risk control ability and adaptability, PSMC has established a comprehensive risk management framework and relevant systems, for which the board of directors continuously plays a key role in risk supervision and control to ensure that the Company and its employees all have the ability to respond to impacts of potential risks.

Corresponding United Nations Sustainable Development Goals (SDGs)



Material Topics GRI Standards

GRI 201 : Economic Performance

GRI 205 : Anti-corruption

GRI 206 : Anti-competitive behavior

GRI 418 : Customer privacy

Stakeholders who have priority reading

Government/Authorities, Shareholders/Investors, Customers



Corresponding Material Topics



Corporate
Governance



Integrity
Management



Regulatory
Compliance



Economic
Performance



Risk
Management



Information
Security



2023 Sustainability Performance Highlights

>50%
Percentage of independent director seats

6%~20%
TWSE Corporate Governance Evaluation

8 hours
Directors' average educational training hours

100%
Completion rate of domestic employees' training on information security management/control measures

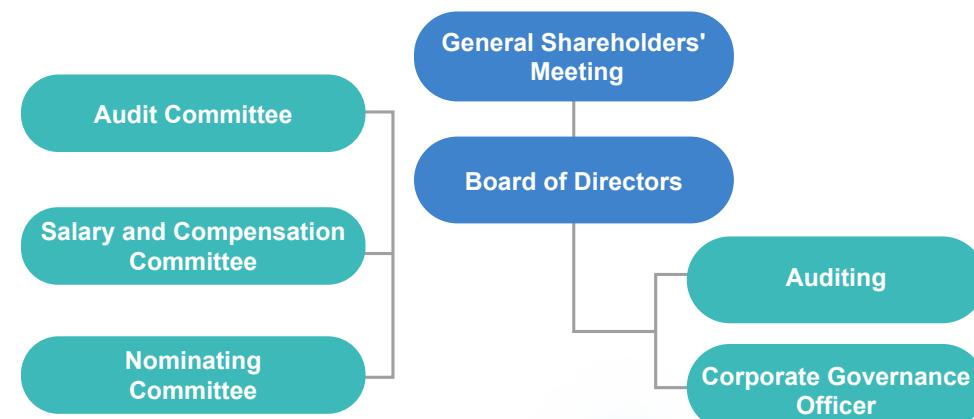




6.1 Corporate Governance

6.1.1 Corporate Governance Framework

PSMC 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 the Company operations, such as the issuance of new shares, dividend distribution, by laws 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, operational strategy, 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 expanding in the international market during the time of economic structural transformation.



Functional Committees

Name of Committee	Duty & Authority	2023 Achievements
Salary and Compensation Committee	The Salary and Compensation Committee is composed of three independent directors to assist the board of directors in formulating and reviewing measures for director and manager performance evaluation, developing compensation policy, system, standards and structure, and regularly evaluating and determining the aforementioned personnel's compensation to ensure its competitiveness and reasonableness.	The Committee held 3 meetings in 2023. The committee members' actual attendance rate was 100%.
Audit Committee	The Audit Committee is responsible for supervising the fair representation of the Company's financial statements, the appointment or dismissal of attesting CPAs, the evaluation of CPAs' suitability, independence, and performance, the effective implementation of the Company's internal control, the Company's compliance with relevant laws and regulations, and the control and management of the Company's existing or latent risks to serve as a countervailing mechanism for corporate governance.	The Committee held 7 meetings in 2023. The committee members' actual attendance rate was 100%.
Nomination Committee	Based on the Board's resolution, the Nomination Committee was set in September 2023 to be responsible for determining and reviewing the composition structure of directors and senior managers, and relevant selection/appointment criteria such as required qualifications, etc. The Committee is also responsible for the evaluation of the independence of independent directors, the potential conflicts of interest related to governance units' members, and the draw-up of succession plans.	The Committee held one meeting in 2023. The committee members' actual attendance rate was 100%.

Note : For more information on the composition, authority, and resolutions of the functional committees, please refer to the Company's 2023 Annual Report.



6.1.2 Operation of the Board of Directors

The Board of Directors is PSMC's highest governance unit, responsible for corporate operations, development, and supervision. As required by relevant regulations, the Board was formed based on a single-track system, and is currently composed of 4 directors and 5 independent directors, for a total of nine directors, who serve a 3-year term of office (As of the end of 2023, the average service tenure of all directors was 3.9 years). The proportion of independent directors is 55.56%, which exceeds the preset requirement that independent director seats should account for more than 50% of the entire director seats. In addition, no independent director is concurrently serving as an independent director in more than three publicly listed companies except PSMC. To meet the Company's organizational development needs, Chairman Frank Huang concurrently serves as the Company's CEO to ensure the smoothness of communication channels with all directors. Eight board meetings were held in 2023, and the average actual attendance rate was 97.73%, 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. Besides, the Nomination Committee was set in September 2023 to help PSMC establish a governance team that can meet the needs of the Company's long-term operating goals.

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, PSMC 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 2023, no material conflict of interest has occurred at the Company. Please refer to pages 16 of the Company's 2023 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, PSMC 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 PSMC's own operations, business model, and development needs, including but not limited to the following:

- (一) Basic qualifications and values: Gender, age, nationality and culture.
- (二) Professional knowledge and skills: Operational judgment ability, accounting and financial analysis ability, managerial competencies, crisis handling ability, industrial knowledge, global market views, leadership, and decision-making skills.

The current board of directors consists of 9 members who are equipped with diverse backgrounds, professional capabilities and practical experiences, and can provide different professional advice to facilitate PSMC's corporate governance. Through directors' rich management experiences, leadership/decision-making abilities, industrial knowledge, risk management capabilities, and other competencies, the Board's functions can be significantly strengthened. Among the directors, the non-executive directors all possess backgrounds related to the financial sector or electronics industries, whose profound experiences in global investment risk assessment and relevant expertise will help PSMC enhance the decision-making quality when carrying out its global deployment in the future. In 2023, PSMC achieved the goals for board diversity management that the proportion of elderly board members should be less than one-third, and the service of all independent directors should be controlled within three terms.





Implementation Status of Board Member Diversity Policy

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

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

Note 2: Directors meet the external independence assessment criteria and adopt the following criteria for independent directors. Directors must be non-executive directors and must meet at least 4 of the following 9 indicators, of which the first 3 must meet at least 2:

- (1) During the past one year, the director has not held any senior executive 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 a senior executive 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 one 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 2023 Annual Report for a brief biography of each director.

Note 6: 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 Chu Hsien-Kuo, who is also the Executive Vice President of PSMC.



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, PSMC, based on the characteristics of the industry and taking 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 length of directors' continuing education achieved in 2023 were 72 hours, and the average training hours for each director was 8 hrs. By reference to international development trends and feedback given through directors' self-assessment, sustainable development issues such as ethical management, tax system reform, ESG risks supervision, etc. were incorporated into the topics for directors' continuing education in 2023. In addition, risk management issues are regularly included in training courses to ensure that directors can possess the ability to assess various risks, and their risk management senses shall be improved. Directors can also participate in external training courses based on their own needs. For detailed director continuing education information, please refer to page 20-21 of the Company's 2023 Annual Report.

Performance Evaluation and Compensation for Board Members

PSMC has formulated the "Measures for Board of Directors Performance Evaluation" in accordance with "Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies" to carry out the performance evaluation for board of directors and functional committees. In addition, the Company is planning to incorporate ESG-related elements into evaluation items, and adjust evaluation focuses by reference to international trends and industrial development tracks to more comprehensively measure governance units' operation and supervision performance. PSMC follows stipulated evaluation procedures and relevant metrics to implement the board's internal self-assessment, board members' appraisal/self-assessment, and functional committees' self-assessment on a yearly basis, and commission's external independent professional institutions or expert-scholar teams to conduct evaluation at least every three years. The evaluation procedures shall be completed before the end of the first quarter of the following year. The evaluation report shall be reviewed by the Board, and improvement and upgrade measures shall be formulated accordingly to help the Board understand and stay on top of the operational efficiency of board of directors and functional committees.

PSMC commissioned "Taiwan Corporate Governance Association", an external independent evaluation institution, to conduct the Board's performance evaluation on December 7, 2023, and submitted the evaluation results to the board meeting held on February 20, 2024. The evaluation results and relevant suggestions shall be used as a reference for the improvement of the board's and functional committees' operational performance. For more information about Board of Directors Performance Evaluation, please refer to page 16-17 and page 19 of the Company's 2023 Annual Report.

With the aim of seeking, motivating and retaining talents, PSMC adopts the results of evaluation conducted in accordance with "Measures for Board of Directors Performance Evaluation" and "Regulations on Manager Performance Evaluation and Remuneration" as a basis to assess the compensation and remuneration for directors and managers. The performance evaluation and

compensation policies are set by the Salary and Compensation Committee. At least 2 meetings are held each year to review the implementation outcomes to ensure the competitiveness and reasonableness of the personnel's compensation. At the current stage, the Company does not commission any external consultants to assist in its compensation operations.

PSMC pays compensation 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 compensation of the directors is reviewed by the Salary and Compensation Committee, submitted to the Board of Directors for approval, and proposed to the shareholders meeting for reporting. The managers' compensation includes salary, bonuses, and employee compensation. Each manager's compensation 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 Salary and Compensation Committee. In the future, the Company will continue to deepen the relationship between managers' compensation 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. PSMC has issued employee stock option certificates and uses the company's financial metrics (such as consolidated revenue, gross profit margin, operating profit rate, etc.) to set performance goals with reference to peers' relative financial metrics (such as total shareholder return, etc.). Then we establish long-term performance goals for a period of 4 years, and also use the performance of non-financial metrics related to ESG governance (such as energy conservation and carbon reduction goals, green energy use and water conservation goals, etc.) as variable compensation evaluation items to align operational goals with sustainable results.
- In order to ensure and enhance the ethics and conduct of senior management and all employees, PSMC 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, PSMC 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 managers with those of shareholders, PSMC encourages managers to hold a certain amount of stock for a long period of time during their employment.



6.2 Integrity Management

PSMC 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. PSMC also strives to enhance the work ethics and professional competence of its internal staff through the three main pillars of "Establishing a Integrity Management Regulation", "Implementing Education and Training", and "Establishing a Whistleblower System" for integrity management and communication.

Integrity Management Operation Status

PSMC "Ethical Corporate Management Best Practice Principles" and "Operating Procedures and Conduct Guidelines for Ethical Management" have been formulated after being approved by the Audit Committee and passed by the board of directors, and have been implemented after being reported to the Shareholder Meeting. In addition, "Procedures for Whistleblowing, Complaints, Suggestions, and Employees' Participation in Feedback Management" and relevant internal regulations have also been added on the basis of the aforementioned regulations for the Company to communicate PSMC's policy commitments to employees, business partners, suppliers, and other stakeholders through the Company's websites, orders / invoices, major engineering equipment trading contracts, internal websites, and other possible channels. A zero-tolerance policy is upheld when dealing with employees' violations of business ethics and related behaviors. For any violations of the Code of Conduct, punitive measures such as disciplinary admonitions, demerits, etc. shall be taken against the violators depending on the severity of violations. For serious violations, the involved personnel shall be dismissed. Moreover, to ensure employees' behavioral compliance with the requirements of the "Ethical Corporate Management Best Practice Principles" and related work rules, employees' behavioral performance shall be linked up with their remuneration through the Company's rewarding and disciplinary systems, and Code-of-Conduct-related rewarding / disciplinary records shall also be considered in employees' annual performance evaluation. In addition to regulating relevant internal personnel, the policies are also applicable to suppliers, customers, or other business counterparties. It is necessary to consider the legality of the aforementioned parties, and check if they are involved in any unethical acts before business relationships are established. The Company also requires new suppliers to complete the "Supplier Survey", and current suppliers and plant-construction contractors to sign the "RBA Commitment Statement", or adds ethical management provisions to contract contents so that business counterparties can jointly practice business ethics and ethical management policies.

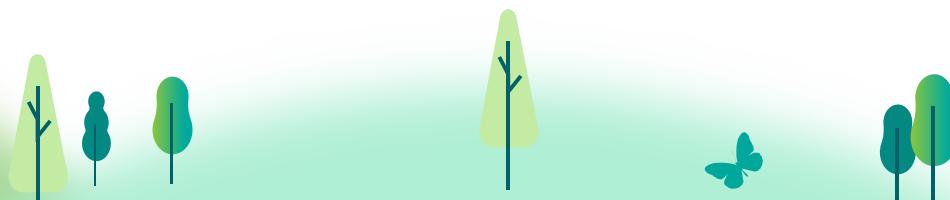
PSMC's Professional Ethics Advancement Committee, chaired by the Director of Legal Affairs, is composed of the heads of the Legal Affairs Office, Finance Division, Accounting Division, Human Resources Division, and Risk Management Division. The Professional

Ethics Advancement Committee is responsible for promoting the development and implementation of integrity management policies and preventive programs. Through annual self-assessments, 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 Audit Committee and the Board of Directors on a regular basis each year in order to carry out self-monitoring and track the status of the improvements.

As of the end of 2023, PSMC conducts corruption-related risk assessments by department every year in accordance with the operating rules for integrity management risk assessment and management. The scope of the assessment base has reached 100%, and a total of "infringement of business secrets, trademark rights, patent rights, potential corruption and integrity risks such as copyrights and intellectual property rights will be strictly monitored through the internal risk management mechanism and included in the assessment of subsidiaries. In 2023, there were no incidents that PSMC violated the integrity management such as corruption or bribery, conflicts of interest, money laundering or insider trading, etc.

Advocacy and Educational Training

In order to help employees comply with ethical standards while performing business duties, in addition to irregularly announcing the variations of laws and regulations to all directors and employees through email or other means, PSMC also advocates the concepts of anti-corruption and emphasis on business ethics to all employees through educational training, and conducts online tests after completing ethical management policy advocacy. The completion rates of the courses related to "material information, insider trading prevention, ESG development, ethical management, internal control & risk management training, social responsibility & business ethics", etc. organized by the Company for entire employees in 2023 all reached 100%, and the nine directors of this term all completed the educational training on anti-corruption policies.



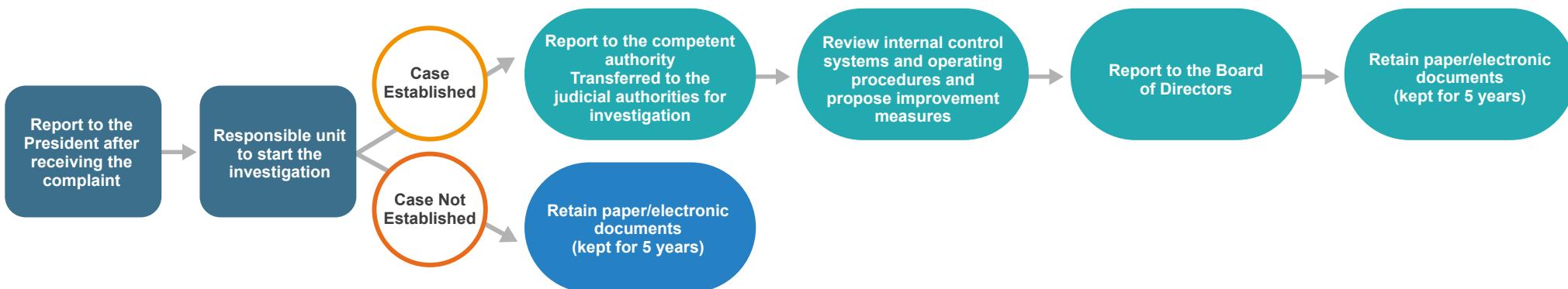


Complaint and Reporting Mechanism

PSMC has set up the "Business Ethics Maintaining Whistleblowing System" and "whistleblowing mailbox", through which external whistleblowers can report unethical cases in an anonymous or a named way to the Company. In addition, whistleblowing channel information is conveyed to external stakeholders through the Company's ESG website, orders and invoices for stakeholders to make whistleblowing reports or file complaints if any violations are identified.

Reports, Complaints and Suggestions Incidents	Reporting, Complaint and Suggestion Channels
Business Ethics Related Issues	<ul style="list-style-type: none">Report email : ethic@powerchip.comProfessional Ethics Incident Reporting System (for internal use only)

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



The complaint investigator 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 PSMC's complaint and reporting mechanism, PSMC 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

The technical innovation in domestic semiconductor industry is a key factor for Taiwan to gain a foothold in the global market. Through industry-government-academia collaboration and investment, a more completed semiconductor ecosystem shall be established. PSMC has been investing resources in supporting domestic semiconductor industry development for a long time by focusing on issues including technical innovation, environmental sustainability, talent cultivation and development, supply chain management, etc. to continuously provide energy for industrial innovation and breakthrough.

2023 Issues of Focus and Investments

Issue	Description of the position/level of involvement	Investment Capital(NTD\$)
Talent Nurturing	Based on the "Act of National Key Fields Industry-University Cooperation and Skilled Personnel Training" passed by the Legislative Yuan in May 2022, the Ministry of Education approved the establishment of semiconductor academies at NTU, NYCU, NTHU, and NCKU to create momentum for continuous semiconductor technological advancement and the reinforcement of Taiwan's semiconductor industry's next-generation competitiveness. PSMC supports the operations of the domestic semiconductor academies with its practical actions to promote industry-academia collaboration and uphold the evolution of public higher education system policies. In addition, the Company has made monetary donations to National Tsing Hua University for the university to construct the Building of Technology and Engineering to optimize the university's academic environment.	225,000,000
Environmental Sustainability	In view of the global net-zero emission wave, the 2050 net-zero carbon emission target, and the current EU carbon border adjustment mechanism, PSMC supports and actively participates in various associations such as the Taiwan Semiconductor Industry Association (TSIA), the Science Park Industry 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. Our associate director, Mr. Ding Li-wen, 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.	1,510,484





2023 Issues of Focus Association Participation and Investment

Name of Association	Main Activities	Investment Capital (NTD\$)
Taiwan Semiconductor Industry Association (TSIA)	<p>Taiwan Semiconductor Industry Association (TSIA) is an organization aimed at promoting collaboration among semiconductor industry businesses for the industrial system's sound development. It also represents the industry to participate in international negotiations, the formulation of international standards, and other activities that are crucial to semiconductor industry's development, and helps communicate the industry's opinions and needs to government agencies for the opinions and needs to be considered during semiconductor policy formulation.</p> <p>As an executive director of TSIA, the discussions and promotional activities that PSMC participated in 2023 included:</p> <ul style="list-style-type: none"> The signing of "MOU to Promote Semiconductor Industry's Net-zero Emissions Takeoff" by TSIA and ITRI The announcement of "TSIA Collective Voluntary Net-zero Emission Reduction Goals" 	1,114,484
Allied Association for Science Park Industries	<p>The Association focuses its efforts on the operation of various industrial operating models such as clustering, vertical integration, expertise division, etc. to establish active and effective operating mechanisms. It also sets up various professional committees to solve and promote member manufacturers' professional issues.</p> <p>As an executive director of the Association, the discussions and promotional activities that PSMC participated in 2023 included:</p> <ul style="list-style-type: none"> The "Industrial Safety and Environmental Protection Month" activities organized by Hsinchu Science Park (HSP) Waste disposal service providers' joint audit activities Communication for Hsinchu Refuse Resource Recovery Plant's storage pit preparation work for its 2023 upgrade preparation project The establishment of "Discussion Meeting for 2050 Net-zero Park Promotion Platform" Chinese National Federation of Industries (CNFI) — "Carbon Neutral Alliance Discussion Meeting" Hsinchu City Government — "ESG Matchmaking Platform" Promote Hsinchu and Zhunan Science Parks' air quality maintenance zones Offer suggestions on the draft amendments to "Emissions Standards for the Semiconductor Industry" and "Announcement Items for the stationary air pollution sources that are subject to regular testing and reporting" <p>In addition, PSMC sends Assistant General Manager Li-wen Ding, who also serves as Chairman of the Company's Environmental Protection Committee, to attend various study seminars and discussion meetings held by the Ministry of Environment on behalf of the Company, and cooperates in the promotion of the Ministry's various policies to establish an industrial communication platform to share information about the development directions of current policies and the latest revisions and development trends of various environmental laws and regulations to assist enterprises' supervisory personnel in staying on top of the dynamic status of policies and regulations, thereby forming a consensus on and offering suggestions for future environmental issues as a reference for the government when promoting environmental policies in the future.</p>	396,000
JEDEC Solid State Technology Association (JEDEC)	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.	320,985

Public Affairs Participation and Investment

unit : NTD\$

Category	Investment Capital			
	2020	2021	2022	2023
Interest Group Lobbying	0	0	0	0
Donations to political organizations, candidates, etc.	0	0	300,000	0
Participation in industry unions, trade organizations, think tanks, or non-profit organizations	1,925,645	1,904,703	2,593,871	2,879,909
Other (e.g. election bills, referendum-related expenses, etc.)	0	0	0	0

Note: All donations are in cash.



Column

Implement RBA Core Spirits and Fulfill Ethical Management Culture

Based on the regulations related to labor, environmental health and safety, and business ethics stipulated by the Responsible Business Alliance (RBA), PSMC has formulated "RBA Social Responsibility Risk Management Regulations", "RBA Social Responsibility Management Review Regulations", "RBA Social Responsibility Performance Goal Management Regulations", "RBA Social Responsibility Internal Audit Regulations", "Management Directions for RBA Social Responsibility Laws/Regulations Compilation and Identification", and "Management Directions for RBA Social Responsibility Corrective and Preventive Measures". The Company conducts systematic examination every year on the compliance of the Company's systems concerning workers' human rights, health and safety, environment, business ethics and management systems' risk assessments, feasible measures, and actual operations. In addition, a standardized risk assessment template (Self-Assessment Questionnaire, SAQ) designed by RBA is used to identify the risks related to the actions and management systems adopted for five major aspects of business operations, which are labor, health and safety, environment, ethics, and management systems. Dedicated units have been assigned to be responsible and implement each aspect's relevant affairs. The 2023 SAQ self-assessment scores achieved by the Headquarters and all fabs all fell within the range of "Low Risk". Moreover, PSMC conducted all fabs' "Validated Assessment Program (VAP)" in November 2023. All fabs passed the validation and obtained certificates in the end of 2023.



Item	Fab	P1/2	P3	8A	8B
SAQ Score		89.6	90.1	89.8	89.9
SAQ self-assessment score: Low risk (≥ 85) , Moderate risk ($\geq 65 & < 85$) , High risk (< 65)					
VAP Score		187.7	200	200	187.7
VAP Certificate Level		Silver level	Platinum level	Platinum level	Silver level

With the Responsible Business Alliance (RBA) pledge, 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>





6.3 Regulatory Compliance

6.3.1 Regulatory Compliance Management

PSMC sets Taiwan as its R&D and manufacturing center with its products marketed and services extended in markets around the world, and will continue to expand business scope through its globalization deployment strategies. To help personnel of various units clearly understand and comply with the laws and regulations related to the businesses they perform, and avoid the financial and reputational losses derived from legal and regulatory violations, with the efforts of the Office of Legal Affairs and the Corporate Governance Officer, PSMC has established a clear legal compliance management system with functions including laws/regulations monitoring & evaluation, formulation of internal legal compliance regulations, and the provision of regular in-person and online mixed training courses for employees. The system can also help directors and the Office of Legal Affairs supervise various departments' legal compliance status. Moreover, with the introduction of legal compliance risk control mechanisms, the latent legal violation risks to which the Company's businesses are exposed can be identified so that response and preventive measures can be developed in advance to strengthen PSMC's corporate governance effectiveness.

PSMC 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 2023, 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.

2023 Regulatory Compliance Status

Human Rights Laws and Regulations
Compliance with Labor Standards Act
No use of child labor
No incident involving discrimination or harassment
No infringement of indigenous rights
No infringement of freedom of association and assembly
No forced labor

Anti-competitive Behavior
No anti-competitive behavior involved
No Antitrust Incidents
No monopolistic incidents

Relevant Company Operating Laws and Regulations
No violation of the Company Act
No violation of Commercial Law
No violation of securities and financial laws and regulations
No incident involving corruption or bribery, conflict of interest, money laundering, or insider trading
No incident involving customer privacy data leakage

2023 Legal Compliance Educational Training

Training Format	Course Topics	Frequency	Target Participants
Online	<ul style="list-style-type: none"> Training on PSMC's social responsibilities and business ethics Material information, insider trading prevention, ESG development, ethical management, internal control and risk management 	Regular	All employees
Online and in-person	<ul style="list-style-type: none"> Information concerning the export of finished strategic high-tech commodities 	Regular	Customs & business related units, legal affairs & product technology units, system management units, and production planning units

6.3.2 Internal Control and Internal Audit

The auditing office under the Board of Directors of PSMC is staffed with the full-time auditors. 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 duly , so that PSMC can reasonably ensure the achievement of the following objectives under the operation of the internal control system:

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



PSMC 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, PSMC 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. PSMC 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. By examining the results of the aforementioned assessments, PSMC can confirm that the internal control systems (including supervision and management of subsidiaries) can reasonably ensure the achievement of the following goals, including understanding the achievement status of operational effectiveness, report accountability, timeliness, transparency, and compliance with relevant laws and regulations, and the design and implementation effectiveness of compliance-related internal control systems.

In addition, the Audit Office supervises each unit's and subsidiary's internal control system implementation, and conducts annual reviews of the self-assessment results. It also adjusts internal control design and implementation procedures in a timely manner to facilitate the Company's self-supervision mechanisms and ensure the quality of relevant implementation. For deficiencies indicated in the aforementioned self-assessment results or identified during Audit Office's audits, and the improvement status of anomalous items, audit reports are regularly issued and then reviewed by the Audit Committee as a principal basis for PSMC's board of directors and president to issue the Statement of Internal Control System. The 2023 statement that confirmed the effectiveness of PSMC's internal control system design and implementation was approved by the board of directors on February 20, 2024. With precise internal control system implementation, no major internal control deficiency was identified in 2023.

6.4 Responsible Taxation

Tax Governance Policy

To match up with global tax governance trends, PSMC formulated its "Tax Governance Policy" aimed at supporting enterprise innovation and promoting economic growth in 2022 in accordance with tax laws and regulations applicable in the places of business operations, and the "OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations". The policy has been implemented after being resolved by the board of directors to ensure the effective control of tax risks to protect shareholder value and equity.

Tax Governance Policy :

https://esg.powerchip.com/upload/media/sustainability_development/Tax_Governance_Policy.pdf



Tax Governance Policy Highlights

Regulatory Compliance

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 Governance Unit

The Office of Accounting is PSMC's tax administration unit, for which personnel with professional knowledge and practical experiences are appointed to carry out general tax administration and management affairs. In addition, departmental meetings are held on a monthly basis to review and convey contents of laws and regulations to relevant personnel. In response to the expansion of PSMC Group's operating bases, the Company has planned to incorporate external professional institutions' tax-related advice into its tax management system to ensure the tax policy's compliance with the latest laws / regulations and global transformation trends, and the effectiveness of the Company's tax administration operations. To avoid the financial losses caused by tax risks, relevant tax pre-assessments shall be conducted before major operating decisions and transactions are made to thoroughly consider the tax laws and regulations applicable in the places of business operations and relevant international tax guidelines so that the outcome of double taxation can be avoided under Audit Committee's supervision, and PSMC's compliance with each operating base's tax laws and regulations can be guaranteed. In addition, PSMC promises that its management framework and transaction arrangement are consistent with substantive economic activities, and shall not carry out any tax planning for the purpose of tax avoidance, nor shall it transfer corporate profits to low-tax countries or regions, demonstrating the Company's commitment to establish a cooperative relationship with local tax authorities based on mutual respect, transparency, and trust.

Tax Information

Country-specific tax information

Unit: NT\$ in thousands

Names of all the resident entities	Primary Business	Number of employees	Operating Revenue	(Loss) Income before Income Tax	Income Tax (Income) Expense	Income Tax paid
Taiwan	Wafer Foundry OEM	8,131	44,022,552	(2,218,026)	(447,444)	3,934,599
Japan	Integrated Circuit Research and Development	33	0	(137,040)	4,947	5,882
British Virgin Islands	General Investment	0	0	269,028	0	0

Effective Tax Rate and Cash Tax Rate

Unit: NTD\$ in thousands

Item	2022	2023	Average
(Loss) Income before Income Tax	26,972,680	(2,086,038)	12,443,321
Income Tax (Income) Expense	5,338,058	(442,497)	2,447,781
Effective Tax Rate (%)	19.79	21.21	19.67
Income Tax paid	1,340,082	3,940,481	2,640,282
Cash Tax Rate (%)	4.97	(188.90)	21.22

PSMC's 2023 effective tax rate was 21.21%, which was higher than the average effective tax rate of 13.96 % for the global "semiconductors and semiconductor equipment" industry announced by CSA Handbook 2024. The main reason for this is that PSMC's business and revenue mainly take place in Taiwan, making its effective tax rate approximately equal to 20% of statutory tax rate for Taiwan's profit-seeking enterprise income tax. However, the income tax paid in 2023 was calculated based on income before income tax of the previous year, and a "net loss before income tax" was presented in 2023, so the 2023 cash tax rate was (188.90) %, which is lower than the current year's effective tax rate of 21.21% and the average cash rate of 13.82% for the global "semiconductor and semiconductor equipment" industry announced by CSA Handbook 2024.



6.5 Risk Management

6.5.1 Risk Management Culture

Risk Management Framework

The Board of Directors serves as PSMC's top governance unit for risk management to supervise risk-management-related operations and mechanisms. The Audit Committee is responsible for strategic guidance and supervising the implementation of risk management measures to ensure risk management effectiveness. The Risk Management Committee under its jurisdiction is responsible for planning, executing and supervising risk management and operational compliance and other related matters to ensure that management goals can be achieved. And the Risk Committee appoints a front-line business strategy execution team to be responsible for implementing the risk control measures set by the committee and daily risk management activities. With the engagement of the Board of Directors, the functional committees, and higher level managerial personnel, the risk management can be connected with the Company's strategies and goals, and the Company's material risk items can be determined to enhance the comprehensiveness, farsightedness, and completeness of risk identification results.

PSMC formulated "Risk Management Policy and Procedures" in 2023, which has been approved by the Board of Directors and shall serve as the highest guiding principles for risk management. The Risk Management Committee is chaired by Executive Vice President Martin Chu to integrate and coordinate related departments based on the overall risk policy to jointly examine the Company's internal and external risks, and promote corresponding countermeasures for the material risk issues that may affect the whole company. The Risk Management Committee holds one meeting at least every six months, and regularly reports to the Audit Committee to ensure that its operations are in line with the Company's sustainability strategies. It also reports summarized risk management achievements to the Board of Directors on a yearly basis for the operations to be connected with the Company's risk management policy.





Shaping the Risk Culture

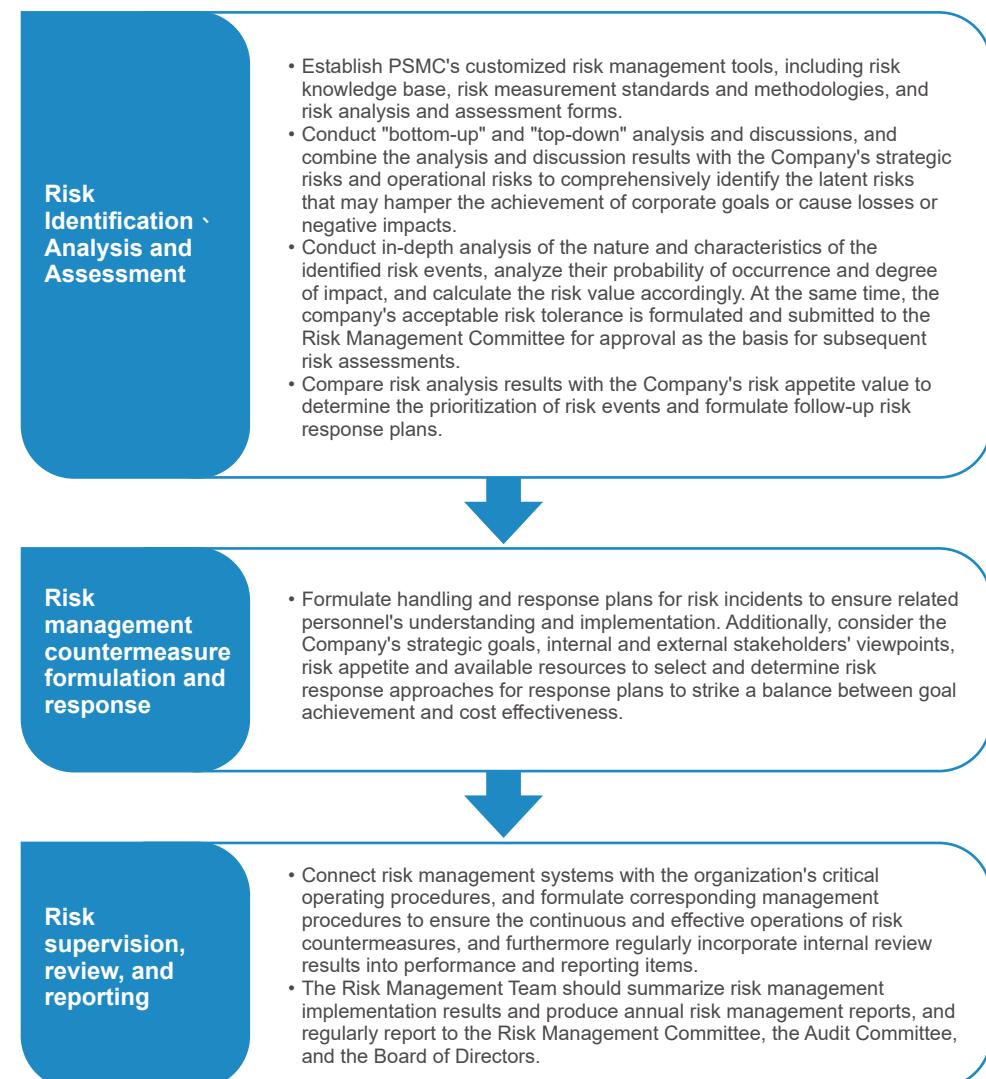
To enhance the risk awareness of all employees and establish a corporate culture of implementing risk management on a daily basis are core objectives of risk management at PSMC. To this end, PSMC has set a number of risk management indicators to track and supervise the effectiveness of risk management implementation. First, PSMC 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, PSMC also conducts key training on risk management through relative education and training, and includes "Risk Management and Crisis Awareness" in the employee performance evaluation, so that all employees clearly understand the potential risks in daily business and enhance their awareness of risk prevention.

PSMC 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, PSMC incorporates risk assessment standards into the raw material procurement, product development or approval stages. And according to the internal innovation management methods and proposal improvement system, when employees propose specific and feasible risk management or other improvement suggestions, they will be rewarded according to the degree, and the risk management indicators will be strengthened to be linked to financial incentives. In the future, we will continue to introduce various innovative risk culture activities that are conducive to risk assessment and management, and shape a comprehensive corporate risk management culture.

In terms of cultivating risk management capabilities and awareness, PSMC not only provides regular risk management training for non-executive directors responsible for supervising operations, but also conducts a total of 6 company-wide risk management-related education and training courses for front-line execution business colleagues in 2023, sharing more than 60 risk practice cases with nearly a hundred colleagues, covering risk aspects such as human resources, marketing communication, compliance, reporting, information, corporate governance, sustainability, finance, law, supply chain, etc., to integrate risk management awareness to daily decision-making and operational activities.

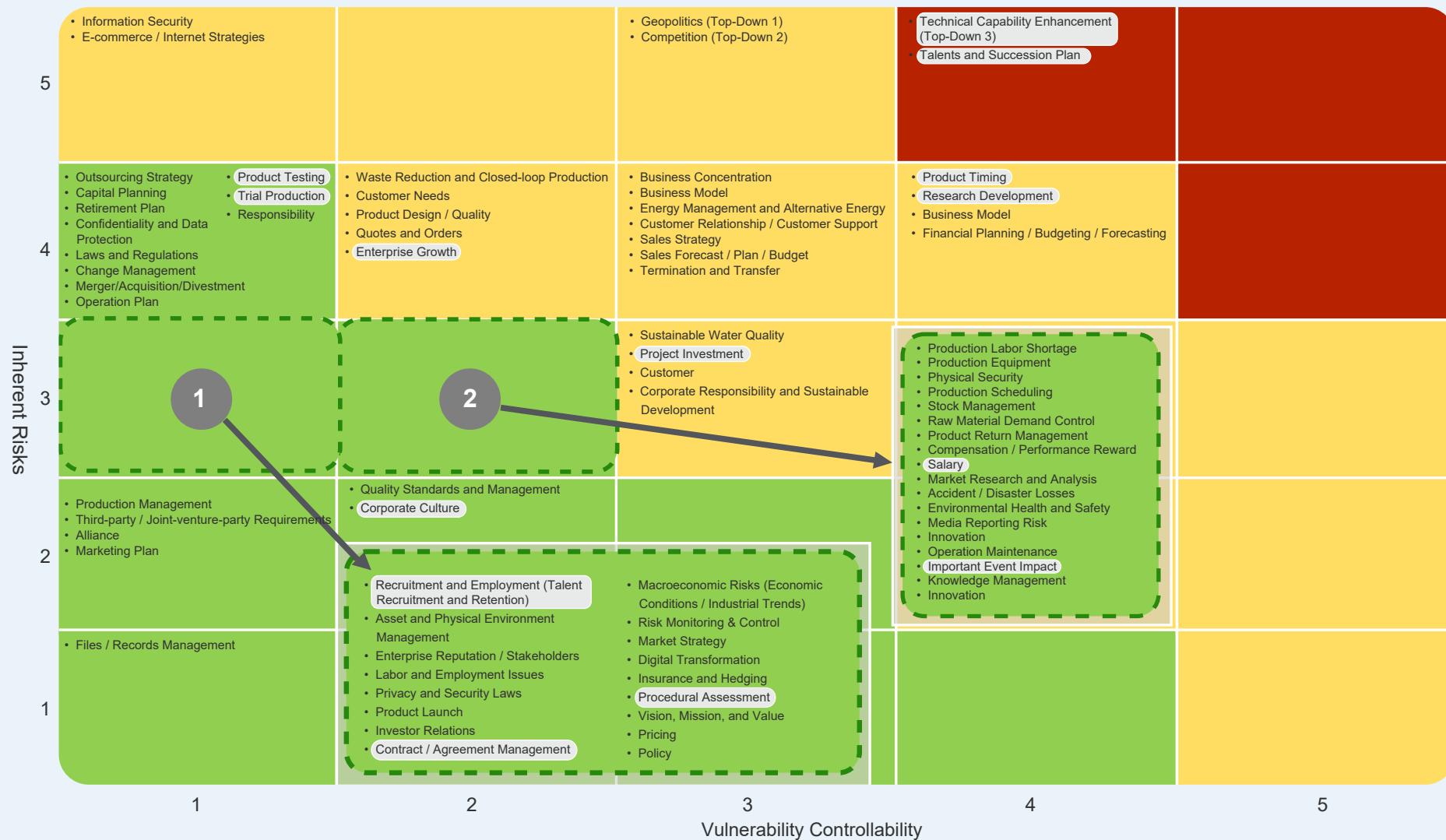
6.5.2 Risk Identification Process

PSMC regularly conducts risk identification, assessment, and internal audits every year, and conducts rolling reviews in a timely manner to ensure the effectiveness of risk management procedures and related control measures, and to continuously improve.





Risk Management and Corresponding Strategy



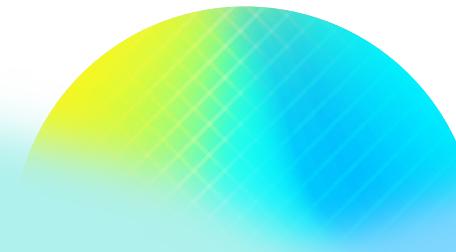
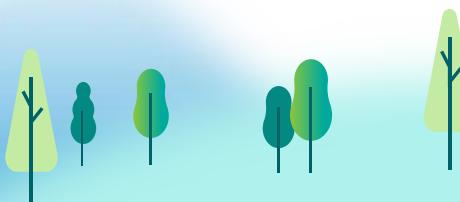


With the operations of systematic risk management mechanisms, the effectiveness of management measures and response strategies can be significantly improved, and the impact arising from potential risks shall be minimized. The potential risks and response strategies related to information security, climate change, human rights, etc. shall be described in separate chapters. For the remaining major risks identified by PSMC in 2023, the analysis results and response strategies are listed in the table below :

Strategy

Risks from the improvement of global semiconductor technology strategies, which will hamper the Company's growth in the future

Risk Description	Potential Impacts
<ul style="list-style-type: none">If the stages of determining new product / technology platform, developing management and mass-production transition management measures, and enhancing mass production yield are not comprehensively completed, there will be adverse effects on the Company's overall reasonable resource deployment and business expansion. This trend will pose severer competition on the Company in the future.	<ul style="list-style-type: none">Failure to use new technologies shall lead to increased costs, lowered product or service quality, and decreased productivity.Failure to complete the development and launch of new technologies in time shall make the Company miss out on market opportunities.Prolonged product development timeline and the introduction of new technologies that affect product development timeline and product quality shall lead to increased costs, lowered product or service quality, and decreased productivity.
Risk Tolerance Level	Corresponding Strategy
<ul style="list-style-type: none">Reputation: Moderate-level risk: Delayed technical development timeline shall affect specific customers' product plans and become a gossip topic among peer companies, by which enterprise reputation shall be impacted.Marketing timing's lower hit rate shall lead to delayed development timeline, which will reduce customers' confidence in the Company, and is classified as a high-level risk.	<ul style="list-style-type: none">Implement and strengthen development procedures standardization and self-directed management.Implement and strengthen project review committees, business development meetings and vertically integrated manufacturer mechanisms.Consult major IDM customers' experiences to improve product development and technology transfer procedures.Consider the introduction of third-party consulting companies' services to assist in product development process diagnosis.





Operation

Global semiconductor companies compete for talent, leading to risk of future talent shortage

Risk Description	Potential Impacts
<ul style="list-style-type: none">In order to meet market demand, the world's major wafer manufacturers have significantly increased capital expenditure and expanded recruitment scales. However, being affected by increasingly intensified birthrate decline in Taiwan, the manpower is obviously falling short of the level needed to support the development of the industry and the Company, making the industry faced with difficulties in talent recruitment expansion.The Company's core manpower loss shall lead to decreased competitiveness, and the failure to develop suitable talent / employee retention policies and the lack of or the incomplete succession personnel cultivation plans shall also cause core manpower loss and other related problems, and affect the organization's operations and production.	<ul style="list-style-type: none">Talent shortage: Foundries may be faced with difficulties in recruiting and retaining competent technical talents. Moreover, with the worldwide increasing demand for semiconductor industry talents, foundries also need to cope with intensified competition for talents among peer companies.Decreased production efficiency: Being affected by core personnel gap caused by the lack of key talents or complete succession personnel cultivation plans, foundries' production efficiency may decrease and their market competitiveness and profitability may be affected.Decreased technological innovation capabilities / business competitiveness: Failure to attract talents and retain competent technical talents who possess market foresight and comprehensive market views shall limit foundries' technological innovation capabilities and affect their positions in the market.
Risk Tolerance Level	Corresponding Strategy
<ul style="list-style-type: none">Increased costs and difficulties in recruiting new employees: Moderate-level risk: With the keen competition prevailing in Taiwan's talent market, increased salary may cause specific impacts to operating costs.Inadequate technology R&D talents: High-level risk: The lack of technology R&D talents shall affect the Company's new process development and long-term technical competitiveness.Talent gap: Moderate to high level risk: Incomplete succession personnel cultivation plans shall lead to core manpower loss.	<ul style="list-style-type: none">Investment in training and development: Invest resources in talent training and development to enhance employees' skill and knowledge standards, and expand the Company's talent base.Build up a culture that will attract talents: Provide flexible work arrangement and diverse benefits and compensation programs to build up a corporate culture that will attract and retain competent technical talents.Reinforce industry-academia collaboration: The Company has collaborated with top universities in establishing semiconductor academies to reinforce industry-academia collaboration and carry out joint research and development projects to attract competent technical talents. PSMC will continue to place emphasis on talent management by formulating effective talent management strategies to attract and retain competent technical talents to ensure the Company's market competitiveness and long-term development.



Emerging Risks

Emerging Risk	Risk Category	Risk Description	Potential Impact	Response Measures
U.S. CHIPS and Science Act	Geopolitics	The U.S. chip sanctions on China's semiconductors might work to a certain extent, yet they have forced Chinese government to expand investment in the semiconductor industry. As a result, the local momentum in China has increased rapidly, particularly the mature processes above 28nm, which have already posed a threat to Taiwan's second-line wafer fabs.	Product lines' total demand amount is shared by competitors, which will affect the long-term growth of the businesses between the Company and customers, and will even result in a drop in revenue due to a shrinkage in some low-price products' order quantities.	<ol style="list-style-type: none"> Continue to develop customized processes based on current technology level and customers' needs to enhance customer stickiness. Plan the development of advanced process platforms to widen the competitive gap. Pay regular visits to customers (and customers' customers) to understand market status and stay on top of customers' needs in a timely manner, which will help the Company stay one jump ahead of competitors to launch new products and enjoy the bonuses for first movers. Optimize processes based on existing platforms to meet customers' needs and optimize cost competitiveness.
Energy Management and Alternative Energy	Social	Without joining the RE100 100% renewable energy initiative, the Company shall not be able to promise customers the compliance with industrial trend requirements, which will bring the risk of losing customers in the future.	Taiwan's major foundries have joined the RE100, but PSMC has not yet express its stance on this issue, which may affect the perception and reputation given by the public and customers to the Company.	<ol style="list-style-type: none"> The Company has formed a Green Energy Project Team, and has set RE30 by 2030 as a phased goal. Additionally, the Green Electricity Plan is reviewed on a weekly basis, and green electricity certificates have been purchased. Discuss green energy issues in green energy weekly meetings. Supervisors in charge of relevant projects will submit project proposals to ESG quarterly meetings, which shall then be submitted to higher supervisory personnel for finalization. The 2050 RE100 goal has been included in the Sustainability Report.
Talents and Succession Plan	Social	When faced with Chinese national industries' talent attraction policies and the active talent recruitment strategies adopted by leading companies in the industry, if the Company fails to attract and retain employees, manpower loss will occur and the organization's operations and production will be affected.	<ol style="list-style-type: none"> Key talent drain or gap The lack of required talents or skills shall impact the Company's operations. Decreased business competitiveness Failure to attract and retain talents shall affect the implementation of business plans. 	<ol style="list-style-type: none"> Higher level managerial personnel nominate succession candidates in writing on a yearly basis based on candidates' work performance and personal characteristics. HR units provide planned training to strengthen the candidates' strengths for them to meet succession requirements. Activate headhunting projects, and optimize recruitment plans to recruit key talents from external human resources.

Sensitivity Analysis and Stress Testing

Financial Risk

1. Interest Rate Changes

Unit: NT\$ in thousands ; %

Item	Year	2022 年	2023 年
Consolidated interest expense		701,784	626,568
Consolidated net operating revenues		76,086,619	44,022,552
Consolidated interest expense as a percentage of net operating revenues		0.92	1.42

Corresponding Measures :

Interest expense as a percentage of net operating income for 2022 and 2023 is 0.92% and 1.42%, 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 significant adverse effect on all revenue and profitability. PSMC will monitor and analyze in a timely manner the cash flow impact generated from interest rate changes in the financial market on all of the Company's interest-bearing liabilities, maintain good relationships with banks, and conduct timely assessment of the potential interest rate risks which the interest-bearing liabilities are subject to, thereby reducing the impact of interest rate changes on the year's profit / loss.



2. Fluctuations in the exchange rate

Unit: NT\$ in thousands ; %

Item	Year	2022	2023
Consolidated net foreign currency exchange gain (loss)		1,225,660	(82,894)
Consolidated net operating revenues		76,086,619	44,022,552
Consolidated net foreign currency exchange gain (loss) as a percentage of net operating revenues		1.61	(0.19)

Corresponding Strategy :

PSMC's net foreign currency exchange gain (loss) in 2022 and 2023 accounted for 1.61% and (0.19) % of the year's net operating revenue respectively. Since the Company's capital expenditure and manufacturing costs are mainly paid in US dollars or Japanese yen, and most revenue comes from US-dollar income, its revenue performance is significantly influenced by exchange rate fluctuations. In response to this risk, by considering exchange rate changes in the market and the Company's actual positions and funding status, PSMC adopts natural hedging strategies and uses spot foreign exchange transactions and forward foreign exchange contracts to hedge exchange rate risks within the scope permitted by the Company's policies.

3. Inflation

With the interference by factors such as inflation, destocking, etc. in the industries, the global market demand became slacked in 2023. In response to this situation, PSMC keeps monitoring price fluctuations in the market, and maintaining good interactions and relationships with suppliers and customers to actively adapt to the slack-off impact caused by inflation to the Company's overall profit performance.

Non-Financial Risks

1. Potential Risks of Capacity Expansion

The construction of the 12-inch fab at Tongluo Science Park in Miaoli, which started in 2021, will be completed in Q2 of 2024, and the production will officially kick off in the second half of the year. However, the forecasted demand may change significantly along with the changes in market environment. Should the demand decrease, the purchased machinery / equipment, additionally recruited personnel, etc. shall have a negative impact on PSMC's profit performance.

Corresponding Measures:

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 2023, global demand for semiconductors continuously entered a period of inventory adjustment due to high inflation in the U.S. in 2022 and increased economic uncertainty caused by the ongoing interest rate hikes by the Federal Reserve. PSMC will continue to observe market changes and closely collaborate with customers. In the events when market demand keeps falling short of the expected level, the Company shall adjust production capacity plans on a rolling basis. In principle, plant and production capacity expansion projects shall be carried out throughout several phases or stages within the Company's affordable budget and the minimum risk level to concurrently achieve stable corporate growth and meet customers' production capacity needs.



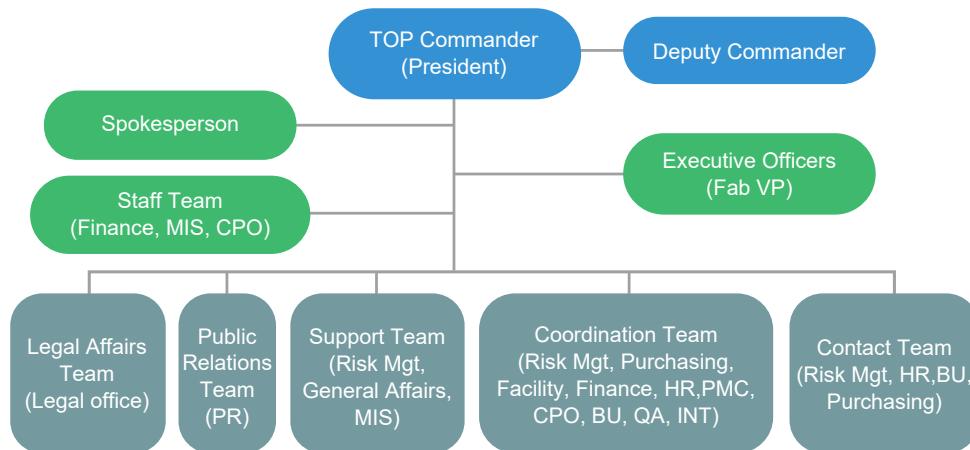


Business Continuity Management System (BCMs)

PSMC knows very well that the occurrence of major accidents or crisis incidents may not only cause operational disruption to the Company, but may also have severe impacts on properties, employee safety, corporate image, customers, and investors equity. Therefore, with the aim of building up various units' ability to respond to and handle crisis incidents, the Business Continuous Plan (BCP) has been formulated for specific risk scenarios such as prolonged power supply interruptions, water outages, fire accidents, earthquakes, climate change, raw materials supply interruptions, labor shortages, information system hacking, critical equipment failure, etc. to ensure that in the events of major accidents or crisis incidents, the normal operations can be resumed as soon as possible. Themed drills are also carried out on a yearly basis.

BCM Crisis Management Organizational Framework

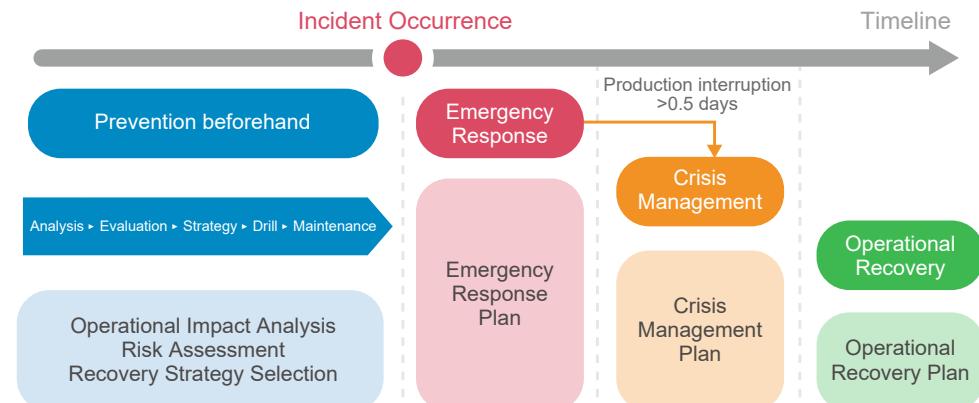
The President serves as the top commander, with the spokesperson, staff team (encompassing units of finance, information technology, and strategic planning) and fab executive officers serving as assistants to promote relevant affairs. Several functional teams have been set for different emergencies and incidents, including legal affairs team, public relations team, support team, coordination team, and contact team.



Implementation Results of Business Continuity Management (BCM) Plan

The annual 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.

- 1. Plant Accidents
- 2. Plant Supply System
- 3. Information System
- 4. External Supply Chain



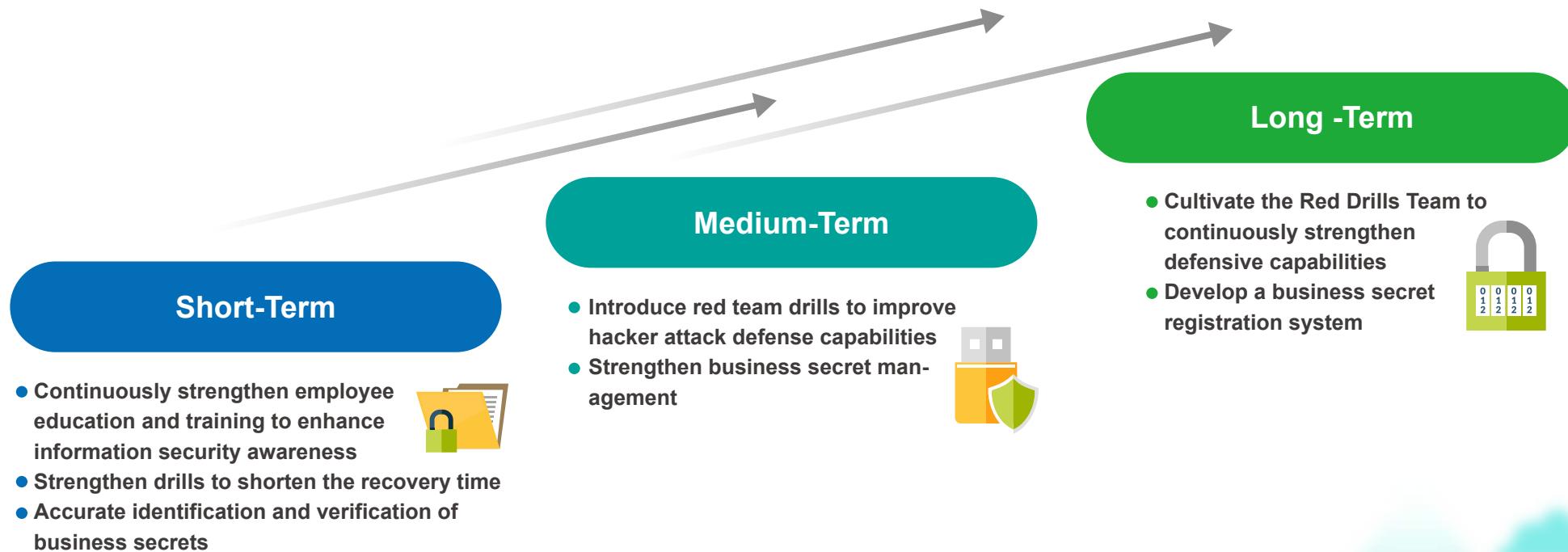
Year	Fab	Type	Scenario	Implementation Result
2021	8B	Electricity	Construction of LMOC(LandMark Optoelectronics Corporation) dug out power pipelines, which caused a whole plant power outage, one-day production interruption and machine damage.	
2022	P1/2	Cyber hacking	Ransomware disrupted and caused factory production interruption.	Personnel of various units worked together to activate emergency response measures, and production line operations were resumed within 90 minutes in all scenarios.
2023	8A	Gas	The CPC main gas pipeline was accidentally cut during digging activities, which caused a major gas leak, and gas supply needed to be cut off for emergency repair. This accident made 8A Plant suffer one-day gas outage, resulting in cleanroom temperature /humidity deviation, VOC exhaust and process local scrubber equipment shutdown, and cessation of all machines.	



6.6 Information Security

Information Security Management Objectives

With PSMC's continuous progress in technological development, information security and confidential information protection has become more and more important. PSMC has passed the ISO 27001 Information Security Management System Certification, and formulated short, medium, and long-term information security goals to ensure the secure protection for technologies developed with great efforts and business secrets.



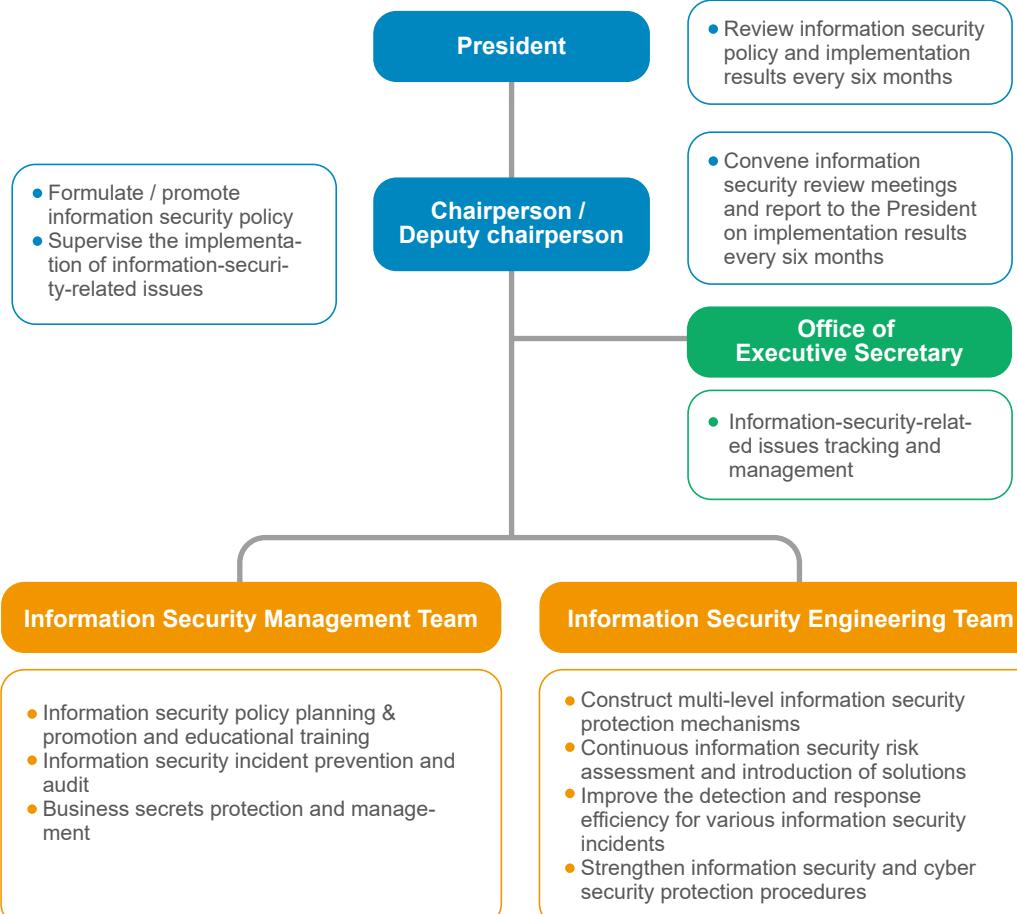
6.6.1 Information Security Management Framework

To ensure the security of the information assets submitted by employees, customers, and business partners, and to achieve continuous enhancement of information security management capabilities, PSMC has formulated its information security policy and management regulations, and set up the "Information Security Committee" formed by representatives designated by relevant units and led by the President to serve as the core decision-making unit for information-security-related strategies, plans, and risk management measures, and to supervise various departments' information security management operations and plan implementation results to reduce information security threats and risks. There are "Information Security Management Team" and "Information Security Engineering Team" set under the Committee to be responsible for information security policy planning and relevant educational training, and regularly report to the President to ensure that the operations of information security management are in line with the Company's operating goals.



The "Information Security Committee" holds meetings to discuss and decide on information-security-related issues with the scope covering human resources, physical security, information security, and other related aspects, and will hold ad hoc meetings to discuss issues related to major changes or information security incidents. Educational training and internal announcements are adopted every year to continuously share and communicate the latest information security news to employees to maintain employees' information security protection consciousness.

Information Security Committee Framework



6.6.2 Implementation of Information Security Protection

Business Secrets Protection

Management policies and actions

- Formulate "Business Secrets Management Regulations", "Documents and Files Management Regulations", and other related regulations to ensure the information security and effective management of the Company's business secrets
- Introduce AI-based business secret detection and protection system (AIRS) to carry out real-time monitoring of printed document contents to check if any confidential information is contained with the aid of AI technology

Employees

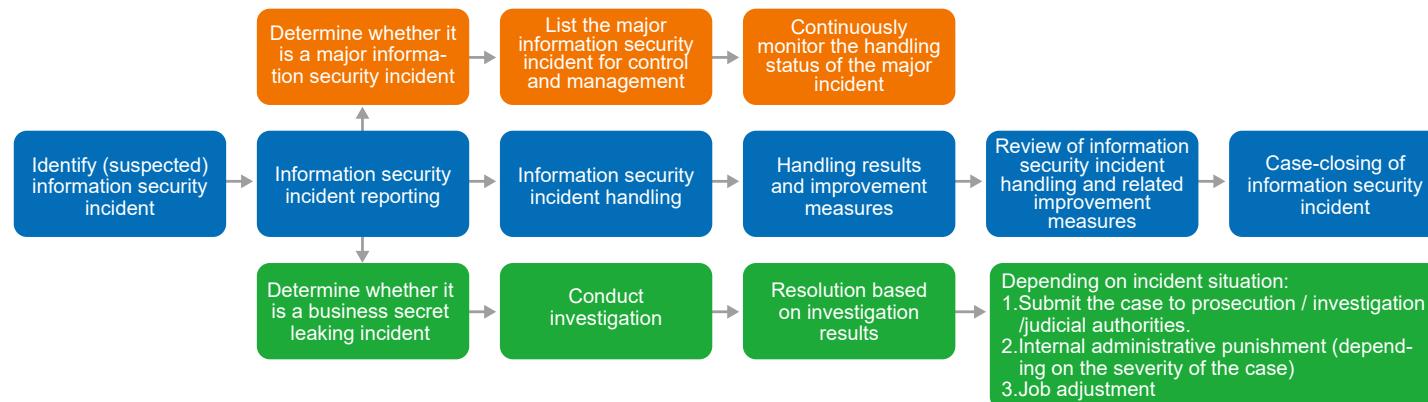
- Employees are required to participate in the course of "Information Security Management / Control Measures" every year. All PSMC employees participated in the course in 2023, achieving a completion rate of 100%.
- Summarize recent information security incidents on a quarterly basis, and make information security rules known to all employees.
- Business secret documents should be labeled; supervisors' approval should be obtained for duplication or printing
- Strengthen access control and monitoring, manage information system access authorization, and retain and review access records

Business Continuity Management

PSMC performs regular server vulnerability scanning and system patching, and instantly fixes major deficiencies to ensure that the Company's operations are not affected by any threats. In addition, joint drills are regularly conducted by relevant units to ensure that PSMC can rapidly and effectively respond in the events of crises. PSMC conducted a ransomware attack disaster recovery drill in 2023, and has planned to carry out the Web Application Penetration Testing in 2024. The drill results shall be used as a reference for measures taken to fortify information security protection to comprehensively and completely protect enterprise assets and stakeholders' rights and interests.

Information Security Incident Reporting and Handling Procedures

PSMC has formulated "Information Security Management Regulations" to clearly and specifically regulate information security incident reporting and handling procedures, and define information security risk levels. As stipulated in the Regulations, after an information security incident is confirmed, the damage should be recovered or the damage control should be completed within specified timeline. No major information security incident occurred in 2023.



Information Security Incident Levels and Time Limit for Handling

Incident Level	Impact Level	Incident Level Description	Time Limit for Handling	Reporting Level
Level 1	Low	<ul style="list-style-type: none"> The incident caused temporary threats and hazards to information systems or services, and had little impact on data's confidentiality, integrity and availability. The response measures can be implemented through daily operating procedures. 	Within 24 hours	Incident occurring unit's section-level and department-level supervisors
Level 2	Moderate	<ul style="list-style-type: none"> Operations of applications or systems are interrupted due to anomalous processing or external intrusion. The interruption timeline can still be controlled and preliminarily judged by the personnel in charge of the operations or systems, or the signs of attacks can be detected and the threats of possible attack damage can be estimated by information security personnel. 	Within 12 hours	Incident occurring unit's director; and all PSMC employees should be notified by email or through public announcement
Level 3	High	<ul style="list-style-type: none"> The incident may have a long-term impact on the Company, or cause hazards to important system operations. The incident has caused significant impact or harm to information systems and services under the information security management system, and emergency response measures must be taken immediately to handle the situation. 	Within 6 hours	Incident occurring unit's VP; and all PSMC employees should be notified by email or through public announcement

Privacy and Personal Information Protection

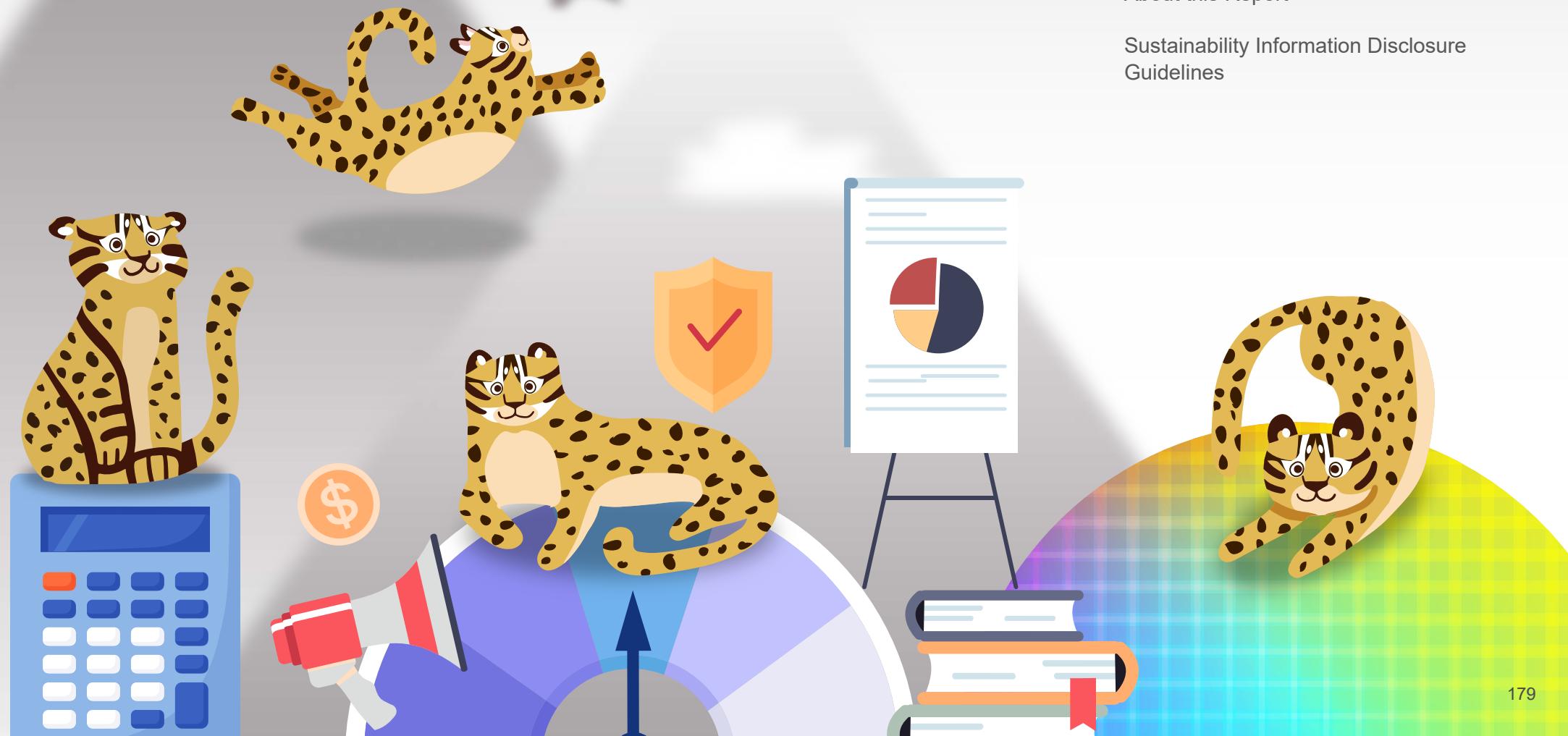
PSMC has formulated the Privacy Policy in accordance with Taiwan's Personal Information Protection Act and other related regulations, with the policy scope covering all employees, business partners, and users. The Company has also incorporated privacy-related issues into the scope of compliance management to identify relevant legal and regulatory compliance on a quarterly basis. In addition, internal audits, risk assessments, customer audits, and supply chain security audits are conducted every year, and the RBA External Audit Certification is conducted every two years to ensure that there is a just and reasonable connection between the information collection act and its purpose. Moreover, the Company has formulated regulations on privacy protection and personal information protection to implement relevant protection measures and also commit not to use customer information for a second time. Through transparent and open privacy policy information, stakeholders' autonomy over private information can be enhanced. In 2023, there were no substantiated complaints concerning breaches of customer privacy and losses of customer data, or other violations of laws and regulations at PSMC, and the proportion of secondary use of customer information was 0%, demonstrating the company's personal data management and privacy commitment and effectiveness in safeguarding human rights.



Appendix

[About this Report](#)

[Sustainability Information Disclosure
Guidelines](#)





About this Report

The Powerchip Semiconductor Manufacturing Corporation 2023 Sustainability Report is PSMC's sixth 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 of driving more positive changes for the society.

Scope of Reporting

The reporting period is from January 1, 2023 to December 31, 2023. The scope covered in this Report includes the plant areas in Taiwan (the Headquarters and all fabs in Taiwan), and the subsidiaries PSMC Japan Corp. and Maxram Inc. in Japan. The reporting period and scope are consistent with those of the Consolidated Financial Report. The Report contains the issues of stakeholders' concern related to PSMC's concrete practices in economy and governance, environment, society, etc. The financial figures were cited from the Company's CPA audited annual financial reports, and are presented in New Taiwan Dollars (NTD).

With the inclusion of subsidiaries in consolidated statements, the scope of report content and data coverage is different from those of the 2022 information. There was no information re-editing in other content of the report. For chapters involving data scope adjustment, special notes have been given in corresponding parts of the 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 (2022) Sustainability Report Issue Date: June 2023
- Current Year's (2023) Sustainability Report Issue Date: June 2024
- Next Year's (2024) Sustainability Report is Scheduled for Release: June 2025

Contact Information

- Capital Planning Department, Powerchip Semiconductor Manufacturing Corporation
- Address: No. 18, Li-Hsing 1st. Road, Hsinchu Science Park, Hsinchu City, Taiwan 300, R.O.C.
- Telephone.: 886-3-5795000
- Fax: 886-3-5792040
- E-mail : cse@powerchip.com
- <https://esg.powerchip.com/en-global>





Sustainability Information Disclosure Guidelines

Appendix I : GRI Sustainability Reporting Standards Content Index Table

Terms of Use	Powerchip Semiconductor Manufacturing Corporation has reported the content for the period of 2023 (January 1, 2023 to December 31, 2023) 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 No.	Omitted/Remarks
General Disclosure					
GRI 2: General Disclosure 2021	2-1	Organizational Details	Company Profile	6	
	2-2	Entities included in the organization's sustainability reporting	About this Report	180	
	2-3	Reporting frequency, period, and contact point	About this Report	180	
	2-4	Restatements of information	About this Report	180	
	2-5	External assurance/reliability	Sustainability Information Disclosure Guidelines	198	
	2-6	Events, Value Chains, and Other Business Relationships	Company Profile 2.1 Supply Chain Overview	6 65	
	2-7	Employees	4.1 Talent Attraction and Retention	110	
	2-8	Workers who are not employees	4.1 Talent Attraction and Retention	110	
	2-9	Governance Structure and Composition	6.1 Corporate Governance	156	
	2-10	Nomination and selection of the highest governance body	6.1 Corporate Governance	156	
	2-11	Chair of the highest governance body	6.1 Corporate Governance	156	



GRI Standards Categories / Topics	Number	GRI Standards Disclosure Content	Corresponding Chapters	Page No.	Omitted/Remarks
General Disclosure					
GRI 2: General Disclosure 2021	2-12	Role of the highest governance body in overseeing the management of impacts	Organizational Structure for Sustainable Development	12	
	2-13	Delegation of responsibility for managing impacts	Sustainable Development Strategy	13	
	2-14	Role of the highest governance body in sustainability reporting	Sustainable Development Strategy About this Report	13 180	
	2-15	Conflicts of interest	6.1 Corporate Governance	156	
	2-16	Communication of critical concerns	Stakeholder Communication	17	
	2-17	Collective knowledge of the highest governance body	6.1 Corporate Governance	156	
	2-18	Evaluation of the performance of the highest governance body	6.1 Corporate Governance	156	
	2-19	Remuneration policies	4.1 Talent Attraction and Retention 6.1 Corporate Governance	110 156	
	2-20	Process to determine remuneration	6.1 Corporate Governance	156	
	2-21	Annual total compensation ratio	4.1 Talent Attraction and Retention	110	
	2-22	Statement on sustainable development strategy	Message from the Chairman and President	4	
	2-23	Policy Commitments	4.3 Human Rights 6.2 Integrity Management	129 160	
	2-24	Embedded policy commitments	4.3 Human Rights 6.2 Integrity Management	129 160	
	2-25	Processes to remediate negative impacts	Materiality Analysis 6.2 Integrity Management 6.5 Risk Management	19 160 168	
	2-26	Mechanisms for seeking advice and raising concerns	Integrity Management 6.2 Integrity Management 6.5 Risk Management	160 168	



GRI Standards Categories / Topics	Number	GRI Standards Disclosure Content	Corresponding Chapters	Page No.	Omitted/Remarks
General Disclosure					
GRI 2: General Disclosure 2021	2-27	Compliance with laws and regulations	6.3 Regulatory Compliance	165	
	2-28	Membership associations	Company Profile	6	
	2-29	Approach to stakeholder engagement	Stakeholder Communication	17	
	2-30	Collective bargaining agreements	4.2 Talent Nurturing and Development	121	
Material Topics					
GRI 2: General Disclosure 2021	3-1	Process to determine material topics	Materiality Analysis	19	
	3-2	List of material topics	Materiality Analysis	19	
	3-3	Management of material topics	Materiality Analysis	19	
Economic and Governance Aspects					
Material Topic — Product Liability and Quality					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Analysis 1.2 Product Liability and Quality	19 49	
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 in 2023.
GRI 417 Marketing and Labeling 2016	417-2	Incidents of non-compliance concerning product and service information and labeling	-	-	There were no such incidents in 2023.
	417-3	Incidents of non-compliance concerning marketing communications	-	-	There were no such incidents in 2023.



GRI Standards Categories / Topics	Number	GRI Standards Disclosure Content	Corresponding Chapters	Page No.	Omitted/Remarks
Material Topics - Integrity Management					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Analysis 6.2 Integrity Management	19 160	
GRI 205 Anti-corruption 2016	205-2	Communication and training about anti-corruption policies and procedures	2.2 Sustainable Supply Chain Management 6.2 Integrity Management	68 160	
	205-3	Confirmed incidents of corruption and actions taken	6.3 Regulatory Compliance	165	
GRI 206 Anti-competitive behavior Topic 2016	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	6.3 Regulatory Compliance	165	
Material Topics – Economic Performance					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Analysis Economic Performance	9 19	
GRI 201 Economic Performance 2016	201-1	Direct economic value generated and distributed	Economic Performance	9	
	201-2	Financial implications and other risks and opportunities due to climate change	3.1 Climate Strategy	75	
	201-3	Defined benefit plan obligations and other retirement plans	4.1 Talent Attraction and Retention	110	
	201-4	Financial assistance received from government	-	-	The Company received a total of NT\$ 580,258 thousand from the government in 2023.
Material Topics – Information Security					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Analysis 6.6 Information Security	19 165	
GRI 418 Customer Privacy 2016	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	6.6 Information Security	165	





GRI Standards Categories / Topics	Number	GRI Standards Disclosure Content	Corresponding Chapters	Page No.	Omitted/Remarks
Material Topic – Regulatory Compliance					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Analysis 6.3 Regulatory Compliance	19 165	
Material Topic – Sustainable Supply Chain					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Analysis 2.2 Sustainable Supply Chain Management	19 68	
GRI 204 Procurement Practices 2016	204-1	Proportion of spending on local suppliers	2.1 Supply Chain Overview	65	
GRI 308 Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria	2.2 Sustainable Supply Chain Management	68	
	308-2	Negative environmental impacts in the supply chain and actions taken	2.2 Sustainable Supply Chain Management	68	
GRI 414 Supplier Social Assessment 2016	414-1	New suppliers that were screened using social criteria	2.2 Sustainable Supply Chain Management	68	
	414-2	Negative social impacts in the supply chain and actions taken	2.2 Sustainable Supply Chain Management	68	
Material Topic – Corporate Governance					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Analysis 1.1 Innovation and Intellectual Property Management	19 156	
Material Topic - Innovation and Intellectual Property Management					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Analysis 1.1 Innovation and Intellectual Property Management	19 33	
Material Topic - Risk Management					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Analysis 6.5 Risk Management	19 168	
Material Topic - Customer Relationship Management					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Analysis 1.3 Customer Relationship Management	19 59	



GRI Standards Categories / Topics	Number	GRI Standards Disclosure Content	Corresponding Chapters	Page No.	Omitted/Remarks
Other Disclosures					
GRI 207 Tax 2019	207-1	Approach to taxes	6.4 Responsible Taxation	166	
	207-2	Tax governance, control, and risk management	6.4 Responsible Taxation	166	
	207-3	Stakeholder engagement and management of concerns related to taxes	6.4 Responsible Taxation	166	
Environmental Aspect					
Material Topic - Energy Management					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Analysis 3.2 Energy Management	19 89	
	302-1	Energy consumption within the organization	3.2 Energy Management	89	
GRI 302 Energy 2016	302-3	Energy intensity	3.2 Energy Management	89	
	302-4	Reduction of energy consumption	3.2 Energy Management	89	
Material Topic - Climate Strategy					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Analysis 3.1 Climate Strategy	19 75	
	305-1	Direct (Scope 1) Greenhouse Gas (GHG) emissions	3.1 Climate Strategy	75	
GRI 305 Emissions 2016	305-2	Energy indirect (Scope 2) Greenhouse Gas (GHG) emissions	3.1 Climate Strategy	75	
	305-3	Other indirect (Scope 3) Greenhouse Gas (GHG) emissions	3.1 Climate Strategy	75	
	305-4	Greenhouse Gas (GHG) emissions intensity	3.1 Climate Strategy	75	
	305-5	Reduction of Greenhouse Gas (GHG) emissions	3.1 Climate Strategy	75	
	305-7	Nitrogen oxides (NOx), sulfur oxides (Sox), and other significant air emissions	3.5 Air Pollution Emissions Management	104	



GRI Standards Categories / Topics	Number	GRI Standards Disclosure Content	Corresponding Chapters	Page No.	Omitted/Remarks
Other Disclosures					
GRI 303 Water and Effluents 2018	303-3	Water withdrawal	3.3 Water Resources Management	93	
	303-4	Water discharge	3.3 Water Resources Management	93	
	303-5	Water consumption	3.3 Water Resources Management	93	
GRI 306 Waste Material 2020	306-1	Waste generation and significant waste-related impacts	3.4 Waste Management	98	
	306-2	Management of significant waste-related impacts	3.4 Waste Management	98	
	306-3	Waste generated	3.4 Waste Management	98	
	306-4	Waste diverted from disposal	3.4 Waste Management	98	
	306-5	Waste directed to disposal	3.4 Waste Management	98	
Social Aspect					
Material Topic - Occupational Health and Safety					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Analysis 4.4 Occupational Safety and Health Management	19 131	
	403-1	Occupational health and safety management system	Materiality Analysis 4.4 Occupational Safety and Health Management	131	
	403-2	Hazard identification, risk management, and incident investigation	Materiality Analysis 4.4 Occupational Safety and Health Management	131	
	403-3	Occupational health services	Materiality Analysis 4.4 Occupational Safety and Health Management	131	
	403-4	Worker participation, consultation, and communication on occupational health and safety	Materiality Analysis 4.4 Occupational Safety and Health Management	131	
	403-5	Worker training on occupational health and safety	Materiality Analysis 4.4 Occupational Safety and Health Management	131	
	403-6	Promotion of worker health	Materiality Analysis 4.4 Occupational Safety and Health Management	131	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked to business relationships	Materiality Analysis 4.4 Occupational Safety and Health Management	131	
	403-8	Workers covered by the occupational health and safety management system	Materiality Analysis 4.4 Occupational Safety and Health Management	131	
	403-9	Occupational injuries	Materiality Analysis 4.4 Occupational Safety and Health Management	131	
	403-10	Work-related illnesses	Materiality Analysis 4.4 Occupational Safety and Health Management	131	



GRI Standards Categories / Topics	Number	GRI Standards Disclosure Content	Corresponding Chapters	Page No.	Omitted/Remarks
Material Topic - Talent Attraction and Retention					
GRI 3: Material Topics 2021	3-3	Management of material topics	Materiality Analysis 4.1 Talent Attraction and Retention	19 110	
GRI 401 Employment 2016	401-1	New employee hires and employee turnover	4.1 Talent Attraction and Retention	110	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	4.1 Talent Attraction and Retention	110	
	401-3	Parental leave	4.1 Talent Attraction and Retention	110	
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	110 156	
Material Topic - Talent Nurturing and Development					
GRI 404 Training and Education 2016	404-1	Average hours of training per year per employee	4.2 Talent Nurturing and Development	121	
	404-3	Percentage of employees receiving regular performance and career development reviews	4.2 Talent Nurturing and Development	121	
Other Disclosures					
GRI 402 Labor/ Management Relations 2016	402-1	Minimum notice periods regarding operational changes	4.2 Talent Nurturing and Development	121	
GRI 406 Non-Discrimination 2016	406-1	Incidents of discrimination and corrective actions taken	4.3 Human Rights	129	
GRI 409 Forced or Compulsory Labor 2016	408-1	Operations and suppliers at significant risk for incidents of child labor	2.2 Sustainable Supply Chain 4.3 Human Rights	68 129	
GRI 415 Public Policy 2016	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	2.2 Sustainable Supply Chain 4.3 Human Rights	68 129	
GRI 415 Public Policy 2016	415-1	Political contributions	6.2 Integrity Management	160	



Appendix II : SASB Sustainability Accounting Standards Comparison Table(2323-12 Edition)

Disclosure Topic	Indicator Number	Disclosure Indicators	Characteristics	Description/Corresponding Chapter	Page No.
Greenhouse Gas Emissions	TC-SC-110a.1	<ul style="list-style-type: none"> Total Global Emissions (Scope 1) Total emissions from perfluorinated compounds 	Quantitative	(1) Direct greenhouse gas emissions from Scope 1 were 49,145 tons of CO ₂ e. (2) Perfluorinated greenhouse gas emissions were 11,850 tons of CO ₂ e Please refer to the contents of Chapter 3.1 for details.	75
	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	In order to align with the international trend of carbon reduction, the Company has set reduction targets for Scope 1 and for fluorocarbons. Please refer to the contents of Chapter 3.1 for details. Note: The treatment and destruction of the gas from the intensification process covers the control of perfluorinated compounds.	75
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	(1) Total energy consumption was 4,554,447.05 GJ (2) Total purchased electricity use was 4,025,176.07 GJ, accounting for 88.38% of total energy use. (3) Total renewable energy use was 49,243.97 GJ, accounting for 1.08% of total energy use. Please refer to the contents of Chapter 3.2 for details.	89
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	The total amount of water withdrawn was 6,582.31 thousand cubic meters, and the total amount of water consumed was 2,182.61 thousand cubic meters. None of the plants are classified as high risk areas for water resources. Please refer to the contents of Chapter 3.3 for details.	93
Waste Management	TC-SC-150a.1	Hazardous waste generated during the manufacturing process and the percentage recycled	Quantitative	The total amount of hazardous waste generated was 4,672.03 tons, of which 86.35% was recycled and reused. Please refer to the contents of Chapter 3.4 for details.	98
Employee Health and Safety	TC-SC-320a.1	Describe how to assess, monitor, and reduce employee exposure to hazardous environments	Discussion and Analysis	Please refer to the contents of Chapter 4.4 for details	131
	TC-SC-320a.2	Total monetary loss due to legal incidents related to violations of employee health and safety	Quantitative	A worker was injured by fallen materials at one of P1/2 Plant's cleanroom computer/office areas on February 2, 2023 and needed to be hospitalized. This case was recognized as a work-related accident, for which the Company was given a penalty of NT\$100,000 according to "Guidelines for Handling Cases Violating Occupational Safety and Health Act and Labor Inspection Act".	-
Recruitment and Management of Global Professional Talents	TC-SC-330a.1	Percentage of employees requiring work visas	Quantitative	In 2023, the employees that are foreign nationals or located offshore accounted for 5.09% of the entire employees, and employees of the subsidiaries in Japan accounted for 0.43% of the entire employees.	-
Product Lifecycle Management	TC-SC-410a.1	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	Total system-level energy efficiency of processors: (1) servers (2) desktops (3) laptops	Quantitative	Not applicable	-



Disclosure Topic	Indicator Number	Disclosure Indicators	Characteristics	Description/Corresponding Chapter	Page No.
Raw Material Procurement	TC-SC-440a.1	Describe the Risk Management approach to using critical materials	Discussion and Analysis	Please refer to the contents of Chapter 2.1 for details.	65
Intellectual Property Protection and Competitive Behavior	TC-SC-520a.1	Total monetary losses resulting from legal incidents related to anti-competitive behaviors	Quantitative	No such incidents occurred in 2023 and there were no monetary losses.	-
Activity Indicator	TC-SC-000.A	Total production	Quantitative	87,585.57 (m ² /year)	-
	TC-SC-000.B	Percentage of self-owned plant production	Quantitative	The percentage of self-owned plant production was 100%.	-

Appendix III : TCFD Climate Related Financial Disclosure Framework Comparison Table

Level	Disclosure Item	General Industry Metrics	Corresponding Chapter	Page No.
Governance	a	Describe the Board's oversight status of climate related risks and opportunities.	3.1 Climate Strategy	75
	b	Describe management's role in assessing and managing climate-related risks and opportunities.		
Strategy	a	Describe the short-term, medium-term, and long-term climate-related risks and opportunities identified by the organization.		
	b	Describe the impacts of climate related risks and opportunities on the organization's business, strategic, and financial planning.		
	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.		
Risk Management	a	Describe the organization's processes for identifying and assessing climate-related risks.		
	b	Describe the organization's process for managing climate-related risks.		
	c	Describe how the identification, assessment and management processes for climate related risks are integrated into the organization's overall risk management system.		
Metrics and Targets	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	75
	b	Disclosure of greenhouse gas emissions and associated risks in Scope 1, Scope 2 and Scope 3 (where applicable).		
	c	Describe the objectives being used by the organization to manage climate related risks and opportunities, and the performances in achieving those objectives.		



Appendix 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

Number	Indicator Description	Description or Corresponding Chapter	Page No.
一	Total energy consumption, percentage of purchased electricity and renewable energy usage rate	Total energy consumption: (1)4,554,447.05GJ Percentage of purchased electricity: (2)88.38% Renewable energy usage rate: (3)1.08%	-
二	Total water withdrawal and total water consumption	Total water withdrawal: 6,582.32 thousand cubic meters Total water consumption: 2,182.62 thousand cubic meters	-
三	Weight of hazardous waste generated and percentage recycled	Total amount of hazardous waste: 4,672.03 tons Percentage of waste recycled and reused: 86.35%	-
四	Explain the type, number of people, and percentage of occupational disasters	Please refer to the contents of Chapter 4.4 for details.	131
五	Disclosure of product lifecycle management: weight and percentage of recycling, including scrapped products and electronic waste	Total waste generation of approximately 13,071.18 metric tons in 2023, with a recycling rate of 93.11%	-
六	Description of risk management related to the use of critical materials	Please refer to the contents of Chapter 2.1 for details.	65
七	Total monetary losses due to lawsuits related to anti-competitive behavior regulations	No such incidents occurred in 2023, and there were no monetary losses	-
八	Production of major products by product category	87,585.57 (m ² /year)	-





Schedule II – Climate Related Information for Publicly Traded Companies -1- The Risks and Opportunities that climate change poses to the company and the countermeasures taken by the company

Item	Execution Status
1. Describe oversight status and governance of the Board of Directors and the management role for climate-related risks and opportunities.	
2. Describe how the impacts of identified climate risks and opportunities on the organization's business, strategic, and financial planning.(Short-term, medium-term and long-term)	
3. Describe the impacts of extreme weather events and transformation actions on the financial planning.	Please refer to the contents of Chapter 3.1 for details.
4. Describe how the identification, assessment and management processes for climate-related risks are integrated into the organization's overall risk management system.	
5. Describe the use of scenarios, parameters, assumptions, analysis factors and the major impacts on financial planning, if resilience of climate change risk is based on the assessment of scenario analysis.	
6. Describe the details of transformation planning, indicators and targets used by the organization to assess and manage physical risk and transformation risk, if there is transformation planning in respond to the management of climate related risk.	Please refer to materiality analysis and the contents of Chapter 3.1 for details.
7. Describe the pricing basis, if planning tool is on the basis of internal carbon pricing.	Evaluate the future introduction of an internal carbon pricing mechanism
8. If climate-related goals are set, the activities covered, the scope of greenhouse gas emissions, the planning schedule, annual achievement progress and other information should be described, if carbon offsets or renewable energy certificates (RECs) are used to achieve relevant goals, the source and quantity of offset carbon reduction credits or quantity of renewable energy certificates (RECs) should be described.	Please refer to the contents of Chapter 3.1 for details.
9. Greenhouse gas inventory and assurance, reduction targets, strategies and specific action plans	Also fill in 1-1 and 1-2 of Schedule II

Schedule II – Climate Related Information for Publicly Traded Companies 1-1 - Greenhouse Gas Inventory and Assurance Results in the last two years

Item	Execution Status / Corresponding Chapter				
	Data Year	2022		2023	
	Scope of data coverage	Parent company		Parent company	
1-1-1 GHG Inventory Information: Describe the GHG emission volume (metric tons CO ₂ e), intensity (metric tons CO ₂ e / NTD\$ million) in the last two years, and the scope of data coverage.	Item	Total emissions (metric tons CO ₂ e)	The intensity (metric tons CO ₂ e / NT\$1000)	Total emissions (metric tons CO ₂ e)	The intensity (metric tons CO ₂ e / NT\$1000)
	Scope I	89,694	0.0012	49,145	0.0011
	Scope II	581,994	0.0076	540,850	0.0123
	Total	671,688	0.0088	589,995	0.0134
	Scope III	213,668	0.0028	171,863	0.0039



Item	Execution Status / Corresponding Chapter		
	Data Year	2022	2023
1-1-2 GHG Assurance Information: Describe the assurance overview in the last two years, including assurance scope, assurance institution, assurance criteria and assurance opinion.	Assurance scope	Parent company	Parent company
	Assurance institution	British Standards Institution (BSI)	The British Standards Institution (BSI)
	Assurance criteria	ISO 14064-1	ISO 14064-1
	Assurance opinion	Please refer to our official website for ISO 14064-1 certificate.	Please refer to our official website for ISO 14064-1 certificate.

Schedule II – Climate Related Information for Publicly Traded Companies 1-2-Greenhouse Gas Reduction Goals, Strategies and Specific Action Plans

Item	Execution Status
Describe the greenhouse gas reduction base year and its data, reduction targets, strategies, specific action plans and achievement of reduction targets.	Please refer to materiality analysis and the contents of Chapter_3.1_for details.

Appendix V : United Nations Global Compact (UNGC) Comparison Table

Item No.	Article of Principle	Corresponding Chapter	Page No.
Human Rights Area			
1	Support and respect international human rights within the scope of corporate influence.	4.3 Human Rights	129
2	Businesses should ensure that human rights are not violated within the company.	4.3 Human Rights	129



Item No.	Article of Principle	Corresponding Chapter	Page No.
Labor Area			
3	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.	4.4 Occupational health and safety	131
4	The elimination of all forms of forced and compulsory labor.	4.3 Human Rights	129
5	The effective abolition of child labor.	4.3 Human Rights	129
6	The elimination of discrimination in respect of employment and occupation.	4.1 Talent Attraction and Retention 4.3 Human Rights	110 129
Environmental Area			
7	Support a precautionary approach to environmental challenges.	3.1 Climate Strategy 3.2 Energy Management 3.3 Water Resource Management 3.4 Waste Management 3.5 Air Pollution Emission Management 3.6 Biodiversity Management	75 89 93 98 104 106
8	Undertake initiatives to promote greater corporate environmental responsibility.	3.1 Climate Strategy 3.2 Energy Management 3.3 Water Resource Management 3.4 Waste Management 3.5 Air Pollution Emission Management 3.6 Biodiversity Management	75 89 93 98 104 106
9	Encourage the development and diffusion of environmentally friendly technologies.	3.1 Climate Strategy 3.2 Energy Management 3.3 Water Resource Management 3.4 Waste Management 3.5 Air Pollution Emission Management	75 89 93 98 104
Anti-corruption Area			
10	Businesses should work against corruption in all its forms, including extortion and bribery	6.2 Integrity Management	160



Appendix VI : ISO 26000 Guidance on Social Responsibility Standards Comparison Table

Core Subjects	Article of Principle	Corresponding Chapter	Page No.	Comment
Organizational Governance	A system for making and implementing decisions for the execution of the organization's objectives	Company Profile	6	
	Verification of compliance with regulations and avoidance of risks caused by human rights issues	6.3 Regulatory Compliance	165	
	Human rights risk situations	6.5 Risk Management	168	
	Avoidance of complicity — direct, beneficial, and silent conspiratorial relationships (avoidance of complicity)	6.2 Integrity Management	160	
Human Rights	Resolving grievances (resolving gripes and complaints)	4.3 Human Rights	129	
	Discrimination and vulnerable groups	4.3 Human Rights	129	
	Civil and political rights	4.1 Talent Attraction and Retention	110	
	Economic, social, and cultural rights	4.1 Talent Attraction and Retention	110	
	Fundamental principles and rights at work	4.1 Talent Attraction and Retention 4.2 Talent Nurturing and Development	110 121	
	Employment and employment relationships	4.1 Talent Attraction and Retention 4.2 Talent Nurturing and Development	110 121	
	Conditions of work and social protections	4.1 Talent Attraction and Retention 4.2 Talent Nurturing and Development	110 121	
Labor Practices	Social dialogue	4.1 Talent Attraction and Retention 4.2 Talent Nurturing and Development	110 121	
	Health and safety at work	4.4 Occupational health and safety	131	
	Human resources development and training in the workplace	4.2 Talent Nurturing and Development	121	
The Environment	Prevention of pollution	3.2 Energy Management 3.3 Water Resource Management 3.4 Waste Management 3.5 Air Pollution Emission Management	89 93 98 104	
	Sustainable resource use	3.2 Energy Management 3.3 Water Resource Management 3.4 Waste Management	89 93 98	



Core Subjects	Article of Principle	Corresponding Chapter	Page No.	Comment
Fair Operating Practices	Climate change mitigation and adaptation	3.1 Climate Strategy	75	
	Protection of the environment, biodiversity, and restoration of natural habitats	3.6 Biodiversity Management	106	
	Anti-corruption	6.2 Integrity Management	160	
	Responsible political involvement	6.2 Integrity Management	160	
	Fair competition	6.2 Credibility Management	160	
	Promoting social responsibility in the value chain	6.1 Corporate Governance 6.2 Integrity Management 6.3 Regulatory Compliance 6.4 Responsible Taxation	156 160 165 166	
	Respect for property rights	1.1 Innovation and Intellectual Property Management	33	
	Fair marketing, factual and unbiased information, and fair contractual practices	2.2 Sustainable Supply Chain Management	68	
	Protecting consumers' health and safety	1.3 Customer Relationship Management	59	
	Sustainable consumption	2.2 Sustainable Supply Chain Management	68	
Consumer Issues	Consumer service, support, and complaint and dispute resolution	1.3 Customer Relationship Management	59	
	Consumer data protection and privacy	6.6 Information Security	176	
	Access to essential services	1.3 Customer Relationship Management	59	
	Education and Awareness	4.2 Talent Nurturing and Development	121	
	Community Involvement	5.1 Social Influence	143	
	Education and culture	5.1 Social Influence	143	
	Employment creation and skills development	4.2 Talent Nurturing and Development	121	
Community Involvement and Development	Technology development	1.1 Innovation and Intellectual Property Management	33	
	Wealth and income creation	Economic Performance 1.1 Innovation and Intellectual Property Management	9 33	
	Health	4.4 Occupational health and safety	131	
	Social investment	5.1 Social Influence	143	



Appendix VII : Independent Third Party Verification Statement



By Royal Charter

INDEPENDENT ASSURANCE OPINION STATEMENT

Powerchip Semiconductor Manufacturing Corporation 2023 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 its 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 followings:

1. The assurance scope is consistent with the description of Powerchip Semiconductor Manufacturing Corporation 2023 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 2023 Sustainability Report provides a fair view of the PSMC sustainability programmes and performances during 2023. The sustainability report subject to assurance is materially correct without voluntary omissions based upon testing within 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 assurers 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 stated disclosure 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 top level 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 to conduct interview.
- interview with 45 staff involved in sustainability management, report preparation and provision of report information were carried out.
- review of materiality assessment process.
- review of key organizational 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 trails to initial aggregated source and checked sample data to greater depth during site visits.
- 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 reports.
- 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 topic-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 substantially 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 materiality assessment process and 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 2023 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, including the disclosures of applicable economic, environmental, and social information, 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, version 2023-12). Based on our review, we confirm that the sustainability disclosure topics & accounting metrics of SASB Standard(s) (Semiconductors Sustainability Accounting Standard, version 2023-12) 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 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.

...making excellence a habit.TM



AA1000

Licensed Report

000-4/V3-AA4ET

Statement No: SRA-TW-804450 For and on behalf of BSI:
2024-05-14

Peter Pu, Managing Director BSI Taiwan

Taiwan Headquarters: 2nd Floor, No. 37, Ji-Hu Rd., Ni-Hu Dist., Taipei 114, Taiwan, R.O.C.

A Member of the BSI Group of Companies



PSMC

Powerchip Semiconductor Manufacturing Corp.

No. 18, Lixing 1st Rd, Hsinchu Science Park, Hsinchu City, Taiwan
TEL : 886-3-5795000
FAX : 886-3-5788565

