

2024 Sustainability Report

2024 永續報告書
SUSTAINABILITY REPORT



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Sustainability Performance and Highlights

Governance

- Macronix attaches importance to research and development, and the technical papers it published have been selected by many international academic semiconductor conferences such as IEDM/VLSI and ISSCC over the years.
- Macronix possesses a large number of high-quality international key technologies and intellectual property rights. Macronix has obtained a total of 317 patents in 2024, and by the end of the year, it has had a total of 9,520 patents successfully registered worldwide.
- Macronix's automotive flash memory manufacturing obtained the "ISO 26262" Road vehicles – Functional safety and product compliance certifications.
- Macronix's ArmorBoot MX76 Secure Boot Serial NOR Flash was recognized as the 2024 EE Awards Asia "Best Memory Solution of the Year".
- All of Macronix fabs, test building, and management centers have passed the IATF 16949:2016 standard certification of the International Automotive Task Force (IATF).
- Macronix obtained the "ISO/IEC27001:2022" information security management system certification.
- Macronix has been awarded first place among outstanding R&D alternative service employers (private industry group) from Ministry of the Interior in 2024
- All plants of Macronix have obtained full score in the Validated Assessment Program (VAP) of the Responsible Business Alliance (RBA).
- Macronix was selected as one of the "Top 100 Global Innovators" by LexisNexis.
- Based on the 10th Corporate Governance Evaluation Macronix was ranked in the top 6%–20% among listed companies and in the top 11%–20% among electronics companies with a market capitalization exceeding NT\$10 billion.
- Macronix was recognized by the Ministry of Environment as an outstanding unit for "Green Procurement."
- Macronix was awarded the 2024 "Outstanding Award" for Occupational Health and Safety Management System Performance by the Occupational Safety and Health Administration, Ministry of Labor.

Environmental

- Macronix was awarded the "1.5°C Label Certificate" from CommonWealth Magazine. Based on calculations using the AGTP climate model and parameter matrix, Macronix's temperature determined by the "Corporate Carbon Reduction Thermometer" (TRIPs) was assessed at 1.457°C.
- Macronix was awarded the "Golden Tower Award" in the ESG Sustainability Category at the 2024 Taiwan Continuous Improvement Awards (TCIA).
- Macronix's Fab 2 and Fab 5 responded to the Ministry of Environment's "Green Office" initiative and were recognized as "Green Partners." Each site implemented 28 green initiatives, totaling 56 initiatives.
- In 2024, Macronix invested approximately NT\$590 million in environmental safety and health initiatives, alongside active efforts to develop and implement sustainable management strategies.
- From 2018 to 2024, a cumulative energy savings of approximately 48,066 thousand kWh was achieved.
- In 2024, greenhouse gas emissions decreased by 2.0% compared to the previous year.
- Water recycling reached 3,862 million liters, with a recycling rate of 84.06% for the 8-inch wafer fab process and 88.10% for the 12-inch wafer fab process. The overall water recycling rate for Macronix was 86.70%.
- Fab 2 and Fab 5 obtained the water recycling rate certification statement in 2024.
- 11,185 metric tons of waste were recycled/reused, and the waste recycling/reuse rate was 97.8%.
- The average removal rate of volatile organic compounds (VOCs) is 96.82%.
- No environmental penalties
- Obtained a B level for Climate and a C level for Water in the Carbon Disclosure Project (CDP) Climate Change Questionnaire

Social

- Received a certificate of appreciation for the "2024 Saluting the Sea - Joint Autumn Beach Cleanup Event in the Taoyuan, Hsinchu, Miaoli, and New Taipei Counties."
- Received a certificate of appreciation for the "2024 Industrial Safety and Environmental Protection Month" seminar.
- Received a certificate of appreciation for "2024 Assisting with Health and Safety Counseling for Industrial Park Enterprises".

- Received a certificate of appreciation for the "2024 Emergency Response and Safety Protection Capability Enhancement Counseling Program for Industrial Park Enterprises."

Friendly Workplace/Employee Benefits

- The Welfare Committee has allocated NT\$38,703 thousand in total for employee welfare.
- Built a five-star employee recreation and fitness center and invested NT\$11,958 thousand in professional sports instructors and the maintenance of software and hardware equipment to create a friendly and safe leisure environment maintaining employees' physical and mental health; received the Taiwan i Sports Certification from the 2024 Sports Administration of the Ministry of Education.
- Purchased a NT\$10,413 thousand group insurance for employees, which covers accidents, diseases, and cancer. The employees are allowed to add their parents, spouses, and children as dependents for low-cost, self-paid insurance. As a result, our employees have a more comprehensive protection for their families to avoid being worried about the future.
- Awarded Accredited Healthy Workplace - Health Promotion Badge (All plants)
- Macronix offers free early-stage lung cancer CT scans and heart CT scans, which has benefited 311 employees in total. The free CT scans are also available to the employees' family members at a discount, which has benefited 161 family members in total.
- In 2024, Macronix held a muscle-building and fat-loss competition, and provided 30 free exercise courses. A professional fitness instructor led employees to practice exercises to improve the core muscle strength. Total weight loss was identified as 261.8 kg.
- Awarded the "Excellence Award - Breastfeeding Room Certification" by the Hsinchu City Government

Education and Training:

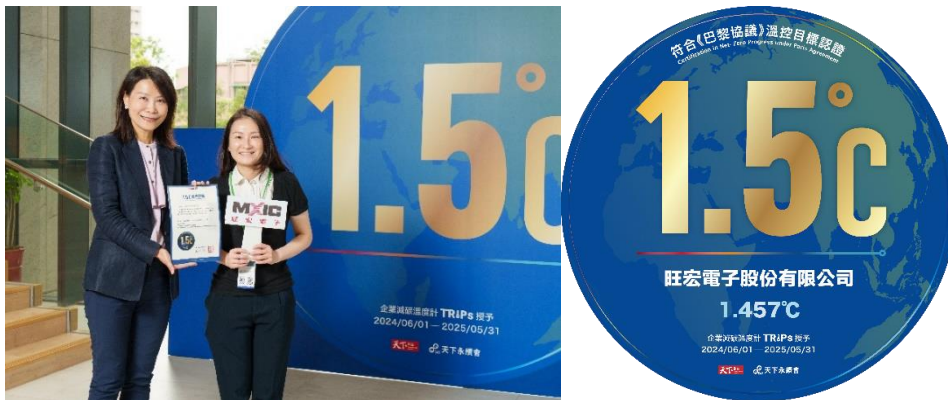
- Macronix provides consistent, progressive training programs for different specialties and tiers; on average, every employee has participated in 22.54 sessions and has had 71.11 hours of training.
- Macronix provides a variety of learning approaches, including digital learning with no limitation of time and place; a total of 53,411 people have participated in training activities through the digital learning platform, which accounts for 61.6% of all training activities.

Charity Events:

- The Macronix Education Foundation scholarships have exceeded NT\$180 million by the end of 2024.
- Macronix has established a charitable organization, combining the strength of both employees and the public to help those in need in society; a total number of employees participating in public welfare activities is 4,301, and donations of NT\$3,183 thousand have been made.
- Adopted 12 km of the “Hsinchu City Eco-Bike Trail” to provide the citizens with the outdoor activities in the healthy and comfortable environment, which continuously has been awarded a Certificate of Appreciation for Adoption by the Hsinchu City Government.

Awards and Recognition

- The American Physical Society (APS) has announced that President Chih-Yuan Lu has been awarded the George E. Pake Prize
- Macronix was awarded the "1.5°C Label Certificate" from CommonWealth Magazine. Based on calculations using the AGTP climate model and parameter matrix, Macronix's temperature level in the "Corporate Carbon Reduction Thermometer" (TRIPs) was classified as outstanding



- Awarded the "Excellence Award - Breastfeeding Room Certification" by the Hsinchu City Government
- Macronix was awarded the 2024 "Outstanding Award" for Occupational Health and Safety Management System Performance by the Occupational Safety and Health Administration, Ministry of Labor
- Macronix's ArmorBoot MX76 Secure Boot Serial NOR Flash was recognized as the 2024 EE Awards Asia "Best Memory Solution of the Year"
- Macronix was awarded the "Golden Tower Award" in the ESG Sustainability Category at the 2024 Taiwan Continuous Improvement Awards (TCIA).



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1. Messages from the Macronix Executives

1.1. Message from the Chairman and CEO

Macronix International Co., Ltd. (hereinafter referred to as “Macronix”) was founded in 1989 and is headquartered in the Hsinchu Science Park, Taiwan. Macronix has remained dedicated to the research, development, and manufacturing of advanced non-volatile memory, offering a broad range of solutions including ROM, NOR Flash, and NAND Flash memory across various specifications and capacities.

In 2024, the electronics industry faced substantial economic challenges, including weakened global demand, supply chain shifts, and escalating international trade tensions. Among these, the U.S.-China trade war has had a particularly profound impact on Taiwan’s electronics exports, especially in the semiconductor sector. In addition, global inflation and price volatility further stressed cost structures. Despite these headwinds, Macronix upheld its pragmatic and forward-thinking management philosophy, successfully delivering high-quality products and services, while promoting environmental sustainability and practicing corporate social responsibility for the common good of society. These continuous efforts have supported Macronix’s long-term development and innovation strategy, culminating in its recognition as one of the Top 100 Global Innovators 2024 by LexisNexis® Legal & Professional.

With the rapid growth of high-performance computing, AI, automotive, and 5G applications, memory chips have become increasingly integral across various sectors. Macronix continues to provide customers with high-performance and highly reliable memory solutions through relentless innovation, proprietary technologies, and a commitment to quality. One such innovation, ArmorFlash, enhances AI applications in edge devices and personal electronics by offering low power consumption, fast access, and robust system security.

Macronix continues to refine its ArmorFlash MX78 series, with the latest design achieving data access speeds over 100 times faster than its predecessor. This significant enhancement enables smoother user experiences when powering up electronic devices and executing critical security functions. These advanced security capabilities of the product have been recognized by external organizations, earning the ISO/SAE 21434 standard certification in 2024, which emphasizes cybersecurity by design. This certification ensures that Macronix’s memory products meet the stringent requirements for confidentiality, integrity, and availability of information in automotive and industrial control applications. As a result, Macronix has made notable progress in collaborations with global leaders in autonomous driving systems and automotive MCU chipmakers, with its solutions now adopted by top-tier automakers and automotive electronics manufacturers.

Since its founding, Macronix has placed a strong emphasis on sustainable talent development, actively fostering technological expertise and promoting environmentally friendly initiatives. The Macronix Education Foundation, established in 2000, has hosted the Macronix Golden Silicon Awards and the Macronix Science Awards, offering platforms for college students in electrical engineering and related fields to showcase their innovations. These awards also inspire high school students nationwide to explore the sciences and apply creative thinking. Starting in 2024, the Macronix Science Awards welcomed high school team entries for the first time, further encouraging youth collaboration and research potential. Many awardees have gone on to excel in special college admission programs. Since the inclusion of an AI category in the 19th Golden Silicon Awards, over 1,000 students have participated through the 25th edition, highlighting the award’s impact in nurturing young AI talent. To date, the Macronix Education Foundation has supported the development of over 40,000 young professionals, awarding more than NT\$180 million in scholarships—making significant contributions to Taiwan’s

technological and talent advancement.

As the global climate change intensifies, countries around the world are actively promoting sustainable development. As a leading global provider in the memory industry, Macronix has proactively established short-, medium-, and long-term carbon reduction roadmaps. In 2024, as assessed by CommonWealth Magazine’s Corporate Carbon Reduction Thermometer, Macronix was awarded the “1.5°C Label Certificate” for the manufacturing sector, demonstrating its determination to meet the Paris Agreement temperature control goals. Additionally, in 2024, Macronix launched a carbon emission reduction project within its manufacturing processes. While maintaining product quality and stability, Macronix conducted in-depth analysis of high-emission equipment. Leveraging its self-developed sNOVA engineering data analytics system—integrated with over 30 years of big data and AI modeling for statistical analysis—Macronix successfully entered the field of AI-powered energy-efficient operations. These efforts were recognized with the prestigious ESG Sustainability Golden Tower Award.

The global political and economic landscape remains volatile and full of challenges. In response to these uncertainties, the management team at Macronix continues to adhere to a management philosophy of “honesty.” Macronix will remain agile in adjusting production strategies, actively and prudently manage inventory, and optimize capital expenditures. All employees will work together to accelerate research and development, scale up mass production, and enhance management efficiency to improve operational performance and strengthen corporate competitiveness. Macronix remains dedicated to developing high-quality and high-performance memory application markets, with a focus on increasing the revenue contribution from automotive and industrial control products. By introducing high-value products such as 3D NOR Flash, Macronix aims to capture new business opportunities in advanced, high-quality, and high-capacity applications in the automotive and industrial sectors. These efforts are expected to bring new momentum to Macronix’s operations and support its vision of becoming an evergreen enterprise.

Chairman and CEO Miin Wu



1.2.Message from the President

In 2024, Taiwanese businesses faced a highly unpredictable and volatile operating environment both domestically and internationally. Key challenges included the geopolitical implications of the U.S. presidential election on the semiconductor industry, escalating U.S.-China tech tensions involving both regulatory and tariff barriers, supply chain shifts, the impact of tariffs and regulations on electric vehicles, and significant price fluctuations in raw materials due to geopolitical conflicts and wars. Notably, disruptions such as the Red Sea shipping crisis led to a sharp increase in both container and bulk freight rates. Additional factors included the Hualien 0403 earthquake, as well as upcoming policies like energy and carbon fees implementation have also added pressure. In response, Macronix adopted a pragmatic and cautious strategy. In addition to maintaining high-quality products and professional services, Macronix actively managed inventory reduction, accelerated R&D outcomes, and reduced capital expenditures. However, due to continued weak demand for memory products in end-user applications, inventory reduction efforts have yet to yield the desired results. As a result, Macronix's consolidated revenue for 2024 decreased by 6% compared to 2023, and the gross margin declined by 0.9%, leading to underperformance in operations.

The operating results for 2024 are as follows: The consolidated net operating revenue for the year amounted to NT\$25.9 billion; the consolidated gross profit amounted to NT\$6.1 billion; the average annual gross margin amounted to 23.6%; the loss after tax was amounted to NT\$3.2 billion, and the loss per share amounted to NT\$1.73. Cash flow from operating activities amounted to NT\$175 million, while cash flow from investing activities amounted to NT\$5.173 billion, with NT\$11.623 billion in cash equivalents at the end of the period. The net value of inventory amounted to NT\$13.406 billion; the debt ratio amounted to 43.5%, and the book value per share amounted to NT\$23.72. All of which indicate that Macronix's financial position remains stable.

Macronix has long been dedicated to innovative R&D, enhancing its growth potential and competitiveness through technological innovation. For example, we filed a total of 394 patent applications in various countries last year (2024). As of the end of the same year, Macronix had already obtained 9,520 approved patents worldwide. In addition to ranking at the top of the semiconductor industry in terms of number of patents, we also hold a large number of high-quality, internationally critical patents. These assets allowed us to secure a leading position in the global non-volatile memory market. Macronix's product excellence was once again recognized, as the ArmorBoot MX76 Secure Boot Serial NOR Flash received the EE Awards Asia Gold Selection Award for "Best Memory Solution of the Year" —marking the fourth consecutive year that Macronix's products have earned such acclaim. Additionally, at electronica 2024 in Munich, Germany, Macronix launched its 3D NOR product, collaborating with world-class customers to address the growing demand for non-volatile memory in various applications, including automotive, industrial, and medical sectors, particularly in areas such as autonomous driving, smart technologies, and high-security solutions.

In terms of manufacturing processes and product, ROM accounted for 22% of annual revenue in 2024, and NOR Flash contributed 59%. Particularly, the demand for NOR Flash from high-quality and high-value applications in automotive, industrial, medical, and communication sectors has already exceeded 40%. NAND Flash accounted for 11% of annual revenue, while 96-layer 3D NAND Flash products line achieved stable production and will gradually contribute to revenue. The ongoing development and application of 3D NAND will focus on enterprise-grade SSD products to meet customer's demand for higher-capacity and high-quality storage solutions.

In addition, Macronix upholds high standards in Environmental, Social, and Governance

(ESG) practices. Macronix emphasizes environmental protection from the source and integrates product lifecycle concepts into its design processes. All chemical substances and minerals used in Macronix products comply with international regulations such as the EU RoHS Directive, REACH restricted substances, and the avoidance of “conflict minerals.” In response to growing cybersecurity threats and risks, Macronix has progressively implemented robust information security mechanisms and has obtained ISO 27001 certification for its information security management system. Moving forward, Macronix will continue to enhance its cybersecurity posture by strictly adhering to ISO standards and strengthening internal controls. These efforts underscore Macronix’s strong commitment to sustainable development. Under the leadership of Chairman Miin Wu and the collective dedication of all employees, Macronix has consistently been recognized for its excellence in corporate governance. In the 10th Corporate Governance Evaluation for TWSE/TPEX-listed companies, Macronix ranked within the top 11% to 20% among listed electronics companies with a market capitalization exceeding NT\$10 billion, reaffirming its solid performance in ESG implementation and sustainable development.

Macronix upholds a business philosophy rooted in “honesty,” with unwavering commitment to innovation and quality. This steadfast approach has led to the successful launch of its 3D generation, reaffirming Macronix’s promise to deliver the highest quality products and comprehensive service support to its customers. Moving forward, Macronix will continue to embody its five core values—innovation, quality, efficiency, service, and teamwork—as the foundation for implementing sound corporate governance and robust risk management mechanisms. By fostering a sustainable business environment, Macronix aims to emerge stronger from economic downturns and share the rewards of its achievements with employees, shareholders, and customers alike.

President Chih-Yuan Lu



2. Macronix

Macronix's Mission and Statement

Today or in the future, Macronix strives to become a leading supplier in the semiconductor industry. Macronix provides innovative customer/application-oriented solutions and NVM products with outstanding advanced technologies, premium quality and reliable services.

Macronix, a leading integrated device manufacturer in the global Non-Volatile Memory (NVM) market, offers a wide range of memory ICs and storage solutions, including ROM, NOR Flash, NAND Flash, and eMMC solutions. With its world-class R&D and manufacturing capabilities, Macronix continues to deliver high-quality, innovative, and performance-driven products to its customers in the consumer, communication, computing, automotive electronics, industrial markets and other fields.

Macronix was founded in Taiwan's Hsinchu Science Park in 1989. Since its inception, Macronix has continuously leveraged the competitive advantages of its products and constantly strived to enhance its production and manufacturing capabilities in order to deliver high-quality products and services. As a result, we have successfully established long-term, mutually beneficial strategic partnerships with large, world-class manufacturers. Macronix has adhered to high corporate governance standards, while actively maintaining investor relations and advocating CSR. Macronix was the first semiconductor company in the Hsinchu Science Park to receive the SA8000 Corporate Responsibility Management Systems certificate. Macronix was also awarded the Corporate Governance Certification for publicly traded and over-the-counter companies. In 2024, Macronix passed the biennial RBA VAP with excellent results, showing that we take CSR seriously and are committed to achieving sustainable development.

In recent years, Macronix has been allocating 10% or above of its revenue for R&D. The technical papers we published over the years were continued to be selected and highlighted by multiple famous international academic conferences, such as the IEDM/VLSI and the ISSCC. Macronix currently holds the intellectual property rights for over 9,000 key international technologies and patents. We have established technical cooperation alliances with global high-tech industry leaders to conduct research on pioneering Phase-Change memories and AI network neural computing. Macronix has also announced the world's first paper about the flash prospective technology — 3D NOR, and provided solutions for the next generation of high-density and high-efficiency non-volatile memories.

Macronix currently owns one 12-inch wafer fab (Fab 5), and one 8-inch wafer fab (Fab 2). Macronix designs and fabricates its non-volatile memory products in Fab 5 and Fab 2. Looking ahead, Macronix will continue to research and develop new technologies to stay ahead of the competition, while simultaneously pursuing new product development and enhancing its technologies, quality, and services in order to strengthen its competitive advantages and boost profits. We will do our utmost to deliver sustainable growth for Macronix while also enhancing Taiwan's international competitiveness.

2.1. Products and Services



Macronix, a leading integrated device manufacturer in the global Non-Volatile Memory (NVM) market, offers a wide range of memory ICs and storage solutions, including ROM, NOR Flash, NAND Flash, and e.MMC™ solutions.











- The ROM product line is primarily focused on customized applications.
- The NOR Flash memory product line offers the most comprehensive storage capacity options, combining high quality, high performance, low power consumption, compact size, and cost efficiency to meet diverse market demands.
- The NAND flash memory product line primarily focuses on SLC types, offering higher storage capacity than the NOR product line, thereby addressing the growing capacity needs of diverse applications.
- The e.MMC™ solution utilizes 2D MLC NAND and 3D TLC NAND technologies, combined with advanced memory read/write control capabilities, to produce high-quality, high-performance, low-power, compact, and higher storage capacity products.

Macronix offers a complete range of low, mid, and high-capacity solutions with NOR Flash, NAND Flash, and e.MMC™ solutions for various embedded application markets.

Macronix Products and Applications

Product Category	Key Products	Applications and Functions
Non-Volatile Memory IC	Read-only Memory (ROM)	Mainly applied in electronic entertainment systems and electronic toys, etc.
	NOR Flash Memory	Applied in personal computers, tablet PCs, printers, hard drives, servers, smartphones, smart healthcare devices, wired and wireless communication equipment, advanced driver assistance systems, infotainment systems, industrial control systems, etc.
	NAND Flash Memory	Applied in printers, wired and wireless communication devices, automotive driver assistance control and infotainment systems, smart medical devices, industrial control and communication equipment, etc.
	e.MMC™	Applied in industrial and networking products, automotive driver assistance control and infotainment systems, smart medical devices, etc.
Wafer Foundry Service	Sub-micron Logic Process/Pressurized CMOS and BCD Process	Pressurized CMOS manufacturing service for power management and LED/LCD driver IC customers.
	Embedded Flash/MTP/OTP Process	Provide integrated embedded Flash/MTP/OTP to strategic clients.

Scope of Application

Computing	 	Personal computers, notebooks, tablets, computer peripherals/accessories, printers, and servers.
Consumer	 	STB, wearable devices, drones, sports cameras, digital cameras, smart home appliances, smart healthcare assistance devices, game consoles, toys, and audiovisual tools.
Communication	 	Mobile networks, home networks, enterprise networks, telecommunication networks, and other wired and wireless network equipment
Automotive	 	Advanced driving assistance systems, telematics and entertainment systems, dashboards.
Industry	 	Manufacturing automation systems, smart buildings, smart grids, EV charging equipment, smart retail, transportation control equipment, industrial computer, POS, test and measurement instruments and other types of industrial control equipment.

Key Markets

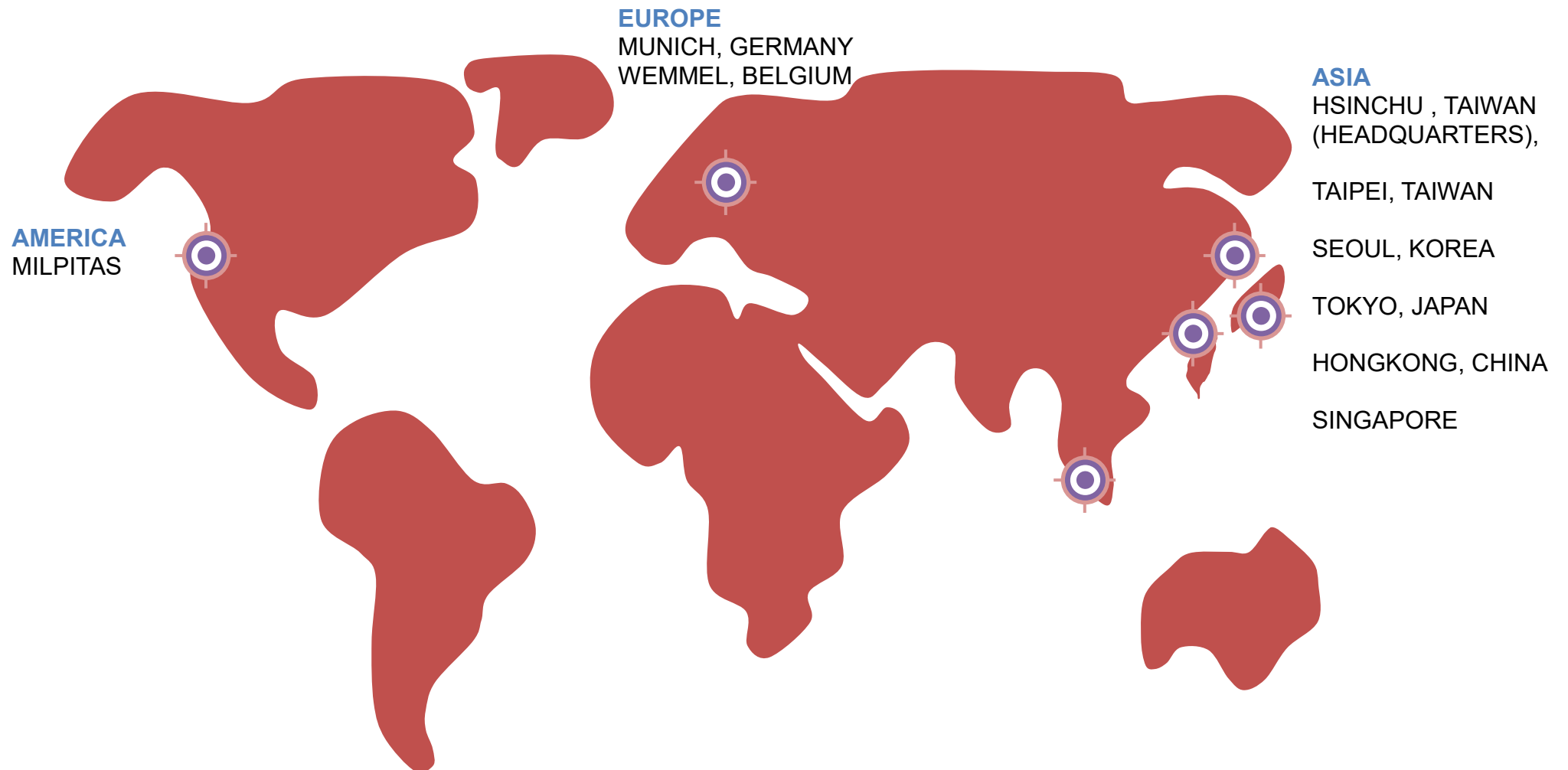
Macronix is an export-oriented company. Although Europe, U.S., Taiwan, Japan and other countries are its main sales regions, its service locations cover Europe, the U.S., Japan, Korea, and Singapore to respond to the needs of customers from all over the world.

Product Sales and Market Share

Product	2024 (consolidated)	
	Sales Turnover (Thousand NTD)	Sales Ratio (%)
Flash	18,325,092	70.80
ROM	5,403,832	20.88
Foundry	2,143,461	8.28
Others	11,090	0.04
Total	25,883,475	100.00

Macronix has long held the leading position in the global NOR and ROM (Read-Only Memory) markets. Based on Omdia, a market research organization, the global market share of Macronix's NOR was 16.1% in 2024.

2.2.Business Locations Worldwide



2.3. Macronix Sustainability Milestones

Time	Milestones
2000	<ul style="list-style-type: none"> Held the first Macronix Golden Silicon Awards - Semiconductor Design and Application Competition
2001	<ul style="list-style-type: none"> Established the Macronix Education Foundation
2002	<ul style="list-style-type: none"> The Macronix Education Foundation held the first Macronix Science Awards.
2004	<ul style="list-style-type: none"> Established the Macronix Science Awards Association Awarded the “Energy Conservation Excellence Award” by the Bureau of Energy, Ministry of Economic Affairs Became the first company in the Hsinchu Science Park to complete the comprehensive greenhouse gas inventory and verification
2005	<ul style="list-style-type: none"> Received the ISO 14001:2004 Environmental Management System Certification from the British Standards Institute Won the 14th ROC Enterprise Environmental Protection Award for four consecutive years
2006	<ul style="list-style-type: none"> Received a green product certification from international brands including SONY, CANON, and LG for compliance with RoHS Directive requirements
2007	<ul style="list-style-type: none"> Received the ISO 14064 International Standard for GHG Emission Verification Certification from the British Standards Institute Received the IECQ QC080000 Hazardous Substance Process Management System Certification Recognized as the Outstanding Enterprise in Voluntary Industrial Greenhouse Gas Reduction by the Bureau of Industrial Development, Ministry of Economic Affairs Credited with the CG6002 Corporate Governance Certification by the Taiwan Corporate Governance Association
2008	<ul style="list-style-type: none"> Recognized the “Green Procurement Excellence Award” from the Environmental Protection Administration Donated CNY 5 million to help victims of the Sichuan earthquake Helped push upstream and downstream supply chain partners to implement the Electronic Industry Citizenship Coalition Code of Conduct (EICC) Granted the new OHSAS 18001:2007 certification from SGS Granted the Taiwan Occupational Safety and Health Management System (TOSHMS) Certification Became the first semiconductor manufacturer to receive the SA8000 Corporate Responsibility Management Systems Certification Donated NT\$300 million to National Tsing Hua University to build the Macronix Building (Learning Resource Center)
2009	<ul style="list-style-type: none"> Received the 5th annual Global Views Monthly Magazine CSR Award for its outstanding performance in Corporate Social Responsibility Donated NT\$100 million to aid the victims of Typhoon Morakot in Taiwan Awarded with the 3rd National Occupational Safety and Health Award Became the first semiconductor manufacturer to be recognized as an outstanding enterprise and to receive a safety certification
2010	<ul style="list-style-type: none"> Received the 6th annual Global Views Monthly Magazine CSR Award top honor (Five-star rating) Received the 2010 Commonwealth Magazine Excellence in Corporate Social Responsibility Award Received the Employment Creation Contribution Award from the Executive Yuan Donated an additional NT\$100 million for the Macronix Building at National Tsing Hua University

Time	Milestones
2011	<ul style="list-style-type: none"> • Donated NT\$30 million to the Japan Earthquake Relief Efforts • Honored as one of the Top 100 Taiwan Brands by the Ministry of Economic Affairs • Once again received the CommonWealth Magazine Excellence in Corporate Social Responsibility Award • Honored with Contribution Award at the 2011 National Invention and Creation Award • Received the CG6006 Corporate Governance Evaluation Certification • Received the Employment Creation Contribution Award from the Executive Yuan • Received the Employee Assistance Program Outstanding Business Award from the Council of Labor Affairs, Executive Yuan
2012	<ul style="list-style-type: none"> • Received the 8th annual Global Views Monthly Magazine CSR Award • Once again received the CommonWealth Magazine Excellence in Corporate Social Responsibility Citizenship Award
2013	<ul style="list-style-type: none"> • Official opening of the new Learning Resource Center at National Tsing Hua University — the Macronix Building • The Macronix Education Foundation was awarded by the Ministry of Education as an Outstanding Educational Foundation • Mr. Chih-Yuan Lu, President of Macronix was awarded of Presidential Science Prize
2014	<ul style="list-style-type: none"> • Deputy Director Wang, Hung-Chih was named an Outstanding Internal Auditor by the Institute of Internal Auditors-Chinese Taiwan • Received the first "Work-Life Balance Award" presented by the Ministry of Labor in recognition of Macronix's performance in care and support for employee families and the health and safety of its employees
2015	<ul style="list-style-type: none"> • The Taiwan Stock Exchange listed Macronix as one of the companies in the top 5% with outstanding performance in the first corporate governance evaluation. • Recognized as an Excellent Healthy Workplace by the Health Promotion Administration, Ministry of Health and Welfare
2016	<ul style="list-style-type: none"> • Recognized as one of the Top 100 Sustainable Enterprises in Asia by Channel NewsAsia • Recognized as an Outstanding Energy-saving Manufacturer by the Ministry of economic Affairs • Awarded the Top Honor for an Accredited Healthy Workplace • Awarded a badge for establishing and managing certified breastfeeding rooms • Awarded for Excellence in Landscaping and Environmental Protection • Recognized as an Outstanding Water-saving Manufacturer by the Water Resources Agency, Ministry of Economic Affairs • Recognized as an Outstanding Energy-saving Manufacturer by the Hsinchu Science Park in 2016
2017	<ul style="list-style-type: none"> • Fab 1 received the Excellence in Safety and Health Award from Hsinchu Science Park • Received the Excellence in Occupational Safety and Health Promotion Award by the Hsinchu Science Park • Fab 2 received the Outstanding Energy-Saving Manufacturer Award from the Ministry of Economic Affairs • Received the Excellence in Workplace Equality Promotion Award by the Hsinchu Science Park • Received the Excellence in Green Procurement Award for Private Enterprises and Organizations in Hsinchu City
2018	<ul style="list-style-type: none"> • Fab 2, Fab 5, and the Test Building passed the Responsible Business Alliance Validated Assessment Program (RBA VAP) audit and obtained the Platinum Certification • Fab 2 received the Outstanding Energy-Saving Manufacturer Award from the Ministry of Economic Affairs

Time	Milestones
	<ul style="list-style-type: none"> Chairman Miin Wu was awarded Ernst & Young Entrepreneur of the Year and Business Paradigm Entrepreneur of the Year Awarded the Excellence in Green Procurement Award for Private Enterprises and Organizations in Hsinchu City The Head Office and Fab 1 won the Badge of Accredited Healthy Workplace Received the Creativity Gold Award for Healthy Workplace – Award of Excellence
2019	<ul style="list-style-type: none"> Received the Annual Sustainable Elite Award in the first SGS CSR Award Received the National Excellent Healthy Workplace – Paradigm in Health Award from the Health Promotion Administration, Ministry of Health and Welfare
2020	<ul style="list-style-type: none"> Received the Breastfeeding Room Certification - Award of Distinction from the Public Health Bureau, Hsinchu City in 2020 Fab 2, Fab 5, and the Test Building passed the Responsible Business Alliance Validated Assessment Program (RBA VAP) audit and obtained Platinum certification Received the Annual Sustainable Elite Award in the second SGS CSR Awards Awarded Excellence in Landscaping and Environmental Protection in 2020 Received the Excellence in Workplace Equality Promotion Award from the Hsinchu Science Park in 2020
2021	<ul style="list-style-type: none"> Secure flash memory ArmorFlash™ won the 2021 Hsinchu Science Park Innovative Product Awards Won the 2021 National Occupational Safety and Health Enterprise Benchmarking Award from the Occupational Safety and Health Administration of the Ministry of Labor Awarded 2021 EE Awards Asia - "Best Memory IC of the Year" Recognized by the 2022 Taiwan Excellence Gold Award The Macronix Education Foundation was recognized with the Social Education Contribution Award by the Ministry of Education Awarded the Excellence in Green Procurement Award for Private Enterprises and Organizations in Hsinchu City in 2021
2022	<ul style="list-style-type: none"> Chairman Miin Wu won the 5th “Presidential Innovation Award” Fab 2, Fab 5, and the Test Building passed the Responsible Business Alliance Validated Assessment Program (RBA VAP) audit and obtained 200-point Platinum certification “Award of Excellence” among the outstanding enterprises in waste reduction and circular economy in Hsinchu Science Park Awarded the “Outstanding Business Entities for Using Electronic Uniform Invoices” by the Hsinchu Branch, National Taxation Bureau of the Northern Area, Ministry of Finance Awarded “First Class Award” among the excellent water saving units in the “Selection of Excellent Water Saving Units and Water Conservation Experts” organized by the Water Resources Agency, MOEA Chairman Miin Wu was awarded with the 2022 EEAwards Asia “Executive of the Year” Presented with the 2022 EEAwards Asia “Featured Vehicle Electronics Solution Supplier” Ultra-Low-Power 1.2V Serial NOR Flash Memory was recognized as the 2022 EEAwards Asia “Best Memory of the Year” Awarded the Excellence in Green Procurement Award for Private Enterprises and Organizations in Hsinchu City in 2022 Recognized as an Excellent Healthy Workplace – Paradigm in Health Award by the Health Promotion Administration, Ministry of Health and Welfare Won the “Award of Excellence” in the 2022 Clean Air Zone Adoption presented by the Environmental Protection Administration, Executive Yuan.

Time	Milestones
2023	<ul style="list-style-type: none"> • Recognized with "Innovation Momentum 2023: The Global Top 100" by LexisNexis • Awarded first place among outstanding R&D alternative service employers (private industry group) in 2023 • Macronix's high-performance OctaFlash™ passed the highest vehicle safety standard ISO 26262 ASIL D certification • The American Physical Society (APS) announced President Chih-Yuan Lu as the winner of the George E. Pake Prize in 2024, a major award in applied physics • Won the SGS ISO Plus 2023 Occupational Safety and Health Performance Management Award • Macronix Education Foundation was recognized with the 16th Arts and Business Awards from the Ministry of Culture • Fab 5 won the Badge of Accredited Healthy Workplace in 2023 • Received the 19th National Sustainable Development Award from the Executive Yuan • Macronix 「 OctaFlash LM/UM Series NOR Flash Memory 」 was awarded the 2023 EE Awards Asia: Best Memory IC of the Year
2024	<ul style="list-style-type: none"> • Mr. Chih-Yuan Lu, President of Macronix was awarded the George E. Pake Prize by the American Physical Society (APS). • Awarded the "1.5°C Label Certificate" by CommonWealth Magazine; based on the AGTP climate model and parameter matrix calculations, Macronix achieved an outstanding temperature rating on the Corporate Carbon Reduction Thermometers (TRIPs). • Recognized with the Outstanding Award for the Breastfeeding Room certification by the Hsinchu City Government. • Received the 2024 Occupational Safety and Health Management System Performance Recognition "Outstanding Award" from the Occupational Safety and Health Administration of the Ministry of Labor. • Macronix's "ArmorBoot MX76 Secure Boot Serial NOR Flash" was awarded the 2024 EE Awards Asia: Best Memory Solution of the Year. • Received the Gold Tower Award in the ESG Sustainability Category at the 2024 Taiwan Continuous Improvement Competition (TCIA).

2.4.External Participation

Macronix upholds its business philosophy of "honesty" and actively participates in external associations, providing recommendations to companies, peers, and the industry through good interactions. Macronix promotes exchanges and development of the business community, government offices, and academia. Macronix's important actions and contributions to different organizations are listed below:

Name	Title	Action/Contribution
Taiwan Electrical and Electronic Manufacturers' Association	Member	Macronix offers suggestions, promotes the collective interests of fellow members, functions as a bridge between the industry and the government, and promotes industrial development.
Allied Association for the Science Park Industries	<ol style="list-style-type: none"> 1. Standing Director 2. Convener of the Health and Safety Committee 3. Alternate Vice Convener of the Environmental Protection Committee 4. Convener of the Joint Security Committee 	<ol style="list-style-type: none"> 1. Macronix contributes to the discussion, decision, and execution of the association's operations. 2. Macronix leads the discussion, decision, and execution of work related to occupational safety and health, fire safety, health promotion and risk management in the science park. 3. Macronix communicates, coordinates, researches, participates, and provides services related to environmental protection. 4. Macronix communicates, coordinates, participates in and advises on joint security, police and traffic safety in the science park. 5. Supervision of the contract execution for the employee clinic at the Hsinchu Industrial Park.
Chinese National Association of Industry and Commerce	Director	Macronix offers suggestions, promotes collective interests of fellow members, functions as a bridge between the industry and the government, and promotes industry and commerce development.
Friends of the Second Special Police Corps, National Police Agency	Committee Member	Macronix cooperates with the police to enhance and promote crime control and prevention.
North consortium, Taiwan Occupational Safety & Health Management System (TOSHMS), Ministry of Labor	President of North Consortium	<ol style="list-style-type: none"> 1. Macronix shares its experience of winning the National Occupational Safety & Health Award – Enterprise Benchmarking Award and Outstanding Award - Headquarter for Occupational Safety and Health Management System Performance. 2. Macronix promotes cross-industry education and awareness of labor safety issues and inspires creative solutions for promoting workplace safety.

Macronix's External Participation

Corporate Governance	Economy	Society
<ul style="list-style-type: none"> ○ Computer Audit Association ○ The Institute of Internal Auditors 	<ul style="list-style-type: none"> ○ Chinese National Association of Industry and Commerce ○ Taiwan Stock Affairs Association ○ Chinese International Economic Cooperation Association ○ Taiwan Investor Relations Institute 	<ul style="list-style-type: none"> ○ Friends of the Second Special Police Corps ○ Taiwan Association of Occupational Health Nurses ○ High-Tech Industry Salary Association ○ Taiwan Union of Nurses Association
Technology and Industry		
GSA	The Allied Association for Science Park Industries	
JEDEC Fee	Monte Jade Science & Technology Association of Taiwan	
SEMI TAIWAN	Taiwan Electrical and Electronic Manufacturers' Association	
WSTS	Taiwan Society for Precision Engineering	
Chinese Institute of Engineers	Chinese Society for Management of Technology	
The Electronics Devices and Materials Association	Ucle Membership	
Taiwan Institute of Chemical Engineers	PCI-SIG annual membership	
NVM Express		

3. Sustainable Development Strategy



The key electronic components produced by Macronix have enriched human lives. As a member of the global market, we insist on sustainable management and are committed to fulfilling the responsibilities of a global corporate citizen. We strive to create a better future by leveraging our advanced technological capabilities to assist our clients in creating excellent products.

In 2022, after expanding the scope of the existing social responsibility management system organization, Macronix established the “Sustainable Development Committee” to promote ESG matters through the operation of the committee, fulfill CSR and protect our living environment, cherish and make good use of our limited natural resources as the main strategy to achieve sustainable development of the enterprise. The sustainable development goals are proposed after taking into account the opinions of stakeholders, which include the compliance with the requirements of Responsible Business Alliance Code of Conduct (RBA CoC). In 2024, we passed RBA VAP (Validated Assessment Program) audit with excellent results. We also complied with various requirements of the Corporate Social Responsibility Best Practice Principles of the Financial Supervisory Commission. In terms of corporate social responsibility, apart from dedicating ourselves to scientific research and education, Macronix actively encourages cultural development as a way to give back to society. All these efforts highlight Macronix's commitment to corporate social responsibility and sustainable development.

Macronix's sustainable development also involves a rolling review of external environmental factors, such as the strategy for achieving net-zero carbon emissions by 2050 and geopolitical risks, and reports the implementation process to the Board of Directors quarterly.

To fulfill our commitment to sustainability, Macronix strives to:

- ◆ Go beyond compliance with regulatory requirements and enhance our environmental, safety and health performance, as well as risk management.
- ◆ Nurture a working environment with a well-planned and well-run human resources management system and related practices.
- ◆ Meticulously commit to sustainable supply chain management that is fully compliant with international standards, laws, and customer requirements.
- ◆ Increase our social care and respond to global trends. Macronix adheres to and requires its suppliers to refrain from using or purchasing conflict minerals. Additionally, we track the source of gold (Au), tantalum (Ta), tin (Sn), tungsten (W), cobalt (Co) and other various minerals to ensure such minerals come from qualified refineries.
- ◆ Promote science education in order to cultivate innovation among the younger generation and expand our contribution to society.

Highlights of RBA VAP Full Score

Since 2008, Macronix has implemented a social responsibility system to ensure reasonable labor conditions and protect basic workers' rights. In 2008, Macronix introduced the SA8000 social responsibility standard and became the first semiconductor company in the Hsinchu Science Park to pass verification. In response to changes in the electronics industry's customer trends, Macronix transitioned to comply with the RBA Code of Conduct (CoC) starting from 2018. From 2018 to 2024, Macronix has successfully passed the RBA VAP audits with outstanding scores of 200 points every two years (including the Fab 2, Fab 5 and test building).

Macronix has always placed great importance on the sustainability of social responsibility. By adhering to the RBA CoC guidelines and undergoing audits, we ensure that our operations comply with the standards, identify areas for improvement, and continue to make proactive improvements. Macronix will continue to uphold the core principles of the RBA, safeguarding workers' rights and adhering to ethical standards, positioning itself as a responsible corporate citizen committed to corporate social responsibility.



3.1.Sustainable Development Policy and Organization

Macronix’s “Corporate ESG Policy” incorporates the existing environmental safety and health policy, social responsibility policy, and ethical corporate management policy, and is formulated with reference to the “Taiwan Sustainable Development Goals” proposed by the National Council for Sustainable Development of the Executive Yuan. In 2022, the Board of Directors approved the policy and the plan. To ensure the implementation of the policy, all Macronix employees must receive training on sustainable development.

Sustainable Development Policy

Macronix has been devoted to the philosophy of building an honest and solid business. We establish and implement corporate governance and risk control mechanisms through the values of innovations, quality control, operation efficiency, customer service, and teamwork to create a sustainable business environment. Macronix respects employees' rights and interests, and is committed to providing a safe and healthy workplace for employees. We are also dedicated to building environmentally friendly business, properly using natural resources, implementing green energy, and carbon reduction. We are delighted to give back to society through promotion of science and innovations, and encouragement of research and development.

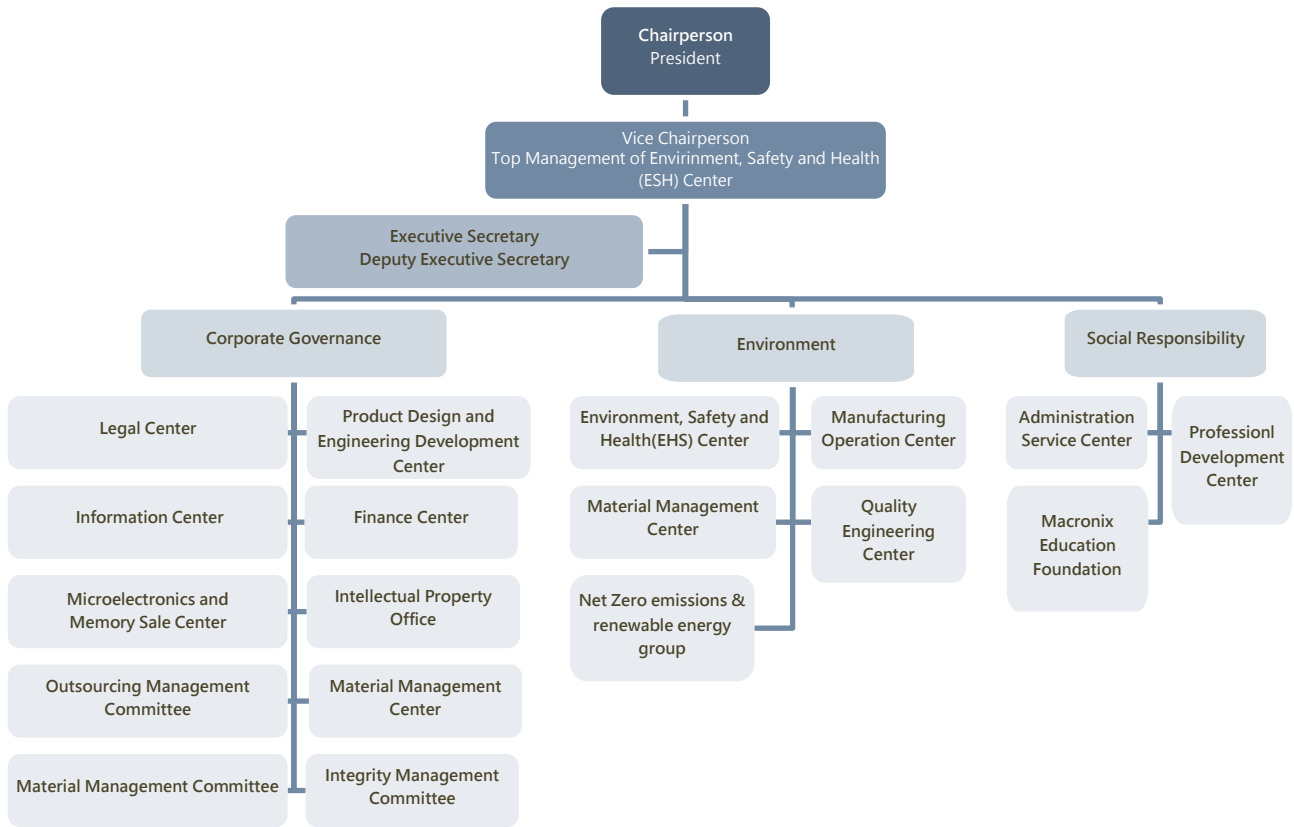
We are committed to protecting the shareholders’ interests in the goal of growing a sustainable business.

1. To comply with the national regulations related to the sustainable field, customer requirements and Macronix rules and policy.
2. To conduct the due diligence on suppliers and contractors to facilitate the ESG performance in the supply chain.
3. To reduce environmental load, mitigate climate change and maintain ecological balance.
4. To consider the United Nations Sustainable Development Goals (SDGs) as well as the Corporate Governance 3.0-Sustainable Development Road Map of the Financial Supervisory Commission (FSC) to be our vision, perform the continuous improvement through the management system to achieve international standards.

Organization of the Sustainable Development Committee

The Sustainable Development Committee is responsible for planning and overseeing the implementation of Corporate ESG Policy, management systems, and annual promotion plans. The President serves as the Chairperson, while the highest authority of the Environmental, Safety, and Health Center serves as the Vice Chairperson. Committee members are representatives from various departments or business units within Macronix. The execution team adheres to the mission of sustainable corporate development, integrates cross-department resources to promote and maintain the effective operation of various sustainable development goals and programs, and enhances the awareness of sustainable development among employees. The team quarterly reports to the Board of Directors and carries out the various sustainable development requirements set by the directors. In 2024, the Chairperson participated in training courses on "Trends in Sustainable Development Information and Financial Reporting Disclosure" and "Green Energy, Certificates, and Sustainable Development—The Corporate Path to Net Zero." Other committee members completed relevant trainings. In the same year, the Sustainable Development Committee has implemented six initiatives

aimed at advancing the 2050 net-zero emissions target, including increasing the use of renewable energy. Under the supervision of the President, all six initiatives have been completed as planned, and their execution was reported to the Board of Directors in February 2025.



3.2. Stakeholder Engagement

3.2.1. Stakeholder Definition, Differentiation and Interaction

Macronix recognizes that conversations with society is necessary to improve mutual understanding, and thus make proper decisions and reduce social conflicts. Macronix understands and responds to society's reasonable expectations, needs, and topics of concern through a number of communication channels. Related communications are reported to the Board of Directors annually. We welcome to access Macronix's company website "Contact us" (<http://www.macronix.com>) to express any comments or opinions.

Macronix continues to build a robust ESG value chain system, work with employees and corporate partners to understand and respond to society's expectations toward Macronix's fulfillment of ESG, and get an insight into new trends, risks and development opportunities. Through the mutual interaction, we turn commitments into concrete actions to implement positive contributions to society, environment and governance. Although this is a long-term plan, Macronix will continue making efforts to realistically accomplish various goals that were set.

So called "stakeholder" in this report is based on the stock exchange regulations, the AA1000 Stakeholder Engagement Standard, and depends on the consideration of the industry opinions.

Interactions and Responses to Macronix's Stakeholders in 2024

Stakeholders	Communication Channels	Topics of Concern	Highlights and Results of Communication in 2024	Subject to Influence (V) or Concern (*)	
Investors	Corporate Social Responsibility Website and Sustainability Report (annually) Corporate website, financial statements (annually) Shareholders' meeting (annually) Self-organized investor seminars (quarterly) Participate in forums/visits by investors/visits to investors (irregularly) Investor service mailbox/phone calls (irregularly)	Shareholder equity Corporate Governance Overview of Investments Innovative R&D Industry development Intellectual Property Rights Dividends distribution Corporate operations Product price Product use	<ul style="list-style-type: none"> * Participated in investors-related ESG activities to understand the awareness and expectations of investors and shareholders on ESG * Provided investors with open and transparent operational information and assisted investors to understand Macronix's long-term strategic goals and prospects (held 1 shareholders' meeting, 4 self-organized investor seminars, and participated in more than 75 external meetings) * Continued to invest in the R&D of various semiconductor processes. In 2024, a total of 317 domestic and foreign patents were obtained, and the cumulative total number of patents granted to Macronix is 9,520. * Disclosure of financial and operational reports on investor relations on Macronix's website: https://www.mxic.com.tw/zh-tw/about/investor-relations/Pages/annual-reports.asp * Disclosure of corporate social responsibility and risk management information on Macronix's Website: https://www.mxic.com.tw/zh-tw/about/CSR/Pages/risk-management.aspx 	Economy	V
				Environment	*
				Society	*
Customers	Customer satisfaction survey (annual) Suppliers' conference (at the request of customers) Customer communication platform (available 24-7) Visits in person (irregularly) Supplier audits (at the request of customers)	Product lead time/price/technology/quality Future direction of products Customer application services Green Products Corporate Social Responsibility Business Continuity Management Net zero greenhouse gas emissions	<ul style="list-style-type: none"> * Passed the RBA VAP audit with the highest score in 2024 * Customer satisfaction survey response rate > 93% * Continued to maintain the ISO 9001 certification * Periodically provided customer purchase order and delivery information, and provided the quantity for supply and lead time within price validity period during quotation * Periodically updated Macronix's product road map * Abnormal event reporting and risk management procedures were completed according to plans and 	Economy	
				Environment	V
				Society	*

Stakeholders	Communication Channels	Topics of Concern	Highlights and Results of Communication in 2024	Subject to Influence (V) or Concern (*)	
			<p>effectively carried out in compliance with customer requirements</p> <ul style="list-style-type: none"> * Respond to customer questionnaires to communicate Macronix's environmental, health, and safety management performance and enhance customer satisfaction * Respond to various survey forms as requested by customers * In line with customer requirements, successfully completed ISO 14067:2018 carbon footprint verification of three key products in 2024 and continue to implement carbon reduction projects 		
Employees	<p>Various open-discussion meetings (held periodically and ad hoc)</p> <p>No Topic is Off Limits suggestion box (available 24-7)</p> <p>Reporting hotline (available 24-7)</p> <p>Printed copies and electronic bulletin boards (to communicate information as necessary)</p> <p>Employee Relationship Management Portal (available 24-7)</p> <p>Learning map platform (available 24-7)</p> <p>Performance evaluation procedure (annual)</p> <p>Health consultation/promotion (held periodically and ad hoc)</p> <p>Employees seek advice in person or by phone (irregularly)</p>	<p>Employee Communication Labor/Management Relations</p> <p>Compensation & Benefits</p> <p>Human rights policy</p> <p>Training System</p> <p>Performance evaluation results</p> <p>Occupational safety and health</p> <p>Key points of the amendment to the Labor Standards Act</p> <p>Pension</p> <p>Calculation/qualifications of retirement pension</p>	<ul style="list-style-type: none"> * Number of open-discussion meetings held: Orientation training for 483 new employees. Department discussions (held by each department as necessary). The head office and each fab convened 4 labor-management meetings. 4 Welfare Committee meetings * Received 153 cases from the "No Topic is Off Limits" suggestion box and reporting hotline with a 100% closing rate * Periodically organizes on-the-job occupational safety training; the ESH department offers consultation for employees at any time * Planned the health promotion plan for the following year based on employees' health condition, opinions regarding the annual health exam, and current events * Physicians provide consultation services for the entire Company 10 times a month * A total of 85 health promotion activities and seminars were attended by a total of 3,644 employees * Conduct emergency response and evacuation drills for potential emergency situations in the plants to reduce the risk of occupational accidents * Regularly hold inter-plant and in-plant safety and health meetings to review safety and health-related issues and 	Economy	V
				Environment	
				Society	V*

Stakeholders	Communication Channels	Topics of Concern	Highlights and Results of Communication in 2024	Subject to Influence (V) or Concern (*)	
			simultaneously implement preventive and improvement measures, providing employees with a safer working environment.		
Suppliers	Suppliers' conference (annual) Supplier audits (performed annually based on risk levels) Supplier evaluation (quarterly and annually) Quality improvement meeting (irregularly) Material supply/demand tracking (periodically and ad hoc) Contractor training courses (as necessary) Contractor coordination organization meetings (as necessary)	Occupational safety and health Supplier evaluation Green product requirements Corporate Social Responsibility Compliance with Business Ethics Quality improvement procedure Supply and demand of important materials Supply chain's information security	* Contractor education and training, as well as coordination organization meetings are completed before operations in accordance with regulations * Completed 25 supplier audits and 4 supplier information security audits in 2024 * Held 1 suppliers' conference * Have maintained the AEO certification for 15 years * 100% of suppliers received a score of 80 points or above in the supplier rating * Approximately 37% of raw materials are procured in Taiwan	Economy	V*
				Environment	
				Society	*
Government	Official document delivery (as necessary) Participation in presentations/promotions/seminars/forums (irregularly) Competent authority audits (as necessary) Phone call or e-mail (as necessary) Communication through the Allied Association for Science Park Industries and Chinese National Federation of Industries (as necessary) Visited competent authorities (as necessary) PUBCSR communication mailbox Charity organizations	Compliance with regulations Corporate Governance Labor/Management Relations Occupational safety and health Net zero greenhouse gas emissions reduction Water resource management Waste Management IFRS (Sustainability Disclosure Standards Implementation Plan) Employee benefits and average salary Key points of the amendment to the Labor Standards Act Impact of the U.S.-China Trade War Employee overload management Odor Noise Corporate sponsorship/funding Charity event participation	* Increased disclosures on Macronix website to increase information transparency * Compliance with laws and regulations of competent authorities at each level, and cooperation with supervision and audits * Participation in presentations, promotions, seminars, forums, or lectures organized by the competent authority; provision of assistance to the Hsinchu Science Park Bureau in counseling SMEs in the science park to enhance their occupational safety and fire management capabilities. * Periodic compliance inspections and report compliance-related matters on a regular basis * Complied with government regulations, proposed response measures, and revised related systems and specifications * Participated in the Safety and Health Committee/Environment Committee and visit the competent authorities to communicate and discuss the operational appropriateness and difficulties of the law and the requirements of the competent authorities.	Economy	V*
				Environment	V*
				Society	V*

Stakeholders	Communication Channels	Topics of Concern	Highlights and Results of Communication in 2024	Subject to Influence (V) or Concern (*)	
			<ul style="list-style-type: none"> * In 2024, the total greenhouse gas emissions for Scope 1 and Scope 2 are 12,000 metric tons of CO2e short of the target set for the review year 2025. To accelerate carbon reduction, Macronix plans to install fluorinated gas reduction equipment, increase the use of green electricity, and implement other related energy-saving measures in 2025, with the goal of achieving its interim target. * Regularly track and manage water resource usage. The ESH management indicators — process water recycling rate and water consumption per wafer — met the 2024 targets. * Fab 2 and Fab 5 obtained the water recycling rate certification statement in 2024. * Visited a total of 45 waste management contractors, and strengthen auditing and management of waste disposal contractors' vehicles. The resource utilization rate of waste and the recycling rate of hazardous waste meet the targets for 2024 . * Monthly routine odor reporting records. No odor notifications were received from factory employees and peer factories in 2024. * The competent authority conducted 56 occupational safety and environmental protection audits; no major penalties were imposed * Annual disease prevention plan based on abnormal workload, regular tracking and evaluation management * Implemented response measures in accordance with the Ministry of Health and Welfare's epidemic regulations. * Donated over NT\$3.183 million to charitable organizations. * Obtained ISO/IEC 27001 international information security management system certification (2022) in December 2024. 		
	Public information			Economy	*

Stakeholders	Communication Channels	Topics of Concern	Highlights and Results of Communication in 2024	Subject to Influence (V) or Concern (*)	
Public Relationship		Operational performance Innovative R&D Industry development Overall Company updates Compensation and Benefits General information about the executives	<ul style="list-style-type: none"> * Published 16 press releases on revenue and investor conferences, 21 press releases on products, material information of Macronix or supplemental data. * There were a total of 742 related original news articles in 2024 * In accordance with the Taiwan Stock Exchange's instructions, Macronix explained the impact of the April 3 earthquake. 	Environment	*
				Society	*
Schools	Registration website Campus promotion Facebook Fan Page Macronix Science Awards Association annual meeting	Macronix Golden Silicon Awards Macronix Science Awards Macronix science competition organization process and achievements Recruitment and appointment	<ul style="list-style-type: none"> * The 24th Macronix Golden Silicon Awards: A total of 272 teams registered, with 926 participants in the competition. With additional outreach through campus promotions and social media interactions, and awards influenced 37,742 people * The 23rd Macronix Science Awards: A total of 733 works were submitted, with 2,722 participants. Including outreach through campus promotions and social media interactions, and awards influenced 333,392 people * A total of 71 members participated in the welcome party of the Macronix Science Awards Association 	Economy	
				Environment	
				Society	*

3.2.2. Determining Material Topics

Material topics are evaluated in this report in accordance with the following determination steps, and the management policies are disclosed in each chapter of the report. The disclosure of management policies is not mandatory for non-material topics.

Process for determining material issues

Process	I. Understand the organizational context		II. Identify actual and potential impacts			III. Determining material topics
	1. Stakeholder identification	2. Sustainability issues	3. Investigating the level of stakeholder concern	4. Internal impact assessment	5. Evaluation of issues	6. Determining material topics
Method	<ul style="list-style-type: none"> According to the requirements specified by the TWSE regarding stakeholders for listed companies. Invite the Sustainability Report Execution Task Force to follow the AA1000SES stakeholder engagement 	The working group enumerates sustainability issues with reference to GRI Standard, SASB, SDGs, TCFD and Macronix value.	Through the "Macronix 2024 ESG Issues Survey," surveyed the level of interest of stakeholders in Macronix's sustainability issues.	Through workshops, investigated the impact of the issues each team is responsible for during the organization's operational processes.	Based on the result of step 4, calculated the degree of interaction between actual and potential impacts, and identified significance by averaging the results.	Through an internal expert meeting, it was confirmed that all six aforementioned potential issues were included as material topics

	<p>principles (dependence, responsibility, impact, diverse perspectives, and tension identification) through a workshop format.</p> <ul style="list-style-type: none"> Referencing our peers. 					
Result	<p>Identify 7 major stakeholders: Investors, customers, employees, suppliers, government, schools, and the public domain.</p>	<p>Listed out 15 sustainability issues.</p>	<p>Received 91 valid questionnaires.</p>	<p>Collected a total of 5 valid questionnaires (sets)</p>	<p>6 sustainability issues were selected.</p>	<p>It was confirmed that these six material topics all have significant impacts. A report was submitted to the chairman of the Sustainable Development Committee and subsequently presented to the Board of Directors.</p>

Understand the organizational context

The initial 15 sustainability issues were proposed based on stakeholder requests, a combination of international and domestic standards and Macronix's previous ESG data.

Internal impact assessment by the Sustainability Report Execution Task Force

In 2024, The Sustainability Report Execution Task Force conducted an internal impact assessment through a workshop, evaluating 15 sustainability issues. The team calculated the degree of interaction between actual and potential impacts, and identified significance by averaging the results. As a result, 6 potential topics were initially selected.

“Stakeholder” Opinions Compiled for the 2024 Sustainability Report

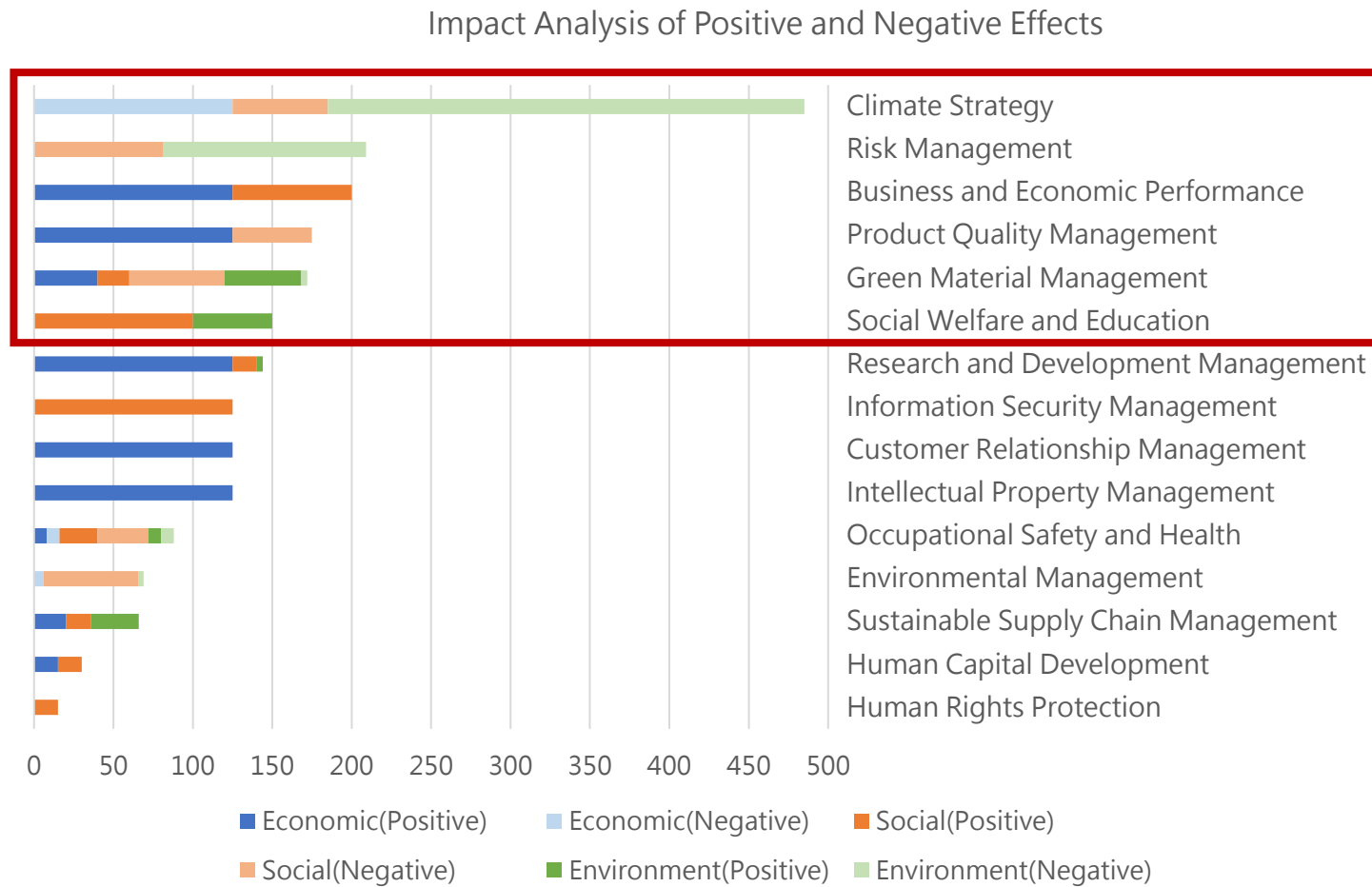
Stakeholders	Relevant Issues- Compilation Method	Scoring method
Investors	Questionnaire survey, statement recording, negotiation	(1)Directly converted to scores for relevant issues (2)Questionnaire filled out by representatives of the Stock Affairs Office
Customers	Negotiation, questionnaire survey	(1)Questionnaire filled out by representatives of the district business offices (2)Customers' questionnaire responses
Employees	Questionnaire survey and Response	Filled out by labor representatives of the labor/management conferences and Welfare Committee
Suppliers	Questionnaire survey and Response	Distributed to and completed by suppliers on Suppliers' conference held on August 30, 2024
Public Relationship	Negotiation Questionnaire survey and Response	Filled out and responded by Macronix’ Corporate Communication Office based on the facts
Government/Associations	Communications,	Communicate with authorities or related person, and proceed the required investigations, and then responded to the Government or related person the investigation results.

	Investigations and Report	
Schools	Negotiation, Questionnaire survey and Response	Filled out and responded by Human Resources or Macronix Foundation

Determining material topics

The actual and potential positive and negative impacts of the six potential topics were assessed and confirmed being included as material topics for 2024. The related issues are addressed in this report.

The results of the economic, environmental, and social (people) impacts of the material topics are shown in the following graph:



Material Topics, Significance Ranking, and Impact Boundaries

Issue	Impact Boundaries (V – Direct; O – Indirect)			Corresponding Chapters
	Internal	Customers	Suppliers	
Climate Strategy	V	O	O	6.2.3. Climate Strategy
Risk Management	V	O	O	4.2. Risk Management
Business and Economic Performance	V	O	O	5. Economic Dimension
Product Quality Management	V	V	O	4.5. Product Quality Management
Green Material Management	V	O	O	6.1.3 Green Materials Management
Social Welfare and Education	V			7.4. Social Welfare

Note: Due to the re-screening of sustainability topics in 2024, which differs from the previous year's approach based on GRI-specific topics, a comparison with the material topics from the previous year cannot be made.

4. Corporate Governance

4.1. Corporate Governance

Macronix's Philosophy

Honesty

Macronix's Corporate Values

Innovation, Quality, Efficiency, Service, Team Work

Macronix upholds high corporate governance standards, complies with corporate governance principles, and continues to establish a solid corporate governance system in accordance with the "Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies" and "Macronix's Corporate Governance Guidelines". In addition, ethical corporate management is Macronix's corporate culture. Macronix strictly complies with the law and attaches great importance to the protection of trade secrets and information security risk management. Macronix established the "Corporate Ethical Management Guidelines" and "Code of Business Conduct and Ethics", in hopes of creating a business environment for sustainable development.

Besides complying with the law, Articles of Incorporation, and the guidelines and resolutions of shareholder meetings and board meetings, Macronix's corporate governance is in accordance with the following corporate governance principles:

- ◆ Protect shareholders' rights and interests
- ◆ Strengthen the roles and powers of the Board of Directors
- ◆ Utilize the Audit Committee's functions
- ◆ Respect stakeholders' rights and interests
- ◆ Increase information transparency

Since 2003, Macronix sequentially established independent director and functional committees such as the Audit, Compensation, and Nomination Committees, to strengthen the operations of the Board of Directors. In 2006, Macronix modified the directors and supervisors election with candidate nominations. In the first Corporate Governance Evaluation for Listed and OTC Companies in 2015, we ranked among the top 5% excellent companies. In the eighth evaluation in 2022, Macronix was ranked among the top 10% in the electronic companies with a market value of more than NT\$10 billion, demonstrating Macronix's outstanding results in promoting and its spirit of actively improving corporate governance.

4.1.1. Governing Unit

Board of Directors

Macronix's Board of Directors makes corporate governance decisions. Board meetings are convened by the chairman/CEO. The directors were fully re-elected on May 27, 2022, with the term of office from May 27, 2022 to May 26, 2025. The Board is comprised of 15 members, including industry professionals, experts and scholars with practical and theoretical backgrounds in business, law, finance, accounting, electrical engineering, physics, and material engineering, etc. There are 4 independent directors who oversee the execution of Macronix's operation plans based on their expertise and objectivity to ensure the quality of the Board's decisions. In addition, among the members of the Board of Directors, 10 do not hold managerial positions in Macronix or its subsidiaries. 13 (87%) are male and 2 (13%) are female. All members are over the age of 50. The members of the Board of Directors, their concurrent positions and convening status are disclosed in the annual report, on Macronix's official website in 2024 (<http://www.macronix.com>) and in the "Market Observation Post System" of Taiwan Stock Exchange.

In addition, since 1997, Macronix has been managing its own stock affairs and has established relevant dedicated units to handle shareholder affairs, address shareholder concerns, and enhance relationships with corporate entities. In addition, the "Investor Relations Office" has been set up to promote the relationships with institutional investors. Besides arranging visits to global institutional investors every year, we hold an investor's conference each quarter to maintain transparent communications.

Board Composition and Diversity

The Board of Directors is the highest governance unit of Macronix. The composition of the Board of Directors is diverse and independent. Regarding director candidates, Macronix adopts a "candidate nomination system". All director candidates are reviewed by the Nomination Committee and approved by the Board of Directors, and submitted to the shareholders' meeting for election. The Chairman of Macronix is elected by the directors in accordance with the law and serves as the external representative of Macronix.

The 12th Board of Directors consists of 15 members. Macronix recruited industry experts and scholars with professional backgrounds in industrial technology, law, financial accounting, education, marketing and public relations. More than 90% of the directors have industrial technology background. The overall capabilities of the Board of Directors are in line with Macronix's future development needs and the Board diversity policy. The directors supervise the implementation of Macronix's business plans in terms of their professionalism and objectivity. The implementation of the Board diversity policy is disclosed in the annual report and on Macronix's official website in 2024 (<http://www.macronix.com>).

Conflict of Interest Regulation and Management

Regarding the governance, operation, and management of the Board of Directors, as well as the Audit, Compensation, and Nomination Committees, regulations are followed based on laws, articles of incorporation, and relevant organizational regulations. Our measures include: Those who have an interest in any agenda item of the Board meeting shall specify the important aspects of their interest. If such interest is potentially detrimental to the interests of Macronix, they shall not participate in the discussion and voting, and shall recuse themselves during discussion and voting, and shall not exercise their voting rights on behalf of other members.

Please refer to Macronix's annual report and website for the concurrent positions of our directors and the list of top ten shareholders. For related party transactions and securities holdings, please refer to the financial statements.

Independence of the Board of Directors

When a director or a juristic person the director represents has an interest in any agenda item of the Board meeting, the director shall follow Article 17 of Macronix's "Procedure Rules of the Board of Directors Meetings" and specify the important aspects of their interest at the respective meeting. When it is detrimental to the interests of Macronix, the director shall not participate in discussion or voting, and shall recuse themselves during discussion and voting, and shall not exercise their voting rights on behalf of other members. If the spouse of a director, a relative within the second degree of consanguinity, or a company with which the director has a controlling relationship of subordination, has an interest in an agenda item of the Board meeting as mentioned above, such director is deemed to have an interest in that agenda item.

In addition, in order to continuously implement corporate governance and strengthen the eligibility of independent directors, the Corporate Governance Officer regularly reviews the qualifications and independence of independent directors during their terms of office and reports to the Board of Directors.

Continuing Education of Directors

In accordance with the "Directions for the Implementation of Continuing Education for Directors of TWSE Listed and TPEX Listed Companies", the members of the Board of Directors continue the education every year to enhance the professionalism required for the business execution by the directors and to effectively perform the functions of the Board of Directors. Beside the respective on-the-job training of each member of the Board of Directors in 2024, Board of Directors also arranged 6 hours of courses on "Global Economic Outlook" and "Trends in Sustainability Information and Financial Reporting Disclosure" to provide the directors with the more profound understanding of economic development and sustainability disclosure. The directors of Macronix constantly actively participate in internal and external training courses, covering related topics such as sustainable development, corporate governance, risk management, green energy and carbon credits, economic development, financial accounting, etc. The average training hours of each director in 2024 was 11.3.

Board of Directors Performance Evaluation

In order to implement corporate governance and continuously improve the effectiveness of the Board of Directors, the "Rules for Board of Directors Performance Assessment" has been published, which stipulates that the Board of Directors should perform an "internal performance evaluation" once a year. In 2024, the internal performance evaluation of the entire Board of Directors, individual directors and functional committees (including the Audit Committee, the Compensation Committee and the Nomination Committee) has been implemented. The performance evaluation results have been reported to the Nomination Committee and the Board of Directors meeting on March 4, 2025, and disclosed in Macronix's annual report.

In addition, in order to strengthen the independence and effectiveness of the performance evaluation of the Board of Directors, beside the internal performance evaluation, qualified external organizations or experts are commissioned to perform the external performance evaluation at least once every three years. In 2023, EY Business Advisory Services Inc., an external professional institution was engaged to perform "External Performance Evaluation", an independent evaluation to be proceeded at least once every three years with results reported to the Nomination Committee as

well as the Board of Directors on March 4, 2025, which has also been disclosed at Macronix's annual report.

Macronix will continue to improve the operational efficiency of the Board of Directors and functional committees based on the results and recommendations of the performance evaluation.

Macronix Corporate Governance Highlights

Scope	Highlights
Board of Directors	<ul style="list-style-type: none"> ◆ Led Taiwan's industry in purchasing director liability insurance (1999~) ◆ Established independent director seats (2003~) ◆ Adopted the candidate nomination system for electing directors (2006~) ◆ Replaced the supervisor system with the Audit Committee (2009~) ◆ Established the Nomination Committee to plan and review director and senior executive candidates (2019~)
Management level	<ul style="list-style-type: none"> ◆ Established the Compensation Committee to evaluate and approve the remuneration for senior executives (2006~) ◆ Prohibits the employment of people who are related to the senior executives within the four degree of consanguinity ◆ Sets operation goals and implements PDP performance evaluation
Internal control	<ul style="list-style-type: none"> ◆ Systematized internal controls and self-evaluate operation procedures (2009~)

Audit Committee

Macronix's 12th Audit Committee is comprised of all the independent directors, one of whom is a certified public accountant of the R.O.C. The term of office is from May 27, 2022 to May 26, 2025. The director of Tyzz-Jiun Duh serves as the convener. Besides executing items specified in the law, the Audit Committee is responsible for the proper representation of Macronix's financial statements, appointment (or dismissal), independence, and performance of certified public accountants, effective implementation of Macronix's internal control, Macronix's regulatory compliance, and the control of existing or potential Company risks. The committee met 6 times in 2024, the members of the Audit Committee, their concurrent positions and convening status are disclosed in the annual report, on Macronix's official website in 2024 (<http://www.macronix.com>), and the "Market Observation Post System" of Taiwan Stock Exchange.

Name	Education	Previous Experience
Tyzz-Jiun Duh	National Taiwan University Ph.D., Forestry	Director-General, Department of Commerce, MOEA Director-General, Department of Industrial Technology, MOEA Director-General, Industrial Development Bureau, MOEA Minister, Ministry of Economic Affairs Minister, National Development Council Vice Premier, Executive Yuan
Chiang Kao	Oregon State University Ph.D., Forest Management	Professor, Department of Computer Science, Southwest Texas State University President, National Cheng Kung University
Cheng-Wen Wu *1	University of California, Santa Barbara Campus Ph.D., Electrical and Computer Engineering	Dean, College of Electrical Engineering and Computer Science, National Tsing Hua University Vice President, National Tsing Hua University Vice President, National Cheng Kung University
Chien-Kuo Yang	Tamkang University B.S., International Trade	Certified Public Accountant, Ernst & Young Independent Director, Spirox Corporation Independent Director, M31 Technology Corporation Supervisor, YoungTek Electronics Corp.

Note *1: Independent Director Wu Cheng-wen resigned on May 19, 2024, due to his appointment as the Chairperson of the National Science and Technology Council."

Furthermore, according to the "Code of Business Conduct and Ethics" of Macronix, the president, vice president, and financial managers shall immediately report any conflict of interest or any concern of a potential conflict of interest to the Audit Committee. As for other employees, if they become aware of any conflicts of interest, they may also report them in writing to their supervisors or members of the management team at any time.

Nomination Committee

Macronix established the Nomination Committee on January 22, 2019, which is comprised of the Chairman and two independent directors. The Chairman is the convener. The committee met 3 times in total in 2024. The composition, functions and operations of the relevant Nomination Committee are disclosed in page 45-46 of the annual report as well as the Taiwan Stock Exchange's "Market Observation Post System". Regarding the nomination procedures, please refer to the "Nomination Committee Charter of Macronix International Co., Ltd." available on the Macronix official website (<http://www.macronix.com>), as well as the Taiwan Stock Exchange's "Market Observation Post System".

Compensation Committee

The Compensation Committee was first established on August 8, 2005 and was renamed to comply with the law on August 23, 2011. The Compensation Committee is comprised of three independent directors. The current term of office is from May 27, 2022 to May 26, 2025, and Director Chiang Kao serves as the convener. The committee met 3 times in total in 2024. The composition, functions, and operations of the relevant Compensation Committees are disclosed on pages 43-44 of the annual report and on the “Market Observation Post System” of Taiwan Stock Exchange.

The Compensation Committee is responsible for formulating and reviewing the policies, systems, standards, and structure for the performance evaluation and compensation of directors and managers. The compensation of directors and managers is determined in accordance with the Articles of Incorporation, taking into consideration performance evaluation results (including sustainability indicators), industry practices both domestic and international, tenure of relevant members, actual participation, and level of contribution. The final distribution is resolved in accordance with applicable laws and regulations. For details of Macronix's compensation policies, please refer to page 43-44 of the Annual Report and on Macronix's official website in 2024 (<http://www.macronix.com>).

Macronix's highest individual annual compensation in 2024 was 13.2 times the median compensation of employee (Note). The highest individual annual compensation change rate was 7.4 times the median compensation change rate of employee (Note).

Note: Calculated based on employee compensation in service for a full year

4.1.2. Internal Audit

In order to strengthen internal audit mechanisms, Macronix established a dedicated internal audit unit, which is an independent department with five full-time auditors directly reporting to the Board. The auditors are responsible for reporting audit operations to the Audit Committee and also attend board meetings for reporting.

Generally, internal audit operations are carried out according to the audit plan approved by the Board, and the unit periodically reviews the self-assessment operations as part of the internal control systems conducted by various divisions, including the quality of the internal control operations, and lastly report the compiled self-assessment results to the Board.

4.1.3. Ethical Corporate Management Rules

Macronix has always complied with laws and regulations and has also devised risk management mechanisms. In 2024, Macronix did not violate any antitrust laws or engage in unfair competition practices and was not involved in any related litigation.

We have always upheld our business philosophy of “honesty” and thus have formulated and published the “Ethical Corporate Management Best Practice Principles”, “Code of Business Conduct and Ethics”, and “Macronix CSR Policy”, all of which serve as behavioral regulations for our directors, various levels of management personnel, and employees. We also expect the directors, managers, and employees of our affiliates to jointly adhere to the principle of honesty in running their businesses.

Besides establishing multifunctional committees under the Board of Directors, Macronix has also established the Committee for the Ethical Corporate Management Promotion under management executives, in which the president serves as the chairman and level-1 supervisors of all departments are committee members. The committee aims to establish an ethical corporate management policy that will be submitted for discussion during Board meetings. The policy will be implemented in accordance with the law and its implementation status reported to the Board at least once a year.

Macronix upholds the philosophy of “honesty”. Macronix has established and implemented corporate governance and risk management mechanisms based on the values of innovation, quality, efficiency, service, and teamwork, thereby creating a business environment for sustainable development. Concrete measures are as follows:

1. Comply with laws and regulations.
2. Pragmatically implement Company policies and the code of ethics.
3. Establish risk management mechanisms.
4. Establish a violation reporting system and protect reporters in accordance with the law.
5. Enhance on-the-job and ethics training.

Code of Business Conduct and Ethics

The Board of Directors approved the Code of Business Conduct and Ethics (the “Code”) for directors, managers at all levels, and all employees. The purpose of the Code is to prevent the misconduct and to promote:

- (1) honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationships;
- (2) full, fair, accurate, timely and understandable disclosure in reports and documents filed with, or submitted to, the Securities and Exchange Commission and in other public communications made by Macronix;
- (3) compliance with applicable governmental laws, rules, and regulations;
- (4) the prompt internal reporting to an appropriate person or persons identified below of violations of this Code; and
- (5) adherence to this Code.

To ensure that all Macronix employees understand the “Ethical Corporate Management Best Practice Principles” and this Code, all new employees must receive training and will be required to pass the test during their orientation. Furthermore, Macronix employees receive annual training of the “Ethical Corporate Management Best Practice Principles and the Code”, so that the principles and the Code are consistently implemented. Violation of the Ethical Corporate Management Best Practice Principles and the Code is included as an evaluation item in annual employee performance evaluations.

Macronix's anti-corruption policies state that "Company personnel should not abuse the opportunities that are discovered through the use of Company property, information or position for private gain, and not use Company property, information or position, or compete with Macronix, for personal benefit. Company personnel owe a duty to Macronix to advance its legitimate interests when the opportunity to do so arises." We have also developed ethical risk assessments for each department, which are carried out on a regular basis and cover all departments of Macronix. In 2024, no incidents of corruption were detected.

To implement ethical corporate management and ethical behavior, Macronix annually arranges courses for directors and online courses for employees and Macronix regularly organizes educational courses on trade secrets, domestic and international data privacy regulations, information security management, and prevention of insider trading for the purpose of raising awareness on corporate ethics and compliance. In 2024, Macronix achieved 100% completion rate of the educational and training courses related to the Ethical Corporate Management Best Practice Principles, with approximately 18,961 participants and 13,460 training hours in total. Suppliers are also invited to the courses annually to ensure that they understand the regulations of Macronix's ethical corporate management. In 2024, a total of 207 supplier participated and the number of training hours amounted to approximately 104 hours.

In order to strengthen internal and external communication channels, Macronix has set up a special telephone line to directly report to the Audit Office: 03-5786688 ext. 78119, and has established the notification and handling of violations of the Ethical Corporate Management. All cases are numbered, documented, investigated and handled one by one, and kept in accordance with the law. After the reported case is accepted, a project team will be formed depending on the nature and type of the case, or transferred to the relevant unit for investigation, and reported to the Board of Directors. In order to effectively carry out the investigation of reported cases, a real-name reporting system is implemented. Whistleblowers are required to provide their name, contact information, as well as the name of the person being reported and specific evidence of the alleged illegal activities. This information is essential for conducting proper verification and investigation. In 2024, a total of 2 reports related to ethical business practices were received. Upon investigation, no evidence of violations were found.

4.1.4. Information Security Management

(I) Information security management strategy, structure and results:

1. Information Security Policy

Information security is an important issue for Macronix's operations. In order to protect Macronix's information assets from internal or external, intentional or accidental threats and damage, and reduce the probability of information security accidents and manage the risk caused by incidents to an acceptable level, Macronix has formulated information security policies and established relevant management systems, which are announced on Macronix's website. Macronix requires all employees and business partners to follow such policies and systems.

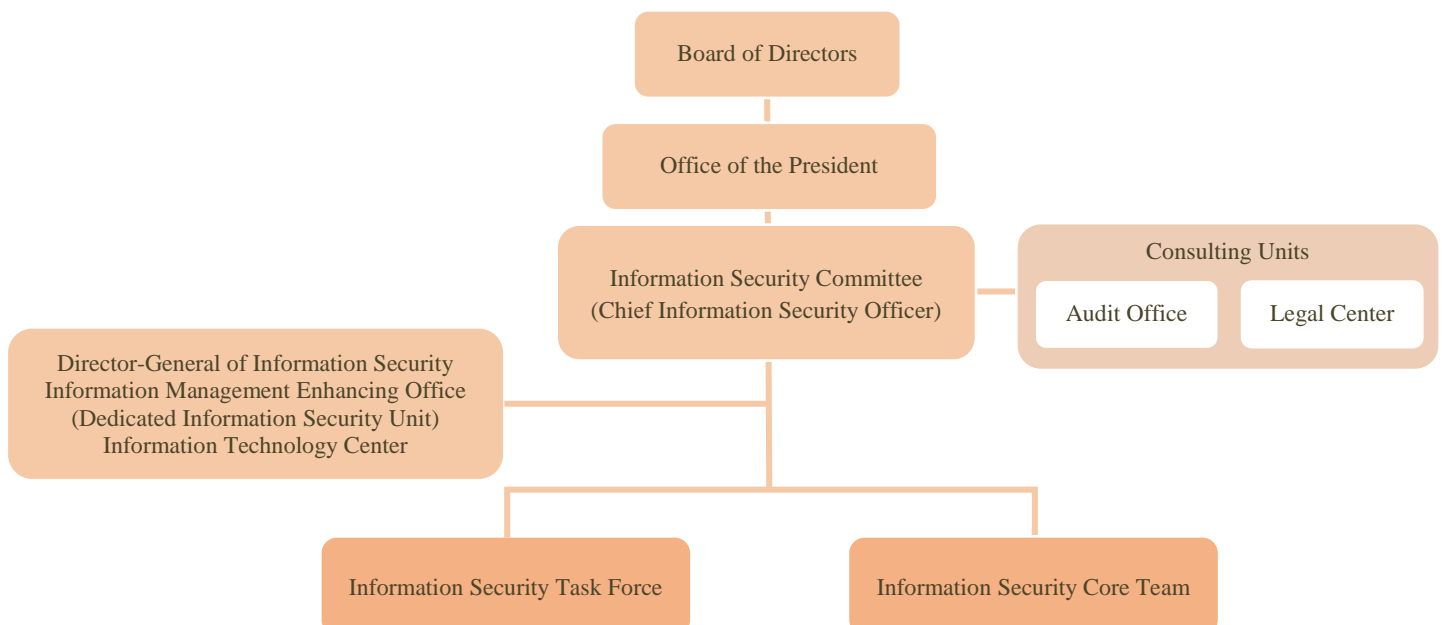
Through active actions to protect the confidentiality, integrity and availability of Macronix's information, we ensure the normal operation of Macronix's business and comply with the requirements of the competent authorities and national laws.

2. Information security management organization and responsibilities

In order to implement the information security policy, Macronix has established the Chief Information Security Officer in accordance with the provisions of the "Regulations Governing Establishment of Internal Control Systems of Public Companies to comprehensively strengthen information security governance and information protection", and set up the "Information Security Committee", with the Chief Information Security Officer as the chairman, and the top executives of each center and business unit as representatives. In addition, the "Information Security Core Team" and the "Information Security Task Force" perform related matters to ensure that the purpose of information security management can be achieved.

The Information Security Committee convenes a meeting on a regular basis every year. The topics scope is extensive and covers the review of information security policies, management and review improvement, annual budget, work plans and results report. The President reports the key outcomes to the Board of Directors every quarter.

▼Organizational Chart of Information Security Management



▼Information Security Organizations and Responsibilities

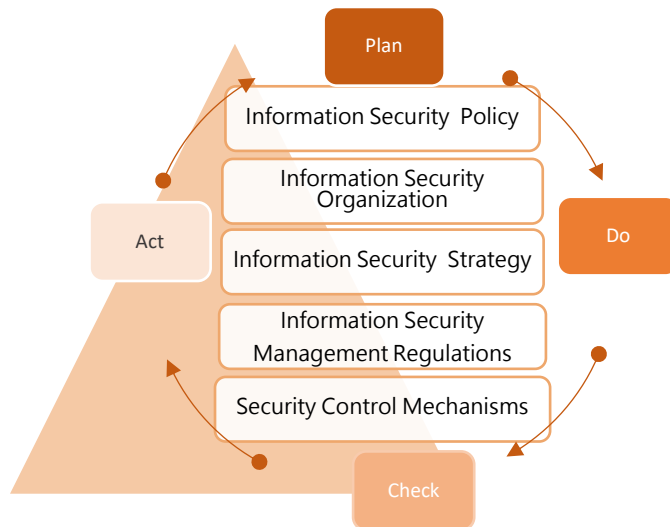
Organization	Responsibilities
Information Security Committee	<ol style="list-style-type: none"> 1. Draft Macronix's information security policy 2. Review and implement various information security management systems 3. Formulate or review major work plans for information security
Information Security Core Team	<ol style="list-style-type: none"> 1. Formulate the goals and implementation scope of information security management systems 2. Formulate information security management system and related regulations 3. Approve information security audit plan and track improvement status 4. Review related operations of the information security management 5. Oversee the management of ongoing operations 6. Review and implement the management methods of information security of each unit 7. Review the information security educational training implementation status 8. Execute various resolutions of the Information Security Committee 9. Promote and implement information security maintenance and management measures 10. Coordinate the information security operations performance of the information security task force
Information Security Task Force	<ol style="list-style-type: none"> 1. Implement tasks related to information security maintenance and management 2. Act as the information security contact of all units, and assist in the promotion of security maintenance and management measures 3. Promotion and transmission of the related matters of information security 4. Carry out resolutions of the Information Security Task Force 5. Make suggestions about the improvement of the management measures and the information security implementation

3. Information Security Management Framework

Macronix's information security management framework includes information security policy, information security organization, information security strategy, information management regulations, and security control mechanisms. To achieve its information security objectives and ensure the confidentiality, integrity, and availability of information assets, Macronix has established information security management regulations and implemented control mechanisms such as a cybersecurity defense network and data protection framework. An intelligent security alert system is deployed to monitor and handle abnormal events. The Plan-Do-Check-Act (PDCA) cycle is adopted to regularly review and improve the framework's completeness, reduce the risk of cybersecurity

incidents, and minimize their impact on business operations—safeguarding the information security of Macronix, its shareholders, employees, customers, and suppliers.

▼Information Security Management Framework



4. Specific management practices for information security

To enhance employees' awareness of information security, Macronix conducts awareness programs to remind employees to comply with its information security management standards. Activities include social engineering drills, the publication of bilingual (Chinese and English) information security newsletters, and the organization of Information Security Task Force meetings. These meetings cover a range of topics, including intellectual property, trade secrets, confidential information, personal data protection requirements, as well as real-world examples of antivirus, anti-hacking, and anti-fraud measures—strengthening employees' understanding and practices of information security protection.

To ensure that business partners are also aware of Macronix's information security regulations, all suppliers and contractors must acknowledge and agree to comply with the relevant information security clauses outlined in the Code of Conducts Compliance Certificate before initiating cooperation. In addition, personnel are required to complete and pass an information security training course before entering Macronix.

To protect against the different types of information security threats and protect Macronix's information assets, Macronix continues to strengthen its information security defense and data protection networks. Access control mechanisms are implemented for the use of computers, IT equipment, and network resources. Macronix also uses the data loss prevention (DLP) system, data encryption, file management and other tools to protect sensitive data from leakage.

Also in order to prevent and reduce the damage caused by hacker attacks, Macronix has established relevant protection mechanisms and systems, including firewalls and intrusion prevention systems. It is mandatory for the factory equipment to be scanned for virus to prevent malware from entering Macronix's network to block malware from infiltrating Macronix's systems. Network partition control is implemented to prevent the spread of computer viruses across regions. Furthermore, the endpoint devices are protected through anti-virus and anti-hacking measures. Real-time monitoring and anomaly response are carried out via the integrated network security operations center (SOC) and an intelligent information security alert system. Macronix also invites the business

units to participate in the security incident response and disaster recovery drill to ensure organizational resilience.

To strengthen the information security protection level of the supply chain and reduce related risks, thereby preventing potential operational impacts from information security incidents involving suppliers, Macronix conducts annual supplier information security audits through its core information security team and follows up on corrective actions for identified deficiencies.

To supervise the strength of the information security system, Macronix adopts a third-party information security assessment tool, Security Scorecard and the information security risk rating service provided by SEMI (Semiconductor Equipment and Materials International), to monitor weaknesses. Regular vulnerability scans are conducted on critical information systems, and ethical hackers (white-hat hackers) are commissioned to perform red team exercises, and external experts are engaged on a regular basis to perform information security assessments. To ensure the effectiveness of the information security management measures, the Information Security Core Team reviews the implementation results of relevant operations every week.

5. Achievements of information security measures promotion and implementation

This year, Macronix implemented a range of information security enhancement measures. In addition to successfully completing the transition audit for the ISO 27001:2022 certification, according to the scoring results of the third-party security assessment tool, Security Scorecard and Panorays, Macronix's annual performance scores over 96 points, which is higher than the global manufacturing average. The security insurance consultant evaluated Macronix's information security maturity based on six core functions and 106 requirements of the National Institute of Standards and Technology Cyber Security Framework (NIST CSF). In the identification (ID), protection (PR), detection (DE) areas, Respond (RS), and Recover (RC), Macronix has shown significant improvement compared with the last year.

In 2024, no incidents about employees, customers, or suppliers' privacy information leakage were reported

A summary of major implementation results of 2024 is shown in the figure below.

▼ Achievements of information security measures promotion and implementation of 2024

Management Structure	Specific Management Practices	Results
Information Security Management Regulations	Compliance with Information security regulations	■ Passed ISO27001: 2022 certification in December 2024
	Implementation of information security management system	■ Achieved 100% participation of global employees in phishing email social engineering drills for 8,786 people. ■ Issued information security e-newsletters in Chinese and English, to promote the latest information security knowledge and Company regulations (A total of 23 issues released) ■ 100% of global employees have completed the information security awareness and regulations training course, with a total of 11,292 participants
	Strengthen the information	■ Incorporated 11 information security KPIs into the intelligent

Security Control Mechanisms	security defense network	<p>information security dashboard for monitoring</p> <ul style="list-style-type: none"> ■ Integrated third-party threat intelligence collection and reporting into digital management systems to promptly patch vulnerabilities and reduce risks ■ Implemented automated backup and recovery technologies for all systems supporting critical business operations (over 1,000 systems) <p>Activated digital management for antivirus operations across over 6,000 computers, enabling real-time monitoring, reporting, and response</p>
	Strengthening data protection network	<ul style="list-style-type: none"> ■ Strengthened encryption capabilities and expanded coverage to include notebook hard drives, file servers, and emails ■ Conducted reviews of sensitive application systems, IT services, and privileged accounts (over 30,000 accounts) ■ Reinforced digital supply chain file transfer security mechanisms, including account authorization, data encryption, and file content monitoring
	Strengthening of supply chain information security management	<ul style="list-style-type: none"> ■ Promoted SEMI information security requirements and encouraged supplier to enhance their own information security capabilities (self-assessments completed by 70 suppliers) ■ Conducted information security audits on suppliers (4 completed) ■ Responded to customer information security questionnaires (a total of 42 cases)

6. Resources invested in information security management

In order to meet the needs of information security management, Macronix has invested relevant resources in the establishment and maintenance of defensive measures and hedging mechanisms, including more than 100 information security-related personnel, and the amount of information security accounts for over 10% of the information-related budget.

(II) Major information security incidents:

In order to strengthen information security risk management, Macronix has established information security incident notification and handling procedures to ensure immediate reporting and handling of information security incidents when they occur. In the last three years and up to the date of publication of this report, there have been no major information security incidents.

4.1.5. Compliance with Regulatory Requirements

Macronix has always complied with laws and regulations. In 2024, Macronix was not involved in any litigation related to employee health or violation of safety regulations. We also did not receive any severe fines or punishment for violations pertaining to environmental laws and/or regulations, nor did we receive any severe fines or punishment for violations pertaining to social and economic laws and/or regulations. “Severe” means “cumulative fines for a single incident reaching NT\$1 million or above” according to Article 4, Paragraph 1, Subparagraph 26 of the Taiwan Stock Exchange Corporation Procedures for Verification and Disclosure of Material Information of Companies with Listed Securities.

Macronix has also set up a regulatory compliance unit that offers consultation services, supervises and implements regulatory compliance, and integrates the philosophy of honesty in its business management by obeying rules and applying knowledge into practice. Again and again, we emphasize the importance of self-discipline and top-down compliance with laws and regulations (including the Securities and Exchange Act, Company Act, Labor Standards Act, Anti-Corruption Act, Fair Trade Act, Money Laundering Control Act, Act of Gender Equality in Employment, Personal Information Protection Act, regulations for import/export management, and environmental protection, etc.) We also frequently promotes relevant regulations and policies.

4.1.6. Personal Data Protection

Macronix recognizes the importance of personal data protection. To demonstrate its commitment and compliance with relevant regulations, Macronix has established a Personal Data Protection Policy and the “Macronix Personal Data Protection Management Guidelines” as the highest guiding principles for protecting personal data. A dedicated “Personal Data Protection Task Force” has been formed to implement and manage personal data protection efforts. The Macronix Personal Data Protection Policy is outlined as follows:

1. For the purposes of executing operational and management-related activities, personal data is collected, processed, and used in a reasonable manner, based on the principle of necessity and within the scope required for business operations.
2. Respond to data subjects’ requests regarding their personal data in accordance with applicable laws and regulations.
3. Take appropriate security measures to prevent personal data from being stolen, lost, leaked, or tampered with.
4. Establish and publish management regulations for personal data protection to ensure effective implementation and operation.
5. Set up a personal data security audit system to inspect and improve protection practices.
6. All employees of Macronix are required to comply with this policy.

To ensure the protection of personal data collected, processed, used, and retained by Macronix, all employees are required to comply with the “Personal Data Protection Act” and Macronix’s internal “Personal Data Protection Management Regulations.” Macronix has also established relevant security control mechanisms to prevent data leakage or theft. In 2024, no complaints were received regarding Macronix’s infringement of privacy rights.

To enhance employees' awareness of personal data protection, Macronix regularly holds training courses. In 2024, a total of 3,657 participants completed the “Personal Data Protection Awareness Training,” accumulating 945.33 hours of learning, with both the course completion rate and test pass rate reaching 100%.

4.2. Risk Management

Management Approach	Impact	<ol style="list-style-type: none"> Actual impact: Compliance with corporate governance evaluation indicators is required to supervise the implementation and operation of risk management, protect Company assets, ensure the health and safety of employees, and balance the rights and interests of stakeholders, with the aim of achieving sustainable corporate operations and development. Potential impact: Identifying potential future challenges and responding appropriately to ensure sound and stable business operations.
	Short-term development direction	In accordance with the risk management policies and procedures approved by the Board of Directors, risk identification is conducted based on short-term objectives and matters related to each unit's business responsibilities.
	Mid- to long-term development direction	In accordance with the risk management policies and procedures approved by the Board of Directors, risk identification is conducted based on mid- to long-term objectives and matters related to each unit's business responsibilities.
	Management methods (including measures)	<ol style="list-style-type: none"> Risk management policies and procedures Risk governance and management organizational structure Summary of risk management operations and implementation reported to the Board of Directors and date of submission
	Process for tracking the effectiveness of actions	<p>External: Constantly monitor the development of domestic and international corporate risk management mechanisms and use this information to review and improve Macronix's established risk management policies or procedures.</p> <p>Internal: Annually report the execution of risk management to the Audit Committee and the Board of Directors to ensure proper oversight and continuous improvement.</p>
	2024 implementation results	Since the Board of Directors legally approved Macronix's "Risk Management Principles," Macronix has annually reported the execution of risk management to the Audit Committee and the Board of Directors, with reports submitted on December 19, 2023, and October 29, 2024, respectively.
	2025 goals	Continuously monitor risks and report the risks and corresponding countermeasures to the Audit Committee and the Board of Directors
	Future goals (Short-, Mid-, and Long-Term)	<p>Short-term: Continuously monitor risks</p> <p>Mid to long-term: Continuously improve risk management and related operational processes</p>

I. Risk Management Organization and Structure

- The Board of Directors has approved Macronix's risk management policies, organizational structure, risk governance activities, and related disclosures. The Audit Committee supervises the execution of Macronix's risk management and presents necessary disclosures and improvement recommendations to the Board of Directors.
- Each department of Macronix should incorporate risk management into their business and daily operations to implement the risk management policies and practices approved by the Board of Directors. The management team is required to regularly report at least once a year to the Audit Committee and the Board of Directors on the execution results and performance.

II. Risk Management Policy

- In order to ensure sound operations and sustainable development, the Board of Directors

of Macronix approved the "Risk Management Principles" on October 24, 2023, as the highest guiding principle for Macronix's risk management.

2. To effectively control risks, Macronix should identify, analyze, assess, monitor, record, and manage risks in the following areas: "Strategic Risks," "Operational Risks," "Financial Risks," "Compliance Risks," "Cybersecurity Risks," "Climate Risks," and "Geopolitical Risks," and disclose them in accordance with legal requirements.

III. Risk Management Procedures

1. Risk identification

Each center of Macronix should conduct risk identification on matters related to the short-, medium-, and long-term objectives and business execution, and consider internal and external risk factors, stakeholders' concerns, etc. in accordance with the risk management policies and procedures approved by the Board of Directors. Each center should also adopt "bottom-up" and "top-down" approach of analyses and discussions, integrating strategic and operational risks, to comprehensively identify potential risk incidents that could result in failure to achieve corporate objectives, causing damages of, or negative impacts on Macronix.

2. Risk analysis

Macronix will assess the nature and characteristics of identified risk events, analyzing their probability of occurrence and potential impact. Relevant departments should also refer to existing control measures, related cases, and experiences to analyze the probability and impact of the identified risks.

3. Risk assessment

Macronix will establish appropriate quantitative or qualitative measurement standards based on the characteristics of the risks, which will serve as the basis for risk analysis. This includes: expressing the probability and impact of risk events through descriptive text, as well as using specific numerical indicators (e.g., days, percentages, amounts, number of people, etc.) to quantify the probability and impact of risk events.

4. Risk monitoring

Macronix's Office of the President is responsible for continuously monitoring risks and reporting the risks and corresponding mitigation measures to the Audit Committee and the Board of Directors.

5. Risk recording

Macronix's Office of the President is responsible for recording and properly archiving the process and results of risk management execution for future reference.

6. Risk disclosure

Macronix's website shall disclose relevant matters in accordance with legal regulations and Macronix's Risk Management Principles.

IV. Risk Management Operations and Reporting

Since the Board of Directors approved Macronix's "Risk Management Principles," we have annually reported the implementation of risk management to the Audit Committee and the board of directors on December 19, 2023, and October 29, 2024, respectively. A summary of the relevant content is as follows.

To implement the risk management mechanism, each department, within its area of responsibility, carries out risk identification, risk analysis, risk assessment, risk monitoring, and risk recording, in accordance with the risk management policies and procedures approved by the Board of Directors. The departments also ensure legal compliance and disclosure of these processes. In addition, Macronix has organized courses such as "Business Secrets Overview," "Information Security Awareness," "Information Security Regulations," "Sustainable Development and Corporate Social Responsibility/Green Products," with a total of 7,078 hours of training, attended by 15,059 participants.

Macronix's Office of the President continuously monitors risks and conducts quarterly reviews of risk management, operations, and execution. Additionally, an annual report detailing the results of the risk assessment is submitted to the Audit Committee and the Board of Directors. This report encompasses the various risks encountered throughout the year; for instance, the risks reported to the Board of Directors for the 2024 include "strategic risk," "operational risk," "financial risk," "compliance risk," "information security risk," "climate risk," and "geopolitical risk." The report also outlines the implementation status and preventive measures for each identified risk.

Please refer to the "Risk Management Section" on Macronix's website (<http://www.macronix.com>) for Macronix's risk management policies and management information.

Macronix is the world's leading manufacturer of NVM. We manage risks through proactive, preventive management procedures that were established with regard to information security, intellectual property, standards of behavior, ethics, operations management, damage prevention, supplier management, environmental protection, safety and health, employee benefits, and health maintenance, etc. In order to protect Macronix's assets, ensure employee health, and care for the rights and interests of stakeholders, we hope to achieve sustainable development. Furthermore, in response to internal and external technical data, Macronix has also conducted relevant simulation exercises and undergone risk analysis. The summary of risk items, management policies, or strategies related to significant environmental, social, and corporate governance issues is as follows:

Material Issues	Risk Assessment Item	Risk Management Policy, or Strategy
Environment	Environmental protection	Introduced and passed the ISO 14001 Environmental Management System Certification. We ensure that our environmental management systems fully comply with the Plan-Do-Check-Act (PDCA) operations of the ISO system to maintain a healthy and safe environment, and continuously make improvements to reach our goal.
Environment	Climate change management	<ol style="list-style-type: none"> 1. Macronix is dedicated to reducing energy use and consumption every year. We follow the instructions provided by the Bureau of Energy, Ministry of Economic Affairs each year to report our energy conservation audit system for energy users. 2. In response to the trend of greenhouse gas control and reduction in the supply chain due to global warming, we planned for greenhouse gas checks, control, and reduction, and described the process of compiling ISO14064-1 GHG inventory in the report.
Society	Epidemic disease	<ol style="list-style-type: none"> 1. Convened the epidemic prevention meetings to formulate anti-epidemic policies and various management measures, and to establish a standard operating procedure, a reporting mechanism, and countermeasures. 2. Assigned dedicated staff to track and pay attention to the epidemic prevention and management measures. Daily pop-ups on computers remind employees about health and safety anti-epidemic measures, and rolling reviews are conducted for the results inspection.
Society	Occupational health and safety	In accordance with the Occupational Safety and Health Act and the operational requirements of the ISO 45001 for occupational health and safety management systems, trained and qualified personnel conduct risk assessments to identify hazards and risks associated with both routine and non-routine work activities involving employees, visitors, and contractors. A risk grading management is implemented, along with the establishment of improvement processes and the adoption of preventive control measures.
Corporate Governance	Centralized procurement	<ol style="list-style-type: none"> 1. Establish emergency procurement procedures 2. Prepare a safety stock 3. Audit suppliers' capability to plan regarding business continuity 4. Continue to develop alternative suppliers 5. Sign supply contracts with major suppliers
Corporate Governance	Information system services	<ol style="list-style-type: none"> 1. Block malicious attacks with a firewall 2. Use a mail and website filtering system to intercept malware 3. Regularly update computer software and deploy endpoint protection software 4. Regularly back up important data 5. Cyber-attack simulation drills 6. Install uninterruptible power supply (UPS) 7. Remote backup 8. Simulate information system disruptions
Corporate Governance	Geopolitics	<ol style="list-style-type: none"> 1. Offsite backup shipping 2. Provide overseas warehouse services
Corporate Governance	Water and Power supply interruption	<ol style="list-style-type: none"> 1. Establish a water tanker transport plan 2. Develop an operational maintenance plan for water supply interruptions 3. Simulate water source disruptions caused by drought conditions 4. Dual-circuit power supply design with Taiwan Power Company 5. Install emergency power generators and uninterruptible power systems (UPS)

		6. Simulate emergency power outages
Corporate Governance	Earthquake	<ol style="list-style-type: none"> 1. Seismic resistant design of buildings and machines 2. Human resource service orders with major suppliers 3. Earthquake emergency response drill
Corporate Governance	Fire or chemical spill	Continue to observe, review and respond from time to time.
Corporate Governance	Green materials management	<ol style="list-style-type: none"> 1. Comply with EU RoHS regulations on banned/restricted substances (2011/65/EU) 2. Adhere to the European Chemicals Agency REACH requirements for Substances of Very High Concern 3. Comply with international standards (IEC 61249-2-21, JPCA-ES01 2003, IPC 4101) for halogen-free products 4. Prohibit the use and procurement of conflict minerals and trace the sources of gold (Au), tantalum (Ta), tin (Sn), tungsten (W), and other minerals extracted through inhumane practices in products to ensure they come from certified smelters and non-conflict regions. In addition, continuously require suppliers to meet this standard to comply with customer requirements.
Corporate Governance	Quality management	Based on the ISO 9000 system and strict quality standards, with certification obtained for ISO/TS 16949. Most of the partnering packaging and testing outsourcing factories are certified under the ISO 9000 system.
Corporate Governance	Information security	<ol style="list-style-type: none"> 1. Establish a dedicated information management unit and related management procedures to protect the safety of computer systems, prevent the risk of data leakage, and provide the basis for compliance by employees and responsible units. 2. Interface with the security requirements of international customers and subcontractors in order to maintain information security.
Corporate Governance	Laws and Code of Ethics, etc.	<ol style="list-style-type: none"> 1. Compliance checking 2. Incident notification mechanism 3. Procurement and Subcontracting Process Audit 4. Subcontractor audit 5. Professional issues on-the-job training and assessment
Corporate Governance	Ethical corporate management and protection of the whistleblower's identity	<ol style="list-style-type: none"> 1. Comply with laws and regulations 2. Pragmatically implement Company policies and the code of ethics 3. Effectively implement relevant regulations through internal and external mechanisms. 4. Establish risk management mechanisms 5. Establish a violation reporting system and protect reporters in accordance with the law. 6. Enhance on-the-job and ethics training
Corporate Governance	Sexual harassment, stalking, personal data protection and legal compliance	Establish relevant grievance mechanisms, investigation procedures, and awareness campaigns to ensure compliance with and implementation of laws and regulations.

4.3. Research and Development Management



4.3.1. Importance of Innovation

Successful Developed Technologies or Products

In recent years, Macronix has successfully implemented product and technology innovations and maintained its superior product competitiveness.

(1) Technology innovation

- ◆ Adopt big data and artificial intelligence (AI) to establish an exclusive system platform for improving the performance and quality control of semiconductor mass production. Become the world's first semiconductor company to elevate the product defect rate measurement from per million (ppm) to per billion (ppb).
- ◆ Use various AI technologies to establish an exclusive production process R&D platform to improve resource efficiency and shorten development time.
- ◆ Build proprietary design and mass production process technology of 3D NAND flash.
- ◆ Macronix's mature proprietary 0.11 μm embedded non-volatile memory and 0.18 μm BCD (Bipolar-CMOS-DMOS) technologies are integrated to provide foundry services in MCU and analog IC related markets.

(2) Product innovation

- ◆ For automotive electronics and Internet of Things applications, Macronix has proposed an innovatively protected and encrypted ArmorFlash product series, and won the "Best Memory IC of the Year" at the "EE Awards 2021 (Asia Award)."
- ◆ In response to the design and development trend of lower power consumption and energy-saving efficiency, Macronix launched the 1.2V SPI NOR flash product series, which saves more than 50% power than the 1.8V product series, and won the "Best Memory IC of the Year" at the "EE Awards 2022 (Asia Award)."
- ◆ To the demand for high performance, Macronix proposed the OctaFlash product series, which doubled the maximum speed of SPI NOR flash in the industry and won the "Best Memory IC of the Year" at the "EE Awards 2023 (Asia Award)."
- ◆ In response to the need for upgrading encryption protection in existing systems, Macronix introduced the ArmorBoot product series to meet various protection strength requirements. The series was recognized as the "Best Memory Solution of the Year" award at the "EE Awards 2024 (Asia Award)."
- ◆ Macronix developed and mass-produced proprietary 3D NAND Flash, making us one of the few suppliers of both NOR Flash and 3D NAND Flash in the world.

Plans for New Products Development

- ◆ 3D NAND Flash: The third- and fourth-generation plan.
- ◆ eMMC controller chip plan of 3D NAND Flash.
- ◆ NOR Flash: 45nm product series plan.
- ◆ NOR Flash: High-speed enhancement plan for protection and encrypted storage chips.
- ◆ 3D NOR Flash: The industry's highest NOR Flash storage capacity single-chip plan.

4.3.2. Intellectual Property Management

Macronix has long been devoted to the innovation, research, and development (R&D) of non-volatile memory technologies and products, and has always attached a high level of importance to protecting its intellectual property (IP) rights. Macronix has filed patent applications in various countries to secure its key technologies and abundant R&D achievements.

Outstanding Patents	
◆	317 patents obtained in 2024
◆	9,520 patents were obtained worldwide as of the end of 2024
Recognition in Patent Ranking	
◆	As for Taiwan’s corporate patent certificates, Macronix has been ranked in the top 100 since 2000 and ranked 21nd in 2024.*
◆	According to the patent announcement in the United States, Macronix has been ranked in the top 1000 from 2001 to 2024, and was ranked 362th in 2024.**

*Source: Intellectual Property Office, Ministry of Economic Affairs

**Source: IFI CLAIMS Patent Services

4.4. Supply Chain Management



As a leading semiconductor provider in the world, Macronix works with a variety of supply chain partners in the industry, including about 1,570 manufacturers, agents, and contractors from 7 aspects: materials, parts, photomasks, equipment, plant facilities, information and automated products, and semiconductor assembly and testing. To generate mutually beneficial outcomes, we select suppliers by placing equal importance on local suppliers and global supply chain partners to ensure our service quality, strengthen supplier cooperation, shorten the process of product development, enhance supply chain flexibility, and reduce unnecessary costs and carbon emissions during transportation. As of 2024, we have around 790 suppliers of raw materials and components, in which the amount of procurement in Taiwan accounted for 37% of our overall procurement amount (2023: 38%; 2022: 38%).

To manage the quality of material suppliers, Macronix aims to provide control and guidance in the following three aspects:

- (1) Supplier management system certifications: We require our suppliers to obtain international certifications such as ISO 9001, ISO 14001, and ISO 45001 with respect to their quality, environmental, safety, and health management systems to ensure that they protect the environment and improve their safety and health practices.
- (2) Supplier audit and counseling: We formulate annual audit plans every year to conduct on-site audits. When deficiencies are discovered, we immediately request that our suppliers submit improvement plans, wherein goals and deadlines are explicitly specified to meet

our expectations.

- (3) Supplier performance evaluation: We conduct supplier performance evaluation on three dimensions: product quality, capability to comply with customers' requests and risk management, and product delivery date. For suppliers with good performance, order quantity will be increased, and the suppliers will be rewarded at the supplier meeting. For suppliers which do not meet the standards, the Raw Material Management Committee will carry out project improvements, counseling, auditing, as well as other measures. In 2024, all Macronix suppliers have undergone strict evaluation. In the annual final results, all suppliers have reached the standards of qualification, and there was as much as 96.5% raw material A-grade suppliers.

In implementing sustainability, we also take into account the participation of the overall supply chain, hoping to help our suppliers establish and raise their awareness and capabilities in Social and Environmental Responsibility (SER) by enhancing SER controls and training for our supply chain partners as well as performing audits.

We hold true to the principles of creating value together with our partners and adhering to high standards of business ethics to protect employees and partner rights and dignity. We set up strict and vigorous health and safety standards to minimize any negative influences on the environment, safety, health, and our partners. In order to fulfill these promises, we work closely with employees, suppliers, and suppliers' employees to ensure that all CSR values are put into practice throughout the entire organization, thereby making CSR a part of Macronix's corporate value. Macronix is determined to become the leading supplier in the semiconductor industry, and provide the customer innovative application-oriented solutions and non-volatile memory products with the superior technology, highest quality and reliable service. Being the world-leading supplier of non-volatile memory it provides such products as NOR, NAND Flash, eMMC and ROM for a wide range of applications including computing, communications, consumer electronics, automotive and industrial applications. Over the past year, NOR Flash sales have accounted for more than a half of the revenue, with communications, computing and consumer applications being the main sources, and the proportion of automotive and industrial applications has also rapidly grown.

After thirty years of hard work, Macronix successfully established mutually beneficial long-term strategic partner relationships with the world major manufacturers in the U.S., Japan, Europe, Asia and other places. Such long-term and successful relationships with strong partners have strengthened Macronix's world leading position in the field of NOR Flash and ROM.

4.4.1. Growing Together with Our Suppliers

Macronix uses CSR as an indicator for evaluating and selecting suppliers. We have further intensified CSR programs in our supply chain to confirm that supply chain partners are in compliance with applicable laws and are willing to accept ethical standards through signing Code of Conducts Compliance Certificate. We also attach great importance to labor occupational safety and health. We look forward to implementing CSR-related work and growing together.

Macronix was one of the first companies in the Hsinchu Science Park to complete greenhouse gas emissions verification, and among the first semiconductor providers to receive AEO certification from the Directorate General of Customs Administration under the Ministry of Finance. We also actively pushed upstream and downstream supply chain partners to comply with the “Responsible Business Alliance® Code of Conduct” and instituted “Supplier Green Product and SER Audit” mechanisms. By conducting annual audits on our supply chain partners, we take action to implement supplier environmental and social assessments and expand our CSR to the level of the supply chain safety.

Macronix request its suppliers to have and comply with similar policy covered under Macronix’s sustainable development policy and CSR policy, i.e. no child or forced labor, granting the freedom of assembly and association, etc. Also, Macronix has incorporated the above principles in its employee training courses and materials. In 2024, 25 suppliers passed Macronix’s Risk Assessment of Suppliers (“RAS”) audit. For those suppliers who failed the audits, Macronix will continue follow up until all of them meet its requirements.



▲ 2024 Supplier Conference promotes Macronix's sustainable development policy, corporate social responsibility policy, and matters that suppliers should cooperate with.

4.5.Product Quality Management

Management Approach	Impacts	<ol style="list-style-type: none"> 1. Actual impact: Macronix's products are widely applied in automotive, medical, and consumer electronics. The quality of Macronix's products affects automotive safety and the quality of customers' end products, which in turn impacts business relations between customers and Macronix 2. Potential impact: Product quality is a critical factor for competitiveness and success as a leading manufacturer of non-volatile memory. It directly influences customers' trust in Macronix
	Short-term development direction	Further optimize existing defect detection technologies through learning from past experiences, aiming to achieve continuous improvement in product quality.
	Medium and long-term development direction	Continuous improvement in the quality management system to provide the best products that meet the needs of customers in various applications.
	Management methods (Including measures)	<ol style="list-style-type: none"> 1. The quality improvement team executes defect improvement projects to reduce the risk of quality anomalies and enhance customer satisfaction. 2. Macronix promotes the CIP (Continual Improvement Program); and participates in national competitions to achieve the purpose of cross-industry learning. 3. Macronix engineers need to participate in quality and CIP education and training to enhance problem-solving skills. 4. Conduct annual customer satisfaction surveys to ensure that Macronix meets customer demands
	Tracking the effectiveness of actions	<p>External: Senior management review customer satisfaction survey results and improvements to areas of customer dissatisfaction to ensure Macronix meets customer needs</p> <p>Internal:</p> <ol style="list-style-type: none"> 1. Quality management improvement meetings are held to track the status of quality improvements 2. The CIP platform records the activities of each team, and engineers are required to undergo problem-solving and improvement training to ensure they possess the necessary skills and apply them in CIP activities
	2024 Implementation Results	<ol style="list-style-type: none"> 1. 100% CIP participation rate for necessary personnel 2. 99.6% completion rate of the educational and training courses
	Targets in 2025	<ol style="list-style-type: none"> 1. 100% CIP participation rate for necessary personnel 2. 100% completion rate of the educational and training courses

	Future Targets (Short, Medium, and Long-Term)	Short-term: No incidents where product quality causes significant impact on customers (such as safety events or production shutdowns) Mid- to long-term: Further enhance customer satisfaction with Macronix
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We strongly believe that the premium quality is Macronix’s essential principle and responsibility, and has always perused the quality promotion and improvement. Macronix also keeps promoting CIP (Continual Improvement Program) projects to require the suppliers to support QCC (Quality Control Circle) improvement and actively participate in national competitions to achieve the purpose of cross-industry learning. In addition, Macronix internally formed various improvement teams, and as of the end of 2024 there have been 131 such teams.

Moreover, Macronix attaches great importance to the demands and opinions of customers. In order to understand customers’ perceptions of Macronix, Macronix conducts customer satisfaction surveys every year. The scope of the survey includes but is not limited to the aspects such as "product quality", "technical capabilities", "product delivery", "application and sales services” and "green environmental protection". Through recycling analysis, in 2024 the survey result showed that the satisfaction rate of customers around the world reached more than 95%.

Regarding the quality certifications, Macronix has been certified with ISO 9001 and IATF 16949. And in terms of the environmental management, including noise, pollution and chemical handling, Macronix has been certified with ISO 14001. In addition, it requires packaging and testing suppliers to obtain the aforementioned certificates.

4.6. Sharing Beneficial Outcomes with Customers

Macronix is a Global Leader in Non-Volatile Memory, Creating Value and Sharing Success with Customers

As a leading supplier of non-volatile memory in the world, Macronix is committed to providing high-quality NOR, NAND Flash memory, eMMC and ROM products for a wide range of applications, including computing, communication, consumer electronics, automotive and industrial sectors uses. We firmly believe that quality and service are the core elements for achieving win-win outcomes with our customers.

Quality is the Lifeline

At Macronix, we have always regarded our products as the lifeline of Macronix. From material selection to the production process, every detail is strictly monitored and tested to ensure product stability and reliability. Our goal is to provide every customer with peace of mind when using Macronix products and to earn their trust in our commitment to quality.

Service is Key

Excellent service is a vital cornerstone to establish long-term cooperative relationships between Macronix and its customers. Macronix solves customer problems and meets customer needs through open communication channels and quick response mechanism. While helping customers enhance their market competitiveness, we also strive to build strong and mutually beneficial partnerships—

achieving win-win outcomes.

Information Security and Trust

In the digital age, the security and confidentiality of customer information are the foundation of trust. Macronix is committed to strictly protecting customers' documents, data, and business-related information. Our internal systems adopt high-standard control measures to ensure that every customer can work with us with complete peace of mind. To us, safeguarding customer information is not only a legal and ethical obligation—it is a promise and responsibility we uphold with utmost dedication.

Global Strategic Partnerships

As the result of more than three decades of dedication, Macronix has established long-term, mutually beneficial strategic partnerships with world-class companies in the U.S., Japan, Europe, and Asia, becoming the world class leading manufacturer in the fields of NOR flash memory and ROM products.

Looking ahead, Macronix will continue to build its intellectual assets, embrace innovation, and deliver even more outstanding products and services. Together with our customers, we strive to create value and realize a shared vision of mutual success.

“Honesty” is Macronix’s business philosophy. Customer satisfaction surveys are conducted to determine if Macronix’s values of “innovation, quality, efficiency, and service” are implemented, and to achieve the win-win scenarios for Macronix and customers. Annual customer satisfaction surveys are conducted by Macronix’s headquarters in Taiwan. Questionnaire survey results are summarized and analyzed for the management team to truly understand the degree of customer satisfaction. To further understand customers’ needs and their degree of satisfaction, we have instituted satisfaction evaluation mechanisms for the 7 areas of greater concern: sales services, order shipments, product quality, product technology, customer application services, green product regulation, and overall performance. Surveys are conducted through questionnaires or telephone interviews; the results serve as an important basis for Macronix to review our service quality and improve our operation flow, which will subsequently allow us to optimize our services and thus enhance our relationships with customers. The 2024 customer satisfaction survey has a response rate of 93%. According to the results, customers gave positive and satisfied ratings on all of our 7 indicators (the maximum score is 5; 4 or above means “Satisfied”).

5. Economic Dimension

5.1. Financial Performance

Management Approach	Impacts	<ol style="list-style-type: none"> Actual impact: Market demand has leveled off, prompting capacity adjustments in response Potential impact: Continued monitoring of U.S.-China trade tensions and the effects of climate change
	Short-term development direction	Evaluate the market situation and immediately make adjustments
	Medium and long-term development direction	Increase operating profits, create Company value, and ensure sustainable management.
	Management method (Including measures)	Set clear goals, review production, management, sales, and R&D expenses, periodically convene meetings for review, and continuously make improvements.
	Tracking the effectiveness of the actions	<p>External: Regularly hold investor conferences to present Macronix's operational results, and periodically disclose monthly revenue, financial reports, and annual reports on Macronix's website for public reference</p> <p>Internal: Conduct regular meetings to evaluate financial performance, formulate action plans to address identified shortcomings through discussion of findings and data in reports, and ensure effective tracking and timely adjustment of financial performance</p>
	2024 Implementation Results	Please see our business performance.
	Targets in 2025	Evaluate the market situation and immediately make adjustments.
	Future goals (Short-, Mid-, and Long-Term)	<p>Short-term: Enhance operational performance and make adjustments in response to market conditions</p> <p>Mid-to-long term: Continuously innovate and conduct R&D to ensure sustainable operations</p>

Macronix established its headquarters in the Hsinchu Science Park on December 9, 1989, and commenced operations in December of that year. The main business activities of Macronix include the design, manufacturing, and marketing of integrated circuits and memory wafers, the commissioned design of related products, development, and consultation, as well as engagement in business-related import/export trading. Macronix has been listed on the Taiwan Stock Exchange from March 15, 1995. As of December 31, 2024, our paid-in capital is approximately NT\$18.6 billion.

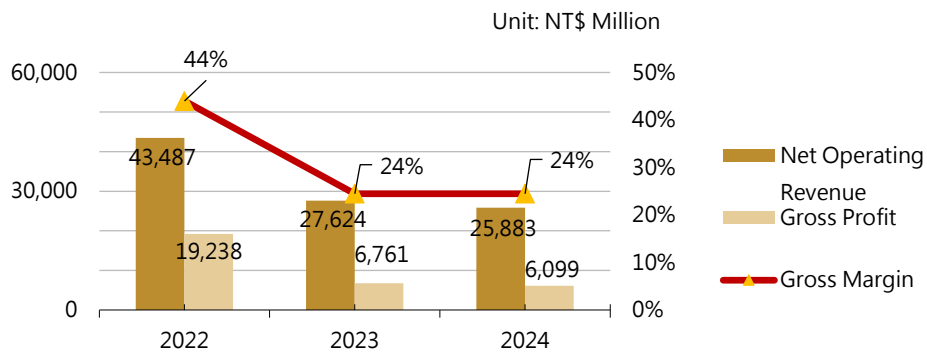
For details on our subsidiaries, shareholding ratio, and business items, please refer to Appendix 5 and 6 or subsidiaries that were included in the 2024 Q4 consolidated financial report. As of December 31, 2024, Macronix has direct and indirect majority ownership in the following subsidiaries: Run Hong Investment Ltd. (Run Hong), Hui Ying Investment Ltd. (Hui Ying), Mxtran Inc. (Mxtran), Macronix America, Inc. (MXA), Macronix (BVI) Co., Ltd. (MXBVI), New Trend Technology Inc. (NTTI), Macronix (Asia) Limited (MX Asia), Macronix Pte Ltd. (MPL), Macronix Europe N.V. (MXE), Macronix (Hong Kong) Co., Limited (MXHK) and Macronix Microelectronics (Suzhou) Co., Ltd. (MXm). Except for being disclosed with the financial information, the aforementioned subsidiaries are not included within the scope of this report.

2022-2024 Business Performance (Consolidated financial statement figures)

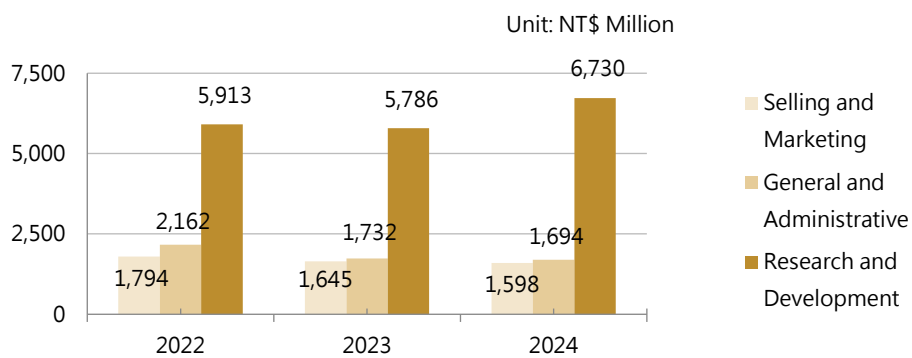
Unit: NT\$ Million

Item	2022	2023	2024	Notes
Net operating revenue	43,487	27,624	25,883	Direct economic value
Operating costs	24,250	20,863	19,784	Economic value distributed
Gross profit	19,238	6,761	6,099	
Operating expenses	9,869	9,168	10,023	Economic value distributed
Income (loss) from operations	9,369	(2,407)	(3,924)	
Total non-operating income and expenses	923	523	378	Economic value distributed
Income (loss) before income tax from continuing operations	10,292	(1,884)	(3,546)	
Income tax expense (benefit)	1,323	(185)	(334)	Economic value distributed
Net income (loss) for the year	8,970	(1,699)	(3,212)	Economic value retained

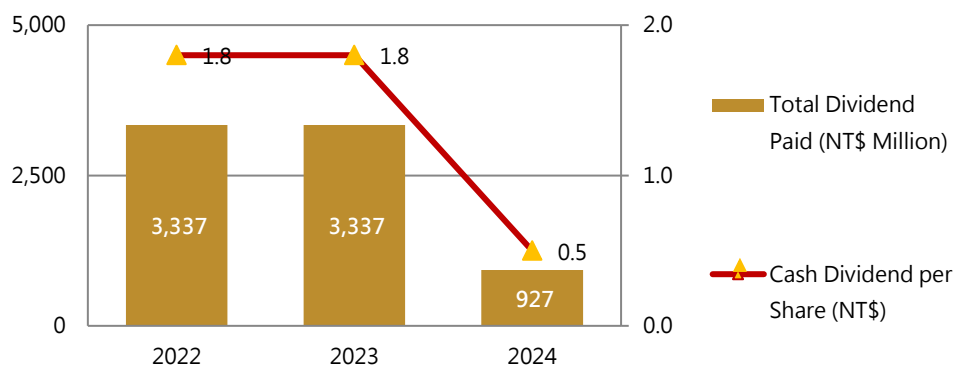
▼ Net Operating Revenue & Gross Profit



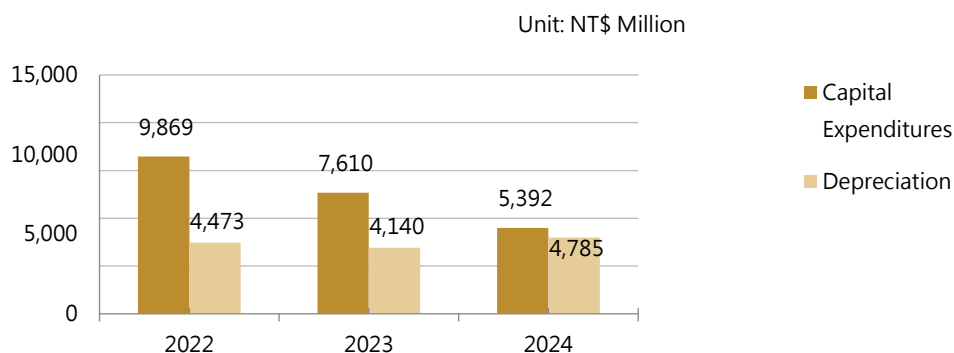
▼ Operating Expenses



▼ Cash Dividend Policy



▼ Capital Expenditures and Depreciation



▼ R&D Investments

Unit: NT\$ Million

Item	2022	2023	2024
Fixed R&D investments	5,913	5,786	6,730
Total revenue	43,487	27,624	25,883
Percentage	13%	21%	26%

Employee compensation expenses in 2024 include salaries, labor and health insurance premiums, director's remuneration, pensions, and other employee benefit information. Please refer to page 79 of the 2024 Q4 IFRSs Parent financial statements (statement of labor, depreciation, and amortization by function).

Financial Aid Received from the Government Grants

As of 2024, Macronix obtained a government preferential interest rate loan of NT\$19,498,000 thousand from the "Action Plan for Welcoming Overseas Taiwanese Businesses to Return to Invest in Taiwan". The loan will be repaid on an average monthly basis after the date of expiry. At the time of the borrowing, the fair value of the borrowing was estimated based on the market interest rate. The difference between the amount obtained and the fair value of the loan is NT\$206,470 thousand, which is regarded as a government low interest loan and recognized as deferred income. In 2024, Macronix recognized other income of NT\$13,176 thousand and the interest expense of the loan was NT\$45,564 thousand respectively.

5.2. Tax Policy

Macronix seeks to improve tax risks management, and is committed to ensuring information transparency and regulatory compliance. We also support government tax policies to drive economic development and sustainability.

Macronix's six guidelines for tax management

1. All operations are conducted in compliance with relevant tax laws and regulations in Taiwan.
2. Transactions between affiliated enterprises comply with the internationally recognized pricing principles announced by the OECD, and BEPS related regulations, so that the pricing policy of related parties complies with the arm's length principle.
3. In response to the global trend of anti-tax evasion, avoid involving countries with low tax rates in tax planning with the purpose of tax evasion.
4. Transparent reporting about tax information, submitting the Country-by-Country Report, Master File, and Local File to the tax authority, so that tax disclosure complies with laws, regulations, and guidelines.
5. Macronix's tax planning and decisions all take the effect of tax risks into consideration.
6. Establish a good interaction with the tax authority based on the principles of mutual trust and information transparency.

6. Sustainable Environmental Dimension

Macronix's ESH Policy	
◆	<u>Rights and Obligations:</u> Commits and guarantees all employees can work in a comfortable, safe and healthy environment, and provides employees and their representatives ample ESH consultation and participation, to use the best efforts fulfilling their duties and obligations regarding ESH.
◆	<u>Regulation Compliance:</u> Abide by the ESH regulations and thoroughly do real ESH practice.
◆	<u>Hazard Prevention:</u> Prevent pollution and potential damages by hazard identification, risk assessment, environmental impact analysis and hazardous sources control. Also, implement energy conservation, carbon reduction, greenhouse gas reduction, water conservation and waste reduction, etc.
◆	<u>Education and Training:</u> Provide employees with competitive and comprehensive ESH training programs for assuring them being able to implement the ESH works appropriately.
◆	<u>Sustainable Development:</u> Meet international Green Product requirements and implement environmental related substances management system. Ensure the sustainable development of Macronix's business operation and ESH works by effectively utilizing corporate resources to establish and continuously enhance ESH management system to meet interested parties.

6.1. Environmental Protection Management and Pollution

Prevention



Macronix has always embraced the principle of sustainable development. We see a sustainable environment as the foundation of our corporate culture, and we seek to protect the planet through concrete actions. Each year, we continue to reduce our energy consumption and carbon emissions, purchase “Green Mark” products, increase resource efficiency, and design green products. We actively promote energy and water conservation, waste reduction, process improvement, pollution control, green offices, resource recycling and reuse, ecological conservation, and educational training. We have adopted a proactive attitude toward complying with regulations and international standards to set up pollution prevention facilities such as wastewater treatment facilities, scrubbers, waste storage areas, toxic gas detectors, and soundproof walls, to prevent various types of pollution, including wastewater, air pollution, industrial waste, toxic chemical substances, and noise. Nevertheless, we go to great lengths each year to minimize the impact of our operations on the environment and enhance our

corporate competitiveness by raising our quality control criteria. Macronix did not receive any penalties in 2024 under our strict environmental quality monitoring.

The important environmental awards received by Macronix in 2024 are as follows:

- Certificate of Appreciation for the Joint Autumn Beach Cleanup Activity in the Taoyuan, Hsinchu, Miaoli, and Zhubei Areas / Hsinchu City Environmental Protection Bureau
- Certificate of Adoption of “Environmental Bikeway in the Air Quality Purification Zone / Hsinchu City Government

Macronix introduced and passed the ISO 14001 Environmental Management System Certification in 1997. We ensure that our environmental management systems fully comply with the Plan-Do-Check-Act (PDCA) operations of the ISO system to maintain a healthy and safe environment and continuously make improvements to reach our goal. Currently, the Macronix Headquarters, Fab 2, Fab 5 and the Test building have all passed the Environmental Management System (ISO 14001: 2015) Certification.



To ensure that a smooth communication channel is provided for environmental or other issues to both Macronix’s stakeholders and internal employees, we have contact persons to handle and respond to the valuable feedback that is provided externally or internally from the government, public, customers, investors, employees, and suppliers. In 2024, Macronix did not receive any environment-related complaints according to case statistics related to environmental complaints.

6.1.1. Water Resource Management

The main source of water for all Macronix's facilities is supplied by a third party, Taiwan Water Corporation, with water sourced from Baoshan Reservoir, Baoshan Second Reservoir, Touqian River (Lungen Weir), Yongheshan Mountain Reservoir and Shihmen Reservoir. Classified as a medium to low risk based on the AQUEDUCT Water Risk Atlas. Hence, water intake does not have any material effect on the water source. All of our plants have water storage facilities in coordination with the regulations of the Water Resources Agency, Ministry of Economic Affairs, which are for public and firefighting urgency use. The water storage facilities that were planned have all reached safe storage capacity. Since manufacturing semiconductors requires a large amount of ultrapure water, Macronix sets up an annual target for water consumption and reviews the water pressure condition to avoid wasting water resources. Moreover, water consumption is reviewed every quarter to ensure that risks remain under control. Macronix's total running water usage in 2024 amounted to 2,769 million liters, with 770 million liters in total water consumption and 1,999 million liters in total water discharge. Recycling discharged water has always been an issue of concern for Macronix. In addition to submitting water consumption data and water balance charts to the Hsinchu Science Park Bureau on a monthly basis, our internal units also monitor the process water recycling rate on a daily basis through wastewater recycling technology and the SCADA system in order to meet our water-saving target and improve the usage efficiency of water resources. In 2024, the total volume of process water recycled was 3,862 million liters and the recycling rate of the 8-inch wafer fab (i.e. Fab 2) reached 84.06%, while that of the 12-inch wafer fab (i.e. Fab 5) reached 88.10%.. Both Fabs were certified to meet the industry benchmarks (50~85% for the manufacture of integrated circuits industry) for the water recycling rate in 2023, and obtained the water recycling rate certification statement in 2024.

Macronix Annual Water Consumption Statistical Table

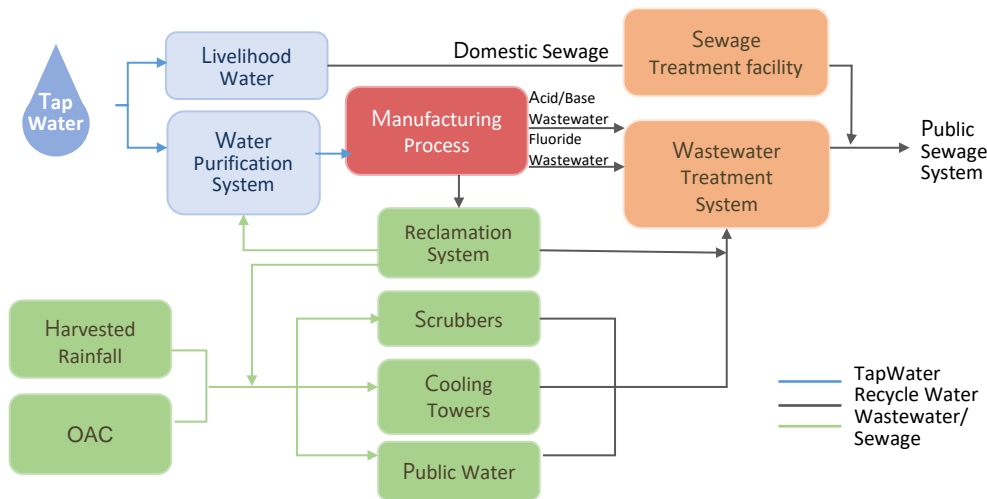
Item	2022	2023	2024
Total Water Withdrawal(Unit: million liters)	2,836	2,684	2,769
Total Water Consumption (Unit: million liters)	738	723	770
Total Water Discharge (Unit: million liters)	2,098	1,961	1,999
Recycled Process Water (Unit: million liters)	4,123	3,821	3,862

Process water recycling rate for the 8-inch wafer fab (%)	87.70	85.19	84.06
Process water recycling rate for the 12-inch wafer fab (%)	87.11	88.10	88.10
Recycling Rate (Unit: %)	85.66	87.03	86.70
Total Revenue (Unit: million NT\$)	43,487	27,624	25,883
Water Usage Intensity (Unit: million liters/million NT\$)	0.065	0.097	0.107

Note:

1. Total freshwater withdrawal = Total water withdrawal; Total freshwater discharge = Total water discharge
2. Unit: million liters = thousand cubic meters

Macronix Water Recycling Diagram



Hydraulic pressure index

- Hydraulic pressure index: Low to moderate (10-20%)
- Water Sources: Baoshan Reservoir, Baoshan Second Reservoir, Touqian River (Lungen Weir), Yongheshan Reservoir, and Shihmen Reservoir
- Receiving Water: Keya Creek
- Wastewater Treatment Unit: Wastewater Treatment Plant of the Hsinchu Science Park

Note: 1.Source: Water Resources Agency, Ministry of Economic Affairs.

2.Water pressure calculation is calculated using Aqeduct Tools.

Low	Low to Moderate	Moderate To High	High	Extremely High
(<10%)	(10-20%)	(20-40%)	(40-80%)	(>80%)

Wastewater generated from the manufacturing of semiconductors can be roughly divided into acid and alkaline wastewater and fluoride-containing wastewater, based on its characteristics. Our wastewater is properly treated in a wastewater treatment facility, and pH, BOD, COD, SS, and NH₃-N are regularly tested based on *the water quality standards of Hsinchu Science Park* to bring it into the allowable limit before being discharged into the third-party sewage system. The sewage system is connected to the park's wastewater treatment facility, where the wastewater is treated to higher water quality standards than the national effluent standard, and then discharged into Keya River through a special pipe. Therefore, there is no significant impact on the ecological environment. Other water resource management

measures include:

- ◆ Regularly tracking and managing the usage data of water resources
- ◆ Conducting risk assessment and management
- ◆ Determining if our manufacturing facility is located in an area with water shortages
- ◆ Promoting water resource utilization programs
- ◆ Entrusting certified organizations with sampling and analyzing the quality of discharged water twice a year
- ◆ Carrying out real-time monitoring of pH/fluoride concentrations of effluents and the pH of rainwater
- ◆ Confirming water quality by testing and sampling water in cooperation with Hsinchu Science Park Bureau
- ◆ Having environmental inspectors routinely examine the conditions of wastewater treatment and report the results in a timely manner to confirm that discharged wastewater meets regulatory standards
- ◆ Setting up a rainwater harvesting tank at headquarters to harvest rainwater, storing in the water tower and using it to water plants and flush toilets

In response to the ammonia reduction plan set up by the Hsinchu Science Park Bureau, Macronix has taken proactive measures to reduce the concentration of ammonia in effluents. For example, in 2015, our Fab 2 and Fab 5 plants began implementing measures, including reduction of materials, wastewater diversion, and improvements in the treatment system, such as setting up A/O-MBR.

Quality of Macronix's discharged water in 2024

Plant	pH	BOD (mg/L)	COD (mg/L)	SS (mg/L)	NH ₃ -N (mg/L)
FAB2	7.5	NA	34.4	58.6	11.5
FAB5	7.2	29.4	39.8	37.0	21.4
BE	8.7	69.0	154.0	38.0	32.2
Allowable limit	5-9	300	500	300	50

Note: Water quality data obtained from the data reported in the “Application Form for Channeling Business Wastewater (Sewage) into Dedicated Sewage Systems”

The ultra-pure water (UPW) consumption of Macronix Group in 2024 is 2.647 million tons, and the UPW consumption per unit product in 2024 is 91.803 cubic meters per wafer-square meter.

Explanation:

- I. The total UPW usage in 2024 is 2,647,243.08 m³, equivalent to 2.647 million tons (rounded to three decimal places).
- II. In 2024, the production of the Wafer Fab II is 386,136 pieces of 8-inch wafers, calculated as $386,136 \times (8 \times 2.54/100)^2/4 \times \pi = 12,356.352$; where $(8 \times 2.54/100)^2/4 \times \pi$ is rounded to three decimal places.
- III. In 2024, the production of the Wafer Fab V is 225,750 pieces of 12-inch wafers, calculated as $225,750 \times (12 \times 2.54/100)^2/4 \times \pi = 16,479.750$; where $(12 \times 2.54/100)^2/4 \times \pi$ is rounded to three decimal places.
- IV. The UPW usage of 2,647,243.083 m³ / total wafer production area of 28,836.102 m² = 91.803 m³/m²."

6.1.2. Air Pollution Prevention



Macronix does not use or discharge any ozone-depleting substances. All waste gases generated from manufacturing process are collected and classified via the gas collector and subsequently treated before being discharged. This process conforms to the government's regulations for environmental protection. The central gas emission treatment system at Macronix consists of three main systems: for general emissions, acid/alkaline gas emissions, and volatile organic compounds (VOCs). Waste gases are treated in professionally designed facilities, and emissions are released in accordance with statutory regulations. The plant is equipped with a continuous monitoring device for VOCs. We entrust certified organizations to test our air pollution every year. In 2024, the reduction rate of VOCs prevention equipment was 96.82% on average. Acid/alkaline emissions and VOCs emission concentration from VOCs exhaust ducts were less than 6 ppm. It is confirmed that they all meet the air pollution control and emission standards of the semiconductor manufacturing industry, with an emission reduction rate of 90% and an emission concentration less than 14 ppm.

Macronix's air pollutant emissions in 2024

Item/Plant	FAB2	FAB5	BE
PM	252.44	166.88	0
HAP	0.07	0.04	0
POPs	0	0	0
SOx	180.91	348.89	0
NOx	3644.72	3829.6	0
VOCs	5810.88	3941	269.83

Unit: kg/year

Note:

1. Emission data obtained from reports concerning the costs of preventing fixed sources of air pollution.
2. Calculation method for air pollutant emissions from stationary sources in public and private premises was being used.

Macronix manages the emission of waste gases generated from various types of transportation, such as shuttle buses for employees, public vehicles, and wafer transport vehicles:

- ◆ Employee shuttle bus to/from work: Vehicle providers include car rentals, which execute the management by requesting the party to sign a self-management agreement form (including maintenance plans, type of gasoline used, emission tests, etc.), and keep all signed documents.
- ◆ Corporate vehicle/wafer transport vehicle: The car rental companies are responsible for the related to rental car's maintenance and regular exhaust inspections.

Our factories are located within the Hsinchu Science Park. We are willing to fully cooperate in all matters required by the Science Park. Macronix's headquarters and Fab 5 are surrounded by factories, and nearby neighborhoods are concerned about unpleasant odors. The exhaust gas of each Fab of Macronix is properly treated before being discharged, so there should be no unpleasant smell.

6.1.3. Green Materials management

Management Approach	Impacts	<p>1. Actual impact: Material usage is carefully managed, taking into account not only price, quality, and economic efficiency, but also compliance with regulatory requirements as well as environmental, safety, and health standards.</p> <p>2. Potential impact: In response to sustainable development trends, changes in customer material requirements may change, potentially driving the need for technological transformation.</p>
	Short-term development direction	Provide stable quality for plant production.
	Medium and long-term development direction	Reduce the risks of raw material supply.
	Management method (Including Measures)	Conduct material requirement planning based on production plan, demand forecast confirmed by demand unit, project application, historical usage, inventory status and requisition status on a monthly basis
	Tracking the effectiveness of the actions	Monthly monitoring of raw material usage
	2024 Implementation Results	The proportion of renewable material usage is 0.24%
	Target in 2025	The proportion of renewable materials usage maintains over 0.2%
	Future targets (Short, Medium, and Long-Terms)	Continuously seek potential alternative recycled raw materials.

In terms of the use of raw materials, Macronix monitors the use of raw materials every month based on the permission issued by government to ensure that the use of raw materials is within the maximum approved amount of environmental protection permits. In addition, our engineering department often checks whether there are ways to reduce the use of materials based on process requirements, such as increasing the capacity of inner boxes to reduce the use of cartons; designing and reusing the leftover packaging materials to improve the protective and drop-resistance abilities of cartons; according to the quantity of shipments, reducing the use of filler materials in order to achieve the optimal amount of packaging.

As a semiconductor manufacturer, Macronix uses wafers the most. Due to the high purity of silicon wafers used in the semiconductor industry, there is currently no proper way to recycle and reuse wafers. Therefore, we do not use recycled materials. The consumption of silicon wafers, chemicals, gases, dosage amounts and packaging materials are as follows:

Materials	2022	2023	2024
Renewable Materials:Packaging Materials (Ton)	197.73	166.51	188.30
Non-renewable Materials (Ton)	86511.49	75866.62	77386.03
Total Amount of Materials Consumed (Ton)	86709.21	76033.13	77574.33
Percentage of Renewable Materials Consumed (%)	0.23	0.22	0.24

Note: Initially, raw material statistics only included the usage of silicon wafers and finished product packaging materials. In 2024, the statistics will expand to include chemicals, gases, and related raw materials for additives, thus revising the usage figures for 2022 and 2023. In 2022, non-renewable materials increased by 86,458.67 tons, and in 2023, non-renewable materials increased by 75,817.84 tons.

6.1.4. Waste Management

Macronix has completed the adoption of alternative materials and the improvement of the manufacturing processes regarding hazardous substances used in electronics that are of concern to the international community and specified in the EU RoHS (Restriction of Hazardous Substances) Directive. We received the IECQ QC 080000 Hazardous Substances Process Management System Certification in November 2007, which confirmed that our products comply with RoHS and customer requirements. Thanks to our thorough hazardous substance management system, we have been awarded green product certifications from many internationally renowned customers.

Product category	Scrapped products (metric tons)	Recycling rate (%)
IC	2.74	100
Wafer	12.53	100

Note: IC and Wafer are all recycled.

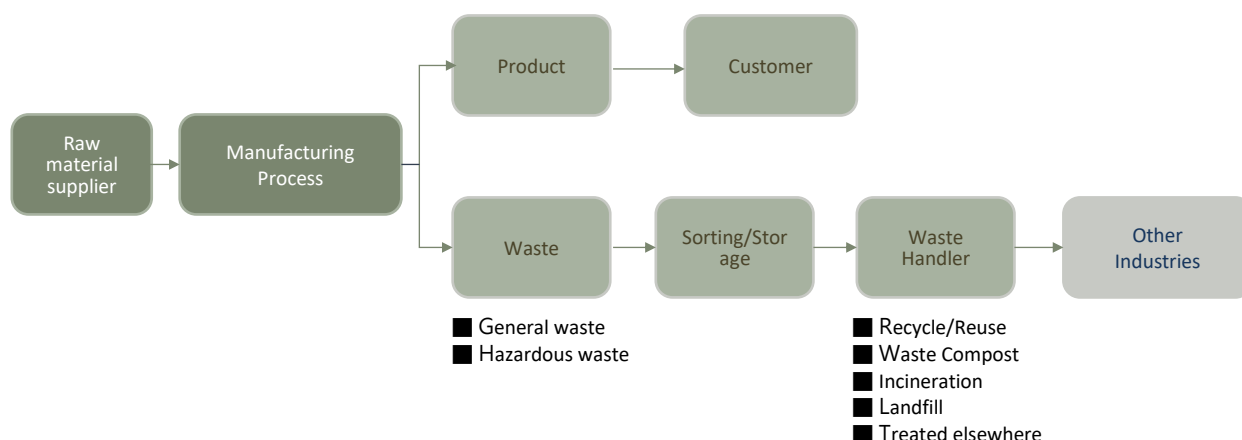
Our main consideration regarding waste management strategies is to recycle and reuse. Our waste production is categorized into general waste and hazardous waste, both of which are entrusted to qualified waste-treatment companies for subsequent waste treatment. Before entrusting the waste for the treatment, it is necessary to confirm whether the treatment method adopted by the entrusted company is appropriate, and the company must pass the relevant review procedures before being entrusted with the waste treatment. In view of the increasing emphasis of current government agencies on waste disposal, Macronix will continue to supervise and manage waste-treatment companies, and conduct their on-site audits. In 2024, Macronix initiated a total of 50 audits at selected new waste-treatment companies and already available ones. During the audits, not only the licenses of the companies were confirmed, but also their product and sales flow were recorded as the basis for evaluation. Furthermore, no incidents of severe leakage, related to the waste disposal, were reported in 2024.

The total waste disposal output in 2024 was approximately 11,441 tons, of which the majority of 56.4% was hazardous waste. Recycling/reuse rates reached 95.1% (general waste) and 99.8% (hazardous waste), and the total recycling/reuse rate reached 97.8%. Landfill treatment, which has a heavy burden on the environment, was 20 metric tons of waste, and the landfill rate was only 0.2%, which shows that Macronix takes environmentally friendly methods of waste disposal as a priority. In the disposal process there was no waste was exported overseas.

Item	2022	2023	2024
Recycled/Reused Amount (metric tons)	11,044	9,875	11,185
Non-Recyclable Amount (metric tons)	259	231	256
Total Amount of Waste (metric tons)	11,303	10,106	11,441
Recycling/Reuse Rate (%)	97.7	97.7	97.8
Total Revenue (million NT\$)	43,487	27,624	25,883

Waste output intensity (million tons/million NT\$)	0.260	0.366	0.442
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To effectively control waste generated by Macronix and the recycling rate, Macronix has set up annual targets and reviews them every quarter to ensure that the operations comply with the given targets. Macronix reduces waste by cutting down the consumption of materials through the joint efforts of engineering departments based on a feasible reduction plan.

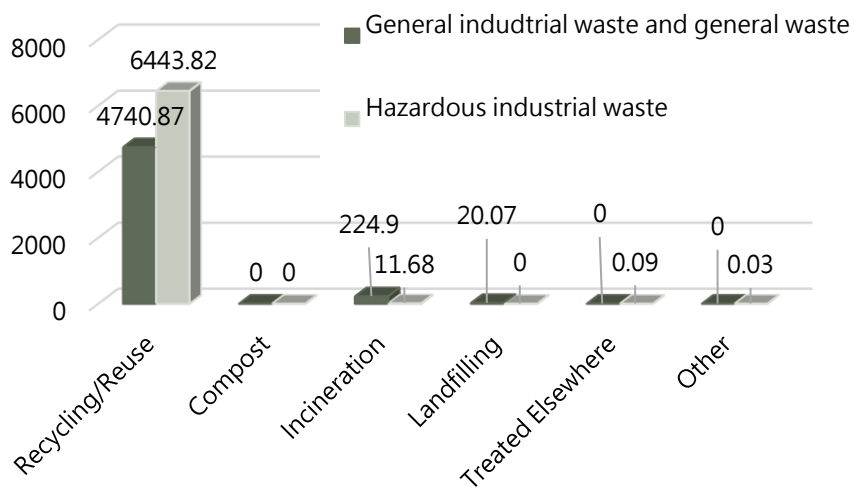


▼ Waste Produced by Macronix in 2024

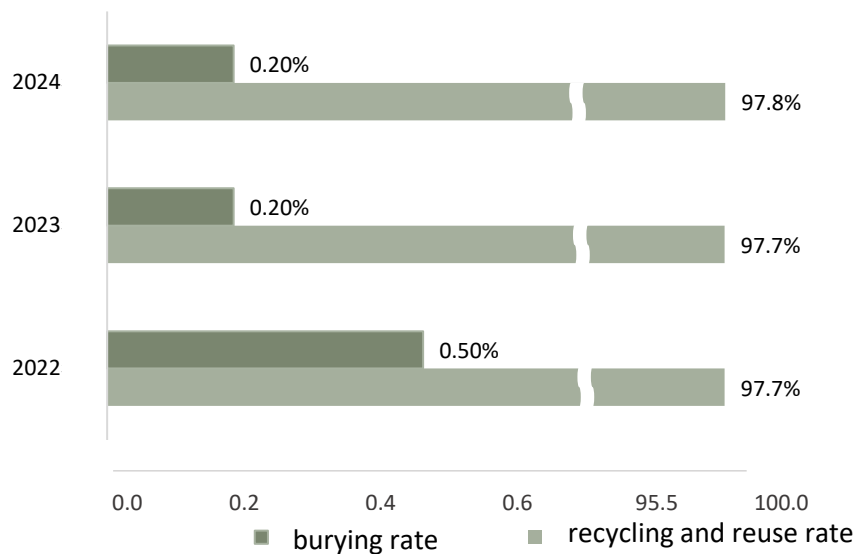
Item	General industrial waste and general waste	Hazardous industrial waste
Recycling/Reuse (metric tons)	4,740.87	6,443.82
Compost (metric tons)	0	0
Incineration (including energy recycling) (metric tons)	224.90	11.68
Landfilling (metric tons)	20.07	0
Treated elsewhere (metric tons)	0	0.09
Other (metric tons)	0	0.03
Total (metric tons)	4,985.84	6455.61
Percentage (%)	43.6	56.4
Recycling rate (%)	95.1	99.8

1. The type, quantity and weight of waste generated in the plant are the same as when it left the plant.

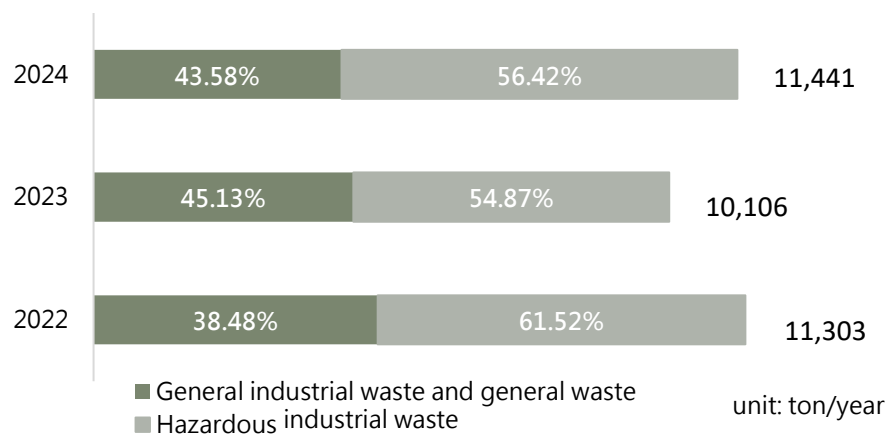
2. The weight of waste is calculated based on the statistics from the IWR&MS



▼ Percentage of Industrial Waste Recycled/Buried



▼ Total Waste Generated

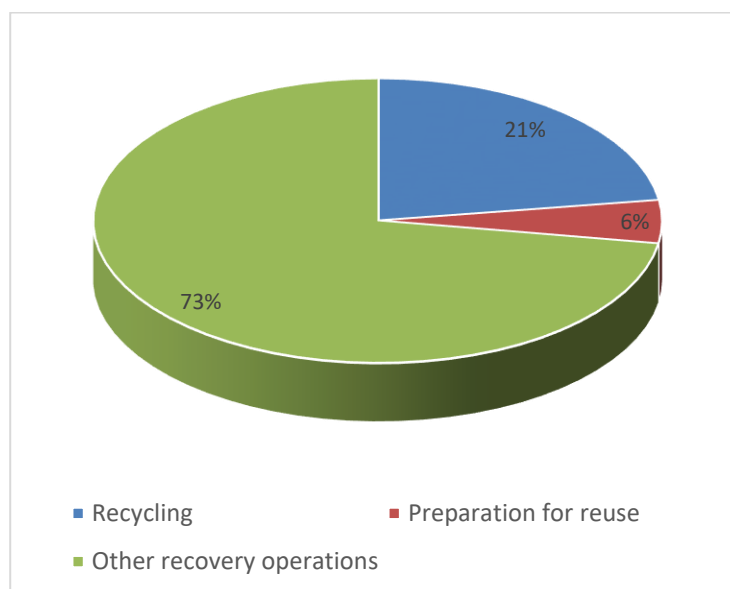


▼ 2024 Macronix recycling waste classification

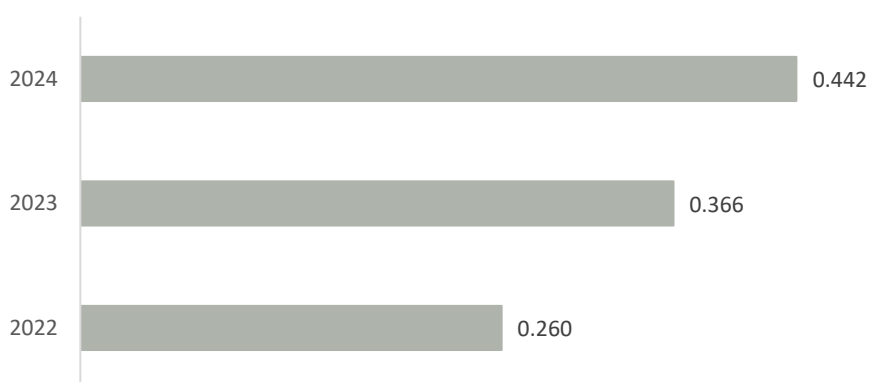
Item	General industrial waste and general waste	Hazardous industrial waste
Recycling	2,198.54	148.52
Preparation for reuse	35.92	588.99
Other recovery operations	2,506.4	5,706.31
Total	4,740.87	6,443.82

Note: The type, quantity and weight of waste generated in the plant are the same as when it left the plant.

▼ Recycling Waste Classification



▼ Waste Intensity





6.2 Energy and Climate Change Management

6.2.1 Climate Change Risks and Opportunities

Due to the increase in global temperatures caused by climate change, climate abnormalities have occurred, resulting in many environmental problems, which in turn affect normal operations and production activities of enterprises. From the perspective of an enterprise, Macronix thinks about improvements and decisions that Macronix can make regarding the climate change. At the same time, it considers the challenges in the sustainability brought by climate change both to Macronix and the supply chain. In 2021, with reference to the Task Force on Climate-related Financial Disclosures (TCFD) guidelines, Macronix assessed the impact to itself and introduced TCFD. Professional members from each center are assembled to form a TCFD task force. The task force uses the TCFD framework to identify climate risks and opportunities, devises management methods for impact items, and uses scenario analysis to quantify the financial impact of material risk opportunities, to take relevant countermeasures to reduce the impact on Macronix's operations.

I. Items for TCFD disclosure

Four Cores	Disclosure Recommendations	Response
Governance	a. Describe the board's oversight of climate-related risks and opportunities.	a. In Q1 of each year, the Environment Safety and Health Center will collate Macronix's performance, achievement status, and implementation results from the past year over all aspects of sustainability, including carbon inventory management, and report to the Board of Directors. Our measures include: material issues such as performance in sustainability, results of communication with stakeholders, management of energy and climate change.
	b. Describe management's role in assessing and managing climate-related risks and opportunities.	b. The TCFD task force is composed of members appointed by the directors of each center; it jointly reviews internal and external risks and formulates risk response strategies for material risk issues.
Strategy	a. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	a. In the climate risk and opportunity analysis period of Macronix, it has defined the short-term as the next 1 year, the medium-term as the next 1–8 years, and the long-term as the next 8 years and after. The main climate risks and opportunities at the company level were collected, identified and analyzed by the TCFD task force based on their job characteristics. Sources include carbon taxes that may occur in the medium term and risks of transition to low-carbon technologies, as well as effects of average temperature changes; potential long-term risks are the risks of transition to cap & trade, and the physical risk of rising sea levels. As for opportunities, the production process belongs to the short-term, low-carbon products/services and adaptations/solutions belong to the medium-term, and the change of customer behavior and search for new business opportunities may be long-term development opportunities for Macronix.

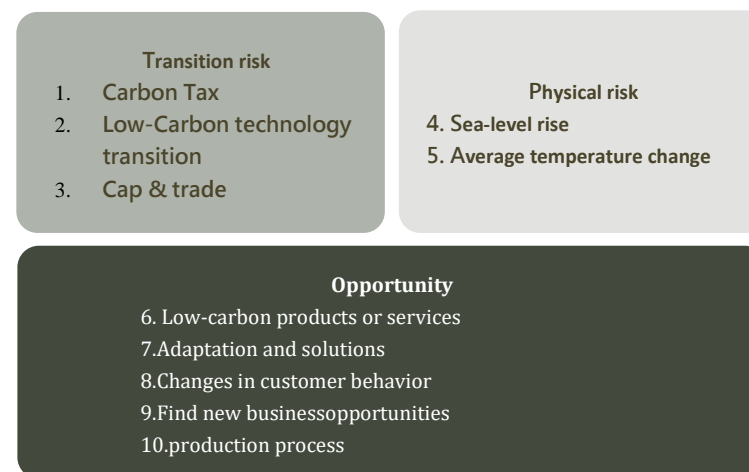
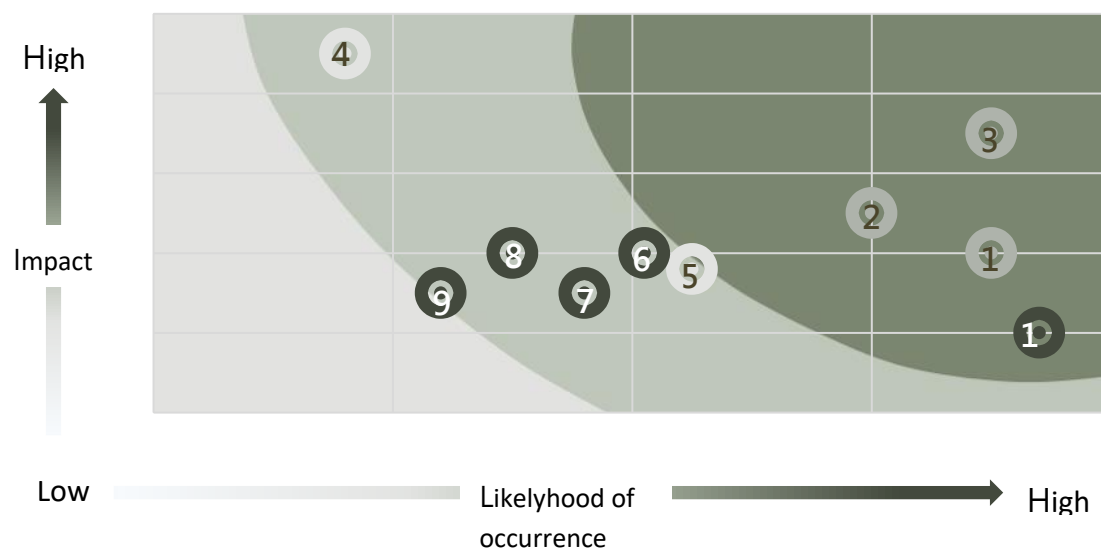
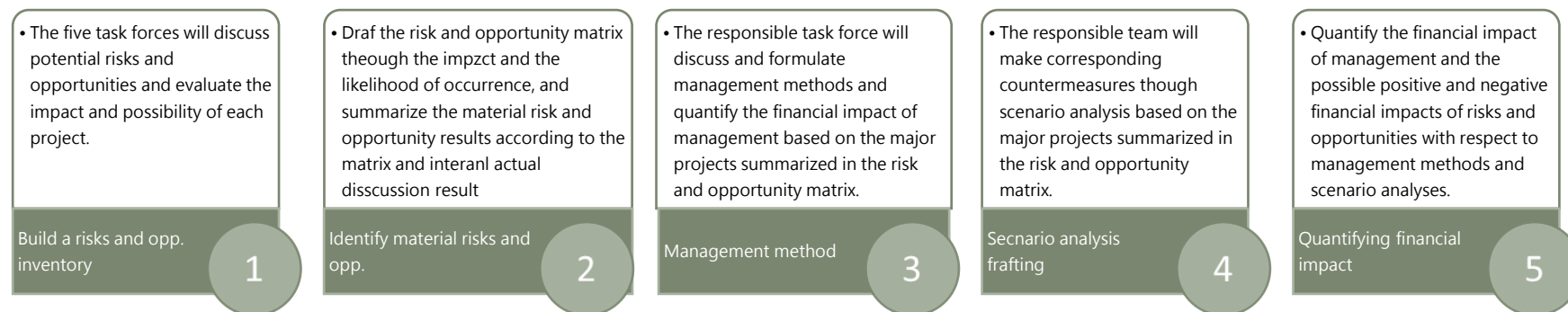
	<p>b. Describe the impact of climate-related risks and opportunities on the organization's business, strategy, and financial planning.</p> <p>c. Take into consideration different climate-related scenarios</p>	<p>b. Macronix will face transformation risk that will directly impact operating costs. Hence, we continually track international trends and regulatory developments, and ensure that we are 100% in compliance with government laws for climate management. In terms of green energy management, we intend to evaluate installation of solar panels and formulation of a green energy purchasing policy. For technology transformation, we are actively purchasing low-carbon (new process) machinery, hoping to lower the carbon emission of production and operation of products, and producing low-carbon products to enhance our competitiveness for sustainability. As for long-term risks, we intend to establish a weather forecast and refrigerating machine optimization mechanism, actively replace machinery with more efficient one.</p> <p>c. Forecasting emissions growth based on historical data and future operational growth, Macronix assumes three types of external pressures from rising temperatures: 1.5°C, 2°C, and NDC to estimate the future carbon-cost expenditure, including carbon fees, carbon tax, renewable energy, etc., to remain alert to possible financial impact on Macronix.</p>
Risk Management	<p>a. Describe the organization's processes for identifying and assessing climate-related risks</p> <p>b. Describe the organization's processes for managing climate-related risks.</p> <p>c. Describe how climate-related risks are integrated into the organization's overall risk management.</p>	<p>a. Based on the correlation between climate-related risks and the Macronix's various businesses, Macronix divides the TCFD task force into five dedicated task forces: customers, finance, facility, supply chain, and logistics support. The members of each task force include middle and senior management. Each task force, based on executive business and professional judgment, identifies, evaluates, manages and establishes the risks and opportunities that Macronix may face, and formulates a list of such risks and opportunities. (See the figure for detailed process: TCFD evaluation process)</p> <p>b. The TCFD then reports the identification results to the Sustainable Development Committee for reporting to project management and the Board of Directors for driving the relevant policy.</p> <p>c. Each task force will formulate a material risk management approach based on feasibility, and assess the financial impact and impact on Macronix's operations. (such as the material risk and opportunity analysis and management table)</p>
Metrics and Targets	<p>a. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process</p> <p>b. Disclose Scope 1, Scope 2, and Scope 3 greenhouse gas (GHG) emissions</p>	<p>a. After each task force completes identification, the Environment Safety and Health Center will consolidate the results and rank them by comprehensive consideration of the impact strength (5 levels) and likelihood of occurrence (7 levels) and identify material risks by completing a risk matrix diagram. (See the figure for detailed process: TCFD evaluation process)</p> <p>b. Please refer to chapter 6.2.2 Energy Management and chapter 6.2.3 Climate Change Management.</p>

<p>c. Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.</p>	<p>c. Macronix has set a long-term target of Net Zero Emissions by 2050 and planned the reduction path as a regular performance inspection indicator. Each plant will formulate carbon reduction projects based on the reduction path and execute them according to the budget review, perform an organizational greenhouse gas inventory and verification every year, and track the progress of carbon reduction on an annual basis, with 5-year as a period for the review of carbon reduction performance and 2025 as the first target inspection point.</p>
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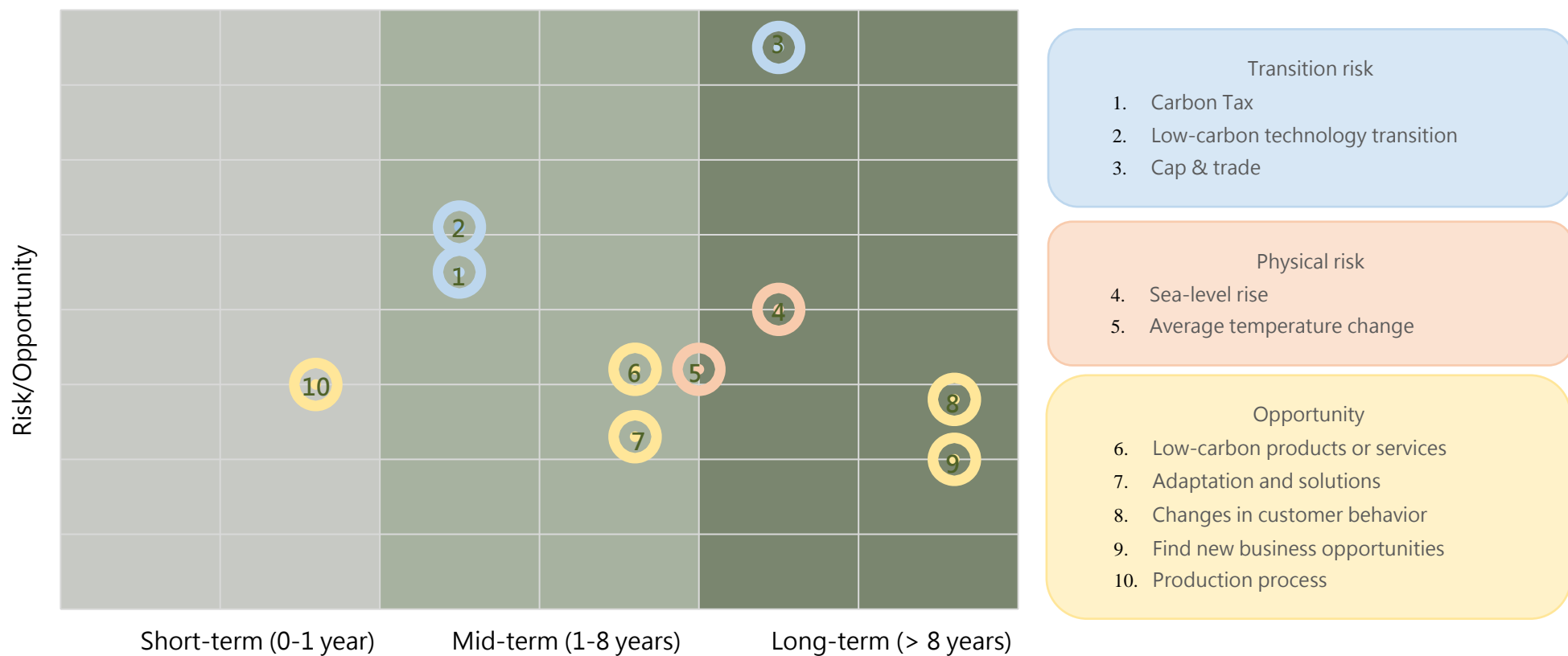
II. Climate risk and opportunity matrices

Climate risks and opportunities are identified based on “likelihood of occurrence” and “impact strength” to determine their risk level. Among major risks with higher impact, preventive measures and response plans will be formulated.

TCFD Evaluation Process



The following figure is arranged according to occurrence time; upcoming risks and opportunities may be seen in time series



III. Material risk and opportunity analysis and management table
Material risk analysis and management table

Aspect	Material risk	Upstream suppliers impact analysis	Macronix impact analysis	Downstream customers impact analysis	Financial impact	Response management measures	Management Costs
Transition risk/regulatory aspect	Cap & trade	<ol style="list-style-type: none"> Product shipment performance and cost increase are affected by carbon emission limits. Increase in management and production costs. 	<ol style="list-style-type: none"> Macronix currently has two fabs that may be included as control targets for total volume control/emissions trading. In order to comply with total volume control and regulatory requirements, Macronix needs to control emissions, which may affect production capacity and orders. The introduction of carbon reduction measures to reduce carbon emissions results in higher production costs. 	<ol style="list-style-type: none"> Customers may turn to other alternative suppliers due to Macronix's reduced supply. Customers request Macronix to actively reduce carbon emissions. 	The market transaction price or cash generated by excess emissions will increase Macronix's direct operating costs	<ol style="list-style-type: none"> Designate dedicated personnel to continuously track relevant regulations and analyze impacts Greenhouse gas inventory and continuous tracking of carbon emissions Implement energy saving projects Implement carbon reduction projects Organize a Net-Zero Emission and renewable energy task force Increase the utilization rate of renewable energy Evaluate and 	The implementation of measures and manpower have led to an increase in Macronix's direct operating costs

						secure reduction credits or carbon credits	
	Carbon fees (tax)	<ol style="list-style-type: none"> 1. The upstream suppliers pay carbon fees and fines, and transfer the relevant fees to increase the purchase cost. 2. The production volume of the suppliers may be capped, resulting in the limited supply or the extension of supply period. 	<ol style="list-style-type: none"> 1. The two current fabs of Macronix are emission sources that should be accounted and registered, and are estimated to be the first batch of carbon fee collection targets. 2. In order to reduce the carbon fees impact, the carbon fees and the cost of carbon reduction measures will be weighed to implement the carbon reduction plan. 3. Controlling emissions, which may affect production capacity and order delivery. 	<ol style="list-style-type: none"> 1. The increase in product costs has reduced competitiveness. 2. Control of production capacity and delivery schedule due to emission reduction. Failure to meet customer expectations will affect customer reputation and orders. 3. Customers request Macronix to actively reduce carbon emissions. 	Macronix's direct operating costs increase	As above.	The implementation of measures and manpower have led to an increase in Macronix's direct operating costs

Transition risk/ technical aspect	Low-carbon technology transition	<ol style="list-style-type: none"> Suppliers develop low-carbon products or technologies to help Macronix reduce indirect emissions. The cost of supplier R&D and materials will increase. 	<ol style="list-style-type: none"> To meet market expectations for energy conservation and carbon reduction in manufacturing may lead to adjustments in process-related technologies. The introduction of new technologies or machines may increase production costs. 	<ol style="list-style-type: none"> Customers may request Macronix to provide products that help with lower carbon emissions. Customers request Macronix to reduce carbon emissions at the organization and product levels. 	Company R&D costs increase	Introduction of new low-carbon or gas-reducing machines and respective process adjustment	The implementation of measures and manpower have led to an increase in Macronix's direct operating costs
Physical risk/long term	Average temperature change	<ol style="list-style-type: none"> Affected by the increase in energy consumption, the production cost increases. Increasing investment and production costs. 	The rise in average temperature will lead to an increase in air conditioning load, power consumption, and electricity expenses.	<ol style="list-style-type: none"> As a result of cost increase, the selling price has increased, resulting in decrease in product competitiveness. Customers request Macronix to actively reduce carbon emissions. 	Macronix's direct operating costs increase	Establishing a weather forecast and refrigerating machine optimization mechanism	The implementation of saving energy has led to a decrease in Macronix's direct operating costs

	Sea-level rise	<ol style="list-style-type: none"> 1. The affected suppliers cannot produce normally or the transportation is interrupted. 2. Suppliers establish measures to avoid operational interruptions, such as off-site backup and inventory increase, which will increase operating costs. 	<p>If the supply chain factory is shut down and causes production interruption, Macronix will continue to strengthen its continuous operation mechanism, such as maintaining appropriate inventory and increasing the number of suppliers to diversify risks.</p>	<p>Material or transportation disruptions may affect product delivery schedules, which may in turn affect customer reputation and orders.</p>	<p>Macronix's direct operating costs increase</p>	<p>Require a more than one source (2nd source) for suppliers that are assessed as being high risk.</p>	<p>The implementation of manpower has led to an increase in Macronix's direct operating costs</p>
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Material opportunity analysis and management table

Aspect	Material opportunity	Upstream suppliers	Macronix	Downstream customers	Financial impact	Response management measures	
Products and services	Low-carbon products or services	<ol style="list-style-type: none"> Require suppliers to provide low-carbon (mining) products and raw materials, thereby reducing Macronix's supply chain carbon emissions. Low-carbon raw materials can meet the expectations of Macronix and stakeholders. 	Under the responsible consumption model guided by climate change, Macronix's existing and future product lines are all low-carbon products. If it continues to develop, it will provide customers with a higher diversity of low-carbon products and create higher sales growth for Macronix.	<ol style="list-style-type: none"> Early access into the customer market with low carbon emission requirements will help increase the sales volume of products. Providing diversified products and assisting existing customers to move into the low-carbon emission market to consolidate customers' demand. Satisfying customers' needs and enhancing partnership. 	Failure to align with the low-carbon transition may result in reduced revenue from low-carbon products	<ol style="list-style-type: none"> Existing and future product lines are already low-carbon products, and they will continue to be developed with the existing management methods. Perform product carbon footprint inventory and verification, and continuously improve carbon footprint. Provide customers with reliable international verification information. 	<ol style="list-style-type: none"> Approximately 10% to 15% of Macronix's annual revenue is invested in all research and development activities Low-carbon products contribute to the growth of sales on the customer side
	Changes in customer behavior	Low-carbon raw materials can meet the expectations of Macronix and stakeholders.	Macronix has more than 30 years of industry experience and is one of the leading manufacturers of non-volatile memory IC; it is able to take the lead in cooperation in future low-carbon trends.	Meet Macronix's needs and enhance partnership.	Failure to align with the low-carbon transition may result in reduced revenue from low-carbon products	Continue to pay attention to the information and regulations related to low-carbon products, and frequently exchange	Low-carbon products generate higher gross margins

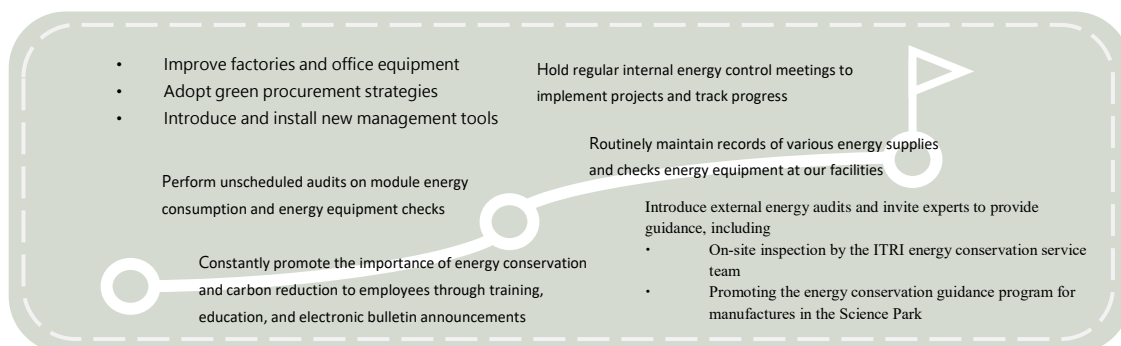
					opinions with customers.	
Adaptation and solutions	<ol style="list-style-type: none"> 1. Require suppliers to provide low-carbon (mining) products and raw materials, thereby reducing Macronix's supply chain carbon emissions. 2. Strengthen supply chain climate resilience. 	Macronix's proprietary technology, abundant experience, and its existing engineering development platform are sufficient to quickly respond to adaptation and solutions of low-carbon products.	<ol style="list-style-type: none"> 1. Early access into the customer market with low carbon emission requirements. 2. Strengthen the competitiveness of the customer consumption market. 	Failure to align with the low-carbon transition may result in reduced revenue from low-carbon products	<ol style="list-style-type: none"> 1. Listen to customer requirements and ideas, respond with suitable products or adjustments 2. Establishing a weather forecast and chillers optimization mechanism in response to climate instability 	<ol style="list-style-type: none"> 1. Sales growth generated on the customer side 2. Reduce operating costs

Market	Find new business opportunities	<ol style="list-style-type: none"> 1. Increase potential new applications. 2. Find new business opportunities from suppliers to reduce the total carbon emissions of Macronix's supply chain. 	Macronix is one of the leading manufacturers of non-volatile memory IC, especially in terms of quality and mastery of proprietary technology, which are conducive to the pursuit of emerging energy-saving and environmental protection applications and opportunities: Internet of Things (IoT), Bluetooth electronic applications, portable consumer electronics, assistive health care electronics, etc.	<ol style="list-style-type: none"> 1. Increasing potential new customers. 2. The customer's brand image is improved, and supply chain is in line with the goal of energy conservation and carbon reduction, which in turn enhances Macronix's competitiveness. 	Failure to align with the low-carbon transition may result in reduced revenue from low-carbon products	Continue to communicate with international customers and attempt to cooperate in new solutions.	Revenue growth generated from new business models
Resource efficiency	Production process	<ol style="list-style-type: none"> 1. In line with the low-carbon trend of supply chain. 2. Provide recyclable raw materials or develop new technologies. 	In order to reduce the negative impact of the value chain on climate, Macronix actively adopts processes with higher efficiency in resource input, reduces waste generation, improves product yield, saves costs and shortens delivery time.	<ol style="list-style-type: none"> 1. Reduce supply chain carbon emissions for customers. 2. Meet customers' expectations for high-efficiency, high-quality, and low-carbon products. 	Failure to align with the low-carbon transition may result in reduced revenue from low-carbon products	<ol style="list-style-type: none"> 1. PFC process optimization 2. Reduction of exhaust from factories 3. Adoption of PFC reduction equipment 4. Reduce chemical use at source 5. Process recipe engineering changes to speed up turnaround time (TAT) of production 	Improving resource efficiency can reduce operating costs

6.2.2 Energy Management

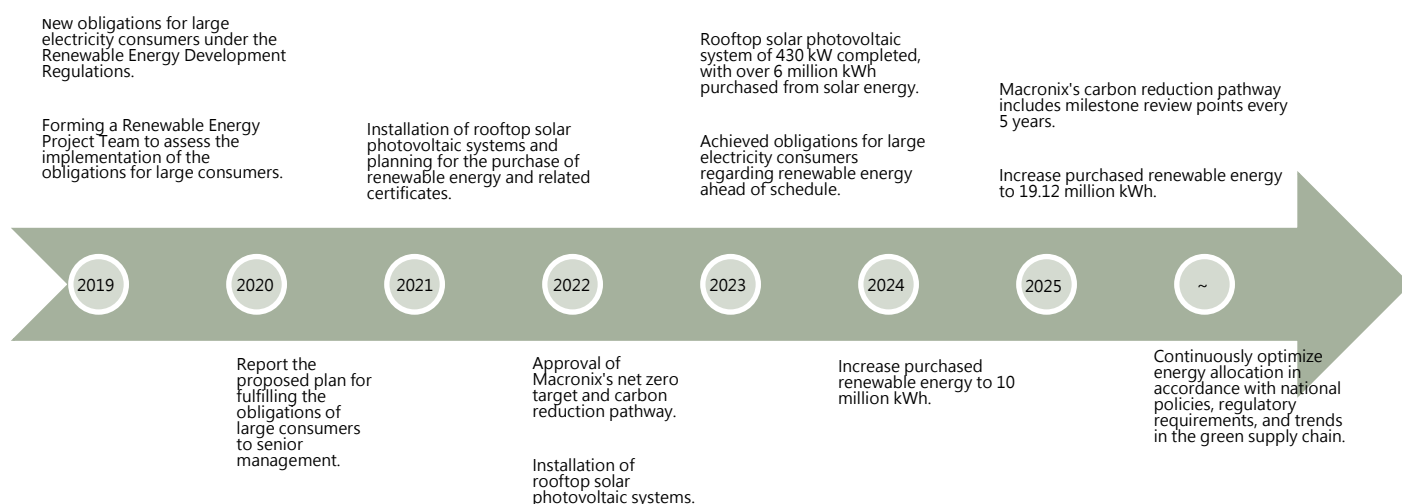


Macronix is dedicated to reducing energy use and consumption every year. We follow the instructions provided by the Energy Administration, Ministry of Economic Affairs each year to report our energy conservation audit system for energy users, as well as our energy use status from the previous year. Furthermore, we officially formed the Macronix “Energy Saving Service Group” in 2008 to carry out various energy conservation activities, implementing energy management in various aspects. Over the years, work activities in this domain have been as follows:



Key Tasks of Macronix Energy Saving Service Group

The Development Journey of Renewable Energy at Macronix



In 2024, the total energy consumption reached 2,037,130 GJ, in which the power consumption from the grid hit 1,909,576 GJ, accounting for 98.0% of the total power consumption. Purchased renewable energy and self-generated photovoltaics for self-use amounted to 38,782 GJ, accounting for 2.0% of total power consumption.

Energy Consumption within Macronix

Item		2022		2023		2024	
		Consumption (GJ)	Percentage (%)	Consumption (GJ)	Percentage (%)	Consumption (GJ)	Percentage (%)
1	Natural gas	68,871	3.69	86,354	4.40	87,047	4.27
2	Diesel fuel	824	0.04	843	0.04	1,193	0.06
3	Liquid Petroleum Gas(LPG) used in kitchens and dormitories	337	0.02	246	0.01	260	0.01
4	Amount of gasoline used	250	0.01	262	0.01	273	0.01
5=1+2+3+4	Non-renewable fuel consumption	70,282	3.76	87,705	4.46	88,773	4.35
6	Renewable fuel consumption	0	0	23,416	1.19	38,782	1.91
7	Purchased electricity consumption	1,797,377	96.24	1,850,902	94.34	1,909,576	93.74
8=1+2+3+4+6+7	Total energy consumption (GJ)	1,867,660	100	1,962,022	100	2,037,130	100
9	Total Revenue (million NT\$)	43,487		27,624		25,883	
8÷9	Energy intensity (GJ/million NT\$)	43		71		79	

Note: (1) Energy consumption unit: GJ ; (2) Data obtained from GHG inventory data, including the power consumption of subsidiaries' offices in Macronix headquarters. (3) The heating values used for calculations are based on the GHG emission factor management form. 4) Renewable fuel comes from purchased solar energy and self-generated solar energy for internal use; (5) The purchased electricity consumption is sourced from Taiwan Power Company

Macronix has implemented various energy-saving projects over the past few years, including projects focusing on the chiller system, power system, and illumination equipment, all of which achieved significant results. The energy-saving strategy in 2024 mainly focuses on energy saving of air conditioners, chiller systems, and energy conservation through equipment operation optimization. A total of 40 energy-saving plans were implemented. The total energy savings recognized in 2024 reached 9,104,084 kWh (32,775GJ), which is equivalent to a reduction of 4,315 metric tons of carbon dioxide equivalent emissions.

Macronix's Energy Conservation Measures in 2024

Energy Conservation Items	Energy conservation amount (kWh/year)	Carbon reduction (tonCO ₂ e)	Energy conservation contribution ratio (%)
Air conditioner energy conservation (17 items)	3,410,991	1,617	37.47
Equipment operation adjustments (6 items)	1,972,922	935	21.67
Chiller energy conservation (3 items)	1,872,981	888	20.57
Cooling tower energy conservation (4 items)	1,062,417	504	11.67
Motor energy conservation (4 items)	404,033	192	4.44
Lighting energy conservation (5 items)	208,474	99	2.29
Other (1 item)	172,265	82	1.89
Total	9,104,084	4,315	100

Note:

1. Data is obtained from the energy audit reports; the type of energy conserved in each item is electricity.
2. The amount of energy conserved is compared against the amount of energy consumed before improvements were made
3. Energy conservation contribution ratio = Number of kWh conserved for each item / Total number of kWh conserved

6.2.3 Climate Strategy

Management Approach	Impacts	<ol style="list-style-type: none"> 1. Actual impact: Green supply chain requires companies to plan and implement greenhouse gas reduction targets and measures, and the related response costs have begun to increase 2. Potential impact: Climate Change Response Act came into effect, the country's 2050 net zero emissions target will be incorporated, and mechanisms such as carbon fee collection and voluntary reduction plans will be added, the future response costs may also rise
	Short-term Development Direction	<ol style="list-style-type: none"> 1. Conduct inventory of the amount of Scope 3 emissions and evaluate the amount of value chain emissions 2. Continue to encourage energy conservation and carbon reduction, and seek possible solutions 3. Establish roof solar power generation equipment for self-use and purchase renewable energy to increase the use ratio of renewable energy
	Medium and long-term development direction	<ol style="list-style-type: none"> 1. Continue to implement the process fluorinated gas reduction plan 2. Minimize energy loss within Macronix and reduce GHG emissions 3. Produce or purchase renewable energy and certificates
	Management method (Including Measures)	<ol style="list-style-type: none"> 1. Designate dedicated personnel to continuously track the changes in regulations and analyze possible impacts 2. Greenhouse gas inventory and continuous tracking on an annual basis 3. Implement energy saving projects on an annual basis 4. Implement carbon reduction projects on an annual basis 5. Organize a Net-Zero Emission and renewable energy task force and track progress and performance on a regular basis 6. Increase the utilization rate of renewable energy 7. Evaluate and secure reduction credits or carbon credits
	Tracking the effectiveness of the actions	<p>External: Perform inventory registration and inspection in accordance with the requirements of Climate Change Response Act</p> <p>Internal: Organize the Net-Zero Emission and renewable energy task force to implement project management, comply with internal greenhouse gas related management standards, comply with ISO 14064-1, ISO 14064-2 and ISO 14001 management systems</p>
	2024 Implementation Results	<ol style="list-style-type: none"> 1. Annual target results: Greenhouse gas emissions in 2024 decreased by 2.0% compared with 2023 2. Short-term target results: The target review years of 2024 and 2025 involve 12,000 tons CO₂e. It is expected that the target can be achieved in 2025 with the implementation of reduction measures, including: the installation of fluorine gas abatement equipment, the enhancement of the utilization rate of green energy and the implementation of energy-saving measures.
	Target in 2025	A 20% reduction compared to the estimated carbon emissions in 2025 under a business-as-usual (BAU) scenario.
	Future targets	Short-term: A 20% reduction compared to BAU in 2025. Medium

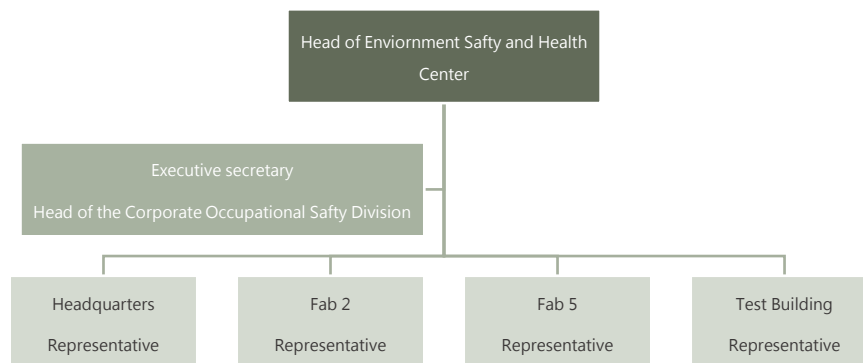
(Short, Medium
and Long- Terms)

and long-term: Achieve Net Zero Emission in Taiwan by 2050

In response to the trend of GHG reductions control and reduction in the supply chain due to global warming, Macronix began planning for GHG emissions inventory, control, and reduction in 2000 and obtained the 2005 ISO 14064-1 GHG emissions verification statement in 2007.

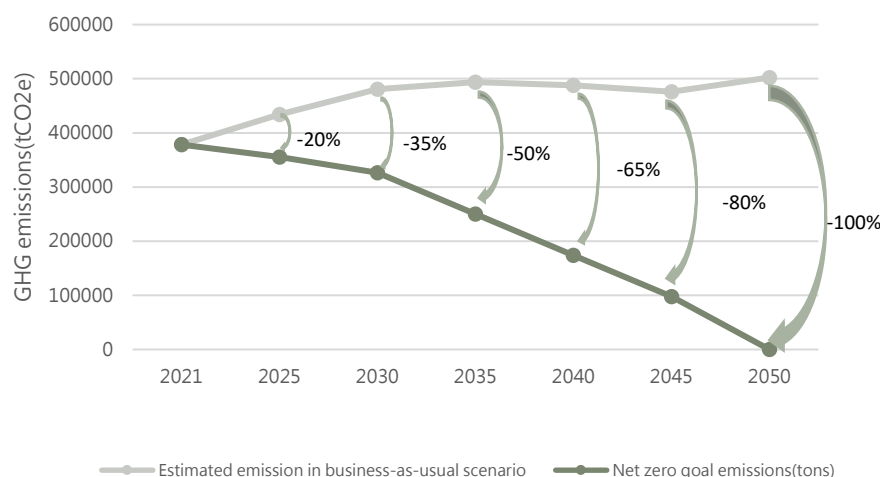
We established the management organization to manage GHG according to ISO 14064-1 verification standards, as illustrated below. Through the complete management system, we performed thorough checks on the energy use conditions in our facilities and offices, and thereby established inventory records and internal procedures for GHG inventories. Therefore, we are able to use the information as a basis for selecting alternative production technologies with reduced energy consumption and GHG emissions in order to achieve our goal in this respect. Ozone-depleting substances (ODS) controlled by the Montreal Protocol are identified during the GHG inventory, but are not included in emissions according to regulations of the Ministry of Environment.

▼ Macronix Greenhouse Gases Management Organization Chart



In response to global climate change and carbon reduction trends and in line with the national goal of Net-Zero Emission by 2050, Macronix also planned a carbon reduction pathway in 2022, reviewed and approved the long-term carbon reduction goal of Net-Zero Emission by 2050, focusing on manufacturing process improvement, energy efficiency enhancement, increasing the use ratio of renewable energy, and planning for carbon credit acquisition. In addition, we also actively evaluate the participation in government-guided projects. In 2018, we participated in the Industrial Development Bureau's "Low Carbon Technology Industrial Application Subsidy Project", and completed the Fab 5's project plan for the newly installed point of use (POU) GHG abatement equipment for the manufacturing machines. We applied to the Ministry of Environment for the registration of our GHG offset project in 2019. The project passed review of the Ministry of Environment at the end of 2020, and completed the first monitoring report and verification of the reduction quota in 2022. Macronix filed the first application for reduction credits with the Ministry of the Environment in November 2023. On October 28, 2024, a reduction quota of 8,836 metric tons of carbon dioxide equivalent (tCO₂e) was approved.

▼ Macronix Carbon Reduction Pathway Planning



All of Macronix’s plants completed ISO 14604-1 Scope 1, 2, and 3 inventory and third-party verification in 2024. In accordance with the operation control method, Macronix calculated the 7 kinds of GHGs including CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, and NF₃. In response to the Ministry of the Environment's announcement of “Greenhouse Gas Emission Factors” on February 5, 2024, which became effective immediately, the Global Warming Potential (GWP), for the calculation of GHG emissions in 2023 is based on the IPCC AR5 version, while the GWP value for the calculation of emissions before 2022 is based on the IPCC AR4 version. As a result, Macronix adjusted the base year for Scope 1 and Scope 2 to 2023. Information on the base year: total emissions were 375,001.280 tCO₂e, with Scope 1 accounting for 32.1%, and Scope 2 accounting for 67.9%. In addition, we began to compile the data of indirect GHG emissions in addition to imported energy at the end of 2019 to provide a more complete GHG inventory and monitor GHG emissions of our value chains. The first verification in accordance with ISO 14064-1:2018 was conducted in 2021. The total indirect GHG emissions excluding imported energy reached 204,910.0493 tCO₂e in 2024 (as the base year of Scope 3). Most indirect GHG emissions were generated from the Category 3 - products (including purchased goods and services) used by the organization and Category 4 - transportation. Since the value chain items covered by Scope 3 will be included in the inventory year by year according to the accuracy and availability of data, the base year of Scope 3 will vary with the addition of new calculation items.

The inventory and assurance of GHG emissions of the parent company (Unit: tCO₂e/year)

Data Coverage	Scope	2023				2024			
		Carbon emissions (tCO ₂ e)	Percentage (%)		Intensity (tCO ₂ e/revenue of NT\$ Million)	Carbon emissions (tCO ₂ e)	Percentage (%)		Intensity (tCO ₂ e/revenue of NT\$ Million)
			Scope 1 + 2	Scope 1 + 2 + 3			Scope 1 + 2	Scope 1 + 2 + 3	
Parent Company	Scope 1	120,502.2254	32.1	19.4	4.4	115,938.0001	31.6	20.3	4.5
	Scope 2	254,499.0547	67.9	41.0	9.2	251,429.1829	68.4	43.9	9.7
	Total(1+2)	375,001.280	100	-	13.6	367,367.183	100	-	14.2
	Scope 3	245,775.8993	-	39.6	8.9	204,910.0493	-	35.8	7.9
	Total(1+2+3)	620,777.179	-	100	22.5	572,277.232	-	100	22.1
	Assurance Organization	Bureau Veritas Certification (Taiwan) Co., Ltd.				Bureau Veritas Certification (Taiwan) Co., Ltd.			
	Assurance Situation	Scope 1 and 2: ISO 14064-3:2019 Reasonable Assurance Scope 3: ISO 14064-3:2019 Limited Assurance				Scope 1 and 2: ISO 14064-3:2019 Reasonable Assurance Scope 3: ISO 14064-3:2019 Limited Assurance			
	Assurance Opinion/Conclusion	Unreserved conclusion/opinion				Unreserved conclusion/opinion			
Subsidiary in the Consolidated Financial Statements	Scope 1	-	-	-	-	99.7574	11.1	-	-
	Scope 2	-	-	-	-	797.0357	88.9	-	-
	Total(1+2)	-	-	-	-	896.793	100	-	-
	Assurance Organization	-				Will commence assurance implementation starting in 2027			
	Assurance Situation	-				Will commence assurance implementation starting in 2027			
	Assurance Opinion/Conclusion	-				Will commence assurance implementation starting in 2027			
Total	Total(1+2)	620,777.179			22.5	573,174.025			22.1

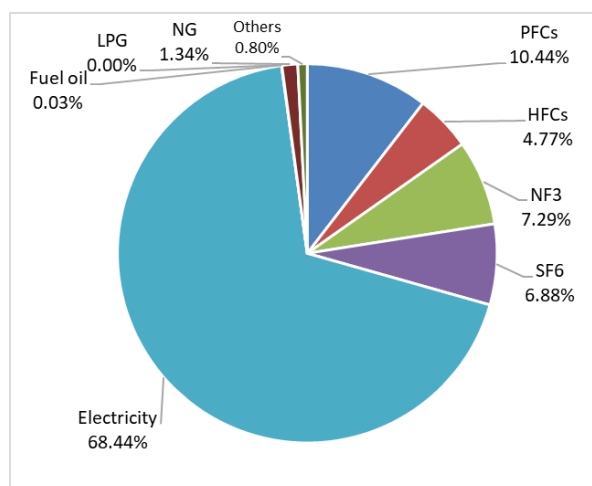
Note: (1) Macronix has no biogenic CO₂ emissions. (2) The disclosed Scope 2 emissions are based on the market-based approach. (3) For the disclosure of climate-related information for publicly listed companies, please refer to the corporate governance section of our annual report. (4) On February 5, 2024, the Ministry of the Environment announced the "Greenhouse Gas Emission Factors," which take effect immediately. Since Macronix started inventory of GHG emissions in 2023, the GWP was calculated using the IPCC AR5 version.

▼ PFC Emission Amount Over the Years

(Unit: tCO₂e/year)

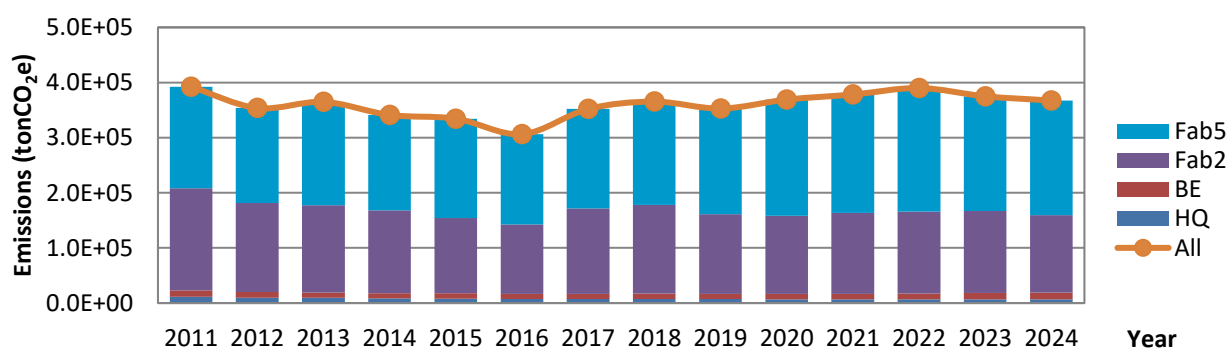
Year	2022	2023	2024
Total	51,741	40,407	38,361

▼ Ratios of GHG Emissions by Source of Emission, 2024



▼ Trend Chart of Greenhouse Gas Emission

GHG Emissions by all Sites over the Years



6.3. Ecological Conservation and Biodiversity



Macronix's headquarters, Fab 2, Fab 5, and Testing Plant are all located in the Hsinchu Science Park, Hsinchu City, which is not situated in a biodiversity hotspot. According to ENCORE MAP data, the area is classified as a low-risk zone for "ecosystem service loss or degradation. Macronix, in line with its commitment to ecological conservation, adopted a six-hectare green park named "Macronix Park" from the Hsinchu Science Park Bureau in 1999. Currently, there are over a thousand green plants and trees within the park and Company premises. In addition to maintaining and caring the original tree species in the park, Macronix has also planted more than 90 additional species, including the flame gold-rain tree, cherry blossoms, and tung trees. The total number of trees in the area now exceeds 1,500, contributing positively to the promotion of biodiversity.

In addition, Macronix has planned an "Ecological Pond" through a Japanese-style wooden circular landscape to raise koi fish. Macronix also plants a variety of aquatic plants, such as lotus, ginger lilies, bulrush, iris, wax-plants, Britton's Wild Petunias, Job's tears, water lilies, yellow water lilies, narrow leaf water-plantains, etc. which display a completely different landscape each season. It also takes advantage of a good ecological environment to attract wildlife and insects to live in order to create a biodiverse aquatic and terrestrial ecosystem.

The landscapes of plant area and Macronix Park are watered with recycled rain water, which not only facilitates water conservation, but also serves as the best example for environmental protection. Ecological urban designs for the Macronix Park, such as 3D green designs, roof greens, multilayer planting, and ecological ponds demonstrate our utmost efforts to protect the ecosystem.





The cultivation of tung trees in the Macronix Park has always been one of our key projects. After transplanting 5 tung trees from outside 25 years ago, the newborn fruits are restored as tung tree seedlings every year and then transplanted to every corner of Macronix Park. In 2024, 20 young tung trees were planted in Macronix Park. After many years of efforts, there are now about 150 tung trees in 9 areas of the Macronix Park, and we will continue to cultivate new tung tree seedlings to diversify the Macronix Park.

In addition, all Macronix plants are located inside the Science Park. All environmental protection work complies with local government regulations, internal corporate environmental policies and specifications to effectively conserve the ecological environment. Environmental awareness is raised to encourage everyone to fulfill their duties as global citizens. The maintenance achievements of Macronix Park have been recognized by the Science Park Administration. Since 2004, it has continuously won the highest honor, the "Outstanding Award," in the Green Beautification Evaluation by the Administration. In 2018, it received the "Environmental Green Beautification Contribution Award," and in 2021, it was awarded a "Certificate of Appreciation for Adopted Park Green Spaces."

Macronix Park is open to the public to enjoy during regular hours. It also serves as a venue for schools and environmental groups to conduct ecological education activities. In 2024, Macronix co-organized the "Occupational Safety, Health, and Environmental Protection Month Ecological Activity", hosted by the Hsinchu Science Park Bureau and the Allied Association for Science Park Industries. The event featured aquatic and terrestrial ecological tours and an eco-friendly wooden clock DIY workshop, inviting the public to participate in ecological tours and hands-on experiences to further understand natural ecosystems and environmental concepts. The event not only enhanced public ecological awareness but also established Macronix Park as a model for promoting ecological education and environmental protection.

The first batch of 5 tung trees



Newly cultivated tung tree seedlings



Tung trees (about 3 to 5 years)



Tung trees (about 5 to 7 years)



6.4. Green Enterprises

6.4.1. Green Products

Following the rising awareness of green consumption and more and more strict environmental protection laws worldwide, we are not only reducing environmental pollution caused by our production processes, but also focusing on managing chemicals in product ingredients. Currently, our green efforts include:

- ◆ Products are in compliance with EU Restriction of Hazardous Substances (RoHS) in Electrical and Electronic Equipment
- ◆ Products are in compliance with the European Union's requirements on Substances of Very High Concern (SVHC) and the End-of-Life Vehicles (ELVs)
- ◆ Green product certifications are obtained from internationally acclaimed customers such as Sony

Macronix has been passing the IECQ QC 080000 Hazardous Substance Process Management System Certification annually since 2007 to ensure the effectiveness of its green product management. According to Principle 15 in the Rio Declaration on Environment and Development, "In order to protect the environment, the precautionary approach shall be widely applied by each country according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." Macronix has complied with regulatory requirements while managing green materials, and no environmental degradation has occurred due to material usage.



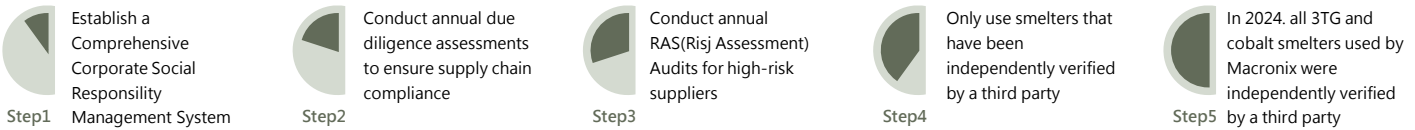
Macronix has developed a risk assessment of suppliers (RAS) system that integrates the quality management system and green product control system for supply chain management, to ensure that upstream and downstream suppliers comply with RoHS directives, the EU regulations on SVHC and ELVs, international laws, and customer requirements. Additionally, Macronix' products currently contain very few substances that are required to be disclosed based on the reporting threshold of certain reportable applications and reporting level of International Electrotechnical Commission (IEC) 62474 D29.00 Material Declaration for Products of and for the Electrotechnical Industry accordingly, The proportion of these substances in the total products is account for 28.9% of the annual revenue. In order to minimize the impact of the products on the environment, efforts have been made to find alternative materials for these disclosed substances.

Conflict Minerals Management

As a key member of the electronic supply chain, Macronix has responded to the demand for global human rights protection by purchasing metals such as gold, tin, tungsten, tantalum (hereinafter referred to as "3TG"), and other minerals required by customers to be used in products only with good due diligence. We insist on not using 3TG minerals that come from conflict mineral areas. In the internal management process, we regularly review the changes in the list of approved smelters and refineries in the CMRT (Conflict Minerals Reporting Template), EMRT (Extend Minerals Reporting Template), and AMRT (Additional Minerals Reporting Template), which are updated at least every six months or when necessary. We perform supplier due diligence on conflict minerals with reference to the framework of the "Organization for Economic Cooperation and Development

(OECD) Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas". If supply chain members have any questions about Macronix responsible minerals template, they can contact pubcsr@mxic.com.tw.

▼ **Due Diligence Procedures for Suppliers of Conflict Minerals**



6.4.2. Green Procurement and Environment, Safety, and Health Costs

Accounting Management System



Macronix actively complies with the international environmental protection trend and government policies by purchasing products or services with domestic and foreign “green mark”, “energy-saving”, “water-saving” labels, carbon-reduction labels and renewable energy to fulfill its corporate social responsibility and receives recognition and commendation from the authorities. The amount of green procurement in 2024 exceeded NT\$100 million.

To keep up with international trend, to fulfill our environmental and social responsibilities, and also to raise the effectiveness of our investments in the environment, worker safety, and health management, Macronix has implemented an environmental, safety, and health costs accounting (ECA) management system under the commitment and support of high-level executives since 2005.

Macronix’s environmental, safety, and health costs accounting (ECA) management system incorporates the investment costs and benefits of environmental safety and health as a whole. Through the system operation management, it provides supervisors, employees, and personnel from the industrial safety/environmental protection departments the understanding of both past and current operating conditions of environmental safety and health and can provide planning for future tasks and goals.

The environmental, safety and health management expenditures and total investment of Macronix amounted to approximately NT\$590 million in 2024, and there were no losses resulting from EHS violations.

7. Social Dimension

Warmth, happiness, and growth are the visions of Macronix human resource management.

In Macronix, a family like enterprise, we provide our staff with the care and attention that any other family would. With empathy, we respect, understand, and care for the work and life of our staff and extend this caring to their families. This makes employees treat each other with mutual trust and cooperation. Following the philosophy of humane leadership, we provide staff with high flexibility and autonomy at work and continuously encourage staff to actively make valuable innovative solutions to our nonvolatile memory solutions. Therefore, the firm has been able to present top technical papers at the International Electron Devices Meeting (IEDM), VLSI Symposia, International Microwave Workshop (IMW), and International Solid-State Circuits Conference (ISSCC), receiving worldwide attention to its progressive R&D outcomes. Macronix believes in respecting individual diversity and adopting an open-door policy to create an atmosphere of open and transparent communication. We routinely hold management communication meetings, conduct labor/management conferences, and set up staff suggestion boxes in order to provide a platform to encourage our staff to communicate, express their ideas, and share their voices. Macronix established the “Macronix CSR Policy” and “Macronix Human Rights Policy” based on requirements on human rights protection set forth in the Universal Declaration of Human Rights, ILO International Labor Standards, SA8000, and RBA CoC. We devote our utmost efforts to create a superior human resource management system and labor system with perfect planning and execution abilities, to comply fully not only with local labor laws and regulations, but also with CSR specifications to protect human rights.

Corporate Social Responsibility

Macronix's first issue of Corporate Social Responsibility (CSR) Policy was approved in 2008 by the president of Macronix and published on Macronix's electronic bulletin board. Besides, Macronix's Human Rights Policy and measures are announced on the website. All of our new employees are required to undergo SA8000 and RBA CoC training.

The CSR Policy* implemented by Macronix comprises the following:

We uphold labor rights, respect human rights, provide a safe, healthy, and amiable working environment, conservatively use the natural resources, promote science education, encourage innovative research and development, protect shareholders' rights, actively contribute to society, and persist in sustainable management.

- (1) Fully comply with national laws or regulations, the agreed customer requirements, and the applicable social responsibility requirements that subscribes.
- (2) Prohibit child employment, nor engaging in involuntary labors.
- (3) Conduct the due diligence on our suppliers/subcontractors, including service provider.
- (4) Provide our employees a safe, healthy, and amiable working environment.
- (5) Respect the freedom of collective bargaining, association, and peaceful assembly, and do not allow any discrimination on racial difference, religious belief, and gender, etc.
- (6) Esteem our employees, and do not allow ruthless punishment measures.

- (7) Operate honestly, ethically and refuse any means of improper advantage violate business integrity.
- (8) Comply with the Responsible Business Alliance Code of Conduct (RBA CoC), and continue improving through the management system.

※ : This version was revised on March 30, 2018

Corporate Social Responsibility Organization

Macronix's corporate social responsibility organization is led by the “Environment Safety and Health Center”, which is responsible for and promotes related works. The President of Macronix is in charge of matters related to the Environment Safety and Health Center, with the support of the deputy chairman, and the committee members, i.e. representatives of Macronix's various departments to implement the commitment to continuously promote and enhance corporate social responsibility, and to ensure the effective operation of the corporate social responsibility.

Given that “Fun at Work” is good for productivity, Macronix provides competitive compensation packages, a people-oriented management system, top recreation and leisure infrastructure, and diverse and meaningful extracurricular activities, hoping to build a quality working environment to motivate staff and make them enjoy working. These measures also help staff nurture active and positive work values, broaden their horizons, spark their passions, and showcase their strengths, so that they can find happiness, morals, self-confidence, satisfaction, and pride in the work they do.

Talent is the foundation and the most valuable asset of the corporation. Hence, Macronix established a comprehensive training system and provides well-structured and constant training plans. This system accommodates different learning paths, competencies, and career ladder structure to provide staff with individual development plan. To achieve continuous growth for Macronix and its staff, Macronix has various types of training programs that are in line with corporate strategies and organizational development. The programs adopt innovative and diverse teaching methods to enhance staff's knowledge, skills, and capabilities that will strengthen Macronix's competitiveness.

We believe that a comfortable working and learning environment will bring out additional growth potential and renewed energy for our staff, which is the prime motivation for success. For this reason, Macronix works hard to build a work environment that allows staff to enjoy physical, psychological, and spiritual health. Macronix values caring for its staff through its management system, and ensures that measures are properly implemented through internal and external audits. We also have improved the workplace environment and increased harmony between the staff and the management team in order to build a warm, happy, and growing family.

7. 1 Staff Respect

7.1.1 Recruitment



Macronix has always regarded “talent” as an important asset of Macronix, and it is also the key to Macronix's continuous innovation and growth, as well as the core of maintaining corporate competitiveness. Therefore, Macronix adheres to the principles of “fair employment opportunity” and “reality” in recruitment and selection process. Macronix also emphasizes basic competency assessment (language and logic ability), professional and technical assessment and communication ability.

In addition, though multiple recruitment channels to contact and recruit talents to join, including job bank recruitment websites, R&D substitute service projects, and internal employee referrals and/or transfers, as well as in-depth campus management of orientation sessions and provide students with the opportunities of career exploration visits and internships to recruit potential talents.

Equal Opportunity

Macronix provides equal employment opportunities, and is against discrimination and child labor and non-compulsory labor and agrees with the requirements of international customers to not employ modern slavery. This is the core value of our happy enterprise philosophy. We aim to provide fair promotion, equal employment, and forbid discrimination and harassment in the workplace. This principle of equal opportunity is the root of Macronix’s corporate value. At Macronix, employment, work assignment, and promotion are based on individual abilities and job requirements, and are not affected by age, birthplace, race, skin color, gender, sexual preference, language, religion, disability, political ideology, nationality, social status, financial status, family background, or any other status.

Prohibition of Child Labor

Macronix prohibits child labor and stipulates in its internal regulations that workers under the age of 16 may not be hired. The ID documents of new employees are inspected when they report for work; the Juvenile and Child Labor Remediation Procedure (OI1080-0103) were established to investigate, handle, and remedy situations when child labor is hired by accident.

Workforce Structure

As of the end of 2024, the total number of employees at Macronix was 3,849, including 3,813 official employees and 36 part-time employees (27 employees worked less than full-time hours per week or per month). A total of 14 employees were sent to work overseas, and the rest were based in Taiwan. Employees between the ages of 30-50 who have a wealth of specialized knowledge and experience are Macronix’s backbone, and account for 55% of all regular employees. The workforce structure is detailed in the table below:

▼ Workforce Structure of *Regular Employees

Category	Sub-category	Male		Female		Subtotal and percentage of sub-categories	
		Headcount (A)	Percentage of sub-category (A/C)	Headcount (B)	Percentage of sub-category (B/C)	Subtotal (C)	Percentage of regular employees (C/Total number of employees)
Position	Executives*	468	71%	188	29%	656	17%
	Non-executives	1,860	59%	1,297	41%	3,157	83%

Age	Under 30	713	70%	300	30%	1,013	27%
	30-50	1,218	58%	900	42%	2,118	55%
	Above 50	397	58%	285	42%	682	18%
Nationality	Taiwanese Citizen	2,190	64%	1,250	36%	3,440	90%
	Foreigner	138	37%	235	63%	373	10%
Type of staff	Direct Employee	449	32%	976	68%	1,425	37%
	Indirect Employee	1,879	79%	509	21%	2,388	63%
Work Location	Local	2,317	61%	1,482	39%	3,799	99.6%
	Offshore	11	79%	3	21%	14	0.4%
Subtotal by Gender		2,328	62%	1,485	38%	3,813	100%
Total Number of Employees						3,813	100%

* Regular employees: Non-fixed term contractor or specific fixed-term contractor with a term of one year or longer

* Executives: Managerial officers

▼ Workforce Structure of *Temporary Employees

Category	Sub-category	Male		Female		Subtotal and percentage of sub-categories	
		Headcount (A)	Percentage of sub-category (A/C)	Headcount (B)	Percentage of sub-category (B/C)	Subtotal (C)	Percentage of temporary employees (C/Total number of employees)
Age	Under 30	17	85%	3	15%	20	56%
	30-50	7	54%	6	46%	13	36%
	Above 50	0	0%	3	100%	3	8%
Subtotal by Gender		24	62%	12	38%	36	100%
Total Number of Employees						36	100%

* Temporary employee: Fixed-term contractor (does not include specific fixed-term contractor with a term of one year or longer)

Headcount of On-site Contractors

As of end of 2024, the headcount of on-site contractors of Macronix was 236, including cleaning, security, food, transportation and other services. For details of the workforce structure, please refer to the following table:

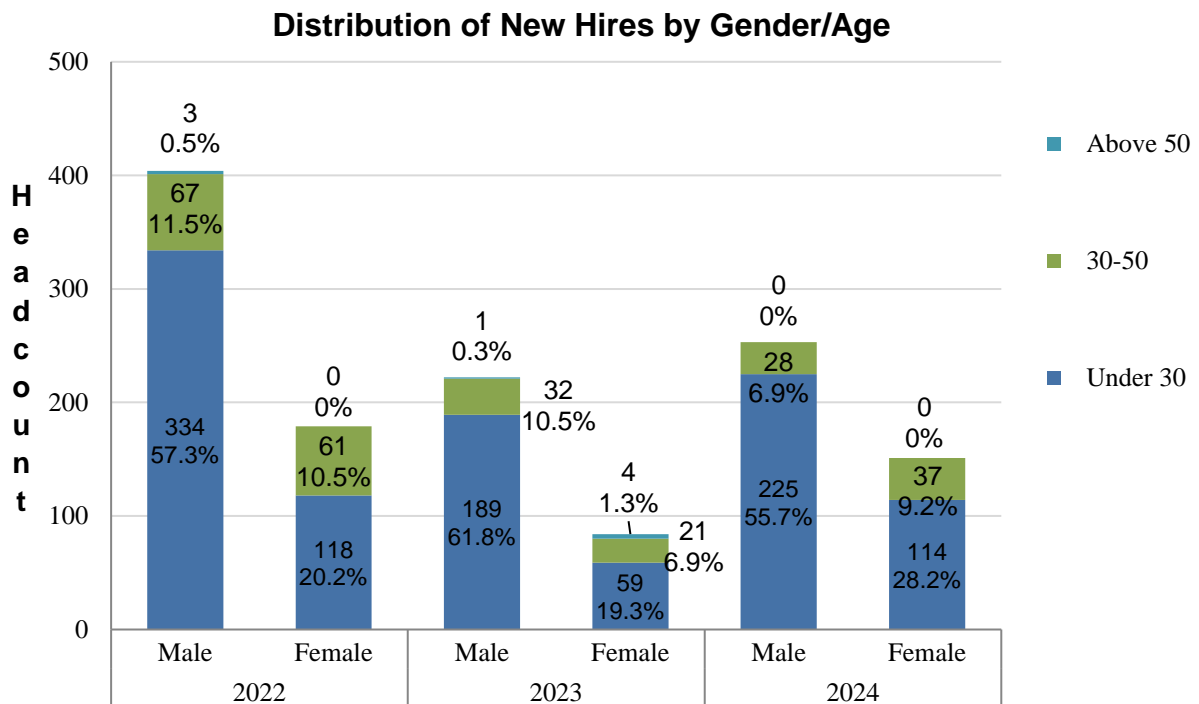
Male		Female		Subtotal and percentage	
Headcount (A)	Percentage of sub-category (A/C)	Headcount (B)	Percentage of sub-category (B/C)	Subtotal (C)	Percentage ((A + B)/C)

123	52%	113	48%	236	100%
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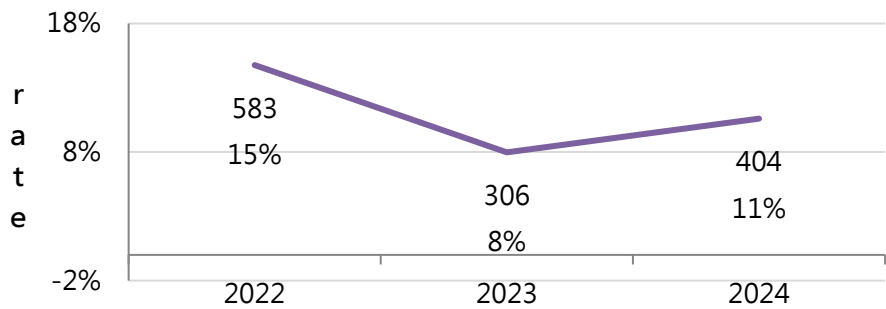
Note: The calculation method for the number of on-site contractors in 2024 has been adjusted to align with the employee count statistics, with data reported as of December 31, 2024.

New Employees

To attract outstanding talent and increase our competitiveness, we implement a multi-channel recruitment project, including visits, recommendations from internal employees, campus job fairs, alternative civilian service (research and development substitute services), and industry-academia collaboration. As of the end of 2024, we had hired 404 new employees (253 male and 151 female), accounting for 11% of all employees. The majority of new employees were under the age of 30 (225 male and 114 female), accounting for 84% of new employees.

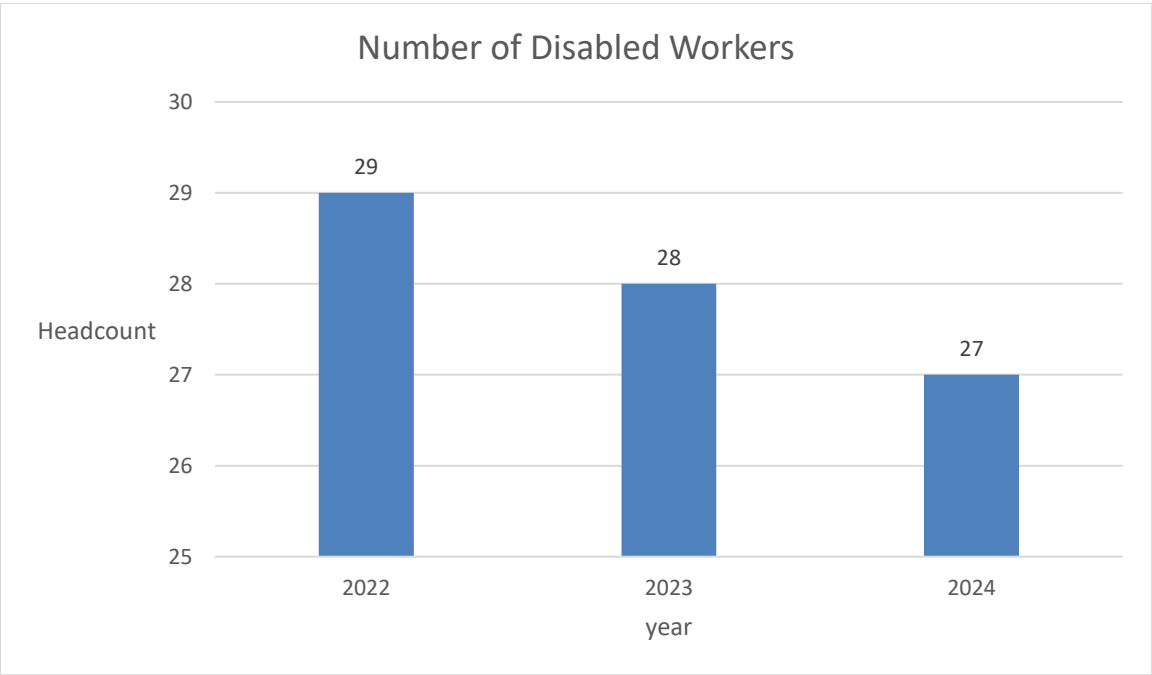


The Number and Rate of New Employees



Hiring Employees with Physical and Mental Disabilities

We respect the working rights of people with disabilities and firmly adhere to the related regulations. Macronix has employed 38 individuals with disabilities in accordance with Article 38 of the People with Disabilities Rights Protection Act (PDRPA), including instances where a person with severe or extremely severe disabilities has been hired, which counts as two individuals with disabilities. As of the end of 2024, we have hired 27 employees with physical and mental disabilities (17 of which are severely disabled), thus reaching the quota of individuals with disabilities that should be hired as stipulated by the PDRPA.



Turnover Rate

In 2024, 398 regular employees (269 male and 129 female) resigned from their positions at Macronix; turnover rates over the years are shown in the following table.

Distribution of Employees Who Resigned Over the Years (by Gender)

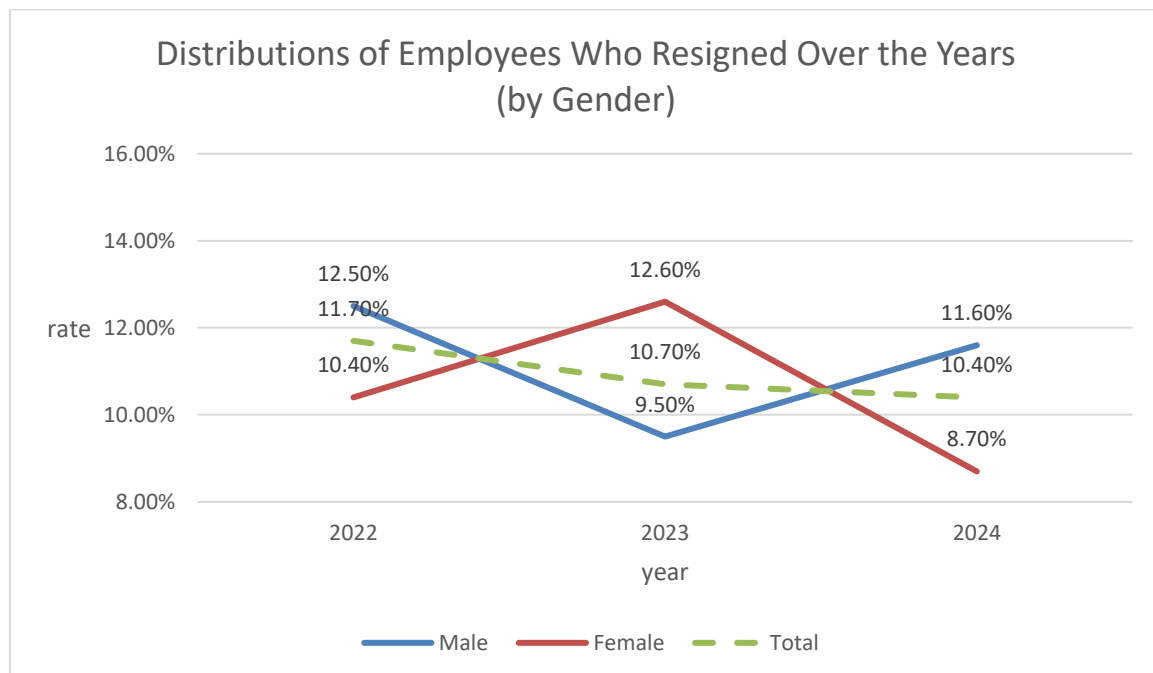
Year \ Gender	Male		Female		Total Number of Employees	
	Headcount	Percentage	Headcount	Percentage	Headcount	Percentage
2022	295	12.5%	163	10.4%	458	11.7%
2023	222	9.5%	184	12.6%	406	10.7%
2024	269	11.6%	129	8.7%	398	10.4%

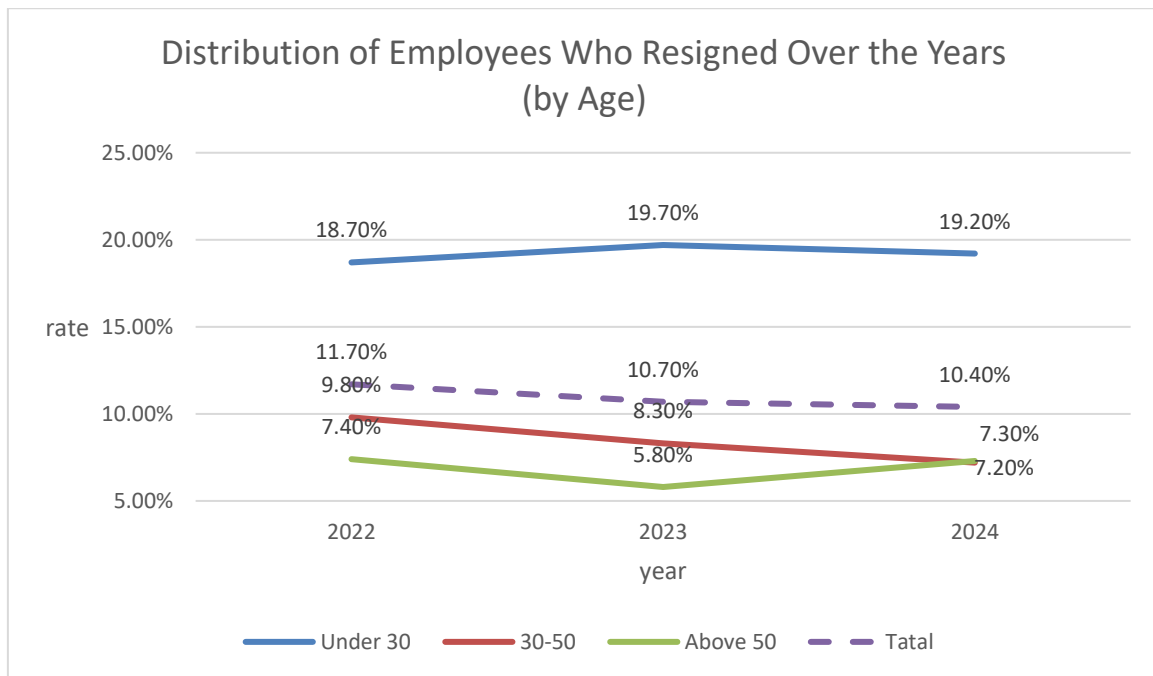
*Turnover rate = Number of employees of each gender who resigned on the said year / Total number of employees of the said gender

Distribution of Employees Who Resigned Over the Years (by Age)

Year \ Age	Under 30		30-50		Above 50		Total number of employees and rate	
	Headcount	Percentage	Headcount	Percentage	Headcount	Percentage	Headcount	Percentage
2022	184	18.7%	228	9.8%	46	7.4%	458	11.7%
2023	190	19.7%	173	8.3%	43	5.8%	406	10.7%
2024	195	19.2%	153	7.2%	50	7.3%	398	10.4%

*Turnover rate = Number of employees in each age group who resigned on the said year / Total number of employees in the said age group





7.1.2 Upholding Employee Rights

At Macronix, our hiring and employment, job assignments, and promotion practices are based on an individual's abilities and potential, and we do not discriminate against any worker based on age, birthplace, race, skin color, gender, sexual orientation, language, religion, disability, political ideology, nationality, social status, financial status, family background, or any other status. We continue to make revisions to support employment for people with disabilities and endeavor to prevent prejudice, discrimination, and harassment.

Since Macronix was founded in 1989, Macronix has maintained good relationships between labor and employees from the outset management, and has never experienced loss of business due to labor/management disputes. There were no material operation changes that affect labor rights in 2024. If there are any material operation changes that require employees to be notified in advance, we will provide a notice in accordance with the law.

If there is any change in the relevant provisions of the working rules of Macronix, it will be discussed in the labor/management conferences and announced after amendment, which is applicable to all employees of Macronix.

Gender Equality and Diversity

At Macronix, employment, work assignment, and promotion are based on individual abilities and potential, and are not affected by age, birthplace, race, skin color, gender, sexual preference, language, religion, physical or mental disability, political ideology, nationality, social status, financial status, family background, or any other status.

We value the diversity of our workforce and hire employees with physical and mental disabilities. Macronix did not receive any complaints or experienced any incidents where the rights of local staff or aboriginals were infringed in 2024.

▼ Employee Nationality Indicator

Category Percentage	Taiwanese Citizen	Foreigner
Headcount	3,440	373
Percentage of regular employees	90	10

▼ Female Diversity Indicator

Category Percentage	Regular Employees	Management	New Employees
Headcount	1,485	188	151
Percentage of females in the category	38%	29%	37.4%

▼ Age Diversity Indicator

Range Year	Under 30	30-50	Above 50
Headcount	1,013	2,118	682
Percentage of regular employees	27%	55%	18%

Women in Technology Leadership

In 2024, Macronix had a total of 656 employees in managerial positions, of which 188 were female managers, accounting for 29% of all managers. The distribution of female managers across different management levels is shown in the table below:

2024 Distribution of Female Managers at Macronix			
Management Level	Senior and Middle Management	Junior Management	Total
Number of female managers (A)	51	137	188
Total number of managers (B)	239	417	656
Female manager ratio (A/B)	21%	33%	29%

Employment Transfers

Macronix respects individual work rights and complies with related laws and regulations, including Article 10-1 of the Labor Standards Act: When transferring an employee, an employer shall not violate the provisions of labor contract and shall also satisfy the following principles:

1. The employee shall be transferred based on the needs of business operations and without improper motives or purposes.
2. The wages and other working conditions shall not be changed to be unfavorable to the employee concerned.
3. The employee shall still be able to satisfactorily perform the duties required in terms of physical ability and skills after the transfer.
4. The employer shall provide necessary assistance if the relocated workplace is too far away for the employee concerned.
5. The livelihood interests of the employee and his or her family shall be considered.

Prohibition of Forced Labor

Macronix does not force or threaten any unwilling persons to provide labor services, and ensures that all work is performed voluntarily. We do not force workers or engage in the hiring of slaves, forced or imprisoned workers, or bonded labor.

All employees have freedom of movement and dormitories do not have a curfew. We do not seize employees' ID documents, passbooks, seals, passports, or work permits, and we enforce the policy of zero charges on foreign workers. Employees have the freedom to terminate their labor contract as long as they comply with laws and regulations.

Pension Plan

Macronix has set up its retirement policies according to the related regulations in the Labor Standards Act. We have established the Pension Supervisory Commission to supervise and manage pension reserve funds, appropriation calculation, and management and operations of other pension-related issues. Macronix appropriates the pension reserve funds according to the regulations of the Labor Pension Act. We invite professional accountants and consultants to conduct the actuarial valuation of Macronix's pension funds each year, in order to ensure sufficient funding for future employee pension payments.

◆ Pension Contribution Under the Labor Standard Act:

Macronix appropriates 2% of the total monthly wages of our employees, and deposits it to a designated account for pension reserve funds in the Bank of Taiwan every month. As of the end of 2024, the fair value of assets was NT\$1,445,963 thousand. Expenses recognized in 2024 were NT\$16,717 thousand and net defined benefit liability is listed at NT\$1,026,122 thousand as of the end of 2024.

◆ Pension Contribution Under the Labor Pension Act:

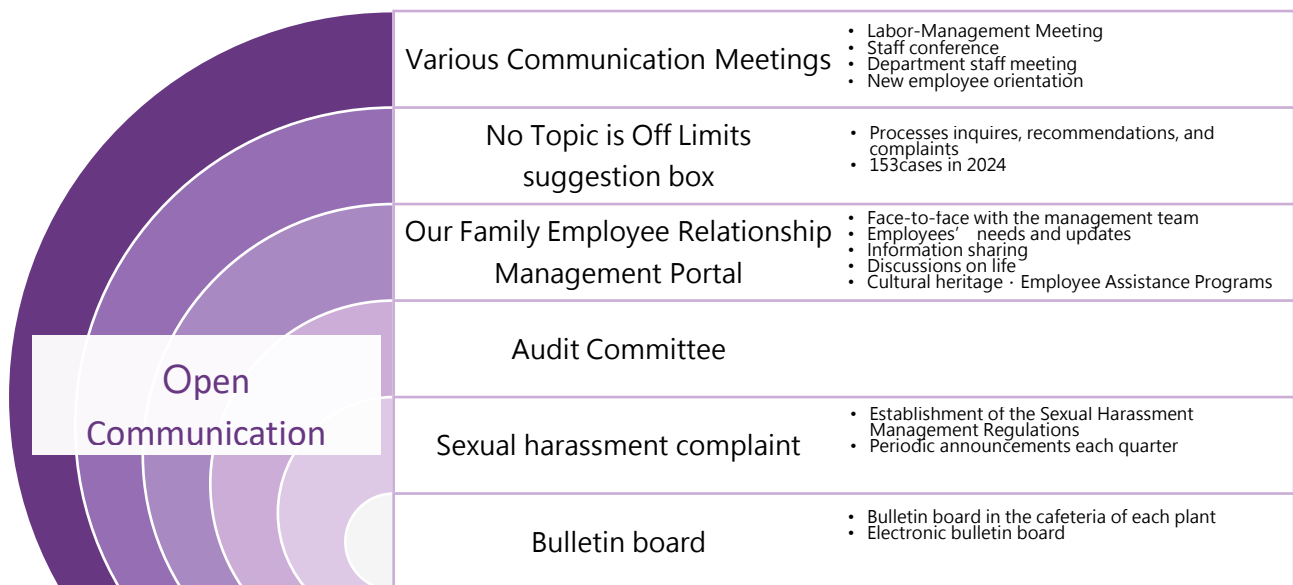
For those who are eligible for the new pension system, Macronix will contribute 6% of their labor pension level to the individual pension account of employees every month, and employees may also choose to contribute 6% of their pension to the individual pension account at his or her own will. The amount of expenses recognized in 2024 was NT \$221,831 thousand.

Note: This report uses the same consolidation method for financial statements.

Open Communication Environment

We respect individual diversity and have adopted an open-door policy to create an atmosphere of open and transparent communication. We regularly hold meetings based on open communication, including: new employee orientation, departmental staff meetings, staff conferences, and labor/management meetings (the opinions of all employees can be expressed by labor representatives) in order to provide a clear channel of communication that ensures that everyone's voice is heard. The "No Topic is Off Limits" suggestion box is provided for employee to communicate and express their opinions. Employees can make inquiries, suggestions, and complaints through the suggestion box. All letters are kept confidential, and follow-up of the progress and results of improvement ensures harmonious communication between employees and Macronix. We also provide communication and sharing platforms, including a bulletin board and the "Our Family" Employee Relations Website, which allows us to timely understand the needs and issues that employees are facing in real life, to positively guide and encourage staff and maintain a strong labor/management relationship.

Satisfaction surveys are conducted regarding employee life-related services, including dining, facility cleanliness, and access security, to serve as a basis for continuous improvement. Interviews with new hires and departing employees are held to gain insight into employee perspectives and trends. In addition, feedback is collected through surveys during various project activities and training programs to support review and execution, enabling the planning of initiatives that better align with employee expectations. Employees are also encouraged to share feedback about their work through the Performance Development Form, which is completed twice a year.



7.1.3 Salary and Welfare Systems

Sustainable Indicators for Managerial Compensation

The compensation of managers is based on their performance evaluation, which includes financial indicators (such as revenue and earnings per share), non-financial indicators (such as decision-making ability and performance enhancement), and sustainable indicators (such as leading Macronix to net-zero, improving sustainability disclosures, strengthening stakeholder communication, and deepening corporate sustainability governance culture). The compensation is reviewed and approved by the Compensation Committee and then submitted to the Board of Directors for final approval.

Target	Sustainability Indicator Weighting
CEO and President	11.11%
Other Managers	16.67%

Competitive Compensation Package

First-class talent, first-class treatment. Employees are the most important assets of Macronix. To attract, motivate, and retain the best talent, we provide attractive and highly competitive compensation packages according to the importance and complexity of the job, without prejudice in terms of political ideology, gender, marital status, or any such differences. Bonuses are distributed according to individual performance. Based on the idea of sharing profit, when yearly final accounts indicate a surplus, we also distribute annual bonuses based on regulations from Macronix's Articles of Incorporation and each employee's individual performance.

▼ Non-Managerial Full-Time Employee Salary Information in 2024

Item/Year	2023	2024	Compared with the previous year
Number of full-time employees	3,579 Person(s)	3,482 Person(s)	-2.71%
Total salary of full-time employees	NT\$4,946,600 thousand	NT\$4,944,047 thousand	-0.05%
Average salary of full-time employees	NT\$1,382 thousand	NT\$1,420 thousand	2.75%
Median salary of full-time employees	NT\$1,173 thousand	NT\$1,199 thousand	2.22%

▼ **Female-to-Male Basic Salary and Total Compensation Ratio in 2024**

Type of staff	Position	Basic Salary Ratio(Female/Male)	Total Compensation Ratio (Female/Male)
Direct Employee	Executives	1.15	1.17
	Non-executives	1.11	1.08
Indirect Employee	Executives	0.96	0.90
	Non-executives	0.88	0.76

Note 1: The number of employees is based on those in service throughout 2024 (excluding managers).

Note 2: Total Compensation includes regular salary, three-festival bonus, and employee remuneration received during the year.

Welfare Benefits

In addition to providing leaves for full-time employees as well as labor insurance and national health insurance coverage, Macronix also offers relevant welfare measures which are described in the following table. Moreover, by implementing leave policies and flexible working hours that exceed legal requirements, along with maternal health protection measures, childcare support programs, and comprehensive assistance for employees returning from parental leave, Macronix was awarded with the 2024 Hsinchu Science Park "Promoting Workplace Gender Equality" – Excellence Award.

Welfare Benefits	Description	Proactive Measures
Leave Programs	Various types of leave are granted according to laws and regulations such as parental leave, parental employee time adjustment, family-care leave, paternity leave, and menstrual leave.	<ul style="list-style-type: none"> ✓ Flexible Leave ✓ Accompanying Miscarriage Leave
Insurance Plans	As required by law, we provide labor insurance, national health insurance, and group insurance (life /accident/cancer/medical treatment) coverage for our employees, as well as travel insurance for business-related travel abroad. We not only provide basic protection, but also allow employees to raise their insurance premiums and include dependents in the insurance policy at their own expense, depending on their needs; this is aimed to provide employees' families with an extra protection and care.	<ul style="list-style-type: none"> ✓ Dependent Enrollment at Own Expense

Welfare Subsidies	We provide subsidies for childbirth, marriages, funerals, emergencies, injuries, hospitalization, and extracurricular cultural activities.	✓ Encouraging Extracurricular Activities
Welfare Facilities	Employee dormitory, parking lot, restaurants, recreation and fitness center, green park, convenience stores, coffee shops, breastfeeding room, and healthcare room.	✓ Recreation and Fitness Center Exclusive for employees
Pension Plans	Our pension fund payment and contributions fully comply with related regulations. In recognition of an employee's contribution and hard work, we also bestow medals to retired employees.	✓ Assistance with Reemployment After Retirement
Staff Welfare Committee	We established the Staff Welfare Committee in accordance with laws and regulations, and systematically promote various employee welfare measures.	✓ Designated Unit
Employees Counseling and Services	We provide free psychological consultation and guidance services, regular health examinations, and post-health examination consultation services.	✓ 24-hour 0800 Service Hotline ✓ Free Psychological Consultation

Unpaid Parental Leave

In 2024, the number of employees qualified for taking unpaid parental leave was 175 (122 male and 53 female), of which 18 actually applied for taking unpaid parental leave (7 male and 11 female).

As of the end of 2024, the number of employees returned to work after taking unpaid parental leave was 11 (5 males at a 83% return to work rate; and 6 females at a 75% return to work rate).

Among 13 employees that returned to work in 2023 (3 male; 10 female), 11 (3 male, 100% retention rate; 8 female, 80% retention rate) had stayed on for 12 months or more after their reinstatement as of the end of 2024.

Number of Applicants for Unpaid Parental Leave, Return to work and Retention Rates

▼ Application rate

Category	Male	Female	Total	<h3>Application rate</h3> <p>■ Applied ■ Not applied</p>
Number of employees eligible to apply for unpaid parental leave in 2024(A)	122	53	175	
Number of employees that applied for unpaid parental leave in 2024 (B)	7	11	18	
Application rate (B/A)	6%	21%	10%	

▼ Return to work rate

Category	Male	Female	Total	<h3>Return to work rate</h3> <p>■ Return to work ■ Not return to work</p>
Number of employees expected to return to work after unpaid parental leave in 2024(C)	6	8	14	
Number of employees returned to work after unpaid parental leave in 2024 (D)	5	6	11	
Return to work rate (D/C)	83%	75%	79%	

▼ Retention rate

Category	Male	Female	Total	<h3>Retention rate</h3> <p>■ Not retained ■ Retained</p>
Number of employees reinstated after unpaid parental leave in the previous year (2023) and still active at the end of 2024 (E)	3	8	11	
Number of employees reinstated after unpaid parental leave in the previous year (2023) (F)	3	10	13	
Retention rate (E/F)	100%	80%	85%	



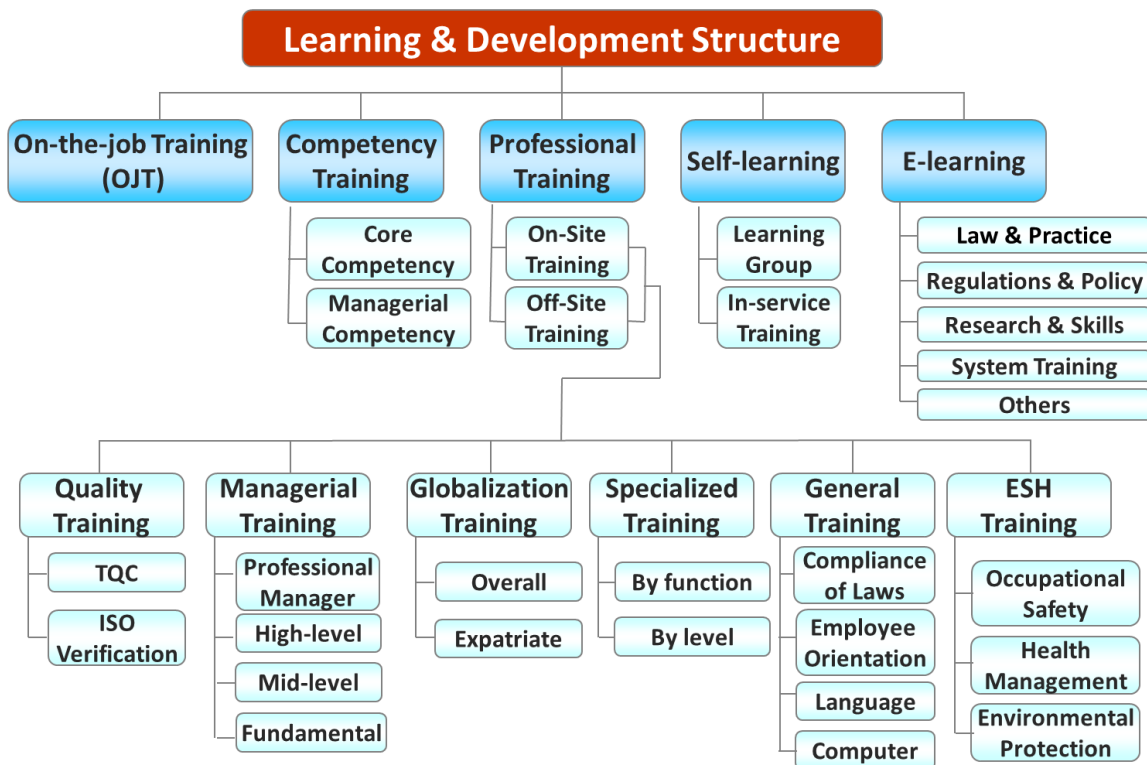
7.2 Learning and Development

Macronix believes talent is the foundation and the most valuable asset to the corporation. Hence Macronix has established a comprehensive training system and provides well-structured and constant training plans and learning roadmaps. This system accommodates different learning paths, competencies, and career ladder structure to provide staff with opportunities for self-growth and allow them to create their own Individual Development Plans.

Our performance management system and individual development plans are closely connected. Interviews for performance reviews are held twice a year in order to confirm whether the employee is on track to achieve his/her individual performance goals and the organization's goals. Based on individual performance, face-to-face meetings between employees and their supervisors can be arranged in order to discuss what is needed to achieve the employee's individual goals and tailor an individual development plan, to broaden and deepen employees' professional knowledge and skills. In 2024, the performance appraisal implementation rate for each employee category was 100%.

7.2.1 Nurturing Talents

Macronix has developed a variety of training courses according to corporate strategies, job requirements, and individual development. With clear goals and strategic directions, we provide detailed learning roadmaps to employees to optimize their personal learning paths. These learning roadmaps include a series of activities that help employees achieve their goals and develop an extended skill set. These learning roadmaps also provide a list of learning programs that can help to increase their learning efficiency.



Our learning roadmaps include four categories:

- (1) New employee roadmap: For new employees to become familiar with the corporate culture through experience and learning. This allows new employees to adjust to their new work environment and quickly become immersed in our corporate culture.
- (2) Competency roadmap derived from Company values: Courses are designed to implement corporate values and impart related skills, so that employees can demonstrate the conduct expected by Macronix.
- (3) Managerial roadmap for different levels of management: Provide ladder structures in management training and feature various courses designed for different levels of management, enabling them to maintain steady progress and strengthen their management skills.
- (4) Professional roadmap based on various fields: Guest speakers from within and outside Macronix are invited to deliver professional training, on topics including R&D, production, quality, risk management, human resources, administration, sales, and information management, in order to strengthen and deepen employees' professional skills.

Macronix also provides various learning channels to satisfy a number of learning needs of each employee. Our measures include:

- (1) Internal training: Guest speakers from within and outside Macronix are invited to host various types of training courses.
- (2) External training: Allowing employees to participate in external and work-related training courses and conferences.
- (3) On-the-job training (OJT): Allowing employees to develop on-the-job professional knowledge, through job assignments, hands-on practice, and project participation; employees can acquire the necessary knowledge and skills by performing these tasks.
- (4) E-learning: Macronix's e-academy learning platform was established to provide employees with easy access to online courses so that individuals can study at their own pace and with their own schedule.



7.2.2 Macronix Academy

The Macronix Academy is the platform for employees to continue their learning and development. It has a comprehensive learning system to provide employees with complete and abundant resources for planning their careers. Through knowledge gathering and sharing, employees can enjoy enriched learning resources to achieve their career goals and to embrace workplace challenges at any time.

Macronix Academy features the facilities and professional equipment required for employees to learn in a positive environment, including:

- (1) Audio-visual room: Contains multimedia computers, books, DVDs/CDs, video tapes, and audio tapes. This rich learning platform allows employees to learn without boundaries.
- (2) Training classrooms: Macronix provides numerous lecture halls and classrooms of various sizes that can accommodate different types of course designs.
- (3) Computer classrooms: Personal computer access is available so that the employees can significantly increase their learning efficiency.
- (4) International lecture halls: Accommodates seats for 250 people, making it the best location for large-scale training courses, conferences, and lectures.
- (5) Library: Features multiple and diverse books, periodicals, and audio/video resources for employees to satisfy their learning needs.



Employee Training Costs and Hours

Indicator	Unit	2022	2023	2024
Total Training Costs	NT\$ million	14.80	18.28	19.21
Total Training Hours	Hour	257,794	272,982	273,705
Total Employees	Person	3,926	3,805	3,849
Total Revenue	NT\$ million	43,487	27,624	25,883
Total Training Costs/Total Revenue	%	0.03	0.07	0.07
Total Training Costs/Total Employees	NT\$/person	3,770	4,804	4,992
Total Training Hours/Total Employees	Hour/person	65.66	71.74	71.11
Total Training Hours for Male Employees/Total Male Employees	Hour/person	74.55	83.35	82.18
Total Training Hours for Female Employees/Total Female Employees	Hour/person	52.36	53.16	53.16
Total Training Hours for Direct Employees/Total Direct Employees	Hour/person	76.89	149.18	138.89
Total Training Hours for Indirect Employees/Total Indirect Employees	Hour/person	46.63	27.38	29.64

7.3. Work-life Balance

7.3.1. Macronix H₂O

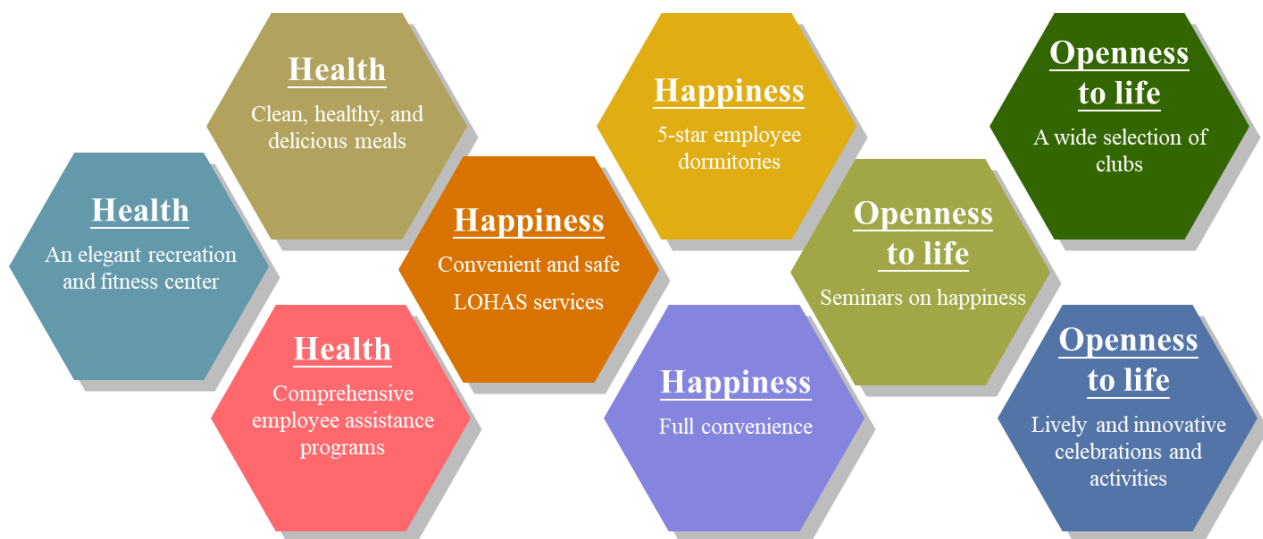


Macronix believes that personnel who enjoys physical and psychological health are the essence of a successful enterprise. For this reason, Macronix strives to provide an excellent work environment for employees, and promotes various approaches to take care of employees' health. In terms of infrastructure, we established a recreation and fitness center and a park, suitable for all sorts of activities, and provide benefits such as health examinations, which encourage our employees to enjoy an energetic work environment and an active life!

To help employees form the habit of exercising, which can help them improve their sleeping quality, relieve stress, think more clearly, and perform tasks more efficiently. We actively encourage employees to participate in sports and art-related activities/clubs/courses. Their participation helped Macronix obtain the “Taiwan i Sports” certification issued by the Sports Administration, Ministry of Education in 2024 (valid for 3 years from 2024 to 2027).

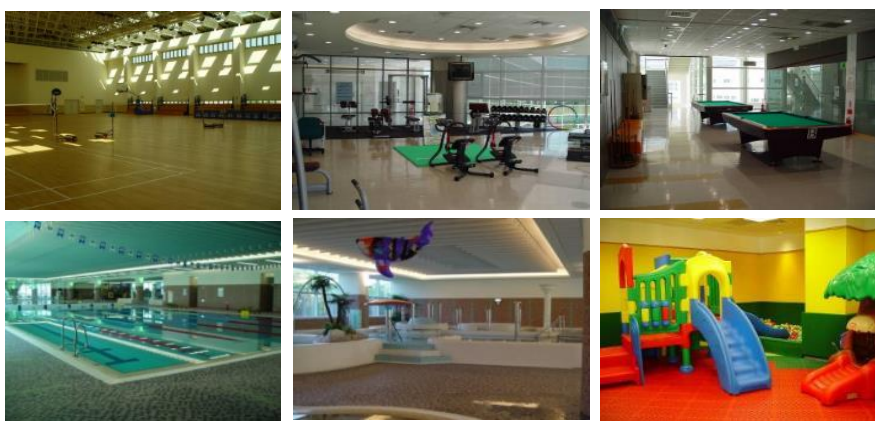
We hope that all employees work in a healthy and happy way, maintaining work-life balance. We continuously promote the “health, happiness, and openness to life” of the (H₂O) Corporate Wellness Program to provide employees with comprehensive care. Macronix uses H₂O to advocate and encourage employees to maintain a work-life balance and help create a bright future together with Macronix.

H₂O=健康Health • 快樂Happiness • 品味生活Openness to life



An elegant recreation and fitness center

To provide an excellent recreational environment for our employees and their families, Macronix has taken a leading position in the industry by establishing the most comprehensive and comfortable employee recreation and fitness center. The center includes a 50-meter heated swimming pool, hydrotherapy spa, children's swimming pool, a fitness room, racquetball courts, aerobics classrooms, a karaoke room, and multi-purpose indoor courts. It provides employees with the most comfortable and healthy facilities for enjoying recreational activities.




Clean, healthy, and delicious meals


Macronix's staff canteen cooperates with professional caterers to prepare meals with no MSG and low in sodium and oil, and has a nutritionist consultant who is responsible for the design of the weekly menu and nutritional balance of the meals. The management unit regularly announces various food safety inspections, and conducts regular audits on the environmental hygiene of the kitchen and the canteen, food, fire safety and other safety management measures, in order to ensure that employees can eat healthily and with peace of mind.

Comprehensive Employee Assistance Programs (EAPs)

Macronix has integrated external professional resources and gathered teams from the Employee Relations Department, Health Promotion Department, and the Performance Development and Learning Development Department to establish employee-support services and implement the Employee Assistance Program (EAP); in combination with a professional consulting agency, we provide 24-hour psychological, legal and financial counseling services free of charge for our employees. We hope that these efforts will be able to help employees deal with a variety of issues, such as health, marriage, family, finance, law, emotions, stress, and work, thereby assisting employees in solving difficulties in their



everyday lives and at work.

<p>Convenient and safe LOHAS services</p>	<p>Macronix provides complete life management services with optimal comfort and support in the work environment. Macronix has set up on-site convenience stores and various vendors/stores to satisfy the nutrition, clothing, living, traveling, recreation, and leisure needs of employees. We hope employees enjoy working in such a balanced environment!</p>
<p>5-star employee dormitories</p>	<p>The employee dormitory totals 16,000 square meters and is situated in a beautiful community. The dormitory can accommodate 1,000 employees, and has a living room, restaurant, training classrooms, game room, elevators with views, garden, parking lot for cars and scooters, and a 24-hour central surveillance security system to provide a safe and comfortable living environment for employees.</p> <div>  </div>
<p>Full convenience</p>	<p>Macronix provides employees with various on-site convenience services such as convenience stores, coffee shops, and travel agencies, so employees can complete daily activities while at work. In addition, Macronix has agreements with various vendors to provide employees with a variety of choices for the needs of daily life, including food, clothing, housing and transportation.</p>

Seminars
on
happiness

Macronix aims to constantly improve its employees' quality of life. For this reason, Macronix organizes a variety of events and courses on daily life, leisure, and health topics to bring more energy and growth to employees. We hope that employees can achieve a perfect balance between family, health, friends, and spirituality in order to have satisfying, healthy, and happy lives!



A wide
selection of
clubs

In order for employees to achieve a work-life balance, Macronix offers more than 40 clubs, such as creative balloon design, Chinese calligraphy, longboard, water activities, Chinese traditional music, and Chinese cultural studies, as well as charity clubs such as the Humane Society and Big Love Society, so that they can make friends and develop new hobbies.



Lively and
innovative
celebrations
and
activities

To enhance employee engagement and foster a positive workplace atmosphere, a Lunar New Year raffle event was held to celebrate the holiday season, allowing employees to relax and enjoy themselves outside of work. In the second half of the 2024, Macronix launched a total of six types of ball games, including basketball, volleyball, badminton, table tennis, billiards and softball, enabling sports enthusiasts to show their passion on the courts.



Promotion of cultural and artistic activities

Macronix held several exhibitions and small-scale on-site guided tours in the Sunlight Corridor of Li-Hsin Factory, together with a series of lectures and related quiz draws, to encourage colleagues to get in touch with cultural and artistic activities and understand their meaning in their spare time.

Name of the exhibition	Exhibition-related information and event purposes
National Palace Museum Painting and Calligraphy Series - Giuseppe Castiglione's One Hundred Horses Exhibition and Ten Fine Steeds Handscroll	1. Promote art appreciation through One Hundred Horses, allowing participants to understand the artistic achievements of Qing Dynasty missionary artist Giuseppe Castiglione (Lang Shining), as well as the influence and historical significance of Chinese painting 2. Through appreciation of One Hundred Horses and Ten Fine Steeds Handscroll, deepen understanding of the historical and cultural significance of horses in Chinese tradition
Splendors of a Flourishing Age - Exploring the Refined Lives of Northern Song People through Three National Treasures from the National Palace Museum	Appreciate the refined daily life of Northern Song Dynasty people through three masterpieces — Literary Gathering by Emperor Hui-tsung, Antiquities, and the Ming Dynasty's Tasting Tea painting. These works reflect the elegance, humanistic literacy, artistic achievements, and quality of life that have continued into the Ming Dynasty, offering meaningful cultural inspiration for modern life
Lantern Painting Activity for the Lantern Festival	Celebrate the Lantern Festival with colleagues
Rare Calligraphy and Chinese Painting Book Exhibition & Special Lecture	Encourage employees to learn traditional calligraphy and painting techniques, appreciate the elegance of ancient lifestyles and cultural refinement, and enhance their own cultural literacy and aesthetic appreciation
Welcoming the New Year – Spring Couplets Workshop & Cultural Charity Event	Conducted a hands-on workshop to create spring couplet calligraphy and decorative pendants. Seventy works were displayed along Sunshine Road, adding festive charm and Lunar New Year ambiance
4th Macronix National Music Festival	Promote the beauty of silk and bamboo string music, cultivate colleagues' ability to appreciate music, and become a rich and profound element of Macronix culture.



Lantern Painting Activity for the Lantern Festival

Rare Calligraphy and Chinese Painting Book Exhibition & Special Lecture

Splendors of a Flourishing Age - Exploring the Refined Lives of Northern Song People through Three National

Macronix has established a variety of arts, cultural, and sports clubs and actively encourages employee participation. Each year, clubs may submit applications for activity proposals and subsidies to the Employee Welfare Committee. Upon approval, the activities are open for all employees to register. These activities encompass various fields, allowing employees to relax and unwind while developing their interests outside of work.

Such arrangements not only promote diverse cultural activities and encourage a vibrant sports culture, but also enhance employees' physical and mental well-being. More importantly, these activities facilitate cross-departmental communication and collaboration, helping to bridge gaps, foster mutual understanding, and strengthen teamwork. This, in turn, contributes to a more cohesive and positive workplace environment.

Events	Information and event purposes
Lightweight Clay is Fun! Teaching Activities	Introduce handmade techniques using lightweight clay
Aerobic Activities in Water	1. Strengthen cardiovascular function 2. Promote full-body muscle development
Badminton Course Project	Cultivate regular exercise habits and improve badminton skills to enhance employees' overall health
Longboard Riding and Basic as well as Freestyle Trick Training Experience Class	Train employees in longboard “dancing” and basic freestyle techniques while improving balance, rhythm, physical fitness, cardiovascular endurance, and bone density—helping employees relieve stress and enhance well-being
Calligraphy Club – Beginners' Course	1. Provide colleagues with a channel to learn calligraphy and build friendships through art 2. Promote relaxation and emotional cultivation through slow-paced calligraphy practice
Succulent Plant Cultivation Course	1. Equip employees with knowledge and skills related to succulent plant care 2. Enhance the beauty and serenity of the office environment
Tai Chi – 13 Movements Training	Learn traditional Chinese martial arts to reduce daily stress and improve health
Freestyle Swimming Technique Correction Class	Address common challenges among employees who have learned to swim but struggle with breathing techniques, helping them achieve true swimming proficiency



Badminton Course Project



Longboard Riding and Basic as well as Freestyle Trick Training Experience Class



Aerobic Activities in Water



Freestyle Swimming Technique Correction Class



7.3.2. Safety and Health Promotion Management

Occupational Safety and Health Management

Macronix is fully aware of the impact of employee safety and health on our corporate competitiveness. Therefore, since Macronix's inception in 1989 Chairman Wu has always played the role of Macronix's advocate, urging employees to take environment, safety, and health management seriously, and establish safety and healthy work rules. Besides requiring executives of various levels to participate in safety and health management tasks, he shows respect and care for employees by consulting and communicating mechanism and instead of penalties with incentives. If there are any emergencies, occupational injuries, false alarms and violence in the workplace, employees can propose occupational safety and health issues or improvement suggestions through the "suggestion box", the "proposal improvement system" or labor representatives at the Environmental Safety and Health related meetings. Employees who make the best proposals are rewarded. Since 2002, Macronix has proactively planned and established Macronix occupational safety and health management system that exceeds regulatory requirements. Macronix actively adopts various international certification standards and has developed a comprehensive Environmental, Health, and Safety (EHS) system to provide workers with a healthy work environment. In order to strengthen the consultation and participation in employees' safety and health issues, Macronix has established multiple EHS communication channels to share information such as EHS goals, internal audit plans, and relevant regulations. The labor representatives participated in the Occupational Safety, Health and Environment Committee, together with the revision of safety and health work rules, incident investigation and working environment monitoring, etc. Non-employees communicate with us through protocol organization meetings and pre-operational safety notices. We have strict and complete working environment monitoring procedures that allow us to examine the number of bacteria in water dispensers each quarter, regularly check food safety and prevent climate change-related health and safety hazards for outdoor workers to ensure employee health and safety. We periodically evaluate and review our management measures according to government regulations and customers' requirements. Macronix constantly promotes occupational safety and health concepts as well as the various indicators of GRI 403 Occupational Health and Safety Guidelines through training and promotion of communication measures. We work together with employees and vendors to jointly create a healthy, safe, and comfortable working environment.



Thanks to the efforts of its employees, Macronix Headquarters, Fab 2, Fab 5 and Test Building have obtained the ISO 45001:2018 Occupational Health and Safety Management Systems Certification every year since 2019. We continue to gain the recognition of the authority each year, and our “excellent culture of safety” is transforming into the values of corporate sustainable development. In the future, Macronix will continue to promote employee’s and visitor’s safety and health, and build a work environment with a high-safety level.

In respect of operation managements, Macronix has also established the Occupational Safety Health and Environment Committee (OSHEC), which was led by the president of Macronix to promote and execute the environmental protection, safety, and health measures. As of the fourth quarter of 2024, Macronix OSHEC consisted of 4 managers, 3 directing supervisors, 19 labor representatives, 7 technical engineering representatives, and 10 environmental, safety, and health representatives; labor representatives account for 44% of the committee, significantly exceeding the legally mandated one-third. The committee convenes meetings at least once every quarter, mainly to discuss Macronix’s environmental, safety, and health management operations, organization, and supervision issues, as well as to track the progress of various projects. Each manufacturing facility holds monthly or quarterly meetings to review the implementation of various initiatives. An internal audit is conducted across all plants annually, along with external audits commissioned to third-party verification organizations. Through the continuous PDCA (Plan-Do-Check-Act) cycle, Macronix maintains a comprehensive occupational safety and health management system to provide all workers with a comfortable, healthy, and safe working environment. In 2024, Macronix had no violations or penalties.

Year	Workers	Headcount	Ratio
2022	Employed workers	3,888	94%
	Non- employed workers	0	0%
	On-site contractors	235	6%
2023	Employed workers	3,896	94%
	Non- employed workers	0	0%
	On-site contractors	225	6%
2024	Employed workers	3,851	94%
	Non- employed workers	0	0%
	On-site contractors	238	6%

Note:

1. Source: Safety and Health Resume Intelligent Cloud – Occupational Safety and Health Administration, Ministry of Labor
2. Employed workers: Macronix employees;
3. Non-employed workers: Contractor personnel stationed in plants and under supervising
4. On-site Contractors: Contractors engaged in routine and daily operations within the plant premises
5. The number of workers is the sum of the monthly average number of workers at each plant

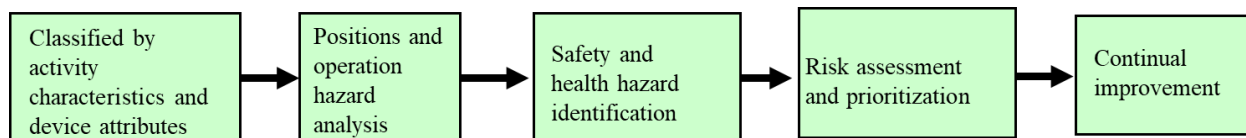
Hazard Identification, Risk Assessment and Accident Investigation

In accordance with the Occupational Safety and Health Act and the requirements of the Occupational Health and Safety Management System (ISO 45001), Macronix conducts risk assessments for operational activities through qualified personnel. Hazards and risks associated with both routine and non-routine tasks are identified for all personnel (including visitors, and contractors). A risk classification system is implemented, along with improvement procedures and preventive control measures, to eliminate hazards and reduce risks. These measures also address occupational safety risks related to climate change and the prevention of workplace violence. In addition to regular identification and evaluation processes, hazard identification and risk assessment are immediately conducted in the event of changes to operational activities or abnormal conditions, in order to mitigate potential operational risks for Macronix.

In accordance with the Occupational Safety and Health Act, employees have the right to stop the work and evacuate to a safe location if there is any potential imminent danger at a workplace. Macronix shall not impose any adverse actions against the workers. Macronix has formulated the risk assessments rules. Based on the results of risk assessments, high-risk items—such as workplace fires or explosions, hazards that may result in fatalities, work stoppages, unlawful conduct in the workplace, or incidents that could lead to physical or psychological harm requiring medical attention—are prioritized for improvement, with corresponding control and corrective measures implemented accordingly. With accordance to PDCA (Plan-Do-Check-Act), Macronix will improve the atmosphere and continue to follow up on and improve matters related to each risk level to ensure a normal operation of the occupational safety and health management system.

Macronix has formulated the occupational injury and accident investigation procedure, which classifies incidents into four levels, including “Near-miss” (Level 0), “Mild” (Level 1), “Normal” (Level 2), and “Severe” (Level 3). Reporting and investigations are undertaken in accordance with such rating. The investigation team or personnel from the responsible departments enter the incident information into the incident investigation system, analyze causes, complete the review of the corrective measures for improvement, and as examine the risk assessment form (Level 1 (inclusive) or above, excluding traffic accidents). All plants simultaneously implement the hazard identification and risk assessment/improvement, adopting a PDCA approach to ensure that similar accidents no longer occur.

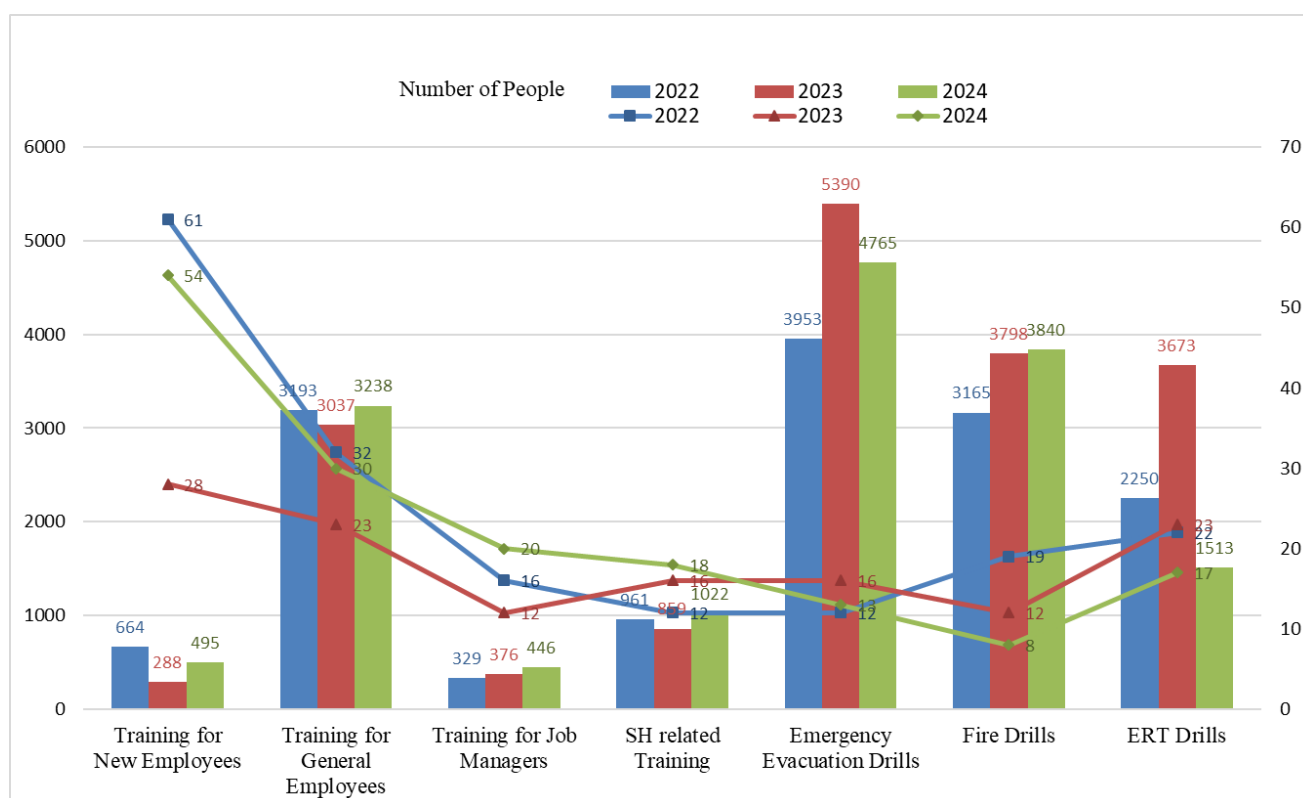
Hazard Identification and Risk Assessment Process



Safety and Health Education and Training

We offer our employees adequate personal protective equipment (PPE), complete safety and health education and trainings, and a 24-hour emergency response team (ERT) that works four shifts in rotation. The business continuity planning (BCP) has also been created to ensure employee and corporate safety as well as regular maintenance of fire safety equipment and building public safety inspection. We also organize education and trainings on occupational safety and health, emergency evacuation drills, fire drills, and emergency response team (ERT) drills (including earthquakes, fires, gases, and chemicals) on a regular basis to enhance employees' response to emergencies. The workplace is also regularly inspected for comfort. A total of 160 drills were organized for a total of 15,319 participants in 2024.

▼ 2024 Macronix Safety and Health Education and Training Statistics



In 2024, Macronix did not have any occupational accidents resulting in serious injuries, and the number of occupational injuries that could be recorded was 3. The main types of occupational injuries were collision, pinches and falls, etc. The investigation of accidents and analysis of causes were carried out, and corrective measures were proposed to improve personnel awareness of hazards and the working environment through the parallel development of each plant.

In addition to establishing standard operating procedures, the following measures have been taken to prevent any occupational hazard or disease from impacting employees and corporate operations:

- Professional audits and 24-hour monitoring are provided.
- All accidents are investigated and followed up with related safety improvements in order

to prevent any reoccurrence or further incidence.

- Training for new and current employees and PPE management are provided.
- Occupational safety meetings are conducted at each level.
- The workplace is monitored, and occupational safety is continuously improved according to regulatory requirements.
- A 24-hour health service center is available for conducting professional health check management, health promotion activities, health lectures, psychological counseling, and an employee sports and fitness center.
- An employee assistance program (EAP) has been implemented and doctors specializing in occupational diseases have been invited on-site to guide and instruct employees regarding the work safety and health.
- Regular doctor visits are scheduled at our facilities to provide medical advice to employees, help conduct health risk evaluations, and assist with health management at different levels.
- The unit responsible for protecting against epidemics collects the latest epidemic prevention information and enforces epidemic control measures in order to safeguard employee health.
- Pregnant employees are taken care of through the implementation of the “Three No’s”, no night shifts, no heavy lifting, and no radiation work, and through ensuring a friendly workplace.

▼ **Macronix Employee Disabling Injury-Related Indicator in 2024**

Year	Workers	Gender	Headcount	Total work hours (hr)	Recordable occupational injuries		Severe occupational injuries (excluding fatalities)		Fatality rate due to occupational injuries		Lost workdays		Recordable cases of occupational diseases	Fatalities caused by occupational diseases	
					Number of people	rate	Number of people	rate	Number of people	rate	Number of people	rate		Number of people	rate
2022	Employed workers	Male	2,319	4,618,452	1	0.04	0	0.00	0	0.00	4	0.17	0	0	0.00
		Female	1,570	3,126,444	1	0.06	0	0.00	0	0.00	9	0.58	0	0	0.00
	On-site contractors	Male	111	221,610	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00
		Female	124	246,178	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00
	Total		4,123	8,212,684	2	0.05	0	0.00	0	0.00	13	0.32	0	0	0.00
2023	Employed workers	Male	2,367	4,677,192	1	0.04	0	0.00	0	0.00	0	0.00	0	0	0.00
		Female	1,529	3,021,304	3	0.20	0	0.00	0	0.00	0	0.00	0	0	0.00
	On-site contractors	Male	109	215,384	1	0.93	0	0.00	0	0.00	0	0.00	0	0	0.00
		Female	116	229,216	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00
	Total		4,121	8,143,096	5	0.12	0	0.00	0	0.00	0	0.00	0	0	0.00
2024	Employed workers	Male	2,355	4,633,820	1	0.04	0	0.00	0	0.00	0	0.00	0	0	0.00
		Female	1,496	2,944,456	2	0.14	0	0.00	0	0.00	54	3.67	0	0	0.00
	On-site contractors	Male	123	242,064	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00
		Female	115	226,156	0	0.00	0	0.00	0	0.00	0	0.00	0	0	0.00
	Total		4,089	8,046,496	3	0.07	0	0.00	0	0.00	54	1.34	0	0	0.00

Note:

1. Types of work injuries calculated by work-related injury statistics
2. $\text{Total work hours} = \text{Total number of employees} \times 8 \text{ hours} \times \text{Number of work days in the year}$
3. $\text{Recordable occupational injury rate} = (\text{Number of recordable occupational injuries} \times 200,000) / \text{Total work hours}$
4. $\text{Severe occupational injury rate} = (\text{Number of severe occupational injuries} \times 200,000) / \text{Total work hours}$
5. $\text{Occupational injury fatality rate} = (\text{Number of fatalities caused by occupational injuries} \times 200,000) / \text{Total work hours}$
6. $\text{Lost Day Rate} = (\text{Number of fatalities as a result of work-related injury} \times 200,000) / \text{Total work hours}$
7. $\text{Occupational disease fatality rate} = (\text{Number of fatalities caused by occupational diseases} \times 200,000) / \text{Total work hours}$
8. All of Macronix's fabs are located in Taiwan.
9. The transportation equipment arranged by Macronix didn't cause any traffic accident.

Health Promotion Management

People working in today's world often experience high levels of work-related stress. Since employees are our most important asset, Macronix actively examines employees' physical and mental health problems. Only having healthy and happy work partners can Macronix be filled with the vital force and sustain its operations; this is the management concept of Macronix's Chairman.

- ◆ Continued to promote the "Macronix Sports Day Program" (since 2011):
 - (1) With the support and leadership of the Chairman and supervisors at all levels of management, Macronix's activity center was used by about 49,000 people in 2024.
 - (2) Established diverse and active clubs, with a total of 23 different sports clubs.
- ◆ Weight loss course and health promotion:
 - (1) Obesity continues to be the top ten abnormality in Macronix's health examination. In 2024, Macronix cooperated with contract vendors to organize muscle-building and fat-loss competitions in the form of teams. The participants joined core muscle group exercise courses led by professional exercise coaches. In total, 30 sessions were organized. The total weight loss was 261.8 kg.
 - (2) Health education messages are regularly displayed and promoted as slideshows on TV and posters.
 - (3) Promote one health theme (via online meetings) at the monthly/quarterly work safety meetings in each plant.
- ◆ Increase the number of participants in health promotion activities:
 - (1) Conduct annual surveys on the needs of employees and plan appropriate health promotion activities.
 - (2) Lung cancer has been the top of the top ten causes of death in Taiwan in recent years. In 2024, Macronix collaborated with Min Sheng General Hospital (hospital qualified to perform laborer physical examinations and medical check-ups) to provide 222 employees with free low-dose CT lung screenings to assist employees with disease prevention and provide subsequent health care. A total of 222 employees took advantage of this and 104 family members took advantage of the discounted price.
 - (3) A total of 89 employees benefited from free "heart CT scans" for prevention detection of cardiac arrest; a discounted price for employees' family members was also provided, and a total of 57 family members benefited.
 - (4) Osteoporosis is the second most important disease in the world, only behind cardiovascular disease. Hence, we continued to work together with Hsinchu Science Park Clinic (qualified hospital for laborer physical examinations and medical check-ups) in 2024. A total of 119 employees participated in the free dual-energy bone mineral density x-ray absorptiometry inspection.
 - (5) Autumn and winter are the flu season every year. Flu prevention ways include not only emphasis on personal hygiene and hand washing, but also receiving the flu vaccine. We worked together with Hsinchu Science Park Clinic (qualified hospital for laborer physical examinations and medical check-ups) in 2024 to provide flu vaccination at employees' own expense for 337 employees.

- (6) Hepatitis B is prevalent in Taiwan, and its most severe complications are cirrhosis and liver cancer, which also are the primary targets of abdominal ultrasound examinations. These two diseases have remained major causes of death in Taiwan to this day. The inspection can also achieve early discovery of issues with the liver, gallbladder, bile duct, pancreas, spleen, and kidneys. Hence, we worked together with Hsinchu Science Park Clinic (qualified hospital for laborer physical examinations and medical checkups) in 2024 to organize self-paid abdominal ultrasound examinations, with a total of 159 participants.
- (7) We started planning to include CPR+AED training in our regular employee training in 2020 to protect the lives of our employees and their families! In 2024, four CPR+AED courses were held, with a total of 124 participants. Training has been included in the compulsory course for new recruits from July 2020.

◆ Maternal worker health management:

- (1) Care programs for female employees have been introduced to implement maternal health care measures that allow employees to work at ease while also caring for their families. Provide information about mothering classes every month, and cancer screening activities take place occasionally to provide health-related information for women. Macronix advocates breastfeeding, and each of its plants has set up a breastfeeding room that offers comfortable equipment exclusively for employees who need to breastfeeding. We also offer small gifts to employees who have been breastfeeding for more than 6 months.
- (2) We have won awards in the breastfeeding room contest held by the Hsinchu City Government for ten consecutive years (2013-2024).

Since working in the high-tech industry is often competitive and stressful, Macronix has planned a long-term EAP to arrange a series of stress-relieving seminars, invite psychologists to provide consultation services at the plants (consultations can also be provided outside of Macronix by calling a toll-free number), and employ visually impaired masseurs/masseuses to provide massages.

◆ Awards & Achievements in 2024

- (1) Breastfeeding Room Certification - Special Excellence Award from the Public Health Bureau, Hsinchu City

Badge of Accredited Healthy Workplace (Entire Plants), certificated by Health Promotion Administration, Ministry of Health and Welfare



Occupational diseases

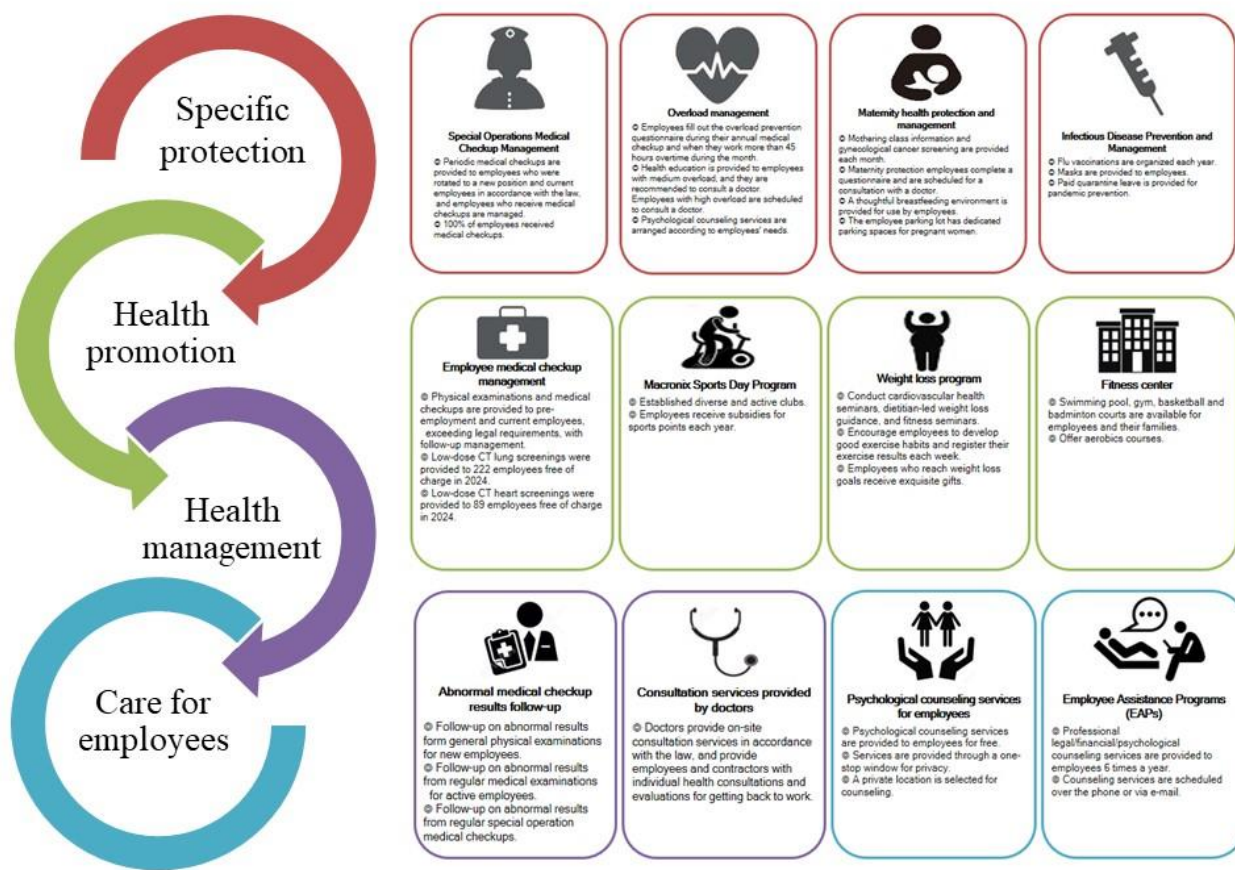
- (1) Employees:

Conduct occupational health examinations every year for the prevention of occupational disease in compliance with the law on workers' occupational accident insurance. A total of 365 people received the health checkups in 2024 under the comprehensive evaluation of physicians. 152 were first-level management and 213 were second-level management. None of them are related to occupational disease.

- (2) Long-term contractors:

Macronix investigates whether there were any occupational diseases among our 44 long-term contractors in the previous year through letters; none of them had any occupational diseases arising from their work.

Comprehensive Health Management



7.4. Social Welfare

Management approach	Impacts	<ol style="list-style-type: none"> 1. Actual impact: Contributing to the cultivation of technological talent in Taiwan 2. Potential impact: Persist in sustainable operation and continue to give back to society
	Short-term development direction	Contributing to the cultivation of technological talent in Taiwan
	Medium and long-term development direction	Enhance the value of knowledge economy, cultivating science and technology talent, care for children's and adolescents' physical and mental development, and elevate social harmony and quality of life.
	Management method (including measures)	<ol style="list-style-type: none"> 1. Sponsor technological development 2. Reward outstanding science and technology talent 3. Cultivate children and adolescents to develop an interest in learning knowledge related to science, humanities, and nature 4. Plan activities such as nature observation, cultural events, historic site visits, and folk-art events 5. Support and organize public welfare and education-related matters
	Process used to track the effectiveness of the actions	<p>External: Hold at least two meetings of the Macronix Education Foundation Board of Directors each year</p> <p>Internal: Convene judging panels and preparatory meetings for the Macronix Golden Silicon Awards and Macronix Science Awards</p>
	2024 Implementation Results	<ol style="list-style-type: none"> 1. The Macronix Golden Silicon Awards attracted 926 teachers and students to participate, and the number of participating teams reached 272. The amount of scholarship awarded was NT\$3.76 million. 2. The Macronix Science Awards attracted 2,272 teachers and students to participate, and the number of participating teams reached 733. The amount of scholarship awarded was NT\$4.8 million. 3. Nearly NT\$4.446 million in support of public welfare and education as well as local cultural and creative industries
	Targets in 2025 Goals	<ol style="list-style-type: none"> 1. Aim to increase participation in the Macronix Golden Silicon Awards by 3% annually, with an expected total of 4,100 participants 2. Aim to increase participation in the Macronix Science Awards by 3% annually, targeting a total reach of

		<p>approximately 5,900 teachers and students throughout the year</p> <p>3. More than NT\$4.34 million in support of public welfare and education as well as local cultural and creative industries</p>
	Future goals	<p>Short-term: Continue to cultivate technological talent in Taiwan</p> <p>Medium to long term: Commit to sustainable operations and continuously give back to society.</p>

Since the inception of Macronix in 1989, we keep maintaining sustainable operations and continue to enhance shareholders' rights and interest and care for the environment. Macronix never forgets to repay this environment and society that nourishes it.

We have devoted longtime efforts to community involvement through cooperation with the Macronix Education Foundation, particularly in the three main areas, such as science education, cultural creation assistance, and care for the disadvantaged.

7.4.1. Planting the Seed of Science Education

Background

We believe that only by constantly fostering technology talent can Taiwan keep its competitive and superior position in the international arena. Accordingly, Macronix made donations to create the Macronix Education Foundation (the “Foundation”) in 2001, chaired by the Chairman Miin Wu. Macronix donated to the Foundation approximately NT\$20 million to hold its primary events each year. Since the establishment of the Foundation, Macronix has donated more than NT\$500 million to the Foundation for the cultivation of talent and the promotion of related businesses. Macronix employees also participate in the Foundation’s events. It is anticipated that through the strength of the Foundation, resources can be maximized systematically, enabling more people to participate, therefore increasing the innovative competency of the younger generations, and expanding the knowledge and perspectives of our domestic students.



Tenets

The foundation’s work focuses on enhancing the value of knowledge economy, cultivating science and technology talent, caring for children’s and adolescents’ physical and mental development, and elevating social harmony and quality of life. In accordance with relevant laws and regulations, it has endeavored to:

- I. Sponsor technological development.
- II. Reward outstanding science and technology talent.
- III. Cultivate children’ and adolescents’ knowledge and interest in the science, humanities, and nature.
- IV. Plan activities such as nature observation, cultural events, historic site visits, and folk-art events.
- V. Handle public welfare and education-related matters that conform to the tenets of the foundation.

Outcomes

By focusing on cultivating basic scientific knowledge and nurturing talented engineers, the Foundation continues to implement the Future—Knowledge Engineering Program because we know that education is the basis for the future that must be constantly planned and promoted. Furthermore, the foundation holds various activities for different groups, including the Macronix Golden Silicon Awards, Macronix Science Awards, and Macronix Chair Professor Project. The Foundation also supports domestic science education in order to foster scientific talents in Taiwan.

For more than 20 consecutive years, over 40,000 teachers and students have participated in the Macronix Golden Silicon Awards and Macronix Science Awards with extreme enthusiasm.

Scholarships worth over NT\$180 million have been awarded. In 2013, the Foundation participated in the evaluation conducted by the Ministry of Education for the first time and received the highest rating of "outstanding". In recognition of the Foundation's important contributions to Taiwan's science education, Chairman Miin Wu, the leader of the Foundation, received the Social Education Contribution Award from the Ministry of Education in 2017, and won Country Winner and Business Paradigm Entrepreneur of EY Entrepreneur of The Year 2018. In 2021, the Foundation was once again recognized by the Ministry of Education with the honor of "Social Education Contribution Award in Group category".

Macronix Golden Silicon Awards

To inspire Taiwanese university and colleges students' creative spirit and hands-on experience in the field of semiconductor research, and to foster positive interaction and exchange between industry and academia, Macronix and the Macronix Education Foundation held the first Macronix Golden Silicon Awards - Semiconductor Design and Application Competition in 2000. Nearly 20,000 students and teachers nationwide had participated in these competitions and it is regarded as the most important competition among electronic and electrical engineering students for evaluating their performance before graduation. Envisioning the industry's development trends, Macronix continues to incorporate a wide variety of applications, such as power management, security, biomedical, robotics, digital home, automotive/EV, IoT, and AI into the Golden Silicon Awards. The goal of adding new categories to the competition is to attract and encourage students to propose innovative ideas and exciting creations in relevant domains, thus further stimulating domestic research trends.

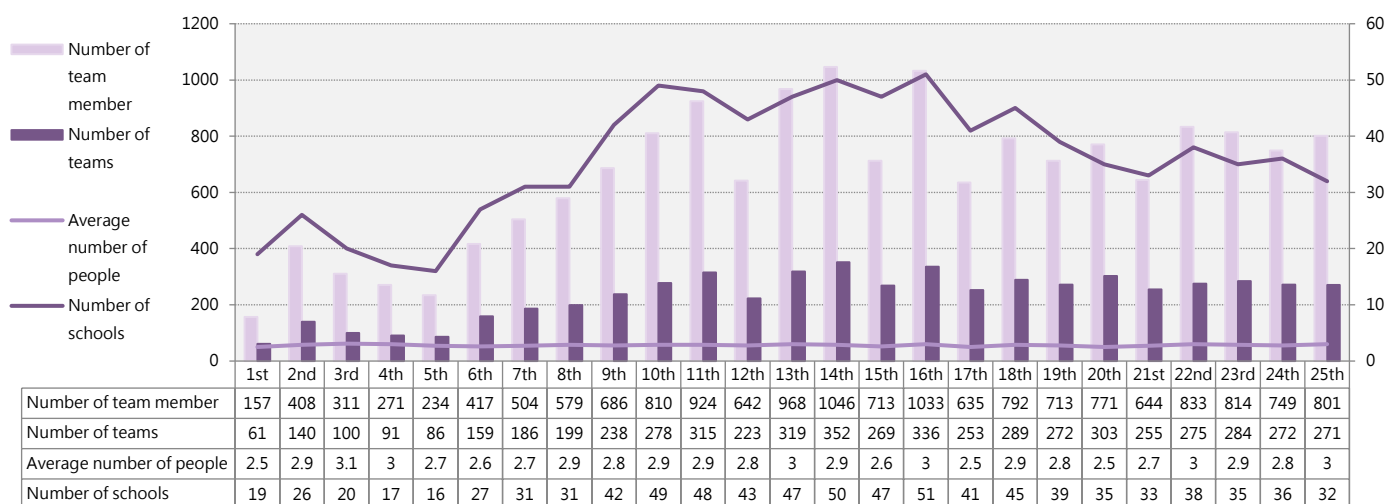
As early as 2019, the Macronix Golden Silicon Award introduced the "Artificial Intelligence (AI)" category into the competition. To date, over 250 AI-related projects have been submitted, with 4 of them progressing into commercial product development. The Macronix Golden Silicon Award has nurtured more than 700 outstanding AI talents in Taiwan

To promote sustainable development of the environment, the Green category of the awards was established within the Application Group, encouraging students to engage in energy conservation and environmental protection-related research. Over the years, 188 works have been submitted under this category, including a winner of the Judging Panel's Gold Award.



National Science Council Chairman Wu Cheng-wen, Ministry of Education Deputy Minister Yeh Ping-cheng, and Macronix Education Foundation Chairman Wu Min-qiu, along with other distinguished guests, listened attentively to the creative works presented by the award-winning students.

▼ Participation in the Golden Silicon Awards over the years



Macronix Science Awards

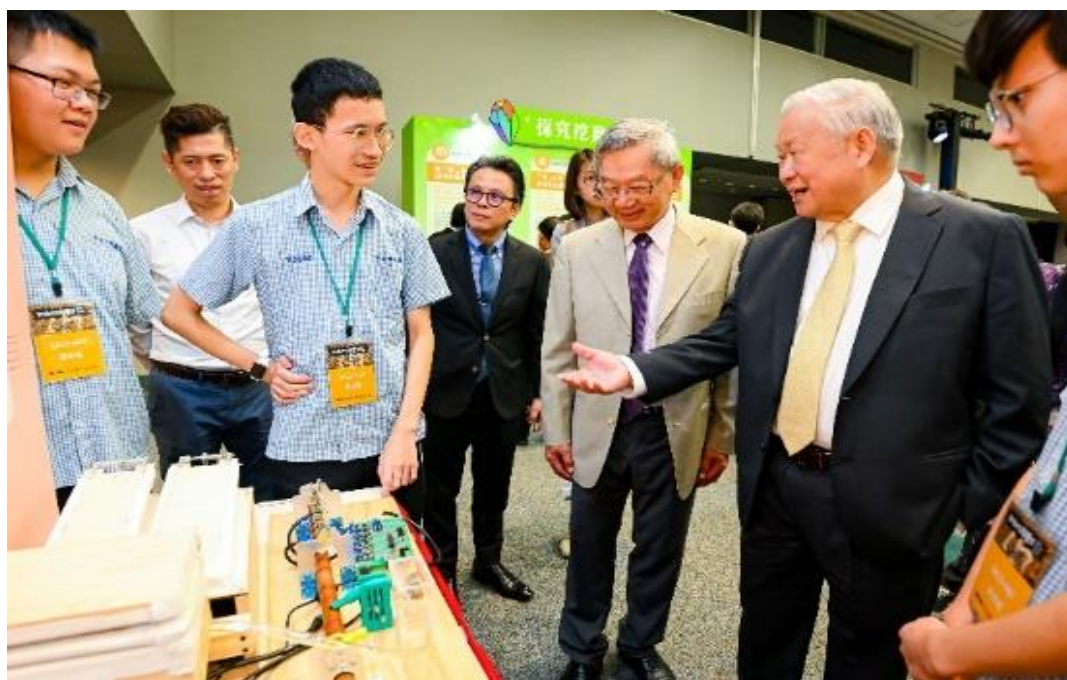
To inspire senior high school students' interests in natural and applied sciences as well as encourage them to explore science, develop their potential for innovation, outside-the-box thinking, and diversified learning enhancement, the Foundation held the first Macronix Science Awards in 2002 with Chia-Tung Lee, Emeritus Professor of National Chi Nan University, serving as the convener.

The number of students and schools participating in the Macronix Science Awards has grown from 189 teams in the first year to a total of 733 teams, comprising nearly 24,000 participants, by the twenty-third year. Cumulative awards from previous competitions have exceeded NT\$100 million, and an average annual award of approximately NT\$5 million is bestowed to the award-winning teachers and students of the year, making it the science competition with the highest monetary amounts in Taiwan. More than 90% of the high schools across Taiwan have participated in this competition, which has been acclaimed in Taiwan as the "Nobel Prize" of senior high school students due to its vast influence. The award-winning students receive a maximum of NT\$480,000 in four-year university scholarships encouraging more students who love science to join the competition.





▲ Administrative Deputy Minister Teng-Chiao Lin of the Ministry of Education, together with Cheng-Wen Wu, Minister of the National Science and Technology Council, and Dr. Mei-Yin Chou, Vice President of Academia Sinica (the convener of the Macronix Science Award), visited the Taichung First Senior High School team's gold award-winning project



▲ The Nei-Hu Vocational High School team demonstrated outstanding creativity by simulating a human playing the Chinese flute, winning the Gold Award at the 23rd Macronix Science Awards

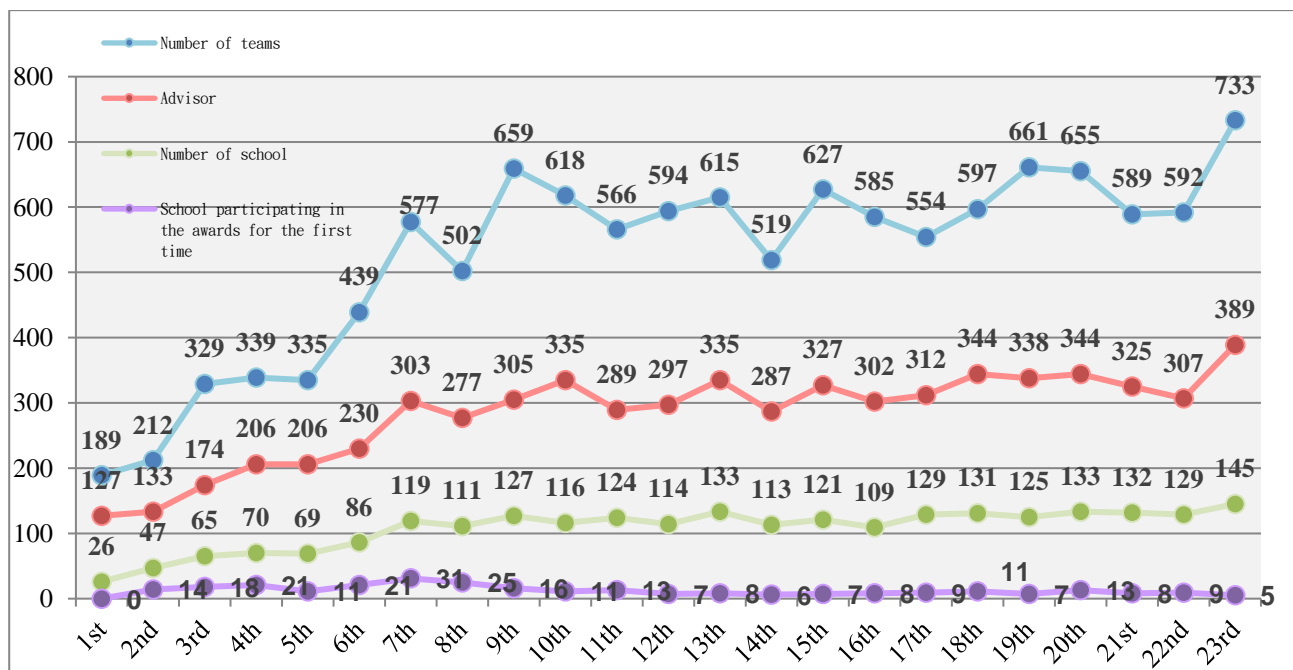
Macronix Science Awards Association

To extend the creative spirit of the Macronix Science Awards, the Foundation established the Macronix Science Awards Association in September 2004, students who reach the finals and receive awards automatically become members of the association. Through the association, new attendees can network with the senior members to expand their scientific horizons from diverse fields' perspectives, thereby helping each other grow and form lifetime bonds.

The Foundation has a project team that guides the association officers in planning and execution of the association's annual meetings. Various seminars are held from time to time inviting Macronix Science Awards committee members and leaders in technological, social, and cultural fields to inspire members to explore life and knowledge in a relaxed, dynamic, and enjoyable manner.



▼ Participation in the Science Awards over the years



Macronix Chair Professor Project

Macronix has also setup the Macronix Chair Professor Project, which helps academic institutions in Taiwan offer positions for senior faculty and famous researchers in the areas of VLSI and SoC. Macronix hopes to give students the opportunity to learn about state-of-the-art technologies and keep up with the latest industry developments. Macronix also encourages the participation and collaboration of industry, academia, and research institutions.



Sponsoring Important Science Education Organizations

Since 2001, the Foundation has continuously promoted science and technology education by upholding the values of the knowledge economy, caring for the development of children and adolescents, and elevating social harmony and quality of life. By supporting major organizations devoted to promoting fundamental science education, including the Wu Chien Shiung Scholarship Foundation, Yuan T. Lee Foundation Science Education for All, and Boyo Social Welfare Foundation, the Foundation aims at inspiring students to learn about science from everyday life, find an interest in science, and ultimately contribute new findings to society.

Since 2022, Macronix has partnered annually with the National Science and Technology Council's "Kiss Science" initiative, opening its technology facilities to the public and providing guided tours to promote scientific literacy in Taiwan. In addition, Macronix periodically sponsors electronics and electrical engineering camps organized by universities and colleges, and arranges visits for various educational institutions and non-profit organizations to Macronix for technology enterprise tours and science education programs.

From 2012 to 2022, the Foundation has also made donations every year to the International Organization of Chinese Physicists and Astronomers (OCPA) for the Outstanding Young Researcher Award (Macronix Prize) to encourage young overseas Chinese researchers in the fields of physics and astronomy in order to jointly promote high-tech developments. Research grants have been awarded to 13 recipients.

Donations to NCKU to Construct the Cheng Kung Innovation Center-MACRONIX Hall to Cultivate Interdisciplinary Talent

Macronix attaches great importance to the promotion and development of knowledge engineering. After donating NT\$400 million to National Tsing Hua University to construct the Macronix Learning Resource Center (Macronix Building), we donated NT\$420 million to National Cheng Kung University in 2019 to construct the Cheng Kung Innovation Center-MACRONIX Hall to foster technology talent. National Cheng Kung University founded the Miin Wu School of Computing in 2020 to provide teachers and students with an excellent research environment, cultivating interdisciplinary talent for Taiwan with an expertise in computational science, artificial intelligence, and data science. This will allow Taiwan to take an important place on the international stage in the field of technology, which will be even more crucial to changing the society and solving humanity's problems.

7.4.2. Fostering Local Cultural and Creative Industries

Holding art exhibitions to support local cultural and creative industries

Since 2019, we have invited an emerging Taiwanese artist to exhibit artworks of different characteristics in the exclusive space of Macronix's show room every year, to provide employees with the opportunity to get closer to and appreciate the beauty of art, and to help visitors at home and abroad understand Taiwan's art and culture. For the art works that are newly displayed every year, we will invite artists to share their creative ideas and conduct guided tours of their works, so that employees can cultivate their artistic literacy and their temperament to achieve work-life balance and diversity.



We invite different artists to exhibit their art works of different characteristics in Macronix's show room every year

Inviting Taiwanese Artists to Design Award Trophies has been recognized by the Ministry of Culture Arts and Business Awards

The Macronix Golden Silicon Awards and Macronix Science Awards have become a major battleground for scientific competition in Taiwan. To cultivate local artists, the Macronix Education Foundation has set an example by inviting different local artists to design the trophies every year. The Macronix Education Foundation has supported local sculptors with donations of over NT\$1 million per year and NT\$1.176 million was donated in 2024, with the total exceeding NT\$26 million over the years and with a total of 30 artists benefiting from this. These creations are the spiritual accomplishments created by 30 artists. They also provide an opportunity for more than 40,000 participants to not only experience the joy of winning but also share the beauty of artistic creation. For 24 consecutive years, the Macronix Education Foundation has supported local Taiwanese artists in creating works. In 2021 and 2023, the foundation was awarded with the recognition of the "Arts and Business Awards - Permanent Award - Bronze Award" by the Ministry of Culture for two consecutive sessions.



Technology for Charity - Care for Underprivileged Groups

The Macronix Education Foundation not only cares for the development of science and technology talent, but also places importance on disadvantaged groups. Since 2009, the Macronix Education Foundation has sponsored the St. Joseph Social Welfare Foundation to assist mentally and physically challenged children and adults in adapting to society and workplaces, and gaining independence through rehabilitation and various medical resources.

7.4.3 Environmental Protection and Charity Events



Adopting a Bicycle Eco-path in Hsinchu City

Based on its corporate social responsibility and commitment to give back to the community, Macronix adopted a 12-km long bicycle eco-path in Nanliao, Hsinchu City, located south to the Hsinchu Fish Harbor, north to the Jincheng Lake. Alongside the path, people can enjoy the scenery changing from the Hsinchu Fish Harbor, Hsinchu Environmental Protection Park, Sea Viewing Park, the seawall and sandy coast near the Hsinchu City EPB Incinerator Plant, Hsinchu City Coastal Low Carbon Center for Environmental Education, Hai-Tian-Yi-Xian Sea-watching Wooden Trail, Konan Coastal Scenic Area, Konan Canal, and finally reach Jincheng Lake, the center of Hsinchu City's bird-watching zone. In particular, the Hai-Tian-Yi-Xian scenic spot's splendid scenery attracts many families during weekdays and weekends that come to enjoy the gentle breeze blowing along the wooden trail. Macronix has assigned dedicated employees to clean the path every week to provide the clean and tidy environment for people to spend time with their kids in pleasant surroundings. Families can create unforgettable memories and enhance their health while enjoying the beautiful landscape. In this regard, Macronix has been recognized with a "Certificate of Gratitude for Adopting the Hsinchu Environmental Bikeway" issued by the Hsinchu City Government every year due to its dedication to corporate responsibility.

Beach Cleanup and Love the Earth - In September 2024, Macronix employees and their families participated in the "Salute to the Ocean – Joint Autumn Beach Cleanup Event for the Four Counties of Taoyuan, Hsinchu, and Miaoli". By taking real action to safeguard the marine environment, the event aimed to instill the principles of environmental sustainability into daily life, reduce the pollution burden caused by waste, and protect marine biodiversity and habitats.

To promote the ecological park adopted by Macronix, Macronix organized an event in October 2024 in support of the Hsinchu Science Park Bureau's Occupational Safety and Environmental Protection Month. The event included an ecological tour of the Macronix Park and a DIY workshop for creating environmentally friendly wooden clock bases. This event not only provided participants with the opportunity to create works using wooden pieces and bamboo branches, but also offered guided tours to understand the various plants, insects, and birds in the Macronix Park. Additionally, it aims to foster a love for nature and respect for all forms of life, while implementing green environmental practices.



Bicycle Lane



Photos From the Beach Cleanup Activity



DIY Clock Base



Garden Tour Description

Refurbished Computer and Digital Training Program

Since 2020, Macronix has started donating obsolete computers and peripheral equipment to the ASUS Foundation as part of the "Refurbished Computer and Digital Training Program", which combines environmental protection with social welfare. In 2024, a total of 351 computers and monitors along with other computer peripherals were donated. The goal is to contribute to resource recycling and the creation of a "circular society", while also hoping to make a greater social impact and shorten the digital gap.



7.4.4 Employees Participation in Charity Event



Macronix, to fulfill its corporate social responsibility in response to the UN SDGs, has taken active steps to fulfill social responsibility, and has demonstrated compassion for those in need during the occurrence of major disasters, helping people in all corners of society. By actively establishing charity clubs, raising funds for those clubs, and helping with allotting club meeting sites and human resources, we show our enthusiasm and support for social charities to all Macronix employees, and deeply endow the DNA of social responsibility in the hearts of our employees.



Humane Society

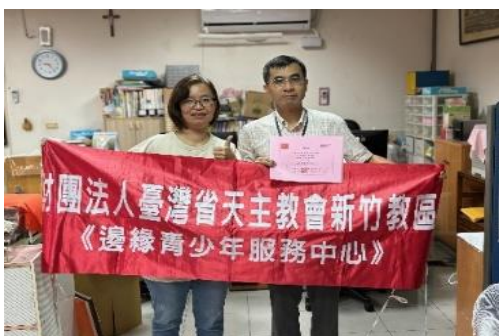
Macronix set up an internal employee charity club, called the Humane Society, in March 2001 with the purpose of helping those in need and increasing social harmony. Comprised by a group of caring Macronix employees, the Humane Society works with other charitable organizations, such as the Hsinchu Taiwan Fund for Children and Families, to help the underprivileged in Hsinchu. The Humane Society was approved by the Hsinchu City Government in 2008 to change its name to the “Humane Society Service Organization”.

Macronix Family Sponsorship Drive	The Macronix Family Sponsorship Drive has entered its 22-nd year, unwaveringly calling upon employees to donate and support social welfare organizations, including the Taiwan Fund for Children and Families (aboriginal children), Sacred Heart Home, Miracle Home (teenagers), World Vision, Humane Society Service Organization, and Eden Social Welfare Foundation. In 2024, the monthly number of adoptive sponsors was 135 people, and the total annual donation amount was approximately NT\$2.5million.
Emergency Aid	Upholding the purpose of helping people in distress, the Humane Society organizes fundraising activities to help colleagues and their family members who encounter major crises or need urgent assistance.

Big Love Society

Macronix's Big Love Society is the first charitable organization in Hsinchu Science Park that focuses on healthcare. It promoted the “10,000 Organ Donor Signups with National Health Insurance Card” initiative as its first phase goal, and 2017 marked the 10th year of its promotion, when the society completed its 10-year mission to help promote organ donation. In the future, the promotion of organ donation will be carried on by medical professionals. However, the spirit of big love will not end, and Big Love Society will continue to gather together company employees and the public to help all corners of society that are in need of assistance.

Promotion of After School Classes for Disadvantaged Students	In 2013, Big Love Society initiated a charity event to collect monthly donations for the Boyo Social Welfare Foundation to help disadvantaged children attend after school classes. Over eleven years have passed and over 75 students participated in after school classes in 2024, with the donations that totaled NT\$626,000.
Promotion of Charity Group Activities	This year, Big Love Society will use community funds to assist the Hsinchu Branch of the Syin-Lu Social Welfare Foundation and the St. Joseph Social Welfare Foundation to handle activities related to mentally handicapped children. It will also make donation to Youth at Risk Ministry in Catholic Hsinchu Diocese.



Animal Club

The Animal Club was established to help take care of stray animals with dedication, love, and compassion, by embracing the principles of respecting life, caring for life, and advocating the concept of respecting animal life, as well as protecting the environment. It is the only corporate club in Taiwan that aims to protect animals.

The Animal Club works with local governments and is dedicated to trap-neuter-return (TNR) of stray dogs/cats in Hsinchu and Miaoli. Besides rescuing injured animals, a greater part of its efforts are put into the capture of stray dogs/cats, and sending the stray animals for spaying/neutering at an animal hospital. This stops the breeding of stray animals at the source, reducing the number of stray animals that are born each year by 3,000-4,000, and helps the government resolve a social issue.

It organizes free adoption activities at holiday flower markets during all holidays (including Chinese New Year), conducting follow-up and bears the expenses of vaccination and spaying female dogs. This prevents the constant increase of stray dogs and also prevents rabies, which will cause even more environmental and protection issues.

The club also raised NT\$7 million to build an animal shelter for dogs that it could not find an owner for, and the shelter has maintained about 300 stray dogs over the last 20 years.

The Animal Club has not ceased its efforts in animal protection for a single day in the 20 years since it was established. The annual support of about NT\$4 million is also self-financed. It has been extremely difficult, but the club hopes to help the most disadvantaged lives that are of least concern to the public based on the belief that each life is equal, allowing the public to emphasize the importance of animal lives and jointly contribute to protecting stray animals in Taiwan.



Adoption of stray dogs	Every weekend and national holiday, volunteers together with young students of charity organizations of Hsinchu's local high schools and colleges host an event at the Hsinchu flower market to allow people to adopt animals. The event raises awareness about adopting instead of buying, not abandoning their pets, and common knowledge for interacting with animals, allowing more people to learn to respect life and mitigate social issues caused by stray animals. Each year, the club finds new homes for approximately 250-300 dogs, conducting follow-up, and pays for
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	vaccines and spaying of female dogs.
Spaying/neutering in place of killing	Spaying/neutering rather than killing not only effectively resolves the problem of too many stray dogs, but also manifests the act of having respect for life. Animal Club sterilizes more than 500 stray dogs and cats on average every year, reducing the reproduction of thousands of stray animals each year.
Animal rescue in action	The Animal Club receives public call-ins from Hsinchu County/City and nearby counties, assists with rescuing injured animals, and captures stray female dogs to have them spayed in veterinary hospitals.
Cleaning Animal Shelters and Feeding Stray Animals	Stray dogs in animal shelters are fed by volunteers every day at a specific time, and cages in the animal shelter are cleaned once a day.
Rabies vaccination for stray dogs	The Animal Club helps Hsinchu City Government provide rabies vaccinations for stray animals and homegrown pets; on average, a total of 600 animals receive vaccine injections every year to help prevent the spread of rabies in Taiwan.

Water Sports Club

The Water Sports Club was established in 2017. It aims to “promote water sports”. Apart from inviting colleagues to participate in and learn about the fun of water play, the club also aims to cultivate their knowledge of different water areas, as well as the concepts and techniques of water sports safety. In recent years, the club has participated in charity fairs organized by Renai Home, using engaging and dynamic activities to foster compassion and meaningful interaction and has integrated the issue of “water conservation” to make the water sports experience more meaningful and diversified

In 2024, the Macronix Water Sports Club was invited to participate in the “Double the Happiness – Charity Fair for Disability Services and Environmental Awareness” organized by the Saint Joseph Social Welfare Foundation. All proceeds from the event were fully donated to support early intervention, adult day services, healthcare, rehabilitation, and other related services, ensuring that individuals with disabilities can learn safely and maintain a healthy lifestyle. Together, we will join hands to create a happy life.



財團法人新竹市天主教社會福利基金會	
接受各界捐款收據	
中華民國 年 月 日	
捐款人姓名 (團體團體)	身分證統一編號
地址	電話
捐款金額 (大寫)	用途
捐款用途 <input type="checkbox"/> 募款服務費用 <input type="checkbox"/> 其他	
●特此聲明：財團法人天主教社會福利基金會 ●統一編號：55050200 ●本會地址：新竹市東區新豐路100號 ●本會分社地址：新竹市東區新豐路100號 ●本會網址：http://www.chcny.org.tw ●本會電話：(03)5502000 ●本會傳真：(03)5502001 ●本會信箱：新竹市東區新豐路100號 ●本會網址：http://www.chcny.org.tw	
董事長：莊宏	會計：莊宏
經手人：莊宏	

8. Appendix

8.1. About this Report

Editorial Principles

Thank you for reading the Macronix International Co., Ltd. (hereinafter “Macronix”) Sustainability Report. Both Chinese and English versions of the Report are available on the Macronix website (<https://www.macronix.com/>). The purpose of the Report is to provide the public and all stakeholders of Macronix a better understanding of our concerns and actions in 2024 with regard to sustainability topic. The Report also highlights our commitments and achievements in various sustainability areas.

Reporting Period

The Report discloses Macronix's performance information in terms of sustainability management policies, key issues, corporate commitments, and actual actions throughout the year 2024 (from January 1, 2024, to December 31, 2024). This Report is issued on an annual basis (the previous edition was released in August 2024, and the next edition is scheduled for publication in August 2026). Due to the re-screening of sustainability topics in 2024, which differs from the previous year's approach based on GRI-specific topics, a comparison with the material topics from the previous year cannot be made.

Aspect Boundaries and Scope of the Report

The boundaries and scope of the Report include: Headquarters (Address: No.16, Li-Hsin Road, Science Park, Hsin-chu, Taiwan, R.O.C.), Fab 2 (Address: No.16, Li-Hsin Road, Science Park, Hsin-chu, Taiwan, R.O.C.), Fab 5 (Address: No. 19, Li-Hsin Road, Science Park, Hsin-chu, Taiwan, R.O.C.), and Test Building (No. 8, Creation Road IV, Science Park, Hsin-chu, Taiwan, R.O.C.). Other than information disclosed in the consolidated financial report, the subsidiaries are not included within the scope of this Report.

Reporting and Third-Party Verification

The Macronix Sustainability Report Execution Task Force regularly holds a “Sustainability Report Writing Commencement Meeting” each year to discuss the direction of the annual plan and compilation of the Sustainability Report. Macronix has been compiling a Corporate Social Responsibility Report since 2012, and the Corporate Social Responsibility Report was renamed the Sustainability Report in 2021.

The Report was written based on the GRI Standards of the Global Reporting Initiative (GRI) and AA 1000AP (2018), and was checked by a third-party verification unit. Bureau Veritas Certification (Taiwan) Co., Ltd. was entrusted with the evaluation of the Report. The Report was verified to comply with the requirements of the GRI Standard and AA1000AS (2018) standards. The assurance level to be applied is Moderate Level Assurance (Type I). The Report also meets the requirements of the Financial Supervisory Commission to import Task Force on Climate-related Financial Disclosures (TCFD) and the US Sustainability Accounting Standards Board (SASB) to disclose the information of stakeholder concern.

Contact Information

We sincerely welcome any comments and suggestions about the 2023 Macronix Sustainability Report.

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Tel: 886-3-5786688

E-mail: pubcsr@mxic.com.tw

8.2 Content Index

8.2.1. GRI Content Index

GRI STANDARD	DISCLOSURE	Page	OMISSION
GRI 1: Foundation 2021	-	-	-
General disclosure			
GRI 2: General Disclosure 2021	2-1 Organization Details	a. Cover, 61 b. 61-63 c. 12 d. 12	
	2-2 Entities included in the organization's sustainability reporting	a. 62 b. 63-65c. 63-65	
	2-3 Reporting period, frequency and contact point	a. 168-169 b. NA c. 168-169 d. 168-169	
	2-4 Restatements of information	a. NA	
	2-5 External assurance	a. 29-30, 168 b. 168, 184-189	
	2-6 Activities, value chain and other business relationships	a. 9-10 b. 9-10, 55-60 c. 61 d. No significant changes during the reporting period	
	2-7 Employees	a. 109 b. 109-114 ; No employees without guaranteed hours during the reporting period. c. 109 d. 109-114	

		e. No significant fluctuation in the number of people	
	2-8 Workers who are not employees	a. 110 b. 1100 c. No significant fluctuation in the number of people	On-site contractors: Macronix began to collect data on work-related injuries of contractors in 2022, and there is no other annual information available.
	2-9 Governance structure and composition	a. 35-40 b. 35-40 c. 35-40	
	2-10 Nomination and selection of the highest governance body	a. 35-40 b. 35-40	
	2-11 Chair of the highest governance body	a. 35-36 b. 35-36	
	2-12 Role of the highest governance body in overseeing the management of impacts	a. 13-15 b. 23-34 c. 29-30	
	2-13 Delegation of responsibility for managing impacts	a. 23-28 b. 29-30	
	2-14 Role of the highest governance body in sustainability reporting	a. 29-30 b. NA	
	2-15 Conflicts of interest	a. 36-37 b. 36-37	
	2-16 Communication of critical concerns	a. 41-42 b. 41-42	
	2-17 Collective knowledge of the highest governance body	a. 35-40	
	2-18 Evaluation of the performance of the highest governance body	a. 37 b. 37 c. 37	
	2-19 Remuneration policies	a. 40 b. 40	
	2-20 Process to determine remuneration	a. 40	

	2-21 Annual total compensation ratio	a. 40 b. 40 c. 40	
	2-22 Statement on sustainable development strategy	a. 21	
	2-23 Policy commitments	a. 107-108 b. 21, 107-108 c. 21 d. 21 e. 107-108, 21 f. 21, 23-28	
	2-24 Embedding policy commitments	a. 21, 55-56, 168	
	2-25 Processes to remediate negative impacts	Please refer to Chapter 4 of the Corporate Governance Guidelines for the relevant corrective measures. Macronix should handle these matters appropriately in accordance with the principle of integrity	
	2-26 Mechanisms for seeking advice and raising concerns	a. 23	
	2-27 Compliance with laws and regulations	a. 48 b. 48 c. 48 d. 48	
	2-28 Membership associations	a. 17-18	
	2-29 Approach to stakeholder engagement	a. 23-28	
	2-30 Collective bargaining agreements	a. 41-42 b. All of colleagues are included	
GRI 3 Material Topic			
GRI 3: Material Topic 2021	3-1 Process to determine material topics	61-62	

	3-2 List of material topics	61-62	
	3-3 Management of material topics	61-62	
Business and Economic Performance			
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	63-65	
	201-3 Defined benefit plan obligations and other retirement plans	66	
	201-4 Financial assistance received from government	66	
Product Quality Management			
GRI 416 : Customer Health and Safety 2016	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	No incidents of violations of health and safety regulations related to products and services.	
GRI 417 : Marketing and Labeling 2016	417-2 Incidents of non-compliance concerning product and service information and labeling	No incidents of non-compliance with information and labeling regulations related to products and services.	
Green Material Management			
GRI 301: Materials 2016	301-1 Materials used by weight or volume	75-76	
Climate Strategy			
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	99	
	305-2 Energy indirect (Scope 2) GHG emissions	99	
	305-3 Other indirect (Scope 3) GHG emissions	99	
	305-4 GHG emissions intensity	99	
GRI 201: Economic Performance 2016	201-2 Financial implications and other risks and opportunities due to climate change	81-92	

Social Welfare and Education			
GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	149-150	
Risk Management			
GRI 205: Anti-corruption 2016	205-3 Confirmed incidents of corruption and actions taken	40	

8.2.2 SASB Index

Sustainability Accounting Standards Board, SASB			
Topic	Code	Accounting Metric	Page
Greenhouse Gas Emissions	TC-SC-110a.1.	Gross global Scope 1 and Scope 2 emissions and amount of total emissions from perfluorinated compounds	98-99
	TC-SC-110a.2.	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	96-97
Energy Management in Manufacturing	TC-SC-130a.1.	(1) Total energy consumed, (2) Percentage grid electricity, (3) Percentage renewable	93-95
Water Management	TC-SC-140a.1.	(1) Total water withdrawn, (2) Total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress	69-73
Waste Management	TC-SC-150a.1.	Amount of hazardous waste from manufacturing, percentage recycled	77-80
Employee Health & Safety	TC-SC-320a.1.	Description of efforts to assess, monitor, and reduce exposure of employees to human health hazards	138-139
	TC-SC-320a.2.	Total amount of monetary losses as a result of legal proceedings associated with employee health and safety violations	48
Recruiting & Managing a Global & Skilled Workforce	TC-SC-330a.1.	Percentage of employees that are (1) Foreign nationals (2) Located offshore	115-116
Product Lifecycle Management	TC-SC-410a.1.	Percentage of products by revenue that contain IEC 62474 declarable substances	104
	TC-SC-410a.2.	Processor energy efficiency at a system-level for: (1) Servers (2) Desktops (3) Laptops	Not Applicable
Materials Sourcing	TC-SC-440a.1.	Description of the management of risks associated with the use of critical materials	52-53

Intellectual Property Protection & Competitive Behavior	TC-SC-520a.1.	Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	41-42
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8.2.3 Sustainable Disclosure Indicator — Semiconductor Industry

No.	Indicator	Response	Page
I	Total energy consumption	2,037,130 Gigajoules (GJ)	93-95
	Percentage of purchased electricity	93.74 %	94
	Utilization rate of renewable energy source	1.91%	94
II	Total water withdrawal	2,769 thousand cubic meters (m³)	69-71
	Total Water Consumption	770 thousand cubic meters (m³)	69-71
III	Weight of hazardous waste produced	6,455.619 metric tons (tons)	78
	Percentage of hazardous waste recycled	99.8%	80
IV	Disclosure of work-related injuries categories	The main types of work-related injuries were collisions, crush injuries and falls	141
	Disclosure of the number of work-related injuries victims	3 people	141
	Disclosure of the rate of work-related injuries	0.07%	143
V	Disclosure of product life cycle management: including the weight of scrapped products and electronic wastes	IC: 2.74 tons Wafer: 12.53 tons	77
	Disclosure of product life cycle management: including the recycling percentage of scrapped products and electronic wastes (Note 1)	IC:100 % Wafer:100 %	77
VI	Description of risk management relating to the use of key materials	Items listed as part of the risk management procedures, along with planning to manage and guide in three major areas: (1) Supplier management system verification (2) Supplier auditing and guidance (3) Supplier performance evaluation. Macronix's risk management team meets quarterly and compiles the results of risk identification, risk analysis, and risk assessment in each center.	52-53

VII	Total monetary losses arising from legal proceedings relating to anti-competitive behavior regulations	None	41
VIII	Output of main products by product category	The total production of memory chip dies is 1,764,382 thousand pieces, and the foundry services correspond to approximately 170,846 pieces of 8-inch wafers.	-











8.2.4 Comparison of Task Force on Climate-related Financial Disclosures (TCFD)

Risks and opportunities of climate change to the Company and the corresponding measures taken by the Company		
Item	Implementation status	
	Corresponding chapter	Corresponding page
1. Describe the Board of Directors' and management's supervision and governance of climate-related risks and opportunities.	Ch 6.2	81
2. Describe how the identified climate risks and opportunities affect the corporate business, strategy, and finance (short, medium, and long term).	Ch 6.2	81
3. Describe the financial impact of extreme climate events and transformation actions.	Ch 6.2	81
4. Describe how the identification, assessment, and management processes of climate risks are integrated into the overall risk management system.	Ch 4.2	49
5. If scenario analysis is used to assess the resilience to climate change risks, the scenarios, parameters, assumptions, analysis factors and major financial impacts used should be stated.	Ch 6.2	81
6. If there is a transformation plan to manage climate-related risks, the content of the plan, and the indicators and targets used to identify and manage physical and transformation risks should be stated.	Ch 6.2	81
7. If internal carbon pricing is used as a planning tool, the basis for price setting should be stated.	Internal carbon pricing mechanism has	

	not been established	
8. If a climate-related target is set, the activities covered, scope of GHG emissions, planning schedule, annual progress and other information should be stated; If carbon offset or Renewable Energy Certificates (RECs) are used to achieve the relevant targets, the source and quantity of the carbon reduction quota offset or the quantity of Renewable Energy Certificates (RECs) should be stated.	Ch 6.2	81
9. GHG inventory and assurance	Ch 6.2.3	99

8.3. Comparison of UN Sustainable Development

Goals(SDGs)

Goals	Description	Chapter
1 	End poverty in all its forms everywhere	7.4.4. Employees Participation in Charity Events
2 	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	7.4.4. Employees Participation in Charity Events
3 	Ensure healthy lives and promote well-being for people of all ages	7.3.2. Safety and Health Promotion Management
4 	Ensure inclusive and equitable quality education and promote life-long learning opportunities for all	7.2. Learning and Development 7.4.1. Planting the Seed of Science Education
5 	Achieve gender equality and empower all women and girls	7.1. Staff Respect 7.1.2. Upholding Employee Rights
6 	Ensure availability and sustainable management of water and sanitation for all	6.1.1. Water Resource Management 7.3.2 Safety and Health Promotion Management
7 	Ensure access to affordable, reliable, sustainable, and modern energy for all	6.2.2. Energy Management
8 	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	4.3. Research and Development Management 6.1.1. Water Resource Management 6.2.2 Energy Management 7.1.1. Recruitment
10 	Reduce inequality within and among countries	7.1. Staff Respect
11 	Make cities and human settlements inclusive, safe, resilient and sustainable	6.1.1 Water Resource Management 6.1.2 Air Pollution Prevention

		6.1.4 Waste Management 6.3 Ecological Environment and Conservation 7.3.1. Macronix H ₂ O
12		Ensure sustainable consumption and production patterns 6.1. Environmental Protection Management and Pollution Prevention
13		Take urgent action to combat climate change and its impacts 4.2. Risk Management 6.2. Energy and Climate Change Management
14		Conserve and sustainably use the oceans, seas and marine resources for sustainable development 7.4.3 Environmental Protection and Charity Events 7.4.4 Employees Participation in Charity Events
15		Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss 6.3. Ecological Environment and Conservation
16		Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive 4.1. Corporate Governance
17		Strengthen the means of implementation and revitalize the global partnership for sustainable development 4.4. Supply Chain Management 6.4.2 Green Procurement and Environment, Safety, and Health Costs Accounting Management System

8.4. Independent third-party assurance statement



INDEPENDENT ASSURANCE STATEMENT

To: The Stakeholders of Macronix International Co., Ltd.

Introduction and objectives of work

Bureau Veritas Certification Taiwan has been engaged by Macronix International Co., Ltd. to conduct an independent assurance of its 2024 Macronix International Co., Ltd. Sustainability Report. This Assurance Statement applies to the related information included within the scope of work described below.

This information and its presentation in the 2024 Macronix International Co., Ltd. Sustainability Report are the sole responsibility of the management of Macronix International Co., Ltd. Bureau Veritas was not involved in the drafting of the Report. Our sole responsibility was to provide independent assurance on its content.

The objective of our engagement is to provide assurance to Macronix International Co., Ltd. stakeholders over the accuracy, reliability and objectivity of the reported information and that it covers the issues material to the business and its stakeholders.

Scope of work

The scope of our work was limited to assurance over AA1000 AccountAbility Principles, included in the ESG Report for the reporting period January 1, 2024, to December 31, 2024. Subject to the limitations and exclusions listed in the section below, our review included:

- Data and information included in 2024 Macronix International Co., Ltd. Sustainability Report;
- Appropriateness and robustness of underlying reporting systems and processes, used to collect, analyse and review the information reported;
- Evaluation of the Report against the main principles of the AA1000 Accountability Principle (2018)
 - Inclusivity
 - Materiality
 - Responsiveness
 - Impact
- Evaluation of the Report against the principles of Stakeholder Inclusiveness, Sustainability Context, Materiality, Completeness, Balance, Comparability, Accuracy, Timeliness, Clarity, and Reliability, as defined in the GRI Standards;
- An assessment was conducted on the extent to which the report applies the sustainability disclosure topics and metrics as defined by the Sustainability Accounting Standards Board (SASB) under the industry-specific standards for Technology & Communications – Semiconductor (TC-SC).
- An assessment was also performed on the report's application of the disclosure recommendations issued by the Task Force on Climate-Related Financial Disclosures (TCFD).





Reporting Criteria

2024 Macronix International Co., Ltd. Sustainability Report has been prepared in reference to relevant best practice reporting frameworks such as the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB), as well as internal definitions set by Macronix International Co., Ltd. for tracking and monitoring the progress against its ESG (Environment, Social, Governance) performance indicators.

Limitations and Exclusions

Our work was subject to the following exclusions:

- Financial data, including financial data that feeds into the calculation of information in the ESG report as these are audited by an external financial auditor and are relied on as accurate for the purposes of our scope of work. This includes but is not limited to any statements relating to production, sales, revenue, salaries, payments, and financial investments;
- Greenhouse gas emissions are verified by verification body selected by Macronix International Co., Ltd. and are relied on as accurate for the purposes of our scope of work.
- Information related to activities outside the defined reporting period or scope;
- Company position statements (including any expression of opinion, belief, aspiration, expectation, aim or future intent) and any Macronix International Co., Ltd. or third-party anecdotes or testimonials;
- Content of external websites or documents linked from the ESG Report and country or business unit specific Reports of other Macronix International Co., Ltd. entities or joint ventures;
- Appropriateness of any new targets, commitments, and objectives established and communicated by Macronix International Co., Ltd.; and
- Appropriateness of definitions and any internal reporting criteria adopted by Macronix International Co., Ltd. for its disclosures.

The following limitations should be noted:

Our work was limited to Macronix International Co., Ltd. activities where Macronix International Co., Ltd. consolidates and reconciles data provided by its markets, countries of operation, suppliers and other third parties. The reliability of the reported data is dependent on the accuracy of data collection and monitoring arrangements at market and site level, not addressed as part of this assurance.

This Moderate level assurance engagement relies on a risk based selected sample of the information in the ESG report and the associated limitations that this entails.



Responsibilities

The preparation and presentation of the ESG Report are the sole responsibility of the management of Macronix International Co., Ltd.

Bureau Veritas was not involved in the drafting of the ESG Report. Our responsibilities were to:

- Provide Moderate level assurance as per AA1000 over the accuracy, reliability and objectivity of the information contained within the ESG Report;
- Form an independent conclusion based on the assurance procedures performed and evidence obtained; and
- Report our detailed conclusions and recommendations in an internal report to Macronix International Co., Ltd. management.

Assessment Standard

The assurance process was conducted in line with the requirements of the AA1000 Assurance Standard (AA1000AS v3), Type 1 at a Moderate level of assurance.

Summary of work performed

As part of our independent assurance, Bureau Veritas undertook the following activities:

1. Interviews with relevant personnel of Macronix International Co., Ltd.;
2. Review of documentary evidence produced by Macronix International Co., Ltd.;
3. Review performance data listed in report with sampling basis;
4. Visits to 4 sites located in Taiwan (Headquarters, Fab 2, Fab 5 and Test Building);
5. Evaluate the design of internal systems, processes and controls for data collection, aggregation, analysis and reporting, including assessing the appropriateness of assumptions made, estimation techniques used and reporting boundaries;
6. Assess the disclosure and presentation of 2024 Macronix International Co., Ltd. Sustainability Report to ensure consistency with assured information.

Our work was conducted against Bureau Veritas' standard procedures and guidelines for external Assurance of Sustainability Reports, based on current best practice in independent assurance.

The work was planned and carried out to provide reasonable, rather than absolute assurance and we believe it provides a reasonable basis for our conclusions.

Our findings

On the basis of our methodology and the activities described above, it is our opinion that:

- The information and data included in 2024 Macronix International Co., Ltd. Sustainability Report are accurate, reliable and free from material mistake or misstatement;
- The Report provides a fair representation of Macronix International Co., Ltd. 's activities over the reporting period;



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- The information is presented in a clear, understandable and accessible manner, and allows readers to form a balanced opinion over Macronix International Co., Ltd.'s performance and status during the reporting period;
- The Report properly reflects the organisation's alignment to and implementation of the AA1000 Assurance Standard v3 principles of Inclusivity, Materiality, Responsiveness and Impact in its operations. Further detail is provided below;
- Macronix International Co., Ltd. has established appropriate systems for the collection, aggregation and analysis of relevant information;

Alignment with the principles of AA1000 Accountability Principle (2018)

Inclusivity

The organization has established stakeholder engagement mechanisms and regularly collects input from diverse groups, demonstrating its recognition of stakeholder perspectives and the presence of an effective communication and engagement framework. Internally, cross-departmental collaboration and strategic-level participation arrangements are evident, and engagement activities are linked to the organization's operational strategies and sustainability governance structures, indicating a certain level of maturity in internal integration.

Additionally, parts of the engagement process have been incorporated into operational policies and procedures, helping to ensure the continuity and institutionalization of stakeholder participation. While there is still room for improvement in clarifying engagement objectives, identifying participation risks, and setting relevant indicators, the organization has established a foundation for practicing inclusivity. It demonstrates alignment with several implementation criteria, such as the formulation of preliminary engagement strategies, information dissemination mechanisms, and interdepartmental collaboration processes. Strengthening top management's commitment and enhancing the measurement of engagement effectiveness would further improve the overall quality and transparency of participation. According to the AA1000 implementation criteria, this is assessed as "Generally aligned with the Principle; enhanced governance-level commitment and participation risk management are recommended."

Materiality

The organization has developed a structured process for determining material issues, covering the three phases of issue identification, assessment, and prioritization, and has integrated this process into core management mechanisms such as risk management, strategy development, and operations. The materiality assessment process demonstrates cross-departmental involvement and a regular review mechanism, reflecting stability and institutionalization.

The identification of issues draws from both internal and external sources, including stakeholder input, industry benchmarking, policy trends, and operational risks, reflecting the organization's ability to integrate diverse information. The evaluation approach includes initial criteria for assessing the significance and relevance of issues, considering short-, medium-, and long-term trends and sector-specific dynamics. Although there is room to further address specific environmental issues (e.g., ozone-depleting substances) and to improve the objectivity of evaluation criteria, the organization's materiality management practice aligns with most of the AA1000 implementation criteria, demonstrating a systematic and sustainable management approach that provides a solid foundation for enhancing disclosures and responsive actions in future reporting cycles. According to the AA1000 implementation criteria, this is assessed as "Generally aligned with the Principle; improving the objectivity of evaluation criteria and completeness of issue disclosures is recommended."



Responsiveness

The organization has taken concrete response measures based on identified material topics and has disclosed actions and outcomes through its sustainability report, website, and other communication channels. Most of these responses are aligned with business policies, internal management processes, and strategic objectives, indicating a structured and purposeful approach rather than isolated actions.

The organization demonstrates a certain level of responsiveness and timeliness in its selection of response methods and timing, and overall communication frequency and transparency appear adequate. Some response topics have been integrated into internal performance indicators and action plans, aligned with internal performance management systems. While no clear evidence has been found showing that the organization fully considers issue prioritization or stakeholder expectations in its response strategies, no deviations from implementation criteria have been observed. Enhancing alignment between response mechanisms and stakeholder expectations, as well as strengthening the tracking of response effectiveness, would further improve the quality and impact of responsiveness. According to the AA1000 implementation criteria, this is assessed as "Generally aligned with the Principle; enhancing the logic behind response prioritization and expectation management is recommended."

Impact

The organization has established a management framework to assess the impacts of its operational activities. Evaluations and performance tracking of positive impacts are relatively complete and aligned with relevant objectives and action plans, demonstrating a performance-oriented management capability. Methodologically, the organization applies quantitative indicators, benchmark comparisons, and internal evaluation systems, and incorporates some stakeholder perspectives.

Although the assessment and disclosure of negative impacts could be further strengthened, the overall scope of impact covers short-, medium-, and long-term aspects, direct and indirect relationships, and considers impacts across the value chain. In some areas, the organization has initiated impact trend monitoring and corresponding strategic planning, showing practical application of the Impact Principle. Continued efforts to disclose negative impacts and improve the balance and contextualization between positive and negative impacts would enable more comprehensive accountability for ecosystem-wide effects. According to the AA1000 implementation criteria, this is assessed as "Generally aligned with the Principle; strengthening the disclosure of negative impacts to improve information balance is recommended."

Key areas for ongoing development

Based on the work conducted, we recommend Macronix International Co., Ltd. to consider the following:

- The current report discloses internal assessment results from the materiality determination process, reflecting a degree of transparency regarding issue identification. However, the results of combined analysis of both internal and external perspectives are not included. We recommend that future disclosures incorporate both internal and external assessment outcomes, with explanations of their differences and how they were integrated. This will help enhance the completeness and interpretability of the materiality determination process and improve transparency and stakeholder confidence in the issue prioritization.



Statement of independence, impartiality and competence

Bureau Veritas is an independent professional services company that specialises in quality, environmental, health, safety, and social accountability with over 195 years history. Its assurance team has extensive experience in conducting verification over environmental, social, ethical and health and safety information, systems, and processes.

The assurance team has extensive experience in conducting assurance over environmental, social, ethical and health and safety information, systems and processes, has over years combined experience in this field and an excellent understanding of Bureau Veritas standard methodology for the Assurance of Sustainability Reports.

Bureau Veritas has implemented a Code of Ethics across the business to maintain high ethical standards among staff in their day to day business activities. We are particularly vigilant in the prevention of conflicts of interest.

No member of the assurance team has a business relationship with Macronix International Co., Ltd., its Directors or Managers beyond that required of this assignment. We have conducted this verification independently, and there has been no conflict of interest.

Bureau Veritas Certification Taiwan

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4 Jun. 2025

Technical Reviewer: Ryan Man *yan*
Verifier: Chris Liu *liu*



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