

2021

Sustainability Report

ChipMOS 南茂科技



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About This Report

102-1, 102-10, 102-45, 102-48~102-54, 102-56

Thank you for reading the ChipMOS TECHNOLOGIES INC. (“ChipMOS”) 2021 Sustainability Report (“the Report”). This Report is the seventh report issued by ChipMOS to explain ChipMOS's economic, environmental and social management practices and performance, and to continue to demonstrate to all stakeholders ChipMOS's commitment and determination to achieve sustainable development.

Reporting Period

This Report covers the corporate sustainability results and performance of ChipMOS from January 1, 2021, to December 31, 2021. ChipMOS publishes CSR reports on an annual basis.

- Current Release: June 2022
- Previous Release: June 2021
- Next Release: Expected June 2023

Report Boundary and Scope

The entities of the consolidated financial statements of ChipMOS include (1) ChipMOS (2) 100% owned subsidiary ChipMOS U.S.A., Inc. and (3) 100% owned subsidiary ChipMOS TECHNOLOGIES (BVI) LTD. and (4) 100% indirectly owned subsidiary ChipMOS SEMICONDUCTORS (Shanghai) LTD. The report boundary of this Report is primarily ChipMOS. ChipMOS U.S.A., Inc., ChipMOS TECHNOLOGIES (BVI) LTD. and ChipMOS SEMICONDUCTORS (Shanghai) LTD. are outside the scope of this Report. The entire plant mentioned in this Report includes all of ChipMOS's operating locations in Taiwan, of which the Tainan fab includes Tainan fab. 2. Any adjustments to the data scope will be described in the text of the Report. In addition, for the information in the previous reports not restated, the sustainability topics in 2021 comply with the AA1000 principle to focus and converge the topics, from 16 Material Topics in 2020 to 10 Material Topics in 2021; for the description of the changes in, Material Topics and topic boundaries, please refer to Chapter 2.2 Materiality Analysis.

Principles of Compiling the Report

This Report follows the GRI Sustainability Reporting Initiative's (GRI) Sustainability Reporting Standards: Core Option. An index of the GRI Standards is provided in Appendix 1.

External Guarantee and Assurance

Report Quality

To ensure the quality of information disclosure, this Report has been verified by the British Standards Institute (BSI Taiwan) to be in accordance with the spirit of the GRI Standards Core Option, the AA1000 AS v3 Application Type II High Assurance Level, and SABA Type I Application Type Moderate Assurance Level. A Statement of Assurance is provided in the Appendix.

Financial Data

The financial data disclosed in this Report was obtained from the consolidated financial statements audited and attested by PricewaterhouseCoopers, Taiwan in accordance with the "Regulations Governing the Preparations of Financial Reports by Securities Issuers" and the International Financial Reporting Standards, International Accounting Standards, IFRIC Interpretations, and SIC Interpretations (“IFRSs”) as endorsed by the Financial Supervisory Commission.

International Standards Management System

In order to enhance the credibility of the data quality, the data in this Report was verified by a third party and obtained from international standard management systems such as ISO 9001, IATF 16949, ISO 26262 and ISO 50001. The fab data of each international standard system through third-party verification is provided in the Appendix. If there is data estimation, it will be indicated in the relevant chapters.

Contact Information and Feedback

We sincerely look forward to your continued guidance and encouragement, and we are committed to sustainable development for all our readers who are interested in ChipMOSIn response to the paperless environmental protection, this Report is published in PDF format on the Company's website for readers to read and stakeholders to download. We welcome your valuable comments and suggestions.

ESG Committee, ChipMOS TECHNOLOGIES INC.
Contact Person: Senior Vice President, Jennifer Chen | Deputy Manager, Stacy Yu
Address: No. 1, R&D Rd. 1, Hsinchu Science Park, Hsinchu City, Taiwan, R. O. C.
Tel: 03-5770055 Ext: 6311
Fax: 03-5668995
E-mail: ChipMOS_CSR@chipmos.com

Message from the Chairman

102-14

In 2021, there was still full of challenges for semiconductor industry and ChipMOS operation, under the influence of many factors such as the global COVID-19 epidemic, supply chain shortages and raw material costs rising. Under the one and another coming challenges, ChipMOS still responsed proactively and positively. Since the outbreak of the epidemic in 2020, we have been reviewing various risk issues, enhancing our management, and speeding up the digital transformation of our all fabs to grasp the market trends and development opportunities. As a result, ChipMOS delivered more impressive performance in 2021. At the same time, both revenue and gross margin significantly grew and improved year to year, and a new record of ChipMOS with being benefited the strong demand driven by the market demand switching and the recovery of the semiconductor industry. ChipMOS insists on a stable operation strategy to meet industry trend and customer demand. In the past two years, the automotive and industrial product have been bullish, driving the revenue growth of driver IC and memory products.

ChipMOS also deeply recognizes the significant impact of climate change on the environment, society, and corporate operations, and continues to strengthen corporate risk management, low-carbon transformation and reform, and places equal emphasis on financial and non-financial performance, setting performance targets and goals to achieve sustainable management.



Corporate Governance

Corporate governance is the cornerstone of sustainable management and the greatest driver of operational and financial performance. ChipMOS adheres to the principles of fairness, honesty, trustworthiness and transparency in all its business activities. The Board of Directors not only continues to improve corporate governance and conduct performance evaluation to enhance the functions of the Board of Directors, but also regularly monitors the progress of sustainability issues in order to maintain sustainable and stable development. In addition, the wave of sustainable or responsible investment continues to rise, and the flow of capital will take ESG impact as an important consideration, hoping that the power of the capital market will lead to a new era of sustainable corporate development. With its long-term active engagement in the ESG field, ChipMOS is bound to create the most abundant business value for shareholders.

Technical Dynamics

With the emerging applications such as AI and 5G, as well as the popularity of mobile devices, the demands of the trends of the homogeneous and nonhomogeneous integration of multi chips and thin and small products constantly drive the technological trend of the semiconductor industry. In order to grasp opportunities for industrial trend, ChipMOS continues to invest in relevant technologies development and digital transformation, and actively implements automation and intelligence in factory to maximize benefits. This can not only enhance manufacturing efficiency, but also improve the working environment. Through continuous change and adjustment, we can minimize losses and maximize profits.

Environmental Protection

In order to maintain a clean and prosperous future for next generation, solving global climate and environmental issues has become the top priority of sustainable development of enterprises. We have obtained environmental management system and identified the risks and opportunities that may impact on the ChipMOS operations through the identification of climate factors, and we will take actions and adapt to the results. We will continue implementing energy-saving projects, adopting renewable energy, improving water recycling and waste reuse, in order to minimize impacts on the environment.

Creating the Future Together

Employees are the most important assets of the Company. Excellent employees create value for the Company, and the Company will actively give back to the society, so as to create a sustainable future. Under the basic conditions of a friendly working environment, competitive salary and benefits and talent development, we expand our employees' broad careers, encourage colleagues to transfer, challenge themselves bravely and stimulate their potential through incentive mechanisms, to realize their value while creating benefits for the Company.

I will continue using my experience and responding to the expectations of stakeholders to promote the sustainable growth of the Company, join hands with employees and partners to meet more unknown challenges, and achieve more brilliance of ChipMOS.

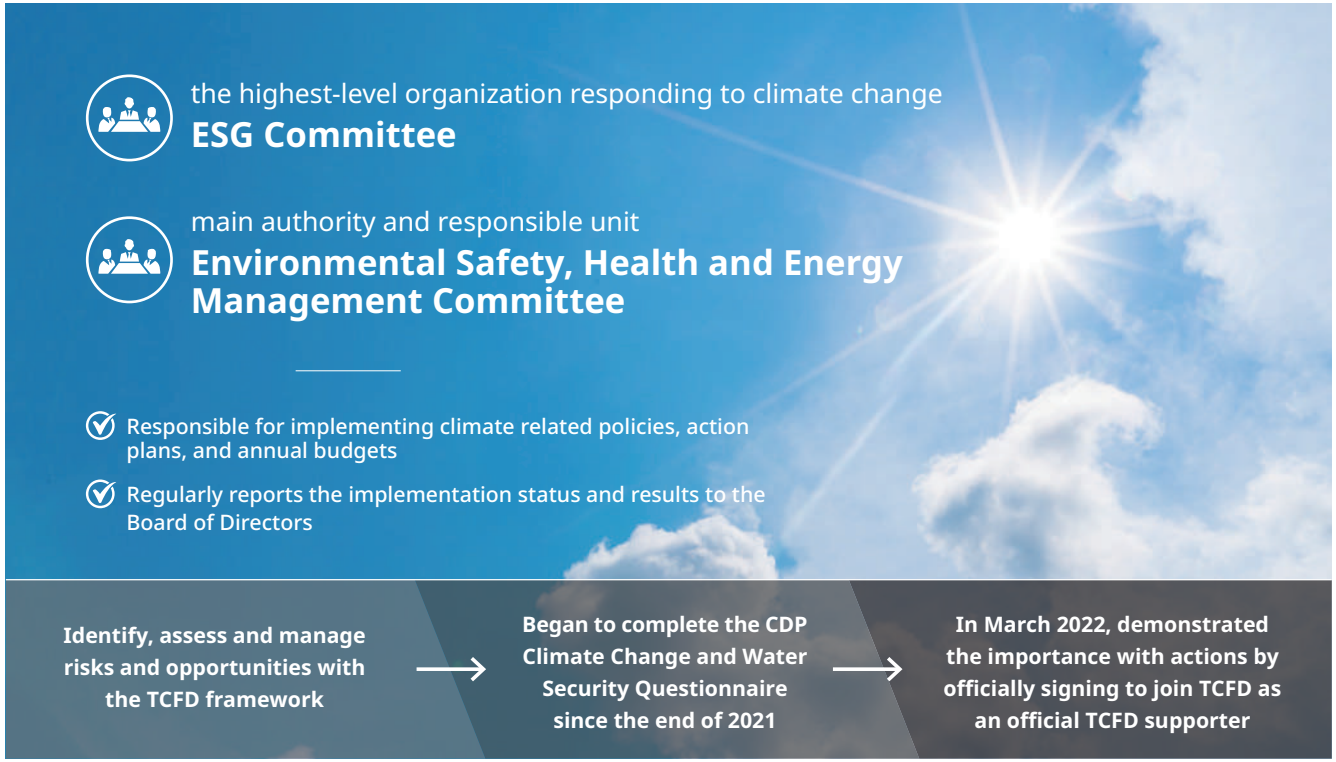
Chairman & President 鄭世杰

Thematic reports

01

ChipMOS Climate Governance Actions

In August 2021, the United Nations Intergovernmental Panel on Climate Change (IPCC) released the sixth "Climate Change Assessment Report," pointing out that global warming "lit up a red light" and that the speed of global warming was much faster than expected. Greenhouse gases emitted since 1850-1900 have caused the global surface temperature to rise by 1.07°C. Taiwan's annual average temperature has risen by about 1.6°C , and is still accelerating. It is very likely that the Earth's warming warning line of 1.5°C will be passed by 2040. From May to June 2021, Taiwan has experienced a drought hardly seen in a century, which has led to varying degrees of water supply with reduced pressure, water restrictions, suspension of farming, and closure of businesses in various regions. Various phenomena show that it is imperative to adopt solutions to the issue of climate change.



Note: The climate change conditions in Taiwan are assessed by citing the Research Center for Environmental Changes of Academia Sinica's cooperation with the Ministry of Science and Technology and the Bureau of Meteorology, combined with the data of six meteorological stations in Taiwan, with the extensive use of the IPCC report



Environmental Strategy

01 Prioritize inventory and implement substantial energy, water, and renewable energy measures

02 Pay close attention to global warming issues, and adjust the reduction targets based on the CDP questionnaire

03 Assess the possibility of purchasing and developing other green energy sources

NET ZERO

2050 Net-zero emissions

Energy
Green Power Program

2021	Completed 990.45 KW solar energy capacity in 2021
2023	Reach 4.5MW solar energy capacity in 2023

Water resources
Reuse of Process Water

2021	The recycling rate of process water (grinding/cutting) reached 86%
2021	Developed water risk and opportunity identification, impact assessment and management measures
2022	Build 550 CMD of process water recycling equipment in Zhubei fab

To respond the climate change and water-related issues, enhance the resilience of enterprises, with the long-term goal of net zero emissions by 2050, three major strategic pillars are developed. Meanwhile, to achieve the goal of carbon reduction, ChipMOS has completed the installation of 990.45kW solar energy capacity in 2021 (accounting for 2% of the Company's contracted power consumption); in the next stage, it will expand the construction of renewable energy (solar energy), and it is expected to reach the construction target of 4.5MW by the end of 2023, to realize the ambition of the target of warming less than 2°C through the purchase of renewable energy. In addition to carbon reduction actions, water recycling is another important issue for ChipMOS to reduce the environmental impact. By the end of 2021, the recycling rate of water from processes (grinding/cutting) has reached 86%; at the same time, water resource risk and opportunity identification, impact assessment and response management measures were launched.

Facing the extreme climate disasters brought about by intensified warming, ChipMOS is in the middle of this impact; with the pressure of global transformation continuing to ferment, we actively seek decarbonization strategies, continue to incorporate climate change into corporate governance, improve the supervision mechanism of executive management, and drive all employees to work together for moving towards the transformation to low-carbon operations.



Thematic reports

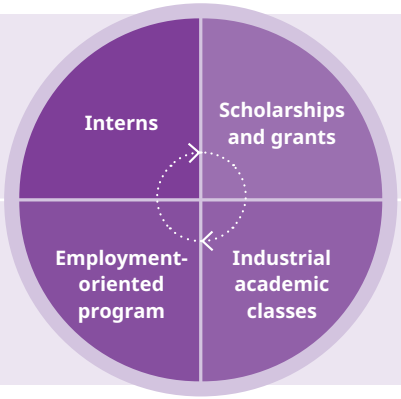
02

Cultivation of Powers for Young Talent

ChipMOS is committed to academic research and technological innovation in the field of semiconductor packaging and testing. By insisting on our primary intention of cultivating outstanding talent, with the exchange of academic technologies and industrial practice, students experience the real workplace before entering society while corresponding to what they've learned in school, thereby enhancing their competitiveness in the workplace. Since 2013, ChipMOS has successively launched a series of industrial-academic collaborative projects with ten colleges and universities in the neighborhood, including summer internships, scholarships and grants, employment-oriented programs and industrial-academic classes. With multi-year cultivation, 566 students have been incubated.

Four project mechanisms to promote industrial-academic collaboration:

Providing six-month internship opportunities to students entering their fourth year



Providing scholarships and grants to incubate semiconductor talent

Incubate corporate talent through courses, seminars, internships and employment

Incubate professional talent through on-site practice and machine operation

Since 2021, a total NT$1,611,000 has been invested to incubate 181 young students. In order to continue to cultivate and enhance the relationship between the Company and colleges, new semester internship opportunities have been added; scholarships, grants, and internship allowances are provided as substantive assistance to disadvantaged students and reduce the financial burden of their families. We have been constantly adjusting and developing other programs to provide students with more diverse choices and encourage students to apply what they have learned.

2021 Diverse Internship Programs

Collaborating colleges	Minghsin University of Science and Technology; China University of Science and Technology; Chung Hua University; Southern Taiwan University of Science and Technology; Kun Shan University of Science and Technology
Method	Two new options added to select, a semester system and an academic year system
Objective	Students have diverse choices, to learn about ChipMOS's corporate culture and on-site work conditions via internships, and obtain practical experience opportunities for "integration of learning and application; employment upon graduation."

Projects in Progress:

ChipMOS continues to communicate and discuss with various colleges to develop various possible means of collaboration. At the beginning of 2022, we started a new program, seeking to create a triple-win situation for students, ChipMOS, and the colleges under the collaboration of the latter two.

Collaborating college	Southern Taiwan University of Science and Technology
Project 1	Donated a clean room packaging machine to Southern Taiwan University of Science and Technology to provide students with the opportunity to operate the real machine
Project 2	Teaching by professional teachers, to incubate semiconductor packaging talent

Collaborating college	Kun Shan University of Science and Technology
Method and Objective	The Industrial Development Bureau, Kun Shan University of Science and Technology and ChipMOS collaborated to open a packaging equipment talent training class, so that students have more diverse learning opportunities



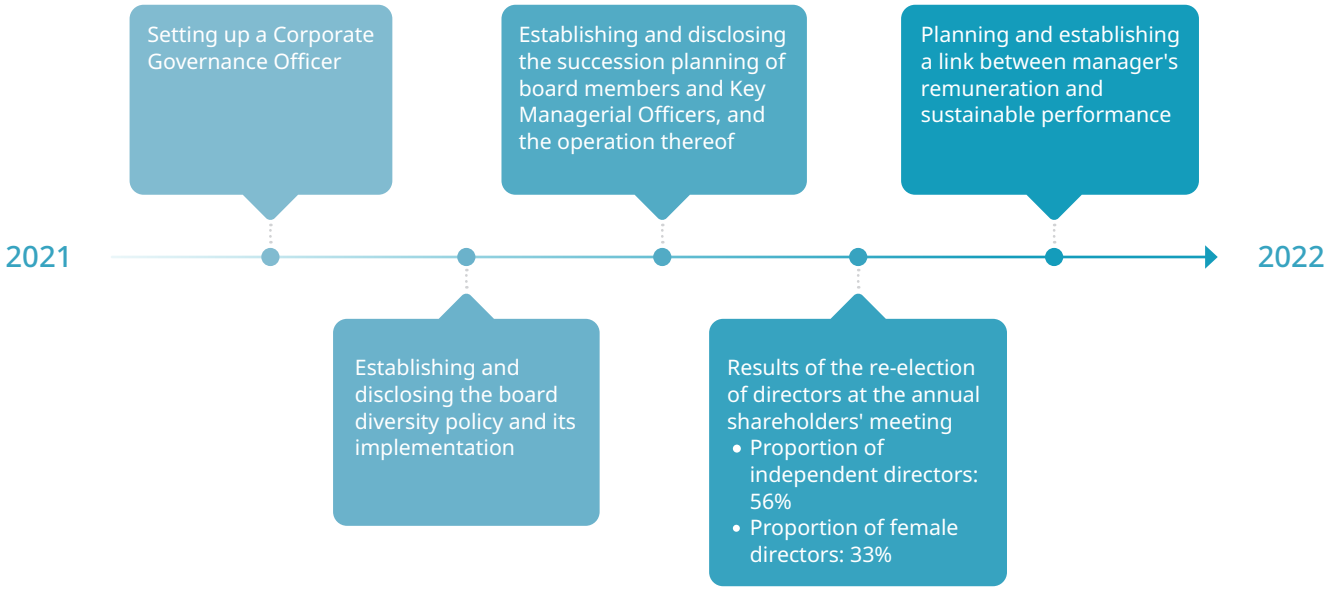
Thematic reports

03

Substainable Governance

ChipMOS recognizes that robust corporate governance is an important foundation for the sustainable development of enterprises, as well as essential for strengthening the competitiveness of enterprises in the capital market, with the "Corporate Governance 3.0 – Blueprint for Sustainable Development" issued by the FSC on August 25, 2020; therefore, we continue to strengthen the diversity and operation of the board of directors. In 2021, ChipMOS set up a corporate governance officer, established and disclosed the board diversity policy and its implementation thereof, and the succession plan of board members and Key Managerial Officers and the operation thereof. The result of the re-election of directors at the 2021 annual shareholders' meeting was that among the nine directors, five of them were independent directors, accounting for 56% of all directors; three female directors (including two independent directors), accounting for 33% of all directors, higher than the 22% of female directors in 2020, and better than the average proportion of female directors in the boards of all TWSE-listed companies of 14%.

Enhancing the Diversity and Operation of the Board of Directors



In terms of sustainable governance, the "Corporate Sustainability Policy" adopted and announced by the board of directors in March 2021 is the highest guidelines and vision commitment for ChipMOS's sustainable development; on March 3, 2022, the original "CSR Committee" was renamed as "ESG Committee." In April of the same year, the organizational structure of the ESG Committee was further adjusted to focus more on three major specializations, namely "corporate governance," "environmental protection" and "social and employee care," while the Committee's rank was elevated above each business unit and the management and manufacturing centers. The Chairman & President serve as the chair and the top commander of the Committee, and report the key issues and important achievements of sustainable management to the board of directors quarterly, to improve and strengthen ChipMOS's determination in sustainable management and alignment with international standards.

Looking to 2022, ChipMOS plans to formulate a scoring mechanism for the non-financial sustainable performance of managers such as the chairman, executive vice presidents, and vice president of the Finance & Accounting Management Center, to connect the remuneration of the management team with sustainable performance and implement the promotion of corporate sustainable development strategies, while continuing to strengthen the information disclosure of environmental, social and governance (ESG) to meet the expectations of diverse stakeholders.

* For more information on sustainable governance, please refer to 2.1 Sustainable Policies and Actions

ESG Performance

Economy

NT$27.4 Billion

2021 consolidated operational revenue reaching a new record high in recent years.

NT$6.96

Earnings per share (EPS) steadily profiting for 8 consecutive years.

33% Female Directors

Better than the average percentage (14%) of female directors of the boards of directors of all TWSE-listed companies.

Environment

4 Major Climate Change Risks

TCFD structure introduced for risk control.

2 Major Water Resource Risks

TCFD structure introduced for risk control.

12.31%

GHG emission density lowered.

Society

94.12%

Percentage of managers transferred from employees.

FSI 0.07

Disabling injury frequency-severity index (FSI) average lower than the industry.

NT$17,631,456

Social engagement investment amount.



Awards and Honors

8th Corporate Governance Evaluation

*** Ranked among the top 5% of all TWSE-listed companies**
*** The top 10% of all electronics companies with market cap above NT$10 billion**

14th TCSA
Taiwan Corporate - Sustainability Awards

14th TCSA
Corporate Sustainability Reporting - Golden Award

Environmental Protection Administration, Executive Yuan
Air Quality Purification Area Recognition - Special Contribution

Hsinchu County / Tainan City Environmental Protection Administration
High Performance Green - Purchasing Enterprise

Hsinchu Science Park Administration
Occupational Safety and Health – Outstanding Organization

Southern Science Park Administration
Southern Science Park Energy Saving Performance Organization

Tainan City Government
Energy Conservation Benchmark Award

Hsinchu County Government
Air Quality Purification Area Performance Recognition Organization

2020 Tainan Science Park
"Promoting Equal Rights in Workplaces" Special Award for Public Institutions

Tainan City Government
Air Quality Maintenance Performance Organization – Independent Management of Diesel Vehicle Smoke Exhaust

CHAPTER

1

Operations

NT$27.4 Billion
2021 consolidated revenue represents a new record high in recent years

22.4%
2021 ROE is 22.4%, stabilizing sustainable operations.

Smart Factory
Grasping opportunities for industrial development, actively promoting digital transformation, and activating organizational momentum.

External Initiatives
Supporting initiatives at home and abroad, taking initiative to become a TCFD supporter and a member of the Taiwan Talent Sustainability Action Alliance.



1.1 About ChipMOS

102-3, 102-4, 102-5, 102-7

Established in July 28, 1997, ChipMOS is a premier semiconductor manufacturing service provider specializing in assembly and testing. And ChipMOS is known as the world 2nd of the raking of LCDD assembly & testing manufacturer. ChipMOS owns two operation centers in Hsinchu Science Park and Southern Taiwan Science Park. Hsinchu Operation Center provides memory testing, wafer bumping and wafer testing service solutions in Hsinchu fab, Zhubei fab, Zhubei fab2 and Hukou fab; and Southern Operation Center provides pakaging and driver IC assembly & testing service solutions. With two state-of-the-art technical built manufacturing bases, ChipMOS has been giving full functioned downstream semiconductor OSAT service solutions to our global business partners. As of December 31, 2021, ChipMOS Taiwan has a headcount of 5,540 employees.

Operational Sites

Hsinchu fab.
No. 1, R&D Rd. 1, Hsinchu Science Park, Hsinchu City (Headquarter)

Zhubei fab.
No. 31, Xintai Road, Zhubei City, Hsinchu County

Zhubei fab. 2
No. 112, Zhonghe St., Zhubei City, Hsinchu County

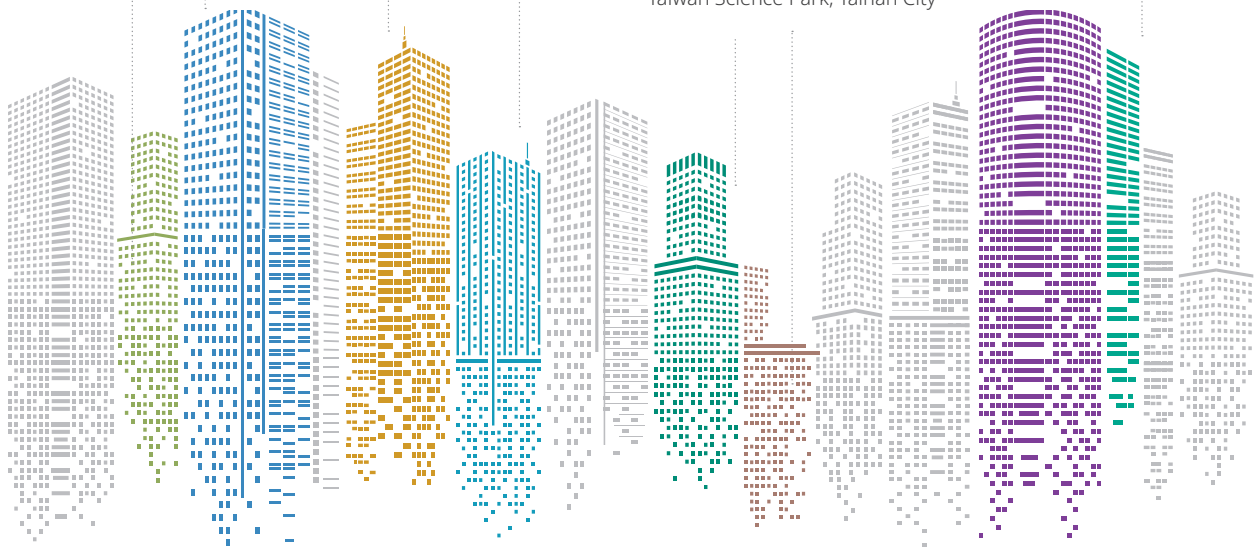
Hukou fab.
No. 4, Rende Road, Fengshan Vil., Hukou Township, Hsinchu County

Tainan fab.
No. 5, Nanke 7th Road, Southern Taiwan Science Park, Tainan City

Tainan fab. 2
No. 3, Nanke 7th Road, Southern Taiwan Science Park, Tainan City

Shanghai subsidiary
Room 309-C, 6 Building, 990 Shenchang Road, Minhang District, Shanghai

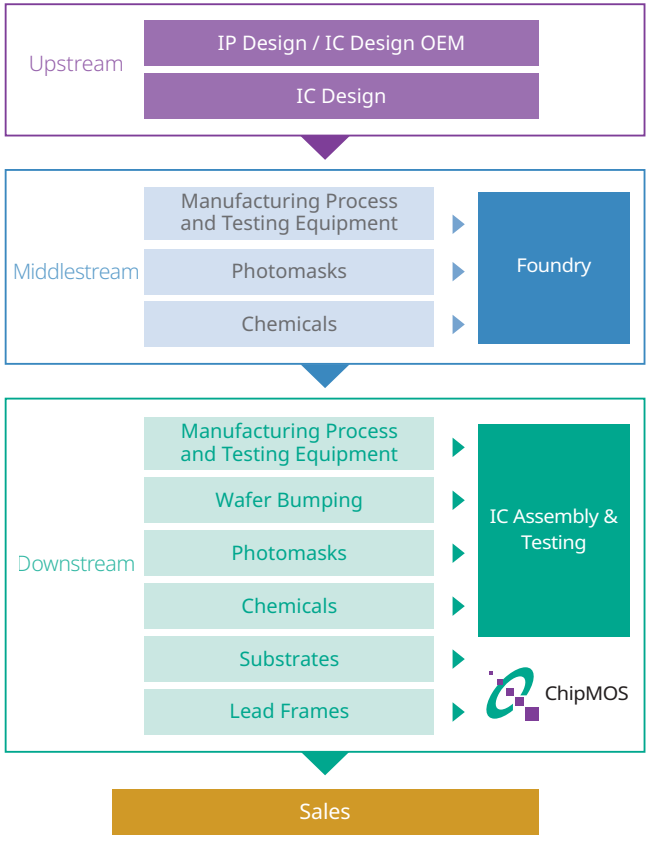
U. S. subsidiary
2890, North First Street, San Jose, CA 95134, U.S.A.



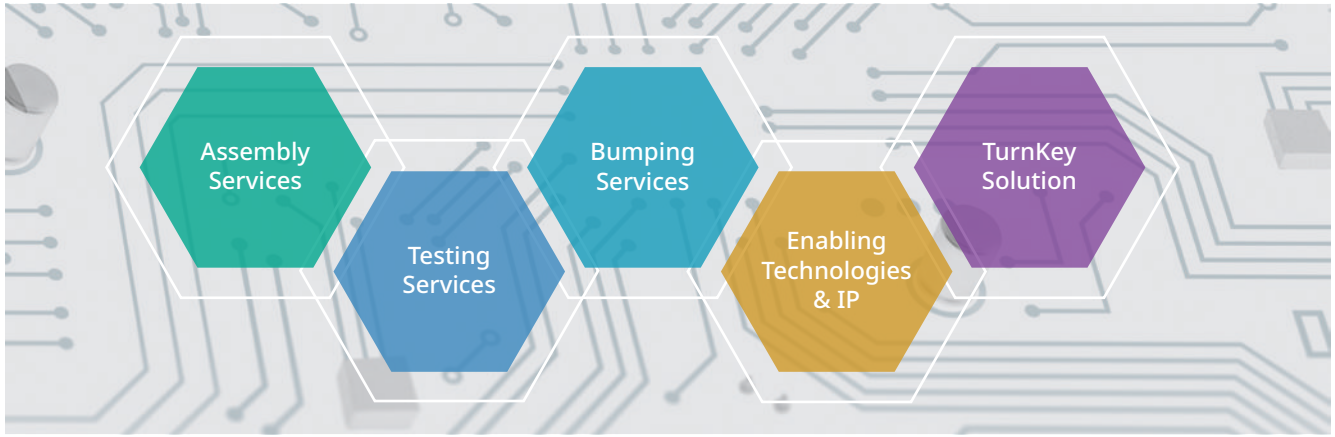
1.2 Main Products and Services

102-2, 102-6, 102-9

The vertical division of labor in the semiconductor industry is divided into upstream chip design, midstream IC wafer manufacturing, and downstream IC assembly and testing according to the manufacturing processes. ChipMOS is engaged in the downstream industry of the semiconductor industry. Its main products and services include: LCD Driver ICs, Memory ICs, Logic/ Mixed-Signal IC Back-End Services and Bump Services. It vertically integrates the back-end process of semiconductors and provides customers with one turn-key solution/service.



1.2.1 Main Products and Markets



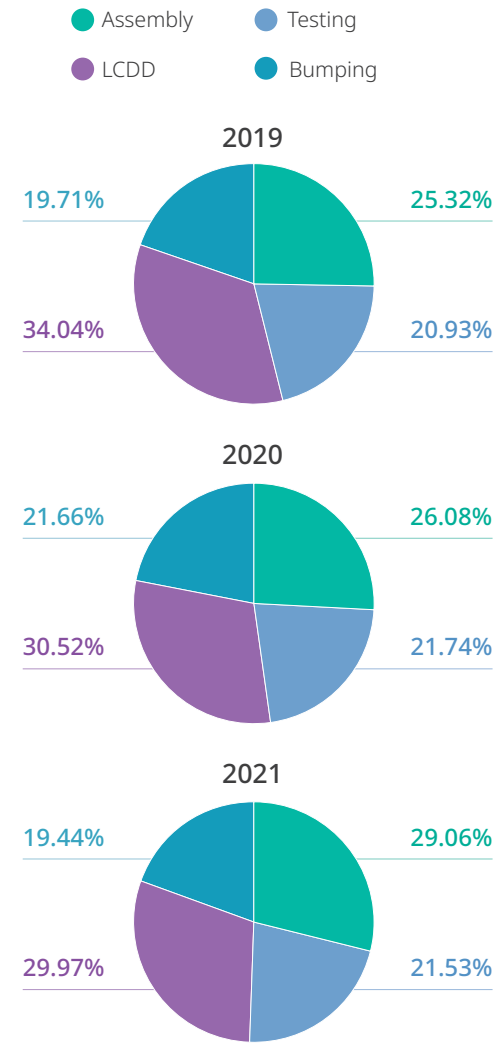
ChipMOS provides customers with back-end packaging and testing services for memory semiconductor, driver IC and mixed-signal products, as well as diversified technology selection and technology integration services including lead frames and organic substrates, etc.

Our main products include the packaging and testing OEM of Thin Small Outline Packages (TSOP), Fine-Pitch Ball Grid Arrays (FBGA), Tape Carrier Packages (TCP), Chip on Film (COF), Chip on Glass (COG), Wafer Level Chip Scale Packaging (WLCSP), and Wafer Bumping Manufacturing (Gold Bump). Our customers include semiconductor design companies, integrated component manufacturers and semiconductor wafer factories. Our products are mainly used in consumer electronic products such as personal computers, automotive electronics, communication equipment, office automation and mobile phones, etc.

ChipMOS provides customers with Driver ICs and memory packaging and testing, and provides one-stop services. ChipMOS U. S. A., Inc. is established in the United States to provide local customer service and business support and cooperation. In addition, ChipMOS has a professional national R&D laboratory to provide the driving force for future development. To cope with the continuous innovation of downstream electronic products, ChipMOS continues studying the improvement of packaging technology in three major areas of basic R&D: packaging materials (such as extending the service life and reducing the material cost), mechanical characteristics (strengthening the external structure and eliminating the internal stress), electrical characteristics (high-speed high-frequency/microwave RF). In 2021, ChipMOS obtained 23 patents, and as of the end of December, ChipMOS had 631 valid patents and 53 trademark rights. In 2022, 70 patent applications are currently under review. ChipMOS is a professional manufacturer of professional IC all-round back-end services.

ChipMOS's top five key customers are mainly distributed in the United States, Taiwan, etc. The revenue, cost and gross profit of the products are attributed to departments concerned. Therefore, ChipMOS's and its subsidiaries' products are divided into four categories: packaging, testing, Driver IC and Wafer Bumping.

Distribution of Revenues of Major Products



Note 1: The major product categories are adapted to the information in the annual report. Please refer to page 72 of the ChipMOS's 2021 Annual Report.
Note2: According to the proportion of revenue in the customers' regions: 78.9% in Taiwan, 6.4% in Japan, 6.0% in Singapore, 6.9% in China and 1.8% in other regions.

1.2.2 Growth Momentum of Future Operations

Multi-Faceted Product Layout

ChipMOS actively grasps market trends and focuses on niche market operations. With the continuous growth of terminal applications and products, all kinds of product lines have corresponding product combinations. Looking forward to the future operation dynamics and business growth, and from the perspective of three product combinations, there are the following aspects:

Driver IC

In 2021, the market demand for 4K and 8K LCD (Liquid-Crystal Display) and OLED (Organic Light-Emitting Diode) high-end TVs continued to increase, which continued to drive the performance growth of COF (Chip on Film) packaging and high-frequency testing. At the same time, the specifications of smart phone panels continued to improve, and the market penetration of the TDDI (Touch with Display Driver) continued to increase. The demand for OLED Driver ICs also increased significantly with the improvement of the yield of OLED panels. Also because the test time of the TDDI/OLED Driver ICs would be longer than that of the original traditional LCD Driver ICs, it was also very helpful to boost the test Average Sales Price (ASP). In addition, there was a shortage of wafers in the automotive market in the first half of 2021. It was expected that the capacity support of the wafer factory could be gradually obtained in the second half of 2021. Automotive driver ICs were expected to have synchronous growth from the second half of 2021 to 2022, which would also further help improve the overall packaging and testing price and gross profit of the Driver ICs.

Memory

Due to the evolution of NAND Flash wafer technology, the emerging SSD (Solid-State Drive)devices could be applied in client and server computers, which expanded the demand for NAND Flash IC packaging and testing. In addition, thanks to the advent of the work from home era and the growth of customers with personal computers, cloud servers and mobile devices, the market share of NOR Flash and niche DRAM (Dynamic Random Access Memory) had been expanded. The RDL (Redistribution Layer) memory wafer contained in the logic product package also increased the coverage of memory ICs due to the stability of quality technology.

Mixed-Signal Products

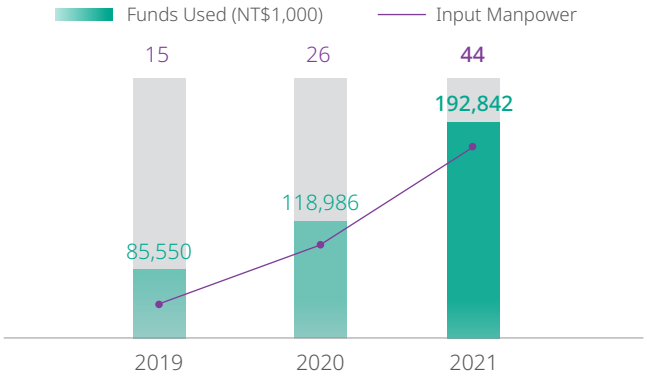
ChipMOS meets the needs of customers for thin and small terminal applications, such as fingerprint readers, and various MEMS, such as the auto focus of camera lenses, OIS (Optical Image Stabilization) and Hall Motor Sensors, which drives the development and business of the WLCSP (Wafer Level Chip Scale Packaging) process and testing technology. The Flip Chip-Chip Scale Package technology is also used to successfully applied for USB4/DP2 0 Re-Driver and PCIe 5.0 Re-Driver products for notebook computers and their peripheral products.

Core Technology Expanding Diversified Product Applications



Smart Factory

In order to effectively respond to the trend of Industry 4.0, improve internal management efficiency, effectively improve personnel repetitive operation and avoid occupational injury, so as to create a friendly working environment that keeps operators away from high temperature and noisy environments, since 2019, ChipMOS has increased the investment of funds and manpower year by year, and actively promotes automated intelligent manufacturing, going beyond simple computerization and automation and implementing intelligent development.

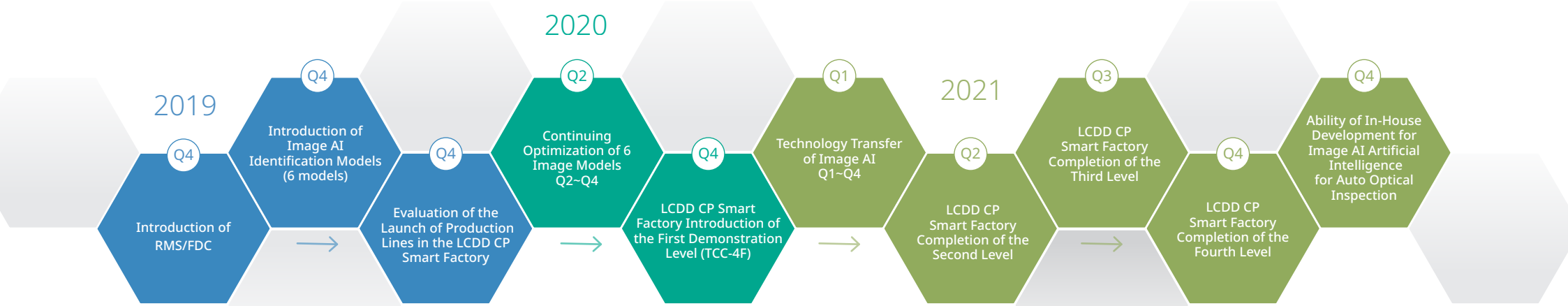


Based on the One ChipMOS philosophy, in 2021, we established various task force teams in various factories to identify key items to be improved in the operation process through pain point analysis and check:

- Incorporate the work research methods and the spirit of ECRS operations (E: eliminate, C: combine, R: rearrange, and S: simplify), optimize the line side warehouse system, and give full play to the advantages of the Recipe Management System and Fault Detection & Classification System, system control, risk avoidance, real-time monitoring, rapid diagnosis, etc., and improve various operating cost management mechanisms.
- One of the key elements of Smart Factory – Talent: tap into experts in various fields, form talents into different project teams, and carry out various intelligence introduction projects in parallel.
- Through the ability of Artificial Intelligence Algorithm and Artificial Intelligence for Auto Optical Inspection, ChipMOS's exclusive Image AI model and central control system for delivery have been developed and imported into bumping and wafer testing production lines.
- The automated parts of the production process (optimized processes such as Auto Move in/out/Auto Download Recipe) have produced effects one after another and extended to all of ChipMOS.

In addition to the improvement of core technologies, in the future, we will start from the fundamental proposal to carry out project and benefit check for One ChipMOS, promote the automated Task Force, continue accelerating the development of automated projects, analyze various cost optimization opportunities, and strengthen cost control capabilities, so as to achieve high-standard product quality control and move towards the goal of Smart Factory and Industry 4.0.

Important Smart Factory Milestones



1.3 Operational Performance and Tax Governance

1.3.1 Operational Performance

102-7, 201-1, 201-3, TC-SC-000.A, TC-SC-000.B

Operational Results of the Company

In 2021, owing to the impacts of many factors, such as the global COVID-19 pandemic and supply chain shortage, operations will still be challenged. However, driven by the change in demand brought about by the pandemic and the strong demand driven by the recovery of the semiconductor industry, we still have significant growth and improvement in both revenue and gross profit margin compared with 2020!The revenue and profit in 2021 reached a new record for ChipMOS. ChipMOS adheres to a prudent and steady operation strategy, acts in accordance with industrial development and customer needs, and continues developing and expanding core technologies and products to maintain growth momentum and improve profits. The main operating conditions in 2021 were reported as follows:

Operational Results

ChipMOS's combined turnover in 2021 was NT$27.4 billion, having a significant increase of about 19.1% compared to 2020, and the consolidated gross operational margin increased to 26.5%. In terms of individual product lines, the revenue of memory ICs increased by 19.8% compared to 2020, accounting for 42.5% of the overall turnover. Driven by vehicle electronics, game consoles and other consumer electronics and new business areas, the revenue of flash memory increased by 33.6%, accounting for 24.9% of the revenue. The revenue of flat display Driver IC related products (including gold bumps) increased by 15.0% compared to 2020, accounting for 46.8% of the overall turnover.

Financial Performance

The Company's financial position has improved considerably through years of continuous adjustments to product lines, customers and business ratios. ChipMOS's net profit attributable to the owners of the parent company in 2021 were NT$5.06 billion and the earnings per share were NT$6.96. By the end of 2021, the consolidated total assets of ChipMOS were NT$42.52 billion, of which cash and cash equivalents were NT$5.91 billion. The consolidated total liabilities were NT$18.14 billion, and the consolidated liability ratio was 42.7%. The equity attributable to the owners of the parent company was NT$24.38 Billion, and the return on shareholders' equity in 2021 was 22.4%.

Technological Development

With the rise of emerging applications such as AI and 5G, and the popularity of mobile devices, the demands of the trends of single chip integration and thin and small products continue to drive the technological development of the packaging and testing industry. In order to grasp the opportunities of the development of this industry, ChipMOS has continued to invest in relevant research and development. In 2021, ChipMOS successfully developed wafer level packaging, such as the rearrangement of micro copper wires, with the wide wire spacing of thin wires up to 3um/3um, the ball mounting process technology of Thin WLCSP, the packaging solution of ultra-thin chips (< 50um) with multi chip stacking and system packaging, and the packaging technology integrating traditional solder wire packaging and cladding process. ChipMOS also provided high-speed Universal Flash Storage (UFS) integration solutions, as well as key products and technologies such as double-sided bonding of high conductivity materials developed for application in heat dissipation packaging services for high-resolution panels.

Future Outlook

ChipMOS has never changed its vision since its establishment: continuing to provide customers with high-tech, excellent quality and highly trusted packaging and testing solutions. Under the influence of business cycles and other external factors, only by responding to industrial development trends, grasping opportunities for product growth and continuing the integration and transformation of the Company's product lines, we can maintain progress and growth within the increasingly fierce market competition. Facing the increasingly severe industrial environment and challenges, we will continue to focus on the R&D and innovation of core technologies to help customers reduce operating costs. On the basis of the Company's development strategy, we act in line with customers' product development blueprints, partner with customers to develop and grow, and try our best to improve the shareholder value.

Looking forward to 2022 and the future, ChipMOS will continue to expand the scale and growth opportunities of niche markets such as automotive electronics and high growth markets of new intelligent mobile devices under the trend of automation and intelligence, so as to grasp the development trends of the industry and meet the needs of customers. At the same time, we integrate the core technologies of wafer bumping and packaging, provide cutting-edge full process technical services in the back-end of semiconductors, develop new products with high growth, actively and continuously promote the optimization and improvement of production line automation and intelligence, so as to continuously reduce operating costs and make the Company's operations and profits grow steadily and continuously.

Operational Performance in the Recent 5 Years

	2017	2018	2019	2020	2021	Unit
Capital Stock	88.6	75.3	72.7	72.7	**72.7**	NT$100 million
Revenue	179.4	184.8	203.4	230.1	**274.0**	NT$100 million
Gross Profit	32.4	34.3	39.3	50.3	**72.5**	NT$100 million
Income Tax Expense	3.0	6.8	4.5	6.1	**9.8**	NT$100 million
Net Profit	30.3	11.0	25.8	23.7	**50.6**	NT$100 million
Earnings per Share - Basic	3.57	1.37	3.55	3.26	**6.96**	NT$
Equity per Share	21.49	24.85	27.02	28.64	**33.53**	NT$
Employee Salaries and Benefit Expenses	59.0	56.1	60.8	60.1	**67.6**	NT$100 million
Cash Dividends	8.6	2.6	8.7	13.1	**16.0**	NT$100 million
Return on Total Assets	9.87	3.69	8.07	7.20	**13.29**	%
Return on Equity	17.46	6.05	13.70	11.70	**22.38**	%

Note 1: Data source: the each consolidated financial report has been audited by the certified public accountants.
Note 2: As of December 31, 2021, the ChipMOS's authorized capital was NT$9.7 billion, consisting of 970 million ordinary shares, and the paid-in capital was NT$7.27 billion with a par value of NT$10 per share, consisting of 727.24 million ordinary shares. All proceeds from shares issued have been collected.
Note 3: On November 1, 2016, ChipMOS publicly listed some of its outstanding shares in the form of American Depositary Shares ("ASDs") on the NASDAQ Global Select Market. As of December 31, 2021, the outstanding ADSs were 4,586,252 units representing approximately 91.73 million ordinary shares. Each ADS represents 20 ordinary shares of ChipMOS.

Production and Self-Made Rate of Main Products in the Recent 3 Years

Unit: thousand wafers/piece; NT$1,000

Year	2019			2020			2021		
Production Value / Major Product	Capacity	Output	Production Value	Capacity	Output	Production Value	Capacity	Output	Production Value
Assembly	3,559,312	2,793,638	4,918,748	3,687,169	2,851,232	5,418,192	**4,603,841**	**3,783,937**	**6,521,438**
Testing	3,635,682	2,465,055	3,221,432	3,811,002	2,781,211	3,350,554	**4,468,592**	**3,419,085**	**3,701,942**
LCDD	2,736,018	1,948,120	4,784,346	2,494,884	2,076,231	5,028,193	**2,759,920**	**2,101,102**	**5,477,583**
Bumping	1,718	1,300	3,508,572	1,555	1,474	4,111,828	**1,876**	**1,529**	**4,369,317**
Total			16,433,098			17,908,767			**20,070,280**
Self-Made Rate (%)		100			100			**100**	

Note: Please refer to page 128 of the ChipMOS's 2021 Annual Report.

R&D Expenses

With the rise of emerging applications such as AI and 5G, as well as the popularity of mobile devices, the integration of single chips and the demand for thin and small products, ChipMOS will continue to drive the technological development of the packaging and testing industry. ChipMOS actively grasps industrial development trends and continues investing in relevant research and development. The main development achievements of ChipMOS in 2021 include the development of micro spacing (3um line width/3um line spacing) copper wire rearrangement technology, the development of solder ball mounting process in Thin WLCSP, the double-sided bonding of high conductivity materials developed to apply in heat dissipation packaging services for high-resolution panels, the development and application of Source & Gate integration technology to narrow frame panels, and the development of industrial grade BGA SSD packaging technology. ChipMOS provided multi chip and system packaging integration solutions, applied SDBG technology to provide 3D NAND ultra-thin chip (< 50um) solutions, and integrated traditional solder wire packaging and cladding process technology to provide high-speed UFS integration solutions.

R&D Investment in the Recent 5 Years

	2017	2018	2019	2020	2021
R&D Expenses (NT$100 million)	9.9	9.4	10	10.2	**11.4**
Proportion in Revenue (%)	5.5	5.08	4.95	4.41	**4.16**
R&D Personnel (persons)	665	669	645	671	**680**

1.3.2 Tax Governance

ChipMOS is committed to information transparency and believes that honest tax payment will help promote economic growth and sustainable corporate development. We formulate tax management policies and implement them in accordance with laws and regulations, continue to create long-term value of the Company and fully protect the rights and interests of shareholders and investors. The Financial Accounting Function is the authority and responsible unit in charge of various kinds of taxes. When handling various kinds of tax returns, they are responsible for obtaining the approval of the appropriate authority according to different levels. At the same time, it continues to train talent and improve the professional quality of taxes in order to ensure the effective operation of the tax management mechanism, and it appoints external tax consulting institutions to handle relevant tax matters, so as to ensure proper compliance with tax norms and reporting obligations.

Tax Policy

1. Comply with local tax laws and relevant regulations in all operating areas, declare and pay taxes within the time limit, and fulfill tax obligations.
2. Tax information is transparent. Tax disclosure has been handled in accordance with relevant regulations and standards.
3. Apply for relevant tax concessions and tax savings, and prohibit avoiding taxes in improper ways.
4. Based on the principles of mutual trust and respect, maintain good communication and discussion with tax authorities at appropriate times.
5. The Company's important decisions should consider the long-term impacts of taxes and implement routine transactions.
6. Continuously understand the new knowledge and changes of relevant national laws and regulations, strengthen professional tax capabilities, and reduce future tax risks.

Income Tax Paid in the Recent 3 Years

Unit: NT$1,000

	2019		2020		2021	
Country	Amount	Proportion	Amount	Proportion	**Amount**	**Proportion**
Taiwan	634,121	99.52	272,788	98.81	**690,122**	**99.79**
United States	1,756	0.28	2,722	0.99	**1,337**	**0.19**
Others	1,292	0.20	569	0.20	**107**	**0.02**
Total	637,169	100	276,079	100	**691,566**	**100**

1. The approved tax refund applied for the undistributed earnings of the previous year was obtained in 2020 - NT$138,941 thousand. For more information, please refer to ChipMOS consolidated financial reports.
2. As Article 23-3 of the Statute for Industrial Innovation is applicable, substantive investment with earnings may be classified as an undistributed earning deduction item, so in 2020 and 2021, the additional tax of undistributed earnings of previous years has not been paid.

Effective Tax Rate in the Recent 3 Years

Unit: NT$1,000

	2019	2020	2021
Net Profit before Tax	3,030,319	2,973,359	**6,035,585**
Income Tax Expense	446,158	605,876	**976,516**
Effective Tax Rate	14.7%	20.4%	**16.2%**

1. The lower effective tax rate in 2019 was due to the disposal of investment interests using the equity method – NT$981,675 thousand, which was due to the suspension of income tax by the stock exchange.
2. The lower effective tax rate in 2021 was due to the share of profits and losses of affiliated enterprises and joint ventures recognized using the equity method – NT$625,733 thousand, which was due to unrealized benefits and investment credit in accordance with the Industrial Innovation Ordinance – NT$105,141 thousand.
3. For further information on income tax, please refer to the ChipMOS Consolidated Financial Report.





1.4 External Initiatives and Organizational Engagement

102-12, 102-13

External Initiatives

Responsible Business Alliance (RBA) Code of Conduct

ChipMOS follows the Responsible Business Alliance (RBA) Code of Conduct. This Code aims to fulfill corporate social responsibility, and fully serves to measure the performance achievement of ChipMOS sustainability in five major aspects of the Company's operations: labor, health and safety, environment, ethics and management system. It also serves as the implementation policy for supply chain management. Through the Self-Assessment Questionnaire (SAQ) and vendor RBA audit, we are committed to protecting the rights and interests of all employees and supply chain personnel. ChipMOS RBA policies and objectives will be released after being approved by the Chairman to all colleagues.

Carbon Disclosure Project (CDP)

In response to international trends, ChipMOS began to voluntarily participate in the 2022 Carbon Disclosure Project (CDP) Climate Change and Water Security questionnaire in 2021. At the same time, ChipMOS promoted the Task Force on Climate-Related Financial Disclosures (TCFD) to identify risks and opportunities, list major matrices, and put forward response strategies and target management according to the results. In addition, ChipMOS officially signed to become a TCFD Supporter in 2022, demonstrating ChipMOS's determination to actively respond to climate issues and management.

TALENT, in Taiwan

The cultivation and development of talent has always been an operational development goal of ChipMOS. In order to strengthen the talent competitiveness of Taiwanese society, and in response to the ESG wave and the importance of global enterprises on talent social responsibility, ChipMOS officially joined the "TALENT, in Taiwan" in 2022. ChipMOS is committed to the six indicators of Talent Sustainability Action – "Significance and Value", "Diversity and Inclusion", "Organizational Communication", "Reward Incentive", "Physical and Mental Health" and "Talent Growth" – and takes concrete actions to drive Taiwanese society to maintain sustainable competitiveness under the falling birth rates.

Continue working with the industry to promote the joint audit of waste management

Since 2016, together with the Taiwan Semiconductor Industry Association (TSIA) – Packaging Environmental Safety Team, we have promoted joint audits, jointly designed the audit system, and strengthened the depth and breadth of waste management, so as to implement a control mechanism to ensure that manufacturers dispose of waste according to law.

Cleaner production and promotion of the circular economy

We continued to respond to the global trend of the circular economy, participated in the "2021 Asia Sustainability Supply + Circular Economy Expo" and discussed relevant energy-saving cooperation opportunities with manufacturers through the TASS 2021 Business Opportunity Media Meeting.

Campus energy saving diagnosis experience sharing

ChipMOS not only devotes itself to the energy conservation of the Company, but also actively tutors the energy conservation of campuses, visits campuses with its own energy conservation experience, provides various information, assists and holds achievement review meetings according to the needs of campuses, and has comprehensive discussions with tutors to achieve energy conservation results. ChipMOS won the "Energy Conservation Model" of the Southern Taiwan Science Park in 2021 and the 2020-2021 "Energy Conservation Benchmark Award" issued by the Tainan City Government.

Actively seek external resources to expand the orientation of information security protection

ChipMOS ensures the implementation of the Company's Information Security Management System (ISMS) and its keeping pace with the times through an annual external audit. The 2021 ISMS annual audit was successfully passed. ChipMOS actively participated in seminars to absorb new knowledge on various topics, reflect on the current situation and plan a better information security environment, such as participating in Cybersec 2021, the 8th Manufacturing CIO Forum, 2022 Information Security Trend Outlook and Digital Transformation Security Strategy Seminar, Security Platform as a Service (SECPAAS). The Company also completed a process and application system health inspection in early 2021.

ChipMOS's Participation in External Organizations

Organization Name	Participation Status
Taiwan Semiconductor Industry Association (TSIA)	Member – Packaging and Testing and Environmental Safety Team
Taiwan Alliance for Sustainable Supply (TASS)	Member
Chinese National Association of Industry and Commerce,Taiwan(CNAIC)	Member
Taiwan AI Communication and Information Association (TAICIA)	Member
Security Platform as a Service (SECPAAS)	Member
The Allied Association for Science Park Industries	Member, Nanke Water and Electricity Supply Committee
Information Sharing and Analysis Center, Science Park, Ministry of Science and Technology (SP-ISAC)	Member
International Microelectronics Assembly and Packaging Society – Taiwan Chapter	Member
Academia-Industry Consortium for Southern Taiwan Science Park	Member
The Institute of Internal Auditors – Chinese Taiwan	Member
Hsinchu County Nurses Association and Great Tainan Nurses Association	Member
Tainan Power Saving Alliance	Member
The Allied Association for Science Park Industries – Water and Electricity Committee	Member
Southern Taiwan Science Park – Environmental Protection and Development Promotion Foundation	Director



CHAPTER

2

Sustainable ChipMOS

59 Persons

Senior executives and ESG Committee members, for total 59, jointly measure the impact of each sustainability issue on the Company's operations

10 Items

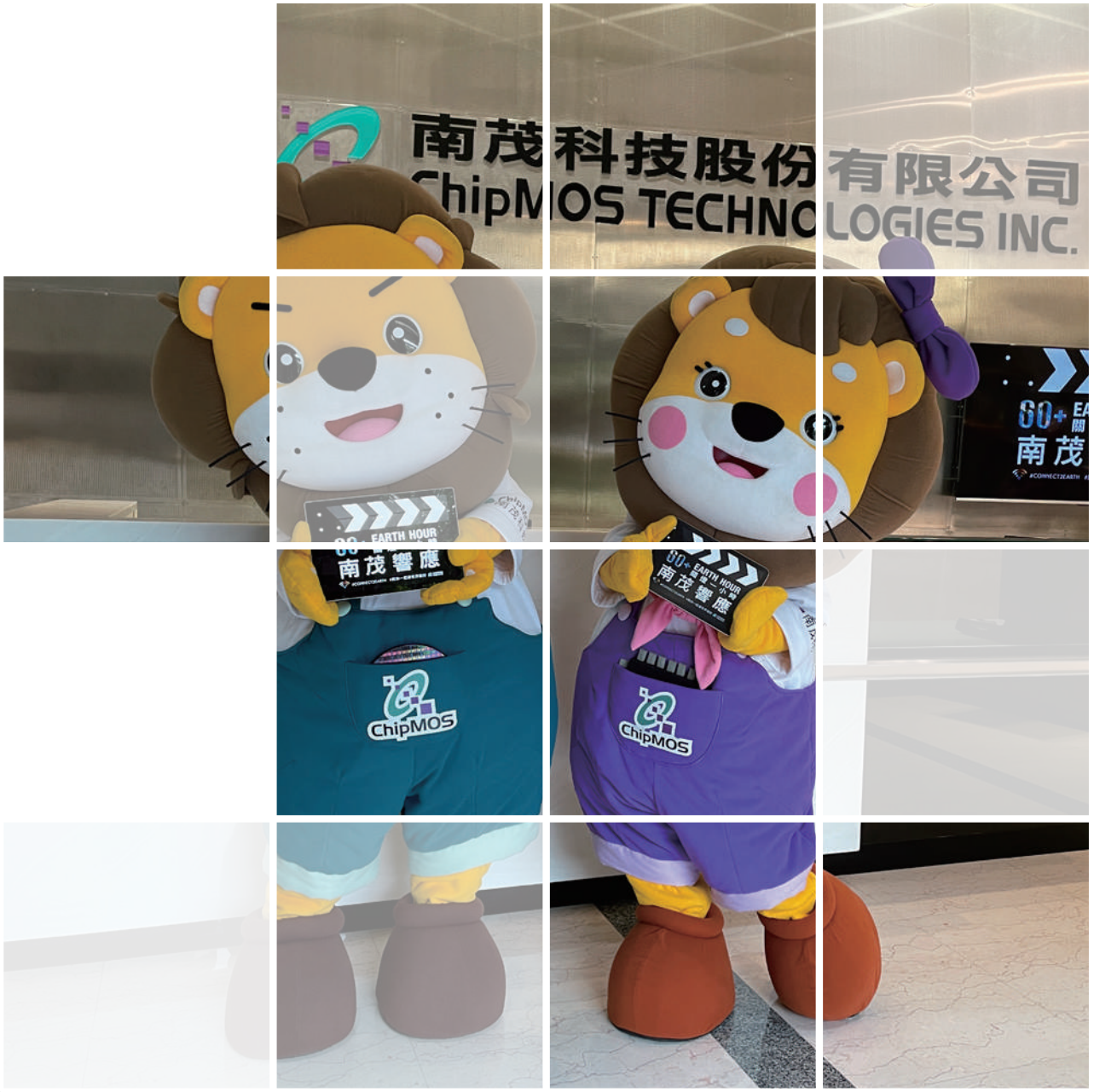
Formulate management strategies, objectives and action plans for major themes.

Operation Diversified Interactive Channels

Strengthen ESG information disclosure and maintain real-time communication with stakeholders

Sustainability Objective Management

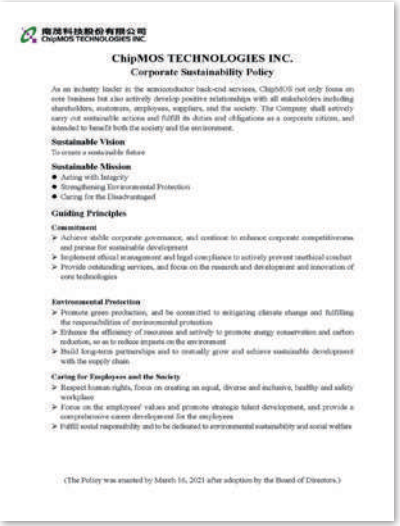
The long-term goal of sustainability is specifically set until 2030 and implemented in daily operations.



2.1 Sustainability Policies and Actions

ChipMOS adheres to the mission of "Honesty, Integrity, Friendliness and Care for the Disadvantaged" and has formulated the "Sustainable Development Code of Practice" and "Corporate Sustainability Policy", which are adopted by the Board of Directors as the highest principle for the Company to promote sustainable development. At the same time, ChipMOS has formulated specific implementation policies, and regularly reviews their implementation effectiveness and continuous improvement. We also incorporate the relevant implementation policies into the operation activities and carry out sustainability actions in various aspects, including continuously improving corporate governance, complying with ethical management and focusing on the R&D and innovation of core technologies, so as to practice our commitments and responsibilities to employees. We actively invest in green production, reduce environmental damage in the production process, continuously improve the use of various resources, and strive for environmental protection. Internally, we protect and care for employees' health and rights, assist employees in career development; externally, we continue cultivating environmental sustainability and implementing public welfare, giving full play to our sustainability influence.

ChipMOS Corporate Sustainability Policy



ChipMOS TECHNOLOGIES INC.

Corporate Sustainability Policy

As an industry leader in the semiconductor back-end services, ChipMOS not only focus on core business but also actively develop positive relationships with all stakeholders including shareholders, customers, employees, suppliers, and the society. The Company shall actively carry out sustainable actions and fulfill its duties and obligations as a corporate citizen, and intended to benefit both the society and the environment.

Sustainable Vision

To create a sustainable future

Sustainable Mission

- Acting with Integrity
- Strengthening Environmental Protection
- Caring for the Disadvantaged

Guiding Principles

Commitment

- Achieve stable corporate governance, and continue to enhance corporate competitiveness and pursue for sustainable development
- Implement ethical management and legal compliance to actively prevent unethical conduct
- Provide outstanding services, and focus on the research and development and innovation of core technologies

Environmental Protection

- Promote green production, and be committed to mitigating climate change and fulfilling the responsibilities of environmental protection
- Enhance the efficiency of resources and actively to promote energy conservation and carbon reduction, so as to reduce impacts on the environment
- Build long-term partnerships and to mutually grow and achieve sustainable development with the supply chain

Caring for Employees and the Society

- Respect human rights, focus on creating an equal, diverse and inclusive, healthy and safety workplace
- Focus on the employees' values and promote strategic talent development, and provide a comprehensive career development for the employees
- Fulfill social responsibility and to be dedicated to environmental sustainability and social welfare

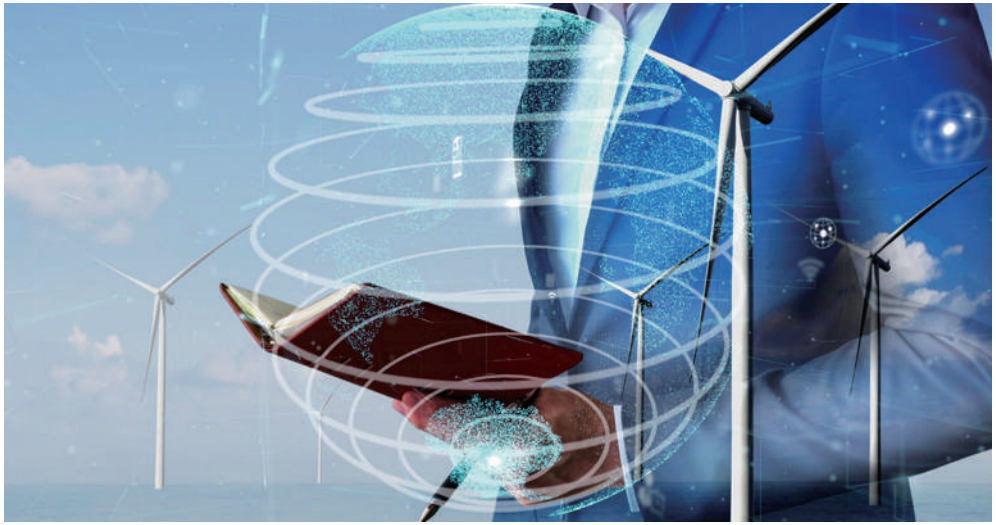
(The Policy was enacted by March 16, 2021 after adoption by the Board of Directors.)

For the Corporate Sustainability Policy and the Sustainable Development Best Practice Principles, please refer to ChipMOS offcial website- ESG Section

2.1.1 ESG Committee

The ChipMOS Sustainable Development Committee (hereinafter referred to as the ESG Committee) is the highest sustainability management organization within the organization. The Chairman & President serves as the Chair and the top commander, and regularly reports to the Board of Directors. According to the professional division of labor and the management of sustainability issues, the ESG Committee is divided into three groups: "Corporate Governance", "Environmental Protection" and "Social and Employee Care". The top managers of each unit are the main members, responsible for coordinating and promoting sustainability development goals. The ESG Committee meets regularly every year to jointly review the promotion of goals and discuss sustainability related plans.

The Committee aims to promote sustainability related activities, formulate sustainability strategies, establish employee sustainability thinking, prepare ChipMOS sustainability reports and actively interact with all stakeholders. When formulating the annual company policy, "enterprise commitment", "environmental protection" and "social engagement" are taken as the practical guidelines, while incorporating the issues of concern for stakeholders into management actions, actively implementing and promoting the economic, environmental and social aspects, and continuing to practice the responsibility of corporate citizens.



ChipMOS sustainability management organization at the highest level

Top Decision Maker

Board of Directors

Chairman

Mr. Shih-Jye Cheng, Chairman & President

Main Committee Members

First level supervisors of each organization

Main Tasks

Formulate and promote sustainability strategy	Responsible for formulating the sustainability strategy and coordinating the implementation and promotion of the Company's sustainable operation management.
Regularly review the implementation effects	• Review the progress of achieving sustainability goals in regular meetings. • Regularly report the implementation status and results to the Board of Directors.
Compile sustainable development reports	Implement and promote sustainable development, compile ChipMOS sustainability into sustainability reports every year, report to the Board of Directors and submit the reports to directors for reference.

Organizational Structure of ESG Committee

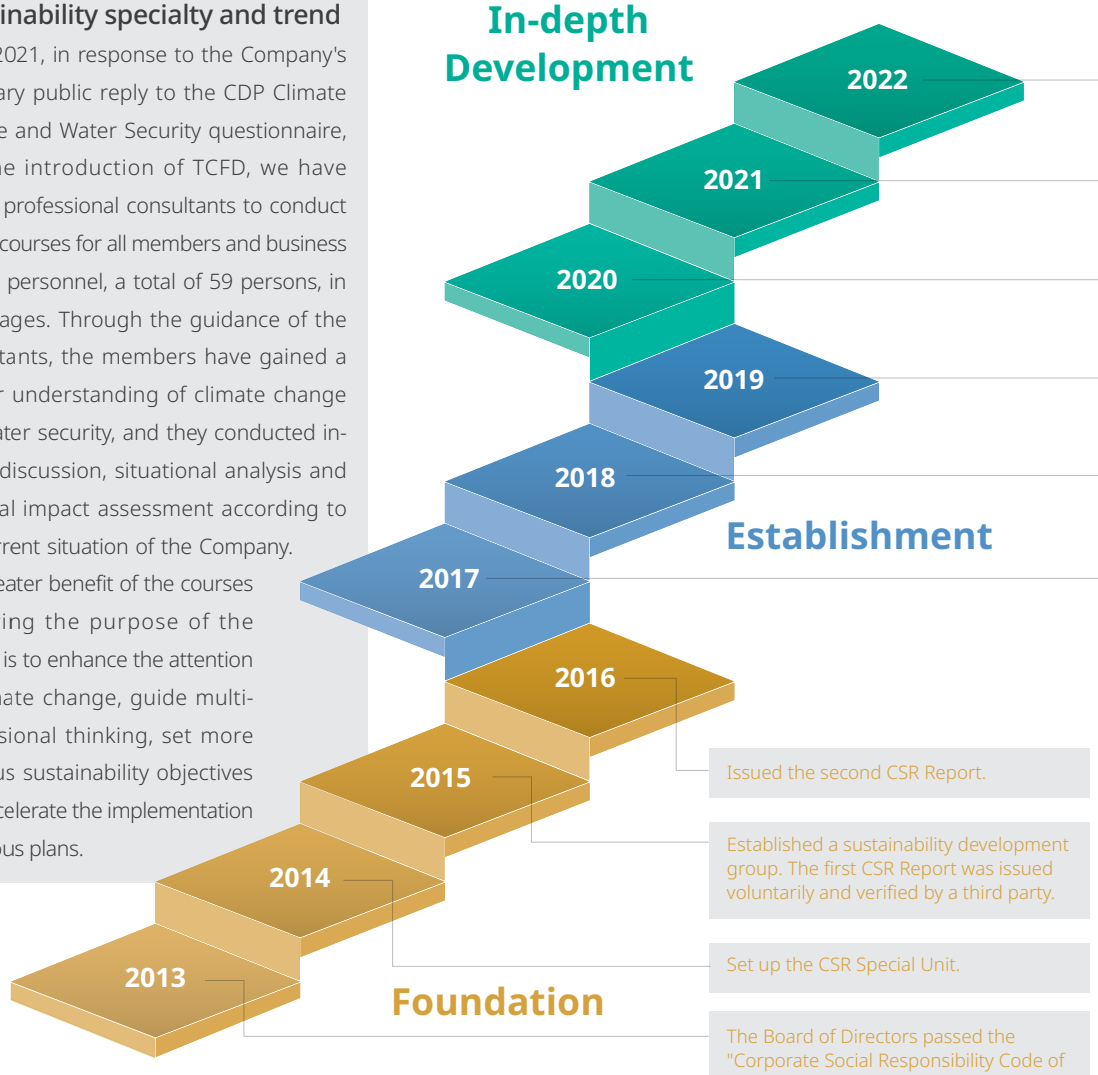


Sustainable Development of ChipMOS

[Sustainability Courses] Continuously improve the sustainability specialty and trend

Since 2021, in response to the Company's voluntary public reply to the CDP Climate Change and Water Security questionnaire, and the introduction of TCFD, we have invited professional consultants to conduct topical courses for all members and business related personnel, a total of 59 persons, in four stages. Through the guidance of the consultants, the members have gained a deeper understanding of climate change and water security, and they conducted in-depth discussion, situational analysis and financial impact assessment according to the current situation of the Company.

The greater benefit of the courses achieving the purpose of the project is to enhance the attention to climate change, guide multi-dimensional thinking, set more rigorous sustainability objectives and accelerate the implementation of various plans.



- The CSR Committee was officially renamed as the ESG Committee through the Board of Directors in March 2022.
- In accordance with to Corporate Governance 3.0, SASB sustainability accounting standards have been introduced.
- Joined "TALENT, in Taiwan" in March 2022.

- The ChipMOS "Corporate Sustainability Policy" was approved and announced by the Board of Directors in March 2021.
- The English version of the Corporate Social Responsibility Report was released.
- Voluntarily participated in the 2022 CDP Climate Change and Water Security questionnaire in 2021.
- Introduced TCFD.
- Won the TCSA Taiwan Corporate Sustainability Awards.

- Revised the Code of Corporate Social Responsibility according to the trend and the current situation of the Company.
- Strengthened the disclosure quality of CSR reports and improved the type and level of third-party verification.
- Won the ACES Awards – Top Green Companies in Asia.
- Won the TCSA Taiwan Corporate Sustainability Awards.

- Developed action objectives, implemented the ChipMOS sustainability vision, and supported SDGs.
- Used multiple communication methods (CSR film, sustainability electronic newspaper, etc.) to continuously establish the sustainability thinking of colleagues.
- Won the TCSA Taiwan Corporate Sustainability Awards and the Top 100 World Enterprise Citizenship Awards.
- Continued working with vendors and external organizations to expand influence

- Developed the ChipMOS sustainability vision.
- Deepened the operation of the online community platform and made CSR video clips.
- The fourth CSR Report was issued in accordance with the newly published GRI Standards
- Continued to win the TCSA Taiwan Corporate Sustainability Awards.
- Won the Top 100 World Corporate Citizens for the first time: Top 50 Large Enterprises.
- Held 2 CSR trend lectures.

Issued the second CSR Report.

- Won the TCSA Taiwan Corporate Sustainability Awards for the first time.
- Issued the third CSR Report.
- Strengthened communication with stakeholders and actively developed a diversified communication platform.
- Organized 36 hours of CSR education and training, and revised GRI G4 to GRI Standards.

Established a sustainability development group. The first CSR Report was issued voluntarily and verified by a third party.

Set up the CSR Special Unit.

The Board of Directors passed the "Corporate Social Responsibility Code of Practice".

2.2 Materiality Analysis

103-1~103-3, 102-40, 102-42~44, 102-46, 102-47

2.2.1 Maintenance of Good Interaction and Communication with Stakeholders

Understanding the suggestions and needs of various stakeholders through specific management policies and smooth communication channels, and conducting effective communication and issue management.

Policy

Listening and communicating instantly	Paying attention to the voices of stakeholders and giving timely responses in appropriate manners during daily business.
Paying attention to feedback and responding clearly	Understanding the issues of concern for various stakeholders through various communication channels, conducting effective communication, and responding one by one in this Report.
Continuous sound interaction and cooperation	Maintaining smooth communication, and continuing to promote and develop various cooperation plans to jointly create a sustainable future.

2.2.2 Thorough Development of a Diversified Communication Platform

ChipMOS actively operates a diversified communication platform and expects more immediate communication and bringing itself closer to the voices of stakeholders.

Sustainability Influence

Official Website – ESG at ChipMOS	FB – ChipMOS CSR Fan Club	Sustainability Video	ChipMOS Sustainability Quarterly E-Paper	CSR Electronic Quarterly Report	ChipMOS Quarterly Publication

External | Internal

Sharing Information

- Sustainability trends at home and abroad
- Sustainability news/hot keywords
- ChipMOS economic, environmental and social information

Sustainability Influence

- Deeper understanding of ChipMOS
- Grasping sustainability trends
- Improving sustainability knowledge
- Subtly influencing readers to establish correct thinking and behavior

Wonderful Sharing in 2021



Sustainability Video

In 2021, the world continued to be affected by the pandemic. Taiwan also fell into crisis many times. In order to protect all employees and the Company's continuous operations, the Company continuously adjusted pandemic prevention measures, took care of employees' mental health, and helped employees start a new life of pandemic prevention. At the same time, we continued investing in social engagement and helping the frontlines fight the pandemic and caring for the disadvantaged without interruption.

Video Information:https://youtu.be/mswGY3_5-gQ

2.2.3 Analysis of Material Topics

Individual departments of ChipMOS communicated with various stakeholders through various channels in their daily business, collected and managed various issues. Integrated and converged with ESG members at the annual ESG seminar. We comply with the GRI standards and AA1000 principles (sustainability context, materiality, integrity and stakeholder inclusion), and systematically conduct the material topics analysis process: identification, analysis, and confirmation. This was done to identify ChipMOS major themes as an important basis for the formulation of sustainability management strategies and objectives.

2.2.3.1 Analysis Process

In order to make sustainability issues cover the overall operations of the Company, ChipMOS convened all members responsible for ESG development such as environment, society, governance and products to review the diversified communication results and feedback of stakeholders. After sorting and classifying the trends of industrial development and international ESG issues, 21 sustainability issues of general and industry characteristics were finally determined. Based on the suggestions of various groups and professional consultants, the main stakeholders concerned were divided into six classes: stakeholders, customers, employees, vendors, government agencies and community groups. In the third stage, a matrix was drawn based on the impact degree and interest degree of the issues, and 10 major topic were determined for 2021. The fourth step examined the influence boundary of the 10 Material Topics, including the organization itself, upstream industries and downstream industries. Finally, target management was carried out for various Material Topics that could respond to the requirements of the United Nations development goals.



2.2.3.2 Stakeholder Communication

ChipMOS attaches importance to various stakeholders and firmly believes that the primary task of sustainable operations of the Company is to establish a good relationship with stakeholders and obtain more trust and support, which will effectively assist the operations and sustainable development of the Company.

We define stakeholders as "internal and external groups or organizations that will affect or be affected by ChipMOS". Through the annual ESG Committee meeting, we gather the suggestions of all members, and discuss the same according to the Company's sustainability context, industrial characteristics and practical experience, and with reference to the five major principles of the AA1000 SES-2015 Stakeholder Engagement Standard (SES) (Dependence, Responsibility, Influence, Diverse Perspectives and Tension), and identify six types of stakeholders by voting: shareholders, customers, employees, vendors, government agencies and community groups.



Issues of Concern for Stakeholders and Communication Effectiveness

Stakeholders	Significance to ChipMOS	Main Concerns in 2021	Communication Channel and Frequency	Communication Effectiveness in 2021	Response Section (Hyperlink)
Shareholders	ChipMOS attaches importance to the rights and interests of shareholders and investors to pursue the development of sustainable operations and is responsible to shareholders and investors.	Talent Development and Training Healthy and Safe Workplace Corporate Governance	Company Financial Report (quarterly) Quarterly Corporate Briefing (quarterly) Company Annual Report (annually) Annual Shareholders' Meeting (annually) Market Observation Post System (irregularly) Sustainability Report (annually) Company Website and Community Website (irregularly)	• A total of 14 meetings and at least 64 major information items and announcements were made to communicate the Company's development strategy and overall operations with shareholders. • A total of more than 128 messages were released, and the sustainability actions and achievements were communicated with various stakeholders through the Company's official website, social networking website and other channels from time to time. • The average rate of return on shareholders' equity from 2016 to 2021 was at least 10%; the rate of return on shareholders' equity in 2021 was 22.4%.	3 Sound Governance
Customers	Mutual trust and customers' recognition are the key to ChipMOS's continuous growth.	Product Quality Healthy and Safe Workplace Environmental Policy and Management System	Customer Satisfaction Survey (annually) Sustainability Report (annually) Customer Service/Quality Assurance Dedicated Window (permanent) Customer Audit (irregularly) Business Meeting (irregularly) Company Website and Community Website (irregularly)	• Passed ISO 9001, IATF 16949:2016, ISO 26262:2018, IECQ QC080000:2017, ISO 17025, ISO 27001:2013. • Third-Party Verification of Management System. • Customer Satisfaction Survey, items such as quality, technology, hazardous substance management, delivery date and service were evaluated, which met the customers' requirements, and the evaluation score was 4.02 (out of 5). • Zero customer complaint cases related to customer information security.	5 Products and Value Services 6 Sustainable Supply Chain



Stakeholders	Significance to ChipMOS	Main Concerns in 2021	Communication Channel and Frequency	Communication Effectiveness in 2021	Response Section (Hyperlink)
Employees	ChipMOS's core competitiveness is an important key and the biggest driver of the Company's continued operation and development.	Product Quality Environmental Policy and Management System Employee Compensation and Benefits	Production Line Meeting (monthly) Labor-Management Meeting and Welfare Committee Meeting (quarterly) Environmental Safety, Health and Energy Management Committee (every three months) Company Publication – ChipMOS Quarterly Chairman's mailbox, employee mailbox/ special line (permanent) Internal website, physical bulletin board (permanent) Chairman's talk and shift leader's meal (irregularly) Company Website and Community Website (irregularly)	• 54 Labor-Management Meetings, Production Line Meetings, Welfare Committee Meetings, Occupational Safety Meetings and monthly foreign worker meetings were held. • 3 face-to-face talks between the Chairman and employees and shift leader's meals were held. • Care for newcomers and employees: - A total of 733 newcomers and 86 internally transferred colleagues were interviewed. - 105 internal colleagues were interviewed and feedback was given immediately. • ChipMOS Quarterly, sharing relevant information of the Company and works contributed by colleagues (reading reflecting, baking, travel, pets, etc.). • Sustainability electronic newspaper, 4 in total, helping colleagues grasp the sustainability trend and the Company's sustainability actions.	7 Inclusive Workplace
Vendors	As important partners for long-term cooperation, we work together for stable development and sustainable operations.	Product Quality Environmental Policy and Management System Talent Development and Training Healthy and Safe Workplace	Vendor Quarterly Assessment (quarterly) Vendor On-Site Audit (annually) Sustainability Report (annually) Procurement/Quality Assurance/Training Window (permanent) Vendor Meeting and Questionnaire Survey (irregularly) Company Website and Community Website (irregularly)	• •Worked with vendors to jointly implement corporate social responsibility, signed and fully followed the corporate social responsibility statement in 2021. • •Provided appropriate guidance and training to vendors, and conducted regular written assessments and on-site visits. • In 2021, 88 vendors conducted RBA audits, with an average compliance of 98.5% (97.5% in 2020). • •Continuously and actively encouraged vendors to obtain certification in international standards.	5. Products and Value Services 6 Sustainable Supply Chain 7 Inclusive Workplace



Stakeholders	Significance to ChipMOS	Main Concerns in 2021	Communication Channel and Frequency	Communication Effectiveness in 2021	Response Section (Hyperlink)
Government Agencies	ChipMOS follows laws and regulations and performs relevant operations with a high degree of self-discipline and prudence, and actively participates in the plan promoted by the governments.	Product Quality Healthy and Safe Workplace Environmental Policy and Management System	Market Observation Post System (regularly) Pollution Control Declaration (regularly) Sustainability Report (annually) Government Agency Audit (irregularly) Official documents, e-mails and meetings (irregularly) Company Website and Community Website (irregularly)	• Zero major violations. • Completed relevant declarations regularly in accordance with the provisions of the government and the applicable laws and regulations. • The use of raw materials was fully in line with international regulations and green product regulations. • Actively responded to and participated in government promotion projects, such as: - Tax policy of the Ministry of Finance: implemented the issuance of unified invoices and the use of electronic invoices. - Ministry of Labor Youth Employment Flagship Program, increasing youth employment opportunities. - Coastal clean beach adoption, air quality purification area, public toilet promotion adoption programs	3 Sound Governance 4 Environmental Friendliness
Community Groups	Deeply understand local needs, actively cooperate with community groups and give the most sincere care.	Product Quality Sustainability Strategy and Vision Environmental Policy and Management System	Sustainability Report (annually) Employee relations/general affairs special window (permanent) Public welfare organizations (irregularly) Social engagement related activities (irregularly) Company Website and Community Website (irregularly)	• The total amount of social engagement investment was NT$17,631,456. • Care for disadvantaged groups, a total of 34 organizations and more than 1,486 people benefited. • A total of 11,376 volunteers participated. • During the severe pandemic period (almost 8 months), in consideration of reducing the risk of infection, the service of visually-impaired masseurs to the factory was suspended, but the salary of visually-impaired masseurs was still paid.	7 Inclusive Workplace

2.2.3.3 Analysis Results of Material Topics

After comprehensive consideration of the impact of the issues and the concerns of stakeholders, 10 Material Topics of ChipMOS in 2021 were determined. Due to the high concern for product quality in the communication and reply of stakeholders, the topic collection and coverage was adjusted from three the aspects of "Environment, Society and Economy" in 2020 to the four aspects of "Environment, Society, Governance and Products" in 2021. In addition to the more convergent focus on governance issues, compared to the analysis results in 2020, stakeholders paid more attention to "Environmental Policy and Management System" and "Talent Development and Education and Training" than in 2020. These 10 Material Topics corresponded to 7 environmental aspects, 12 social aspects and 5 economic aspects of the GRI Standards.



Description of Variances for Material Topics between 2021 and 2020

2020 (total 16 topics)	2021 (total 10 topics)	Description of Variances
Operational Performance	**Operational Performance**	-
Legal Compliance	**Corporate Governance**	Topic Consolidation
Ethics and Integrity		
Corporate Governance		
Risk Management	**Risk Management**	Topic Consolidation
Information Security Protection		
Product Quality	**Product Quality**	Topic Consolidation
Hazardous Substance Management for Products		
Water Resources and Wastewater Discharge Management	**Environmental Impact Mitigation**	Topic Consolidation
Waste Management and Recycle		
Climate Change and Energy Management		
Remuneration and Benefits	**Employee Incentives and Benefits**	Changes of Topic Title
Occupational Health and Safety	**Healthy and Safe Workplace**	Changes of Topic Title
Employment	**Recruitment and Retention**	Changes of Topic Title
RBA Supply Chain Management	-	The topic title is changed to “Sustainabl Supply Chain,” and lower the materiality
Customer Satisfaction	-	The topic title is changed to “Customer Satisfaction,” and lower the materiality
-	**Environmental Policy and Management System**	New topic added; complete environment policies and system drive various environmental actions for implementation
-	**Talent Development and Training**	Increased materiality; emphasizing talent incubation for better competitiveness, as a key to the sustainable management.

★ ChipMOS Material Topics

	Sustainability Issues	Corresponding to GRI general disclosures or specific topics	Chapters
Environment	Environmental Policy and Management System ★	307 Violation of environmental regulations	4.1 Environmental Protection Policy
	Environmental Impact Mitigation ★	102-11 Precautionary principle or approach, 302 Energy, 303 Water and effluents, 306 Waste	4.2 Climate Change and Energy Management 4.3 Water Resources Management 4.4 Recycling
	Climate Change Management	102-11 Precautionary principle or approach, 201 Economic performance, 302 Energy, 305 Emissions	4.2 Climate Change and Energy Management 4.3 Water Resources Management 4.4 Recycling
	GHG Emission	305 Emissions	4.2 Climate Change and Energy Management
	Energy and Resources Efficiency	301 Materials, 302 Energy, 303 Water and effluents	4.2 Climate Change and Energy Management 4.3 Water Resources Management 4.4 Recycling
Society	Recruitment and Retention ★	202 Market presence, 405 Diversity and equal opportunity	7.1 Attraction and Retention of Talents
	Talent Development and Training ★	404 Training and education	7.3 Talent Development
	Healthy and Safe Workplace ★	403 Occupational health and safety	7.5 Healthy and Safe Workplace
	Employee Incentives and Benefits ★	401 Employment	7.2 Employee Incentives and Benefits
	Human Rights, Equality and Inclusion	406 Non-discrimination, 409 Forced or compulsory labor, 412 Human rights assessment	7.4 Safeguarding Human Rights
	Social Welfare and Environment Conservation	413 Local communities	7.6 Social Engagement
	Cultivation of Young Talents	-	7.1 Attraction and Retention of Talents
Governance	Corporate Governance ★	102-18 Governance structure, 205 Anti-corruption, 206 Anti-competitive behavior	3.1 Corporate Governance 3.2 Ethical Management
	Sustainability Strategy and Vision	102-14 Statement from senior decision maker	Message from the Chairman
	Risk Management ★	102-11 Precautionary principle or approach	3.3 Risk Management
	Operational Performance ★	201 Economic performance	1.3 Operational Performance and Tax Governance
	Customer Service	418 Customer privacy	5.1 Customer Service
	Sustainable Supply Chain	204 Procurement practices, 308 Vendor environmental assessment, 414 Supplier social assessment	6.1 Sustainable Supply Chain Management
Products	Product Quality ★	416 Customer health and safety, 417 Marketing and labeling	5.2 Product Quality 5.3 Green Products
	Diversified Products	-	1.2 Main Products and Services 5.2 Product Quality
	Intelligence factory	-	1.2 Main Products and Services 5.2 Product Quality

2.2.3.4 Boundary of Material Topics

ChipMOS examines the impact boundaries of 10 major issues from the perspective of technical services provided (display Driver IC, memory and mixed-signal) and the upstream and downstream value chain. The impact categories are divided into direct cause, indirect cause and business partnership.

● Direct cause ■ Indirect cause ▲ Business partnership

			Value Chain Boundary							
			Organization			Upstream Industry			Downstream Industry	
	Sustainability Issues	Material Topics	Display Driver IC	Memory	Mixed-Signal	Raw Materials	Equipment	Service Supply	Model	Customers
Environment	Environmental Policy and Management System	◉	●	●	●	■	■		▲	
	Environmental Impact Mitigation	◉	●	●	●				▲	
	Climate Change Management		●	●	●	■	■		▲	▲
	GHG Emission		●	●	●	■	■		▲	▲
	Energy and Resources Efficiency		●	●	●	■	■			▲
Society	Recruitment and Retention	◉	●	●	●					
	Talent Development and Training	◉	●	●	●					
	Healthy and Safe Workplace	◉	●	●	●	■	■	■		
	Employee Incentives and Benefits	◉	●	●	●					
	Human Rights, Equality and Inclusion		●	●	●					
	Social Welfare and Environment Conservation		●	●	●					
	Cultivation of Young Talents		●	●	●					
Governance	Corporate Governance	◉	●	●	●					
	Sustainability Strategy and Vision		●	●	●	■	■			
	Risk Management	◉	●	●	●	■	■	■		
	Operational Performance	◉	●	●	●	■	■			
	Customer Service		●	●	●	■	■		▲	▲
	Sustainable Supply Chain		●	●	●	■	■	■		
Products	Product Quality	◉	●	●	●	■	■	■	▲	
	Diversified Products		●	●	●	■	■	■		▲
	Intelligence factory		●	●	●		■			▲

2.2.3.5 Impact Management of Material Topics

ChipMOS uses the following 7 indicators to assess the impact of Material Topics on the Company and take mitigation measures and target management.

★ ChipMOS Material Topics ● Highly correlated ▲ Moderately correlated

		Significance to and Influence on ChipMOS						
	Sustainability Issues	Increase revenue	Reduce cost	Obtain funds/ capital	Enhance customer trust	Reduce goodwill risk	Enhance cohesive force	Exert social influence
Environment	Environmental Policy and Management System ★				●	▲		●
	Environmental Impact Mitigation ★				●	▲		●
	Climate Change Management				●	▲		●
	GHG Emission				●	▲		●
	Energy and Resources Efficiency				▲	▲		●
Society	Recruitment and Retention ★						●	▲
	Talent Development and Training ★	▲					●	
	Healthy and Safe Workplace ★					▲	●	●
	Employee Incentives and Benefits ★						●	●
	Human Rights, Equality and Inclusion				▲	▲	●	▲
	Social Welfare and Environment Conservation				▲	●		●
	Cultivation of Young Talents		▲					●
Governance	Corporate Governance Team ★	●	▲	●				
	Sustainability Strategy and Vision			▲	●			▲
	Risk Management ★				●	●		
	Operational Performance ★	▲		●	▲			
	Customer Service	●			●	●		
	Sustainable Supply Chain		●		●	▲		
Products	Product Quality ★	▲			●	●		
	Diversified Products	●		▲	▲			
	Intelligence Factory	▲	●		▲			

2.3 Sustainability Goals and SDGs

In accordance with the Company's ESG development direction and the results of Material Topics, ChipMOS focuses on 10 major SDGs to respond and set measurable and timely internal management objectives.

Aspect	Topics	Benchmark Year	2021 Target	Status	2025 Target	Completion[Note1] Percentage	2030 Target	Corresponding SDGs
Governance								
Corporate Governance	Corporate governance evaluation level	-	20%	Achieved (5%)	20%	100%	5%	-
Sustainable Supply Chain	Average conformity of RBA audit results	-	98%	Achieved (98.5%)	98.5%	100%	98.5%	12, 17
Information Security Risk Management	ISO 27001 annual audit deficiency improvement completion rate	-	100%	Achieved (100%)	100%	100%	100%	-
	Operation interruption time caused by major information security incidents	-	<2 hours	Achieved (<2 hours)	<2 hours	100%	<2 hours	-
Ethical Management	a. Corruption incidents and violations of laws in social and economic fields	-	a. 0 pieces	a. Achieved (0 pieces)	a. 0 pieces	a.100%	a. 0 pieces	16
	b. Conduct promotion on colleagues' professional ethics and compliance with laws and regulations by e-mail	-	b. 4 times	b. Achieved (4 times)	b. 4 times	b.100%	b. 4 times	
	c. Completion rate of questionnaire survey on professional ethics for indirect employees	-	c. 10%	c. Achieved (10%)	c.10%	c.100%	c.10%	
	d. Completion rate of adding regulations governing professional moral conduct to vendors' purchase contracts	-	d. 95%	d. Not achieved (93.3%[Note 2])	d.100%	d.93.3%	d.100%	
Customer Service	Overall Score of Customer Satisfaction	-	3.5	Achieved (3.5)	3.8	92%	4.0	-
Risk Management	a. Number of major economic, environmental and social incidents	-	a. 0 pieces	a. Achieved (0 pieces)	a. 0 pieces	a.100%	a. 0 pieces	-
	b. Implementation rate of the Company's risk control strategy	-	b.100%	b. Achieved (100%)	b.100%	b.100%	b.100%	-
Operational Performance - Organizational Strategy/ Operational Layout	a. Focus on the demand for automotive electronics	-	Maintain competitive advantages and grasp market demands	Achieved	Maintain competitive advantages and grasp market demands	-	Continue maintaining competitive advantages and grasping market demands	-
	b. Expand the scope of the non-TV related and non-driver related packaging and testing business	-	Maintain competitive advantages and grasp market demands	Achieved	Expand the business scope	-	Continue expanding the business scope	-

Note 1: Completion Percentage of 2025 Target= The status of 2021 Target / 2025 Target x 100%

Note 2: Due to the fact that some suppliers' standard contract provisions cannot be modified, it can't actually add the clauses.

Aspect	Topics	Benchmark Year	2021 Target	Status	2025 Target	Completion Percentage[Note1]	2030 Target	Corresponding SDGs
Products								
Diversified Products - Product Layout	NPI success rate	-	94%	Achieved (94%)	95%	98.9%	95.5%	-
Intelligence Factory	Production efficiency improvement	2020	0.5%	Achieved (0.5%)	1.0%	50%	1.5%	12
Product Quality	Passing third-party ISO 9001/IATF 16949/ISO 17025 certification	-	100% fab	Achieved (100%)	100% fab	Achieved (100%)	100% fab	12
	Third-party QC-080000 certification	-	Passed	Achieved (passed)	Passed	100%	Passed	12
	Number of customer complaints about abnormal hazardous substances in products	2020	0	Achieved (0)	0	100%	0	-
	Procurement of nonconflict minerals and raw materials	-	100%	Achieved (100%)	100%	100%	100%	12
	Process Improvement Team (PIT) proposal achievement rate	-	100%	Achieved (206%)	100%	100%	100%	12
Environment								
Recycling of Packaging Materials	Recycling rate of carton and rubber bands[Note 3]	2019	2%	Achieved (2%)	6%	33%	10%	13
Water Resources	Tainan fab. water recovery in the process ≥ 25% of tap water consumption	-	25%	Achieved (25%)	30%	83%	35%	6
Energy and Resources Efficiency	Annual power saving rate of the entire Company compared to the previous year	2018	1%	Achieved (1%)	5%	20%	10%	7, 13
Society								
Recruitment and Retention	a. Implementation rate of RBA internal management objectives	-	a.100%	a. Achieved (100%)	a.100%	a.100%	a.100%	8
	b. Renewal rate of foreign workers	-	b.80%	b.Achieved (80%)	b.80%	b.100%	b.83%	
Human Rights, Equality and Inclusion	a. Proportion of disadvantaged people in posts for employees with physical and mental disabilities	-	a.50%	a. Achieved (51%)	a. 50%	a.100%	a.50%	8
	b. Continuous inclusion and protection of diversified employees	-	b. Open access to foreign spouses	b. Achieved (14 persons)	b. Continuous employment of foreign spouses and evaluation of employees from diverse ethnic groups	-	b. Continuous employment of foreign spouses and evaluation of employees from diverse ethnic groups	
Cultivation of Young Talents	Expand and maintain internship cooperation opportunities	-	Add at least one school/ department production and learning cooperation opportunity	Achieved (5 schools/ departments)	Continue expanding and maintaining internship cooperation	-	Continue expanding and maintaining internship cooperation	8

Note 3: The average recycling rate of packaging materials (carton and rubber bands) in 2019 was 97%, and the short/medium/long-term target was set as the benchmark year.

Aspect	Topics	Benchmark Year	2021 Target	Status	2025 Target	Completion Percentage[Note1]	2030 Target	Corresponding SDGs
Society								
Healthy and Safe Workplace - Health Management	a. Better than the annual employee health check rate as specified by laws and regulations		a.99.5%	a. Achieved (99.7%)	a. 99.5%	a.100%	a. 99.5%	3
	b. Completion rate of the implementation of grading management for abnormal health checks		b.100%	b. Achieved (100%)	b.100%	b.100%	b. 100%	
	c. Number of health promotion activities conducted		c. 30 activities	c. Achieved (33 activities)	c. 35 activities	c.94%	c. 38 activities	
Employee Incentives and Benefits	a. Employee participation growth rate[Note 4]		a. 1% higher than in 2019	a. Achieved (1.03%) Note 5	a. 4% higher than in 2021	a.-	a.9%	8
	b. Proportion of job balance activities		b.25%	b. Achieved (28%)	b.25%	b.100%	b.25%	
	If there is any profit in the year, 10% shall be set aside as employee compensation	-	10%	Achieved (10%)	10%	100%	10%	8
	Rate of basic conditions in the basic salary and compensation for men and women	-	1:1	Achieved (1:1)	1:1	100%	1:1	8
Social Welfare and Environment Conservation	Environmental Awareness/Public Welfare Practice Activities	-	≥18 activities/year	Achieved (18 activities)	≥18 activities/year	100%	≥18 activities/year	3, 4, 11
	The number of volunteers increased by 5% compared to the benchmark year	2018	5%	Failed (- 61%)[Note 6]	5%	-	5%	-
Talent Development and Training	Rate of annual training plan courses adopting diversified training modes	-	30%	Achieved (55%)	60%	92%	75%	4
	Provide internal lecturers with opportunities for independent learning	-	6 times	10 times	6 times	100%	10 times	4
	Annual self- learning opportunities for employees	-	180 times	Achieved (243 times)	250 times	97%	280 times	4

Note 4: The number of employees participating in welfare will increase by 4% by 2025 and 9% by 2030 based on an annual growth of 1%.
Note 5: 12,418 employees participated in welfare in 2019 and 12,546 in 2021, an increase of 1.03%.
Note 6: In 2021, due to the impact of the COVID-19 pandemic, the activities were cancelled, therefore the number of volunteer decreased significantly.

2.3.1 Sustainable Business Model

Value Chain

Key Partners

- Raw Materials Suppliers
- Packaging Materials Suppliers
- Equipment Suppliers
- Government Agencies
- Community Groups

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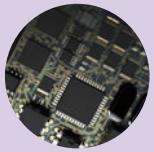
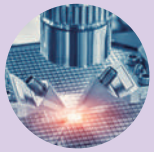

IC Assembly


IC Testing


Wafer Bumping

Market and Product Applications

Main Customers

- Semiconductor Design Companies
- Integrated Device Manufacturers
- Semiconductor Fabs

Main Applications of Products

- Personal Computers
- Automotive Electronics
- Communication Equipment
- Office Automation
- Consumer Electronics such as Mobile Phones

Value Investment

Six Major Capitals

- Financial Capital: Create economic value as feedback via efficient financial resource management
- Manufacturing Capital: Cost of adding and maintaining plant and equipment
- Intellectual Capital: R&D expenses
- Natural Capital: environmental expenditure and investment
- Human Capital: Employee salary and welfare expenses
- Social Capital: Inputs of environmental sustainability and fulfillment of public welfare

Key Resources

- Professional niche product packaging and testing technologies
- Diverse product positioning
- Introduction of automation
- Talent development and incubation

Core Services

Providing the packaging and testing technologies for three major products

- Memory IC
- Display Driver IC and Wafer Bumping
- Logic & Mixed-Signal Products

Advantages of ChipMOS

- One-stop Service
- Stable financial resources and growth of operation and management
- Digital transformation is introduced to promote automated intelligence factory to achieve high specs and quality
- Sharing the supply chain risks of major raw materials
- A complete education and training system to assist employee career development and growth with the Company

Customer Management

- Based on customers' product development blueprints, packaging and testing solutions of excellent quality are provided
- Assisting customers to reduce operating costs
- Multiple communication channels to value customers' voices

Sustainable Values

2021 consolidated operational revenue reached a new record high in recent years of NT$27.4 billion.

The cumulative power volume generated with renewable energy (solar energy) over 10 years equals the supply of monthly power consumption of 9,975 households

The cumulative recycled water from processes over 14 years equals 4,122 standard international swimming pools

In 2021, social engagement affected 34 institutions in total, with 1,486 direct beneficiaries

2.4 Sustainable Value Management

ChipMOS's sustainable value management mode takes six types of capital Financial, Intellectual, Manufacturing, Natural, Human, Social as resource inputs. Through the core operation and management foundation of the Company, ChipMOS faces the upstream, self-operation and downstream stages of ChipMOS's value chain and all ChipMOS stakeholders, continuously creates value and achieves a balance in economic development, environmental protection and social activities.

ChipMOS Sustainability Vision

- Steady and healthy corporate governance to ensure shareholders' rights and interests
- Leader of semiconductor packaging test service technology
- Establish long-term partnerships with customers
- Practice green production and green processes
- Cherish the value of employees and cultivate internal elites
- Focus on public welfare investment and actively cooperate with local governments

[Input] Six Types of Capital

Financial Capital

Sound financial management is the key basis for maintaining the daily operation of the organization and providing product manufacturing and services.

ChipMOS Capital: **NT$7.27 billion**

Intellectual Capital

Accumulate experience and technology in the field of semiconductor packaging and testing, and continuously invest in innovative R&D and patents.

R&D funds: **NT$1.14 billion**

Manu-facturing Capital

Maintain manufacturing equipment and plant related settings, and provide products and services that meet customer needs.

Cost of adding and maintaining plant and equipment: **NT$ 5,881,506,000**

Natural Capital

Gradually improve the effective use of energy resources, and promote the maximization of benefits through source input management and waste reduction.

Cost of energy-saving actions: **NT$30,363,000**

Cost of water resource management: **NT$49,848,400**

Cost of waste management: **NT$32,043,800**

Cost of air pollution prevention and control: **NT$5,907,700**

Human Capital

Attracting high-quality talent and strengthening talent cultivation have become the key capital of the core competitiveness of enterprises.

Employee salary and welfare expenses: **NT$6.76 billion**

Social Capital

ChipMOS maintains long-term partnerships with stakeholders, and gives back to society and exerts social influence through social engagement.

Total investment in social engagement: **NT$17,631,456**

[Process] Core Operation and Management

Core Management Foundation

- ChipMOS Sustainability Vision
- ChipMOS Core Values
- Core Technical Services

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- Risk Management
- High Involvement of Senior Executives
- International Standards Management System

ChipMOS Business Model

Value Chain

Upstream	ChipMOS Product Manufacturing	Downstream
Raw Materials/ Equipment / Service Supply/Social Engagement	Display Driver IC, Memory, Mixed-Signal	Products/Services

Involved Aspects

Upstream	ChipMOS Product Manufacturing	Downstream
Legal compliance and integrity management, risk management, product quality, RBA supply chain management, product hazardous substances, occupational health and safety	Legal compliance, corporate governance, risk management, product quality, RBA supply chain management, operational performance, information security protection, ethical integrity, customer satisfaction, product hazardous substances, climate change and energy management, water resource and wastewater discharge management, waste management, labor-management relationship, salary and benefits, occupational health and safety	Customer satisfaction, risk management, product quality, information security protection, product hazardous substances

Stakeholders

Shareholders | Customers | Employees | Suppliers | Government Agencies | Community Groups

[Output] Sustainability Performance

Financial Capital

Consolidated Revenue: NT$27.4 billion
Consolidated After-Tax Surplus: NT$5.06 billion
Shareholders' Return: 22.4%
➡ Response Section: Operational Performance

Intellectual Capital

Valid patents: 631 items
R&D trademark rights: 53 items
➡ Response Section: Main Products and Services

Manu-facturing Capital

Total production output value: NT$20,070,280
➡ Response Section: Operational Performance

Natural Capital

Energy intensity reduced by 11.08%
Greenhouse gas emission intensity reduced by 12.31%
As per the energy saving plan, emissions reduced by 3,485 tons CO_2e
Total water intake reduced by 7.7%
Wastewater discharge reduced by 8.2%
➡ Response Section: Environmental Friendliness

Human Capital

Headcount: 5,547 persons
Employee Turnover Rate: 1.12%
Training Hours per Employee: 146.25 hours
➡ Response Section: Talent Attraction and Retention, Talent Development

Social Capital

Income tax payment: NT$690,122,000
Social Influence: 34 organizations benefited and 1,486 people directly benefited
➡ Response Section: Social Engagement

[Impact] Value Creation of ChipMOS

Leading Brands

- **No. 2 in the World** – LCD Driver IC assembly test capacity
- **Excellent Quality** – High tech and highly trusted packaging and testing solutions

Corporate Governance

- **Board of Directors Functions**– Implement the Board of Directors diversification policy and implement the Board of Directors performance evaluation mechanism
- **Transparent Information Disclosure** –More than 128 public messages

Customer First

- **Product Quality** – The entire fab passes four quality related management systems
- **Customer Satisfaction** – Overall score: 4.02 (out of 5)

Supply Chain Partners

- **Support Local Procurement** – The proportion of local procurement expenditure is 60%
- **Sustainable Growth** – Drive vendors should purchase 100% of non-conflict minerals

Environmental Sustainability

- **Reuse of Water Resources** – Nearly 4,122 international standard swimming pools have been saved in recovered water over 14 years
- **Energy Saving and Carbon Reduction** – 25 energy-saving schemes, with a total carbon reduction of 3,485 tons CO_2e

Friendly Workplace

- **Protect Labor Rights and Interests** – 100% compliant with human rights and laws and regulations
- **Salary and Benefits** – Continuously optimizing the salary level of all staff
- **Employees Demonstrating Strengths** – The average training and learning hours of each employee are 146.25 hours
- **Healthy Workplace** – Employee health examination is implemented every year, which is superior to the diversified screening items in the industry (31 items in total)

Social Integration

- **Join Hands with Schools/Institutions** – 34 institutions that benefited directly
- **Expand Influence** – Continuously implement the environmental protection plan, with the participation of vendors

CHAPTER

3

Sound Governance

Corporate Governance Evaluation

The 8th Corporate Governance Evaluation results showed that ChipMOS is ranked in top 5% of all TWSE-listed companies

3 Female Directors

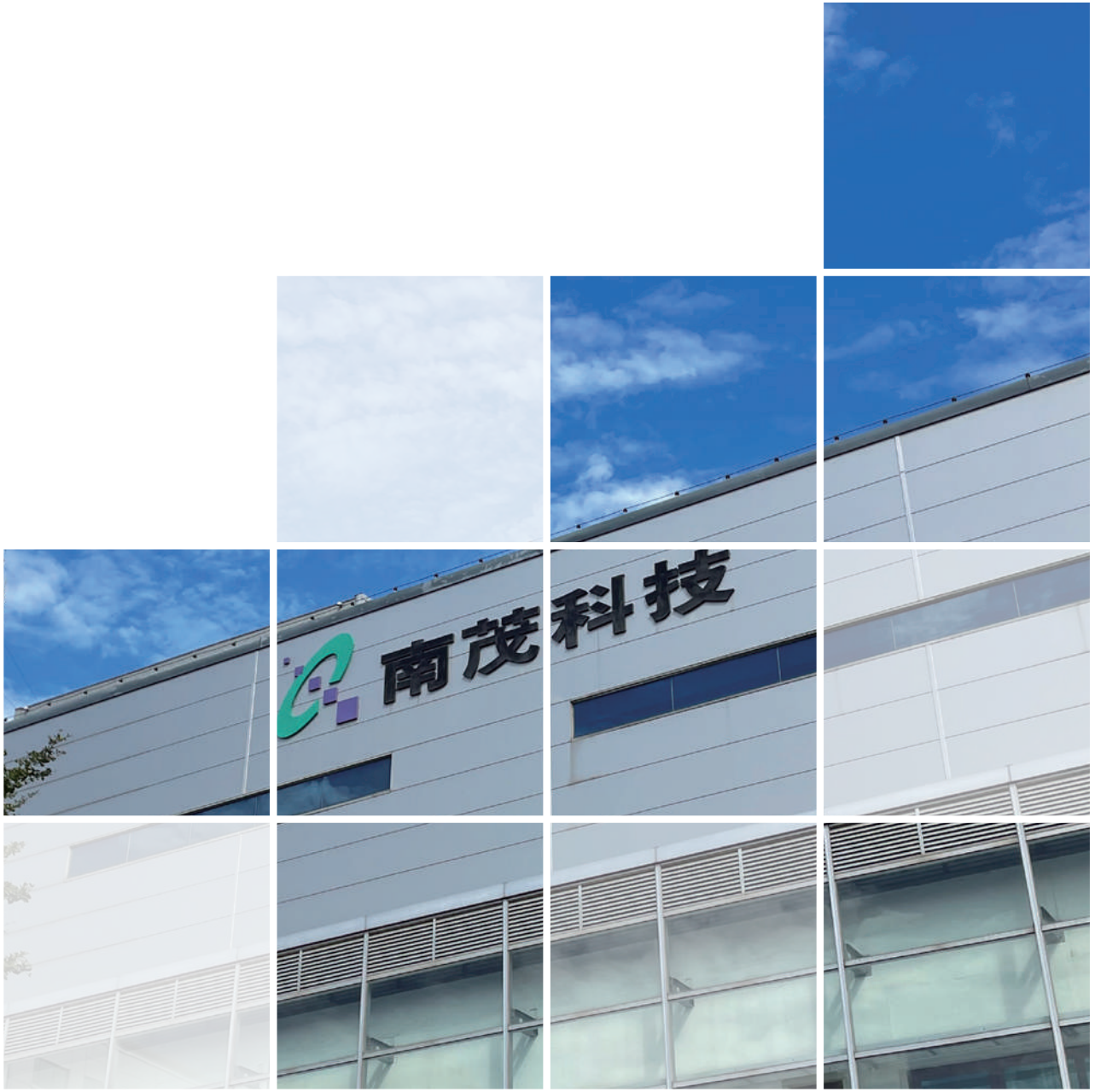
Female directors account for 33% of all directors, better than the average proportion of all TWSE-listed companies (14%)

100%

All directors and senior executives signed the integrity management policy statement

Strengthen Enterprise Risk Management

Set up a risk management team as the responsible unit, formulate "Risk Management Policies and Procedures", and establish an effective risk management mechanism



Management Approach

Policy

Implement the responsibility of corporate management, protect the interests of shareholders and related stakeholders; comply with laws and regulations and ethical corporate management while actively prevent the unethical conducts; establish the risk control mechanism and maintain the stable corporate operation

Commitments

On the foundation of the core values, strictly abide with the ethics and insist the transparent operation; establish the effective supervisory mechanism and continuously improve the corporate competitiveness and sustainable operations

Resources

The board of directors, management teams, functional committees, ESG Committee and Information Security Management Committee

Specific Actions

- Implementation of Diversity by the Board of Directors
- Board of Directors Performance Evaluation
- Ethical Management and Promotion of Compliance
- Regular Risk Identification, Evaluation and Management
- Implementation of Information Security Training and Improvement of Employees' Information Security Awareness

Evaluation Mechanism

- Supervision and Evaluation from the Competent Authority
- Corporate Governance Evaluation by TWSE
- Internal Audit and Customers' Audits
- Sustainability Evaluation by Investment Institutions

3.1 Corporate Governance

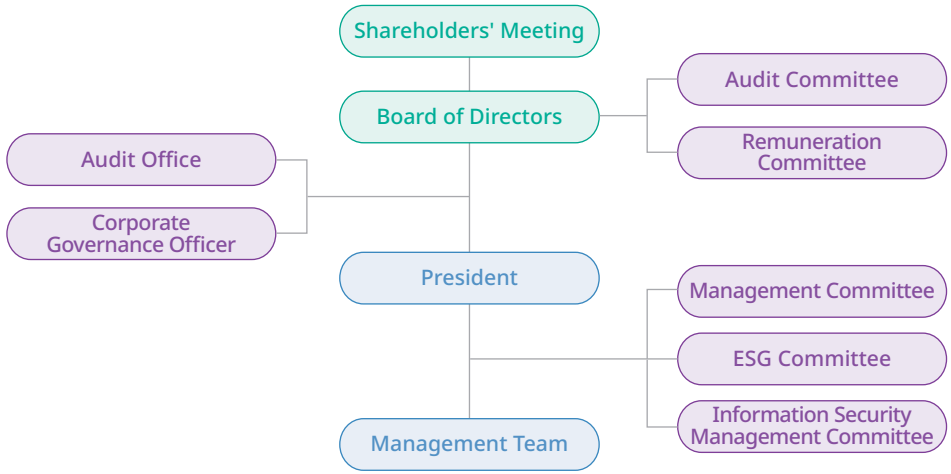
102-18, 102-22, 405-1

3.1.1 Governance Organization

ChipMOS follows the "Articles of Incorporation" and "Corporate Governance Best Practice Principles" and relevant laws and regulations, formulates the corporate governance structure, establishes a good corporate governance system, abides by laws and regulations, and operates in good faith to ensure the steady operation and growth of the Company. ChipMOS strengthens the supervision and management of the Company's operation through the Board of Directors, strives to protect the rights and interests of shareholders and other stakeholders, actively communicates and interacts with stakeholders, continuously improves information transparency and implements sustainable corporate development, which are the main priorities for development promoted by corporate governance.

In 2022, according to the results of the 8th corporate governance evaluation announced by the Taiwan Stock Exchange, ChipMOS ranked among the top 5% of all TWSE-listed companies and the top 10% of all electronics companies with market cap above NT$10 billion. ChipMOS will continue strengthening corporate governance management, including safeguarding shareholders' rights and interests, strengthening the operation of the Board of Directors, strengthening internal control risk management, improving information transparency, and implementing sustainable development, so as to actively improve the level of corporate governance and allow stakeholders to understand the effectiveness of the implementation of various policies.

Corporate Governance Organizational Structure



3.1.2 Giving Full Play to the Functions of the Board of Directors



Board of Directors

The ChipMOS Board of Directors is the highest governance authority and major business decision-making center of the Company. It is responsible for guiding the Company's strategy, supervising the management and the planning and implementation of the Company's sustainable development, and exercising its powers in accordance with the Articles of Incorporation and relevant laws and regulations, in order to ensure that the Company complies with various laws and regulations. It is responsible to the Company and the shareholders' meeting.

The ChipMOS Board of Directors has 9 directors with a term of office of 3 years. The election method of the directors (including independent directors) adopts the candidate nomination system, and directors are elected through a fair, impartial and open election process. The Board of Directors has 5 independent directors, accounting for 56% of all directors, and follows relevant laws and regulations to judge and evaluate the independence of independent directors. 3 female directors (including 2 independent directors), accounting for 33% of all directors, better than the average proportion of female directors of the Boards of Directors of all TWSE-listed companies of 14%. In order to maximize the value of the Company, we must fully grasp the operation information and conditions, so as to increase the operational efficiency and make decision-making more smoothly. The Chairman of the Company is also the President.

In principle, the Board of Directors meeting shall be convened once quarterly. In case of emergency or at the request of more than half of the directors, the Chairman may convene it at any time. In 2021, the Board of Directors held eight meetings. 94% of the directors attended the meeting in person, effectively fulfilling their supervision function. Its operation and implementation were not corrected by the competent authority in 2021.

The Board of Directors is mainly responsible for the deliberation and resolution related to operations, and the guidance and supervision of the management team.

- Deliberation on business policies and medium and long-term development plans
- Review and supervision of the implementation of annual business plans
- Deliberation on plans for surplus distribution or loss make-up
- Appointment of managers
- Supervision of the planning and implementation of the Company's sustainable development
- Convening of the shareholders' meeting and conducting of business reports and resolutions
- Other businesses that should be handled according to law

(For more details, please refer to ChipMOS Articles of Incorporation)

Implementation of Diversification by the Board of Directors

The ChipMOS Board of Directors members have diverse backgrounds and are composed of members with rich industrial operation experience and academic experience, including professional backgrounds in business management, electrical engineering, finance and accounting, law, etc. The ChipMOS Board of Directors has 9 directors, including 5 independent directors (accounting for 56% of all directors), and complies with relevant laws and regulations for the judgment and evaluation of the independence of independent directors. The average term of office of all directors is 6 years. Among them, the term of office of independent directors is less than 3 years for 3 seats, 3-9 years for 1 seat, and more than 9 years for 1 seat. The term of office of more than half of independent directors does not exceed three consecutive terms. ChipMOS has two directors that concurrently serve as managers of the Company, accounting for 22% of all directors, no more than one-third of the number of directors. In addition, ChipMOS pays attention to gender equality in the composition of the Board of Directors. Among these 9 directors, there are 3 female directors, accounting for 33% of all directors. The Company's implementation of the Board of Directors member diversification policy and its implementation are also disclosed inthe Company's Annual Report and the ChipMOS official website.

Specific Management Objectives and Achievement of the Diversification Policy

Management Objectives	Attainment
More than half of the seats are for independent directors.	✓
The Board of Directors includes at least one female director.	
Directors concurrently serving as managers of the Company should not exceed one-third of the number of the directors.	

Implementation of Diversity among the Board of Directors Members

Full Name	Position	Gender	Concurrently Serving as an Employee of the Company	Age			Professional Knowledge and Skills							
				51-60	61-70	71-80	Operational Judgment	Accounting and Financial Analysis	Operational Management	Crisis Management	Industrial Knowledge	International Market View	Leadership	Decision Making Ability
Shih-Jye Cheng	Chairman	Male	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓
Kun-Yi Chien	Director	Male			✓		✓		✓	✓	✓	✓	✓	✓
Bright Yeh	Director	Male		✓			✓		✓	✓	✓	✓	✓	✓
Silvia Su	Director	Female	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓
Chin-Shyh Ou	Independent Director	Male			✓		✓	✓	✓	✓	✓	✓	✓	✓
Kuei-Ann Wen	Independent Director	Female			✓		✓		✓	✓	✓	✓	✓	✓
Hui-Fen Chan	Independent Director	Female		✓			✓		✓	✓	✓	✓	✓	✓
Yeong-Her Wang	Independent Director	Male			✓		✓		✓	✓	✓	✓	✓	✓
Hong-Tzer Yang	Independent Director	Male			✓		✓		✓	✓	✓	✓	✓	✓

Board of Directors Members' Continuing Education in 2021

Date	Organizer	Course	Total Continuing Education Hours
2021/08/10	Taiwan Corporate Governance Association	ESG and Corporate Governance 3.0 Trends	27
2021/08/10		Prevention of Insider Trading and Insider Equity Trading	27
2021/11/09		Development Trends and Important Norms for the Prevention and Control of Money Laundering and Financing of Terrorism	6
2021/11/09		Discussion on Corporate Operations and Related Tax Systems	6
Total			66

Note: Total Continuing Education Hours = course hours x times the person participated
Note: please refer to the ChipMOS Annual Report (3. Corporate Governance Report), the ChipMOS official website, or the Market Observation Post System for the introduction, attendance and continuing education of the members of the Board of Directors

All Directors have completed development courses for at least 6 hours per year in accordance with laws and regulations. In 2021, the average hours that the directors were engaged in continuing education was 7.3 hours. The directors continued to engage in continuing education related to corporate social responsibility and sustainable development, so as to have the ability to make and supervise economic, environment and society related decisions.

Board of Directors Performance Evaluation

In order to implement corporate governance and improve the function and operational efficiency of the Board of Directors, the ChipMOS Board of Directors passed the "Rules for Performance Evaluations of the Board of Directors" in 2020. It is stipulates that the overall performance evaluation of the Board of Directors, individual directors and functional committees should be carried out regularly every year, and at least once every three years by an external professional independent organization or an external team of experts and scholars. The evaluation indicators cover five aspects: participation in the operation of the Company, improvement of the decision-making quality of the Board of Directors, composition and structure of the Board of Directors, selection and continuous education of directors, and internal control. The payment of the directors' and managers' remuneration not only examines the link between personal performance and the overall operational performance of the Company, but also includes non-financial related strategic performance objectives such as technology R&D and innovation, customer service management, etc.

The internal self-evaluation results of the Board of Directors in 2021 were submitted to the Board of Directors in the first quarter of 2022, and the performance evaluation results of the Board of Directors, individual directors and functional committees in 2021 were disclosed in the Company's Annual Report. In addition, an external professional team will be invited to evaluate the performance of the Board of Directors in 2022 to further implement corporate governance.

Remuneration System for Directors and Managers

For the remuneration of the directors, the Board of Directors is authorized to submit it to the Remuneration Committee and the Board of Directors for review and distribution according to their participation in the operation and contribution value of the Company while taking into account the standards of the industry, and review the remuneration system according to the actual operating conditions. Independent directors are paid monthly and do not participate in the distribution of annual directors' remuneration.

The Company's managers' salary includes fixed salary and variable salary. It is regularly inspected with reference to the external salary level. In order to encourage managers to pursue the Company's development and achieve business objectives, the Remuneration Committee will consider the Company's operation and refer to the external market to determine the reasonableness of compensation and submit it to the Board of Directors. The personal performance measurement standard not only includes the Company's short-term operating objectives such as financial revenue, profit and other indicators, it also evaluates the key performance of the long-term strategies. At the same time, in order to balance the Company's sustainable operation and risk control, the 2022 plan will further implement the linking of sustainability performance with the manager compensation. For the relevant salary policies, please refer to the ChipMOS 2021 Annual Report.

Corporate Governance Officer

The Company has set up the Corporate Governance Officer in accordance with the laws. Its main duties are to handle matters related to the Board of Directors and the shareholders' meeting in accordance with the laws, prepare minutes of the Board of Directors and the shareholders' meeting, assist the directors in taking office and continuing education, provide information necessary for directors to perform business, and assist the directors in complying with laws and regulations, etc. In 2021, after approval, Vice President Ms. Silvia Su of the Finance & Accounting Management Center of the Company was appointed to serve as the Corporate Governance Officer to assist the operation of the Board of Directors. The qualifications of Corporate Governance Officer meet the requirements of the Company's "Corporate Governance Best Practice Principles" and completed the required professional education for newly appointed person.

For information on the corporate governance operations and continuing education of the Corporate Governance Officer, please refer to the Company's website/Corporate Governance Section.

Internal Audit

The Company has set up an "Audit Office" special unit under the Board of Directors according to law, which is composed of one full-time Audit Director and one auditor. It is responsible for inspecting and reviewing the effectiveness and implementation of the Company's internal control system, and providing internal control consultation and improvement suggestions. The appointment and removal of the Audit Director is approved by the Audit Committee and submitted to the Board of Directors for resolution. The assessment is approved by the Chairman. The Remuneration Committee puts forward salary suggestions and submits them to the Board of Directors for resolution. The appointment, removal, assessment and salary of other internal auditors is signed by the Audit Director and reported to the Chairman for approval.

The Audit Office reports the implementation of internal control to the Board of Directors and the Audit Committee at least once a quarter. In 2021, it reported 6 times to the Board of Directors and 5 times to the Audit Committee. We also discussed internal control and issues of concern to independent directors with the convener of Audit Committee through email, meeting/forum. One separate meeting was held in 2021. For the communication between independent directors and the internal Audit Director and accountants, please refer to the Company's website/Corporate Governance Section and the annual report.



Audit Committee

Composition

- Established on June 28, 2007.
- The Audit Committee Charter was formulated with the approval of the Board of Directors.
- Members of the Committee: it is composed of all independent directors, and at least one person should have accounting or financial expertise.
  1. Chin-Shyh Ou – Independent Director (Chair)
  2. Kuei-Ann Wen – Independent Director
  3. Hui-Fen Chan – Independent Director
  4. Yeong-Her Wang – Independent Director
  5. Hong-Tzer Yang – Independent Director

Main Responsibilities

- Assist the Board of Directors in performing supervision duties.
- Exercise the functions and powers prescribed by the Company Act, the Securities and Exchange Act and relevant laws and regulations.
- Supervise the effective implementation of internal control.
- Review major asset or derivative transactions, loans of funds endorsements or guarantees, and matters involving the interests of the directors.
- Appointment, dismissal, remuneration, independence and performance evaluation of the CPAs.
- Appointment and removal of the Finance, Accounting or Internal Audit Officer.
- Supervise and audit the proper expression of the Company's financial statements.
- Supervise the Company's compliance with relevant laws and regulations and the management and control of existing or potential risks of the Company.

Operation

- Hold a meeting at least once a quarter and fully communicate with the Company's internal audit unit and CPAs.
- Six Audit Committee meetings were held in 2021. The average attendance rate of the independent directors was 93%.
- The attendance of each independent director at the meeting is disclosed in the Company's Annual Report.

Remuneration Committee

Composition

- Established on March 29, 2012.
- The Remuneration Committee Charter was formulated with the approval of the Board of Directors.
- Members of the Committee: three independent directors
  1. Yeong-Her Wang – Independent Director(Chair)
  2. Chin-Shyh Ou – Independent Director
  3. Kuei-Ann Wen – Independent Director

Main Responsibilities

- Faithfully perform relevant functions and powers with the due care of good managers, and submit suggestions to the Board of Directors for discussion.
- Assist the Board of Directors in evaluating the link between the remuneration level of directors and managers and the Company's operational performance.
- Formulate and regularly review the policies, systems, standards and structures of the performance objectives and remuneration of the directors and managers.

Operation

- At least 2 meetings per year.
- Five meetings were held in 2021.
- The average attendance rate was 100%.



3.2 Ethical Management

102-16, 102-17, 205-1~3, 206-1, 419-1, TC-SC-520a.1

3.2.1 Policies and Norms

ChipMOS is committed to adhering to the principles of "honesty and integrity" when engaging in all business activities, strictly abiding by government laws and regulations and implementing laws and regulations, and adhering to five aspects: corporate governance, securities laws and regulations and insider trading, protection and fair competition of intellectual property rights, environmental protection, safety and health laws and regulations, and labor laws and regulations. Through this, ChipMOS can maintain the Company's reputation, abide by business conduct and ethics, and engage in business activities based on the principles of fairness, honesty, trustworthiness and transparency, and implement the ethical management policy and actively prevent dishonest behavior.

In order to strengthen corporate governance and improve the internal control mechanism, the "Regulations Governing Professional Moral Conduct" and "Procedures for Ethical Management and Guidelines for Conduct" are formulated to declare and require all employees to follow the same, and promote the core values of honesty, integrity and responsibility to all employees through various specific actions.

3.2.2 Implementation

100%

- All operation locations have completed the risk evaluation for anti-corruption
- Directors and senior executives sign the integrity management policy statement
- All directors participate in the "Regulations Governing Professional Moral Conduct" course
- Ethical integrity, professional ethics and compliance with relevant regulations is promoted to all employees
- Each newcomer shall sign the Letter of Commitment to the Regulations Governing Professional Moral Conduct when coming on board

Reporting and Protection

- Formulate the protection system for whistleblowers of fraud, encourage employees to contact the Audit Committee or President anonymously if they find that there are unethical and improper behaviors in the Company, take appropriate protective measures to protect whistleblowers, and prohibit managers from taking adverse personnel punishment against former employees. If a whistleblower is punished by adverse personnel punishment, the Audit Committee may order the Company to take measures such as restoring their original position or providing compensation.
- Set up an "Audit Committee Opinion Box" (Audit_committee@ChipMOS.com) independent of the management team, so that employees, customers and third-party manufacturers can directly report to the Audit Committee and appeal and report illegal and improper events or damages to their own rights and interests.0 whistle blowing events reported in 2021.
- In 2021, there were 0 corruption events, no legal anti-competitive behavior, antitrust and monopoly, and no violations of laws and regulations in social and economic fields.

Risk Assessment and Advocacy Actions

- According to the corruption risk assessment of all ChipMOS operating sites, no significant risks were found in 2021.
- All 9 directors and 53 senior executives signed the ethical management policy statement.
- The relevant policy documents are available on the Company's internal website for all employees to consult at any time.
- All employees (including 966 newcomers in 2021) have signed the Letter of Commitment to the Regulations Governing Professional Moral Conduct.
- Conducted relevant education and training on professional ethics and compliance with laws and regulations in the form of physical/online courses or e-mail:
  - Issued 4 promotion letters to all employees; in order to confirm the publicity effect, 10% of the indirect labor (246 persons) were tested online, and 100% passed the test.
  - RBA Code of Conduct course had a total of 64 participants and 228 person hours.
  - A total of 810 employees participated in the education and training for newcomers (including RBA courses), with a total of 690 person hours.

Joint Compliance with Vendors.

- The ChipMOS e-Commerce Platform establishes the terms and conditions of the Regulations Governing Professional Moral Conduct and the notice of reporting mailbox, so that vendors can immediately know the above information to facilitate reporting.
- In order to implement the ethical management policy, when signing purchase contracts with vendors, it is explicitly required to add the terms and conditions of the Regulations Governing Professional Moral Conducts, and inform that illegal and improper events of the Company's personnel are reported or sent to the reporting mailbox, and the legal effects of violations, thus preventing improper gifts or business entertainment from violating the requirements of the Regulations Governing Professional Moral Conduct, and to jointly abide by the responsibility for following the Regulations Governing Professional Moral Conduct with vendors. Since the standard terms and conditions of the contracts signed with some manufacturers could not be modified in the year, the achievement rate of adding the terms of professional ethics to procurements contract in 2021 was 93.3%. Continue promoting the provision of the Regulations Governing Professional Moral Conduct in procurement contracts. The achievement rate is expected to be 100% in 2023.



3.3 Risk Management

102-11

3.3.1 Risk Management Strategy

With the development of society and technology, the fluctuation degree of various changes in the operation process increased leading to greater risks for operations by facing the changes of the environment and climate, the opening of markets and the frequent occurrence of network attacks. The Company must face the necessity and urgency of risk management. In view of this, ChipMOS has formulated the "Risk Management Policies and Procedures" to clear define the scope and organization of the Company's risk management, so as to strengthen corporate governance and establish an effective risk management mechanism.

The risk management scope of ChipMOS includes all kinds of risks faced in the process of operation activities, including operating risk, climate change risk, information security risk, financial risk, supply chain risk and legal compliance risk. For the risk projects including environmental aspects, financial aspects and operational governance aspects, ChipMOS regularly performs operational impact analysis and risk identification according to the frequency and significance of risks (e.g. the influence of finance, operations and reputation), control degree, etc., defines the priority and risk level of risk control through quantitative evaluation, and adopts corresponding risk management strategies according to the risk level, so as to promote the steady and healthy operation and sustainable development of the Company.

In addition, the Company also pays attention to risk alert and whistle. For example, whistling professional moral conduct & whistleblower channel area on ChipMOS website is set up to report any suspicious behavior or compliance risk that may violate the Regulations Governing Professional Moral Conduct or the Procedures for Ethical Management and Guidelines for Conduct of ChipMOS. Also, the operation instructions related to personnel safety and health events and the Contingency Event Procedure stipulate the notification process of daily personnel safety and health events or accidents and the disposal process of operation emergencies.



Risk Analysis and Identification

- Annual risk assessment: define high, medium and low risk levels according to occurrence and impact degree.

Analysis of Operational Impact

- Identify potential losses and impacts and quantify the impact of losses.

Risk Control Strategy

- Formulate the implementation policy and control strategy according to the risk identification results.
- Establish an incident handling mechanism, such as a "contingency plan", "recovery plan" and "recovery confirmation" of the affected system.

Business Continuity Management

- Carry out risk scenario drills, such as key equipment failure, information security abnormalities, manpower shortage and other events.
- If potential risks are found in the drill, they will be continuously improved and tracked and used as a reference for the next emergency drill.

Risk Management Organization Structure

ChipMOS has set up the risk management team as the responsible unit, responsible for the implementation of risk management, with the senior staff as the convener to coordinate operation and manufacturing, information technology, human resources, financial accounting, procurement materials, legal affairs units, etc to manage including the financial, strategic, operational and disaster aspects of various risk. Each risk management unit shall assign a department supervisor or above to quantitatively evaluate the occurrence frequency, impact degree and control degree of potential risks through identification, analysis, evaluation and other procedures every year, and carry out necessary operations and risk management in accordance with the regulations to ensure that the risks involved are controlled within an acceptable range and continuously monitored.





Case Sharing Severe Infectious Diseases (COVID-19) Pandemic Control Strategies and Response

Highest commanding center ChipMOS pandemic containment center

- Set up in late 2019 Highest Commanding Center
- ChipMOS pandemic containment center

- Preparing contingency activation mechanism
- Governmental Policies (Taiwan Centers for Disease Control)
- Grasp the pandemic trends

Plans are adjusted in the rolling manner

2021

- ✓ Continuing the high-spec pandemic containment
- ✓ Leading and assisting employees to start the new life with pandemic containment
- ✓ Value the mental and physical health, with self-motivation articles With assistance of external EAP
- ✓ Encouraging vaccination

From 2022 to April

- ✓ Continue the pandemic containment measures to ensure the employees' health and safety of the working environment
- ✓ Prescribe the cares and assistances to the employees with confirmed cases and home-quarantined
- ✓ Assistance to the suspected cases and identified potential contacts by the members of pandemic containment panel

✓ Continuous Operation ✓ Safeguard the health and safety of all employees

Operation of Risk Management

A total of 46 potential risk factors were identified in 2021. On November 8, the ChipMOS risk management team briefed to the Board of Directors on the ever-changing risk environment faced ChipMOS, the focus of the Company's enterprise risk management, risk assessment and risk mitigation actions to be taken.

Risk Category	Potential Risk Factors	Control Strategies and Practices
Climate Change Risk	Carbon Emission Management	➡ To actively and effectively manage greenhouse gas and energy management. ChipMOS has formulated the "Resource, Energy and Greenhouse Gas Management Procedure" as the requirements for relevant operation management procedures. ➡ Verify the product carbon/water footprint and product material flow cost accounting, and clearly grasp various influencing data factors as the basis of risk control. Note: Climate change risks follow the TCFD framework. For more information about risk identification, potential financial impact, see the chapter on Climate Change and Energy Management.
Financial Risk	Changes in Interest Rates	➡ Seek more preferential loan terms in the market and the loan terms that are less affected by changes in interest rate are our main consideration. ➡ Pay attention to interest rate movements at all times and maintain close contact with financial institutions, and regularly assess our borrowing rates and market average interest rates to undertake necessary adjustments.
	Changes in Exchange Rates	➡ Sales denoted in foreign currencies are mostly denoted in USD and some of the payments for major raw materials and machinery and equipment are denoted in USD or JPY. Therefore, parts of the payables and receivables in foreign currency can be offset against each other, creating a natural hedging effect. ➡ Monitor changes in international exchange rates at all times and collect information on exchange rate changes to reduce exchange gains or losses resulting from the conversion of foreign currency to NTD for operational needs. ➡ By using liabilities in foreign currencies to balance the position of our assets in foreign currencies, through such nature hedge, we can minimize the impact on our profit and loss resulting from the fluctuation of exchange rates.
	Inflation	➡ Pay attention to international economic situation as well as abnormal factors that may lead to inflation at all times in order to stay alert to any price fluctuations in the raw materials market and keep seeking for alternative materials for making decision and review. ➡ Maintain good interactions with suppliers and customers to reduce effects on costs or revenue changes caused by price changes from supply/demand fluctuations in the market. ➡ To meet processing needs, the demand for gold, a precious metal, accounts for a certain portion of our costs. As our supply chain for processing precious metal is comprehensive, we can flexibly respond to the risks of losses resulting from changes in precious metal prices.
	Capital Utilization Efficiency	➡ By utilizing low-risk financial products, we can utilize our capital efficiently with steady benefits. ➡ We do not engage in high-risk and highly-leveraged speculative investments but only engage in the financial planning to control and reduce the potential risks resulting from the existing and expected assets and liabilities denoted in foreign currencies.
Operational Risk	Natural Disasters/ Interruption of Public Services	➡ Through hazard risk and environmental identification, evaluate the risk factors in the process of business operations, grasp the risk impact, and effectively control the same. ➡ Formulate the "Contingency Event Procedure" and "Emergency Response Working Instruction" to ensure the response mechanism and aftermath treatment of various emergencies (including fires/ earthquakes/typhoons, etc.), maintain the safety of employees, reduce the losses related to the Company and customers, and prevent or reduce the impacts and influences on the environment.
Legal Compliance Risk	Changes in Policies and Regulations	➡ Follow the laws and policies, implement the identification mechanism for enforcing laws and regulations, and take appropriate countermeasures. ➡ Pay close attention to the changes of relevant laws at home and abroad at all times, and update relevant systems and regulations in line with the laws.
Supply Chain Risk	Supply Interruption	➡ Focus on the establishment of long-term partnerships, and give priority to new vendors with excellent reputations in relevant industries. ➡ Perfect the vendor management mechanism, effectively grasping the stability of Vendor supply. ➡ For major key materials and equipment vendors, maintain manufacturers (two manufacturers or in at least two regions) to avoid sudden risks such as manufacturers' own operations and regional natural disasters.
Information Security Risk	Information System Abnormalities	➡ Carry out information security control and management of production machines, such as asset inventories, machine anti-virus operations, strengthening the awareness of information security protection of relevant personnel, and take relevant information security control measures to improve the capability of information security protection. ➡ Regularly conduct disaster recovery drills for important system information, and take actions to maintain the Company's operations.
	External Threats	➡ Introduce an information security system to prevent external intrusion (such as firewall, intrusion prevention system) and electronic data monitoring system for external storage devices, to avoid data leaks or computer viruses. ➡ For the information security protection of confidential documents, third-party security control software is adopted to protect and prevent the risk of leaks of customer and the Company's data.

3.3.2 Continuous Operation Management

Taking Continuous Operation Management as the Management Spirit of Enterprise Risk Management

ChipMOS formulates relevant measures for the prevention of accidents, including risk scenario drills and emergency response and recovery plans. In case of major incidents of events of concern in the current year, ChipMOS will give priority to the drills. Since 2020, because of the pandemic, employees started working from home. This also forced the Company to change its working mode. We integrated digital technology into the continuous operation management, and continuously invested in digital technology, thus ensuring that emergencies can be immediately and effectively responded to and that losses and damages are minimized.



- The disaster level assessment is held in the fourth quarter of each year.
- Control measures like drills and recovery control, etc. are performed for effective prevention.
- Drill items: to be conducted according to the annual disaster contents and major issues of social concern.

- Build remote connection
- Joint Platform of all employees, customers and suppliers: mobile phone and computer instant messaging
- Zoom Conference System
- E-learning Platform

- Establish partnerships with strategic suppliers according to the Company's strategy, in order to stabilize the supply of materials.
- Maintain manufacturers (two manufacturers or in at least two regions)

- Master key flows and manufacturing processes through operation impact analysis

Emergency Support Measures
- Workplace
- Machine Contingency Planning

- Establish the emergency response team according to each operation center.
- For details, see the Operating Procedures.
- Set clear objectives for affected projects.
  - Maximum allowable service interruption time.
  - Recovery time objective
  - Recovery point target



Examples of Continuous Operation Drills in 2021

For the risk scenario drill, ChipMOS has a "Contingency Event Procedure". The risk management team holds a disaster level assessment in the fourth quarter of each year. The disaster risks encountered in the operation and management process over the years will be aggregated into 13 risk events, and the risk level will be determined as per the occurrence rate and impact severity according to the disaster risk assessment of the whole year or major or important events in the current year, based on which the annual major practice and assisted drill items are decided. The events with a risk level greater than 5 in the current year are taken as the main drill items. The rest are sub-drill items, which must be drilled at least once within five years.

For example, in 2021, due to the instability of power supply, there were many power outages in Taiwan, which made the enterprise operation risk higher. ChipMOS immediately carried out continuous operation plan drills (specific to the major causes like natural disasters (for example, earthquakes), engineering accidents or abnormal power supply by Taipower) for the power failure of Zhubei fab., Tainan fab., with the expectation to properly cope with production, equipment, material management, information system operation, industrial safety and other disasters. Response mechanisms are established, including the mechanism of switching supply feed lines with Taipower, in-fab. UPS/building of a power generator framework, thus ensuring that the response measures are available in case of emergencies, and minimizing the losses and damages.

Operating Unit	Drill Project	Drill Situation
APG	Power Failure	In Tainan fab., 20 sets of DA machines on the 5th floor of TA building lost power for 13 hours due to transformer displacement caused by earthquake.
LCDD	Power Failure	In Tainan fab., half of the COG machines couldn't operate due to failure of power caused by the construction of Taipower outsourcing manufacturers.
WS	Power Failure	The busbar fault of Taipower caused the generator unit to trip and affected group A feeders. It led to instantaneous power failure in the plant area of Zhubei fab.
BUMP	Power Failure	Taipower tripped, causing Tainan fab. power failure for the whole fab.
LPC	Power Failure	Taipower tripped, causing Tainan fab. abnormal power supply for the whole fab. This incident caused power failure of the fab. for up to 4 hours before completing the power supply and returning to the fab.
Response Measures	1. Since Taipower distinguishes multiple cable feeders for power supply, a switching mechanism with Taipower feeder groups is established in the fab. to reduce power interruption. 2. The generator and UPS are built in case of temporary power tripping and power interruption.	

In addition, in 2021, ChipMOS conducted a sub-drill for chemical gas leaks caused by earthquakes. The drill content was that ChipMOS Tainan fab. had a 4-magnitude earthquake occur in the fab. area, resulting in an accuracy deviation of half of LCDD ILB machines and chemical gas leakage of the POT machine due to pipeline damage. This event caused damage to relevant production. According to the drill results, it is suggested that oxygen concentration detection equipment are added in the area with chemical gas to further control the safety of the environment.

3.4 Information Security Management

103-2, 103-3, 418-1

3.4.1 Information Security Policy

ChipMOS formulated the "Information Security Policy" with the approval of the Chairman in 2014, which aimed to establish the overall direction of ChipMOS information security management as the basis for organizational action and future information security activities:

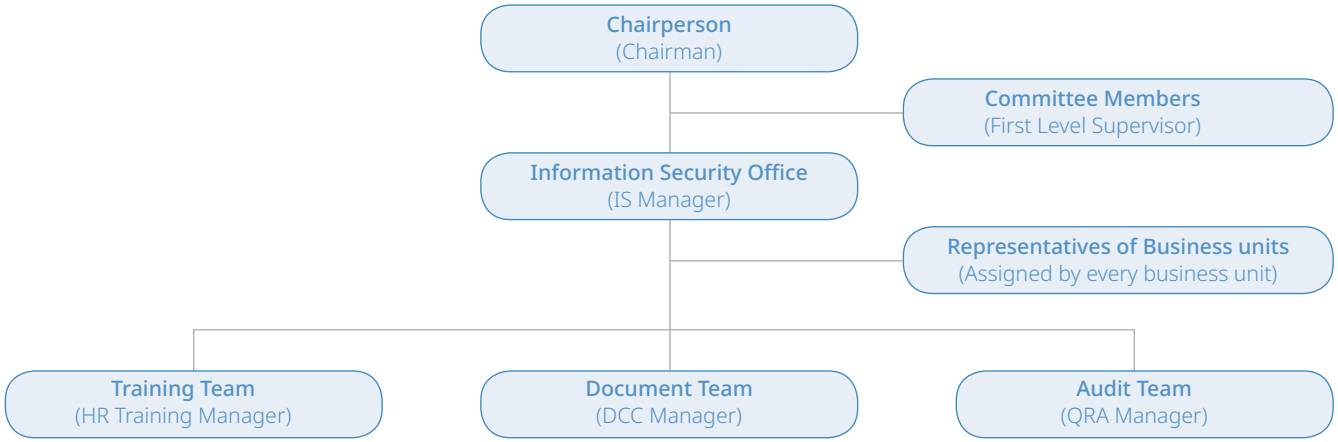
- Protect the confidentiality of the Company's information assets and avoid unauthorized access or improper disclosure.
- Ensure the integrity of information operations and avoid improper tampering and destruction.
- Ensure that authorized users can use information assets when needed.



3.4.2 Information Security Management Committee

In 2014, ChipMOS set up the Information Security Management Committee to be responsible for the formulation of information security policies, the supervision of the implementation of information security plans, the management review, coordination and communication of information security related matters, so as to ensure the effectiveness of the implementation of information security management system and improve the information security of the Company's operation.

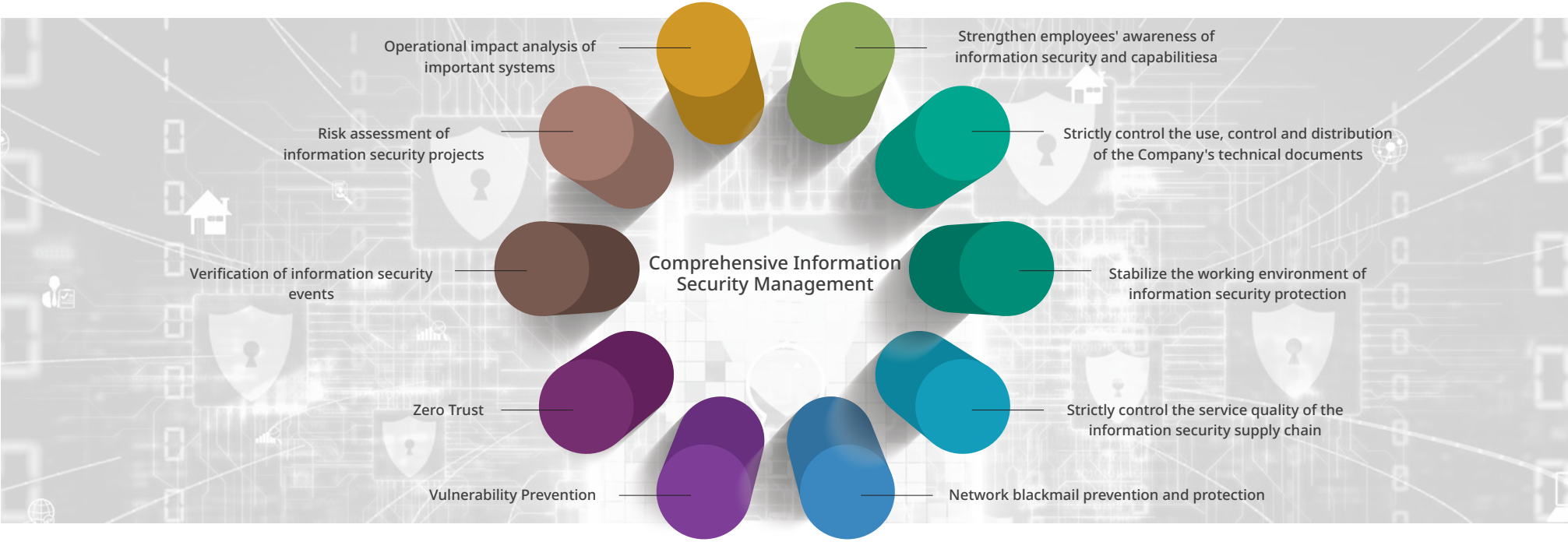
The Information Security Management Committee is chaired by the Chairman, with the director of the Information Security Office as the management representative. The members of the Committee are the first level supervisors of each business division, and there are training group, document group and audit group under its jurisdiction. An annual management review meeting is held every year, in order to review the implementation effectiveness of the annual information security works, and review the information project of the next year. In 2021, a total of 12 information security team meetings were held to discuss the progress tracking of important information security activities, the tracking of routine information security operations, and the response to internal and external information security issues. The information security trainings were complete for 2 times.



3.4.3 Comprehensively Protect the Information Security of All Stakeholders

"ChipMOS attaches importance to the information protection of all stakeholders. It not only continuously strengthens the internal protection mechanism of the Company, but also brings the information security issues of the whole supply chain into the protection scope to ensure the best defense of the Company, customers, employees and vendors."

ChipMOS continues paying attention to the latest information security issues, actively participates in external seminars, such as Cybersec 2021 Taiwan Information Security Conference, 2022 Information Security Prospect and Digital Transformation Security Strategy seminar, and participates in the SECPAAS security platform to expand information security protection in combination with external resources. In 2021, ChipMOS continued to pass the ISO 27001 verification of the Information Security Management System. In terms of actual management actions, we continue strengthening the Company's information security environment and actions by taking relevant key measures, and protect the Company's information assets, continuous operation and authorized use, so as to win the trust of stakeholders. In addition, ChipMOS formulated the "Information Security Incident Management Procedure", which clearly stipulates that when a major information security incident occurs, after it is jointly determined as an information security incident by the information security incident case officer and the system administrator, the information supervisor shall be notified and an emergency handling team shall be established to deal with the incident, and the management representative shall be notified within 30 minutes for subsequent corresponding handling.





	Operational Impact Analysis of Important Systems	Strengthen Employees' Awareness of Information Security and Capabilities	Strictly Control the Use, Control and Distribution of the Company's Technical Documents	Stabilize the Working Environment of Information Security Protection
Note	In order to ensure the continuous operation of the Company, avoid the interruption, damage, improper use and information leakage of information system services, it is required to reduce the damages to an acceptable level.	Employees' negligence and lack of awareness of information security is one of the common information security risks of enterprises.	Since the Company's technical documents have the potential risk that they may be exposed to the outside, document use control continues to be strengthened.	For the potential vulnerability that the system may be attacked or damaged, the authenticity of personnel certification is strengthened.
Practice	➡ Define the appropriate maximum allowable service interruption time, recovery time objective and operation continuity strategies for important systems or new import projects. ➡ Formulate the operation impact analysis form, identify potential risks, and make improvement to reduce possible losses.	➡ Conduct social "phishing" drills with hot current affairs topics every quarter ➡ Irregularly promote information security and hold internal information security education and training	➡ The Company's technical documents are encrypted and controlled by using TrustView (file protection and encryption system), which clearly controls the permission of copying, editing, printing, storing and making screenshots. Documents cannot be opened unless they are in the Company's domain. ➡ The Company's technical documents are clearly classified into three levels: Level A: Top Secret – including company contracts and customer consent forms. Level B: Confidential – including manuals, procedures, instructions, norms/ specifications, engineering drawings, condition cards, parameter cards, potential failure modes and effect analyses, and safety data sheets. Level C: General – including forms. ➡ The approval authority of the Company's technical documents is individually defined according to the three levels of documents, and the targets of external distribution must sign an NDA (Non-Disclosure Agreement) before receiving documents.	➡ Conduct quarterly vulnerability scanning to identify possible risk vulnerabilities and continue to improve them. ➡ Improve information security to avoid account theft. System managers or external connection systems need to conform with two-factor authentication when logging in to ensure the authenticity of users. ➡ Before opening a newly built external website, vulnerability scanning and improvement must be completed before it can be launched.
Achievements in 2021	completed the operation impact analysis of 27 systems and 2 projects.	All Staff: Issues 6 social phishing drills and 14 information security promotion sessions. Note The average success rate of phishing during phishing drills decreased from 3.6% in the first half of the year to 0.3% in the second half of the year. The colleagues "caught" must receive education and training. The colleagues "caught repeatedly" must put forward their improvement plans. New comers: Issues Annual education and training for newcomers. Note During the training of new recruits, information security course topics shall be arranged at the same time. In 2021, a total of 810 employees were trained, with a coverage of 100%. Specific Objects:		

Targets	Information Security Training Courses	Number of Trainees	Coverage
Staff of the Information Security Office	Asset inventories/ information security evaluation	5	100%
ITM contractual personnel	Information Security Education and Training	20	100%



Strictly Control the Service Quality of the Information Security Supply Chain

Purpose

To improve the service quality of external manufacturers and ensure the stability and security of the ChipMOS system.

Practice

Implement the evaluation of information outsourcing service manufacturers. Manufacturers with poor evaluation results must put forward specific improvement plans or the cooperative relationship will be terminated.

Implementation Results in 2021

Evaluate the service quality of outsourcing service cases for 30 manufacturers (40 outsourcing service cases), of which 2 manufacturers needed to improve and have completed the improvement, and the cooperation with 1 manufacturer has been terminated.

Online Blackmail Prevention – Continue Strengthening Information Security Protection

- Two-factor authentication is introduced for the WFH connection, employee emergency external connection and AD system login, in order to ensure the user's true identity.
- Use social phishing drills to reduce accidental hits on unknown links or files.

Vulnerability Prevention

- Immediately repair major vulnerabilities, such as QNAP NAS, Pulse Secure, vCenter, Apache Log4j, etc.
- Strengthen the vulnerability scanning of external website systems, and give priority to websites with high use frequency and content involving production related information. A total of 6 websites were completed in 2021.
- Complete quarterly vulnerability scanning and Intrusion Prevention System (IPS) health inspection.
- Using CDM (Cyber Defense Matrix), the Company takes a comprehensive view of the five categories and five resources of the Cybersecurity Framework (CSF) proposed by the National Institute of Standards and Technology (NIST), to find current vulnerabilities to strengthen. For example, cross-fab. domain, stricter external connection restrictions, VM, emergency contact, resetting sequence and backup rule adjustment.

Zero Trust

- The Local Administrator's authority is revoked to prevent employees from installing illegal and harmful software and reduce damage to the Company's reputation or information security environment.
- Introduction of two-factor authentication: Added an OTP (One Time Password) authentication mechanism. This OTP will be bound to the mailbox or mobile device of the person logging in to improve the login's authenticity.

Verification of Information Security Events

Purpose

To log in and classify information security events, observe the changes of the Company's information security environment, and adjust the management mode of personnel/issue/time/place/object appropriately.

Practice

For the violation of information security and the violation of information security involving the customer's personal data, make a record, and if the case is serious, impose a fine to improve the degree of attention.

Implementation Results in 2021

There were no incidents of reaching the level of information security and there were no information security violations involving customers' personal data.

COVID-19 Information Security Impacts – Risk Assessment of Information Security Projects such as Digital Transformation and Mixed Office

- WFH (Work from Home) Started
- The real name system of seats in public meeting rooms was launched as a reference for colleagues' footprints in public space.
- A Closed-Circuit Television (CCTV) is installed in public areas to supervise the implementation of COVID-19 prevention conduct.
- The COVID-19 prevention questionnaire platform was launched.
- Electronic entry registration of external personnel was finished.
- Risk assessment of information security projects of instant messaging system and two-factor authentication system.

CHAPTER

4

Environment Friendly

7 Kinds

Introduce TCFD framework, identify 7 kinds of climate risks and opportunities, and develop coping strategies and management actions

25 Schemes

In 2021, 25 energy-saving schemes were implemented in the whole fab., with an energy-saving ratio of 1.5%

12.31%

We would continue taking actions to save energy and reduce carbon, and reduced the intensity of greenhouse gases by 12.31% compared with 2020

100%

Committed to recycling. The recycling rate of main packaging materials (tray and carton) in 2021 was more than 100%



Management Approach

Policy

Promote the green production, improve the resource utilization efficiency, active carbon-reduction and energy saving, climate change mitigation and reduce the environmental impacts

Commitments

Comply with the environmental regulations, committed to improve the environment management performance, take care of both environmental responsibility and revenue growth and fulfill the responsibility of environmental protection

Resources

- ESG Committee, Environmental Safety, Health and Energy Management Committee

Specific Actions

- Drive the reduction at source, improve the material utilization efficiency, and recycle the packaging materials
- Introduce TCFD, climate/water risk and opportunity identification
- Action plans for carbon-reduction and energy saving

Evaluation Mechanism

- International standards management system including ISO 14001, ISO 50001 and ISO14064-1
- Internal audit and customers' audits
- Sustainability evaluation by investment institutions

4.1 Environmental Protection Policy

307-1

Global warming and climate change have been already the phenomena that global enterprises must face up to. ChipMOS continues following the international agreements of “the Paris Climate Agreement”, and makes concerted efforts to control global warming, reduce GHG emissions and improve the adaptability of climate change. ChipMOS is committed to planning a number of energy conservation and carbon reduction projects, promoting the carbon, water footprint and material flow cost accounting of products, and reducing carbon through carbon reduction, in order to mitigate the impact on the environment. Meanwhile, we will continue educate employees to enhance their awareness of environmental protection, and also extend to vendors and stakeholders to join hands to become a low-carbon, energy-saving and green friendly enterprise.

In 2021, ChipMOS had no pollution incidents and no major violations of environmental laws. ChipMOS's environmental sustainability activities continue to be recognized by the outside world, including High Performance Green Purchasing Enterprise, Air Quality Purification Area Recognition - Special Contribution, encouraging ChipMOS to continue investing in environmental protection and earth protection.

We take the initiative to introduce ISO 14001:2015 and invite an impartial third-party inspection and verification organization for inspection, so as to accelerate the implementation of various environmental actions and affirm the results.

ChipMOS Environmental Protection Policy

1. Deeply rooted in environmental protection culture, deepen employees' awareness and responsibility for environmental protectionComply with environmental regulations and fulfill voluntary commitments related to environmental protection
2. Reduce environmental load and continue investing in waste reduction and pollution prevention
3. Effective control, energy conservation and resource recovery
4. Continuous improvement, in order to improve environmental management
5. performance
6. Pay attention to global climate change and related issues, assess risks and opportunities, and fulfill the responsibility of environmental protection

Key Performance in 2021

1. Handle environmental education and training - by analyzing the trend of net zero emissions at home and abroad, and by requiring brands to include "supply chain carbon footprint" and "carbon reduction performance" in important procurement indicators in recent years, have colleagues know that the Company is transforming in response to climate change and net zero emissions.
2. ChipMOS expands the setting of solar power generation system and improves the use of renewable energy.
3. Continue paying attention to the issues related to global climate change, independently and publicly reply and expose the CDP Climate Change and Water Security questionnaire in 2021, and promote the Task Force on Climate-related Financial Disclosures (TCFD) to identify risks and opportunities, list major matrices, and put forward response strategies and target management according to the results.

4.2 Climate Change and Energy Management

103-2, 103-3, 302-1, 302-3, 302-4

4.2.1 Introduce TCFD

Climate change has become a common challenge for global enterprises to promote sustainable development. To control the global warming within no more than 2 °C and affect the opportunities and risks implied in enterprise capacity expansion and market opportunities are the challenges that enterprises must face up to and prepare in advance. ChipMOS is well aware of the importance of corporate action and shoulders the heavy responsibility of environmental protection. We refer to the framework of the Task Force on Climate-related Financial Disclosures (TCFD) issued by the Financial Stability Board (FSB), identify the management of ChipMOS climate change risks and opportunities, and further have a comprehensive understanding of the impact of climate change.

TCFD Framework

Governance

ESG Committee

- The Sustainable Development Committee under the supervision of the Board of Directors is the highest level organization in ChipMOS in response to climate change
- The Chairman of the Board of Directors serves as the Chairman of the Committee and regularly reports the implementation status and results to the Board of Directors

Environmental Safety, Health and Energy Management Committee

- It is the main authority responsible for promoting and implementing climate risk response actions
- Regularly track the promotion and implementation through quarterly meetings

Strategy

- ChipMOS defines short-term, medium-term and long-term (to 2030) climate related risks and opportunities according to the existing internal target management schedule
- Assess the potential impact of climate risk factors on the Company's strategic, operational and financial planning

Risk Management

- ESG Committee members jointly identified climate change risks and opportunities according to the TCFD Framework at the seminar
- According to the results of climate risk identification, formulate countermeasures and key development plans
- Climate change issues will be included as a part of risk management, and control strategies and specific practices will be formulated accordingly

Indicators and Objectives

Effectively reduce carbon footprints

- Since 2009, starting from Tainan fab., ISO 14064-1 GHG emissions inventory has been introduced; from 2013, it has been expanded to the Scope I and II GHG inventory to all fabs every year, and has been verified by a third party. In 2020, the calculation of category III was added, accurately controlling greenhouse gas emissions and conducting the key management.
- Since 2012, conducted product carbon footprint check for series of products to effectively master product carbon emission data

Efficient Use of Energy

- Actively invest in the use of renewable energy, import high-efficiency and energy-saving equipment, water resource recycling, material source management and waste reduction, formulate annual implementation objectives, and have the senior executives regularly inspect the implementation results

4.2.2 Identification of Climate Risk / Opportunity

ChipMOS ESG Committee members have held four meetings since 2021 to discuss in-depth risks and opportunities related to climate change. Taking TCFD as the guiding principle, the risk topics cover transformation risk and entity management risk, and summarize the risk categories such as regulations and policies, market / technology, and operation interruption, there are 48 carbon risk items in total, including 4 major carbon risks and 7 moderate carbon risks; 21 carbon opportunities, including 3 major carbon opportunities; 7 moderate carbon opportunities, total 69 risk and opportunity items. We rank the risks and opportunities according to the possible time of risk impact (short-term, medium-term and long-term), impact degree factors (finance, operation / manpower, law and goodwill), and finally identify four major carbon risks and three major carbon opportunities, for total seven major risks and opportunities, assess the potential financial impact, and develop relevant countermeasures and countermeasures, so as to mitigate the impacts of climate risks and grasp future business opportunities.

Climate Change Risks and Opportunities





Major Carbon Risks

- 5 Customer Behavior Change
- 6 Demand for Low-carbon Products and Services
- 22 Renewable Energy Regulations
- 28 Carbon Tax

Moderate Carbon Risks

- 21 Fuel Tax / Energy Tax
- 23 General Environmental Regulations
- 26 Voluntary Agreement
- 31 Lack of Regulation or Legality
- 32 Total Volume Control / Emission Trading
- 35 Extreme Rainfall and Drought
- 38 Average Temperature Change

Major Carbon Opportunities

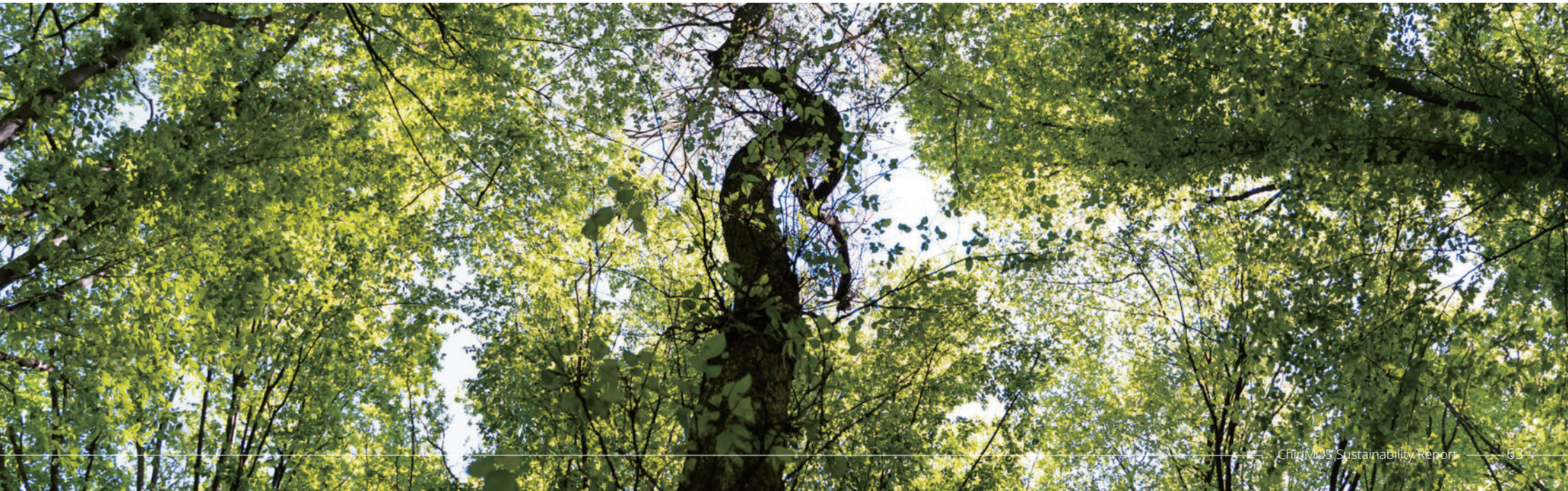
- 6 Energy Efficiency Improvement
- 14 Customer Behavior Change
- 16 Low Carbon Energy

ModerateCarbon Opportunities

- 1 Alternative or Diversified Resources
- 4 Recycled Materials
- 5 Production Process
- 9 Low Carbon Products or Services
- 10 Commissioning and Solutions
- 17 Participation in Renewable Energy Projects
- 18 Policy Incentives

Major Carbon Risks	Risk Description	Location of Occurrence	Time of Occurrence	Potential Impact	Financial Connection	Management Practices
Renewable Energy Regulations	International or domestic regulations on renewable energy may affect the current and future energy sources, composition, price, etc.	Within the Organization	Middle Term	Increase in Capital Expenditure	1. Loss of revenue if products fail to meet regulations or standards 2. According to the renewable energy obligations as specified in domestic laws and regulations, the large power users paid NT$56Million, NT$668Million and NT$1.33 Billion in 2025, 2030 and 2050 respectively.	Solar energy installations are expected to be total 6,990.45KW in 2023, with a capital expenditure of approximately NT$389.963 million: 1. Lease and Buyback In 2021, the roofs were leased to install 990.45KW, and it is expected to be bought back in 2023. 2. Lease land and Build on Its Own The contract will be completed in 2022, and it is expected to obtain fields with 6,000KW in 2023.
Carbon Tax	Tax system formulated by international or domestic governments, related to GHG emissions or climate change.	Within the Organization	Middle Term	Increase in Indirect Costs	Total emissions (regression forecast in the past five years) * Carbon tax price (word bank or IPCC AR6): It is estimated that the additional cost will be NT$9.22 Million in 2030 and NT$148 Million in 2050.	1. Strive to reduce GHG emissions at the Company's organizational boundary to cope with the cost of carbon tax at home and abroad in the future. 2. At present, 98-99% of greenhouse gas emissions in the fab. come from electricity. At present, efforts are made to invest in energy-saving schemes and renewable energy equipment to improve the use of renewable energy and reduce carbon emissions. 3. Develop low-carbon products and reduce GHG emissions.
Customer Behavior Change	Because of the rising global or regional awareness of sustainability, customers have different considerations when choosing products or services than before.	Within the Organization / Customer	Middle Term	Decrease in Operating Income	1. Revenue decreased by NT$1.75 Billion in 2030 and NT$3.5 Billion in 2050. 2. The labor cost of communicating with customers was NT$5 Million in 2021, and is estimated to be NT$10 Million in 2030 and NT$15 Million in 2050.	The customer requests to draw up a green power use and carbon neutrality assessment plan. 1. First, conduct the carbon footprint verification and establish the verification scope 2. Formulate carbon reduction targets 3. Set up carbon neutrality targets
Demand for low-carbon products and services	Due to the climate change factors, the products and services currently provided are high energy consumption or high carbon emission, which do not meet the market demand and may be eliminated.	Within the Organization / Customer	Middle Term	Decrease in Operating Income	Regarding issues related to the introduction of low-carbon materials, the labor cost of communicating with customers will be >NT$15 million in 2030 and >NT$20 million in 2050.	1. Strive to reduce GHG emissions on the organizational boundary of the Company. 2. At present, 98-99% of greenhouse gas emissions in the fab. come from electricity. At present, efforts are made to invest in energy-saving schemes and renewable energy equipment to improve the use of renewable energy and reduce carbon emissions. 3. Develop low-carbon products (together with relevant material evaluation units) to reduce GHG emissions

Major Carbon Opportunities	Opportunity Description	Location of Occurrence	Time of Occurrence	Potential Impact	Financial Connection	Management Practices
Energy Efficiency Improvement	Avoid the impact caused by energy shortage or price fluctuation, and help to launch new products or services.	Within the Organization	Middle Term	Decrease of Operating Costs	The electricity cost of NT$220 Million will be saved in 2035, and NT$962 Million saved in 2050.	By replacing old models with high energy consumption and updating new models year by year, we can improve energy efficiency and avoid the impact caused by energy shortage. In addition, the production capacity of new models will also help to meet the process requirements of new products.
Customer Behavior Change	When customer behavior changes, different considerations will be given to the selection of products or the provision of services.	Customers	Long Term	Emerging Market Development	The gross profit rate of low-carbon products will increase by 0.5-1% in 2035 and 1-2% in 2050.	The customer requests to draw up a green power use and carbon neutralization assessment plan. 1. First, conduct the carbon footprint verification and establish the verification scope. 2. Formulate carbon reduction targets. 3. Set up carbon neutrality targets.
Low Carbon Energy	Reduce dependence on fossil fuels and gradually replace them with renewable or low-carbon or green energy.	Customers	Middle Term	Carbon Assets Management	In 2023, a 6,990.4KW solar power generation system will be obtained, which can reduce the purchased power volume from Taipower. In 2025, the power cost will be saved by NT$8.42 million, in 2030, by NT$8 million, and by NT$6.31 million in 2050.	The solar power generation system will be built, with an additional budget of NT$34.8 million in 2022, with NT$41.96 million of budget planned for 2023, and the total power consumption of renewable energy will reach 1.7% in 2023.



4.2.3 Climate Transformation Scenario and Financial Impact Estimation

ChipMOS takes the current climate change policies and strategies and the implemented and determined operation conditions as the basic scenarios. The basic assumption is that the emission growth rate of category I: estimated based on the assumption of average value from 2019 to 2021; power consumption growth rate: 2%; from 2020 to 2050, according to the non-nuclear home policy and the gradual change of power coefficient under waste coal, the current government's forecast target (30% coal, 50% gas and 20% renewable energy) will be achieved in 2030, and will continue to grow to 50% renewable energy and replace coal-fired power generation until 2050.

The carbon emission quota estimation under different scenarios includes NDC target: the emissions in the baseline year will be reduced by 1.46% annually before 2030, and gradually move towards zero emissions from 2031 to 2050; WB2DC (SBT): the annual reduction of emissions in the baseline year is 2.5% linear decline; 1.5DC (SBT): the annual emission reduction in the baseline year is 4.2% linear decline. The benchmark scenario is that if ChipMOS maintains its current status without any change, its main climate change financial impact risks will occur in carbon tax, total amount control and carbon fines, and carbon reduction without initiatives, resulting in the gradual replacement of market substitutes. The assessment results show that ChipMOS will have financial impacts in 2025, 2030 and 2050 (NDC, WB2DC and 1.5DC) under the condition of inaction. In 2025, the main financial risk will come from the 3,818 KW capacity to be borne by the compulsory capacity. On the whole, the financial impact caused by the carbon tax is the most significant when the world is about to move towards 1.5 ℃. This carbon tax must reach more than US $300 per ton of carbon, which is extremely difficult to achieve under the current political environment. In terms of the possible carbon tax price currently regulated by the state, which is only NT$100, its financial risk cost is less than NT$100 Million.

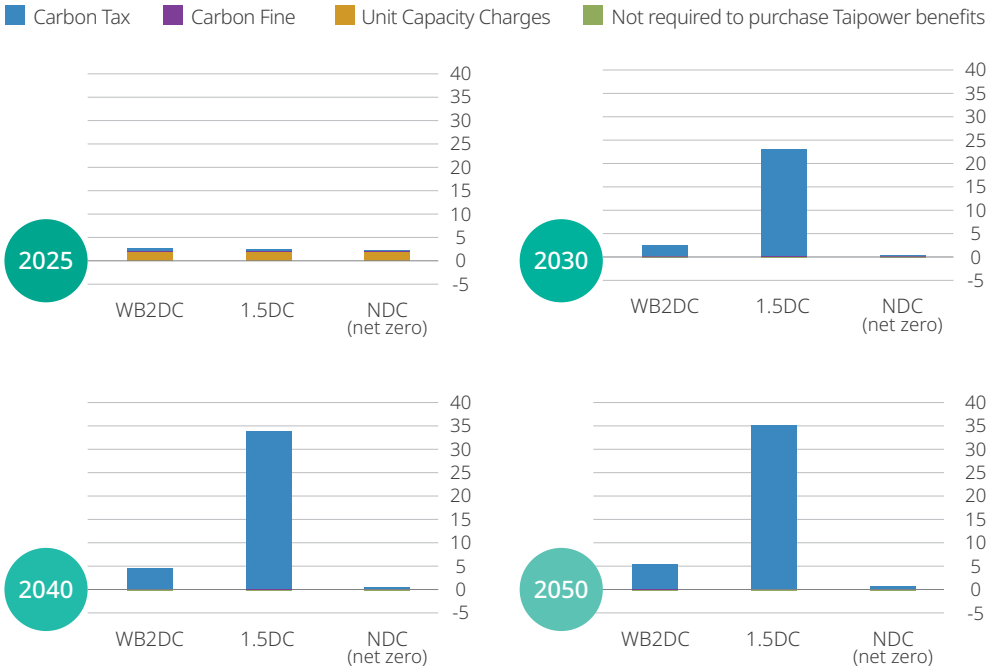
ChipMOS uses renewable energy strategy to achieve the 2025 financial impact risk assessment under B2DC, 1.5DC and NDC. Then the most important financial risk comes from the cost of renewable energy transfer supply and the cost of device capacity. However, it can also avoid part of the carbon tax and the benefit of not having to purchase power from Taipower. The net cost is about NT $500-600 Million. By 2030, the cost risk also comes from renewable energy transfer and carbon tax. Especially in the 1.5DC scenario, when the global carbon tax reaches hundreds of dollars per ton, the carbon tax will become a very important risk. In this case, the financial risk of the three scenarios is NT$700 Million - NT$1.8 Billion. By 2050, in order to achieve the goal, the renewable energy needs to be purchased in most scenarios, so the financial cost mainly comes from the procurement of renewable energy.

	Risk	Explanation
Laws and Regulations	Carbon Tax	According to different situations, the unit carbon emissions of enterprises will be taxed. In this part, due to the great difference in tax system, the uncertainty is very high. This assessment mainly considers three levels of carbon taxes: 1. NDC: estimated as SSP1-4.5; 2. WB2DC: estimated by SSP1-2.6; 3. 1.5DC: estimated as SSP1-1.9
	Total Amount Control and Carbon Fines	Carbon fines (NTD/kg CO2e) are applied to the excess part, which are analyzed by different total amount controls. Total amount control is designed in three scenarios: 1. NDC: 100 NTD/tCO2e; 2. SBT (WB2DC): 750 NTD/tCO2e; 3. SBT (1.5DC): 1500 NTD/tCO2 e
	Compulsory Capacity	According to the draft measures for the management of renewable energy power generation equipment to be set up by power users with a certain contractual capacity or more announced by the Energy Administration on December 31, 2020, ChipMOS assumes that 10% of the compulsory capacity will be set up in 2025 and 20% discounted. The construction cost will not be amortized.
Technology	Power Saving Benefit	Power saving cost, mainly based on Taipower's announced price, 2.44NTD/ kWh
Market	Green Products	Alternative products and services are gradually impaired because they do not meet the environment friendly requirements. NDC: 0；B2DC: market share reduced by 1%；1.5DC: market share reduced by 2%

* Based on the five illustrative SSP scenarios in the Sixth Assessment Report (AR6) issued by the Intergovernmental Panel on Climate Change (IPCC) in 2021: SSP2-4.5 is corresponding to NDC; SSP1-2.6 is corresponding to WB2DC (Well-below 2℃); SSP1-1.9 is corresponding to the reduction pathway of 1.5℃; For the carbon prices that are possibly simulated in each scenario by IPCC, pleaser refer to https://tntcat.iiasa.ac.at/SspDb/dsd?Action=htmlpage&page=10

Climate Scenario Analysis and Financial Impact

Unit: NT$100 Million





4.2.4 Energy Management and Efficiency

TC-SC-130a.1

The use of energy not only consumes the earth's resources, but also produces carbon dioxide and causes the greenhouse effects. Therefore, the efficient use of energy resources will help mitigate the impact on the environment. In view of the characteristics of the science and technology industry, ChipMOS is one of the major power users under the regulations of the Energy Administration of the Ministry of Economic Affairs. We have always adhered to a rigorous and cherished attitude towards energy use. Since 2012, we began to carry out energy-saving actions in a planned way, and continuously introduced various energy-saving technologies and equipment. In 2014, in Tainan fab., the ISO 50001 Energy Management System was introduced spontaneously. In 2017, Hsinchu fab. was also be ISO 50001 Energy Management System certified. In 2020, we actively promoted the use of renewable energy, built solar power generation equipment, and continued increasing the proportion of renewable energy. We collect more precise data every year to help strengthen energy management strategies and make them more efficient. The statistics show that the purchased power accounted for more than 99% of the total energy consumption in 2021. In addition, five renewable energy certificates were purchased, accounting for 0.001% of the total energy consumption. In 2021, a total of 1,779,688.97 gigajoule were consumed in terms of purchased power, mainly used for the expansion of production capacity and production lines, increasing energy consumption. The natural gas of 9,192.41 gigajoule was consumed. Moreover, the gasoline of 212.63 gigajoule was consumed.

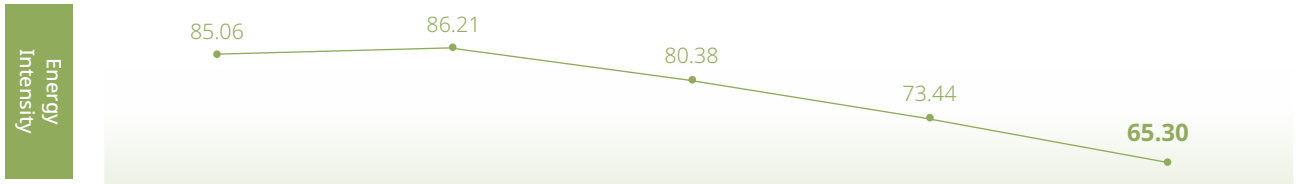
ChipMOS Energy Management Policy

1. Every year, meeting the 1% power saving goal set by the Energy Administration
2. Complying with domestic energy management regulations and relevant provisions
3. Improving energy efficiency and implementing energy conservation and carbon reduction
4. Strengthening the management of design and procurement
5. Establishing targets and continuously improving

Key Performance in 2021

1. In 2021, we were in line with the 1% power saving target set by the Energy Administration, with a total of 25 items implemented, reaching 1.5%
2. Complying with domestic energy management regulations and relevant provisions
2. Improved energy efficiency and implemented energy conservation and carbon reduction by 3,485 (tons of CO_2e)
4. A total of 15 items were proposed to strengthen the design or purchase new equipment, saving 0.77% of electricity.
5. In 2022, it is expected to implement 19 energy-saving plans, saving 1.02% of electricity

Energy Use



Type of Energy	2017	2018	2019	2020	2021	Unit
Purchased Power Note 1	421,204	438,232	449,151	466,290	**494,358**	Megawatt Hour
	1,516,333.57	1,577,635.31	1,616,605.52	1,678,642.23	**1,779,688.97**	Gigajoule (GJ)
Gasoline Note 2	6,602.88	6,700.68	7,675.96	7,546.80	**6,515.31**	Liter
	211.80	218.72	250.51	246.29	**212.63**	Gigajoule (GJ)
Diesel Oil Note 3	221,708.64	208,449.41	201,578.31	37,256.34	**5,704.10**	Liter
	7,735.28	7,678.19	7,084.59	1,309.40	**200.47**	Gigajoule (GJ)
Natural Gas Note 4	52,375.79	196,571.15	286,487.61	261,786.10	**244,115.50**	CBM
	1,796.45	7,563.58	10,787.94	9,786.39	**9,192.41**	Gigajoule (GJ)
Total (Total consumption of energy)	1,526,077.10	1,593,095.80	1,634,728.56	1,689,984.31	**1,789,294.48**	Gigajoule (GJ)
Energy Intensity Note 5	85.06	86.21	80.38	73.44	**65.30**	Gigajoule (GJ) / Current Consolidated Revenue (NT$ Million)
Purchased Power/ Total (Total consumption of energy)	99.36	99.03	98.89	99.33	**99.46**	%

Note 1: Electricity calorific value is converted as 1 kWh = 0.0036 gigajoules
Note 2: Gasoline calorific value is converted as 1 liter = 0.0326 gigajoules
Note 3: Diesel calorific value is converted as 1 liter = 0.0351 gigajoules
Note 4: The calorific value of natural oil is converted as 1 cubic meter = 0.0376 gigajoules
Note 5: Energy Intensity = absolute energy consumption (purchased power + gasoline + diesel + natural gas) / consolidated revenue of current year (NT$1M)



In order to make more effective use of energy resources in important manufacturing sites, we continue developing various energy-saving schemes, extend the scope of promotion from the public environment to the production end, carry out source control, and strive to create a low-carbon green energy production environment. Our specific measures include: upgrading of production equipment such as clean room system, ice water system, lighting reduction system, air conditioning reduction system and production machine environment.



Major Energy Saving Actions in 2021

Category	Number of Projects	Investment (NT$1,000)	Annual Benefits Note 1 (NT$1,000)	Annual Power Saved (MWh)	Annual Energy Saved (MJ)	Carbon Reduction Note 2 (T-CO_2e)	ROI Note 3	Power Saving Rate Note 4
Equipment Energy Resource Reduction	8	17,314	4,958	1,871	6,735,736	939	3.5	0.4%
Smart Energy Saving	4	8,873	2,563	967	3,481,614	486	3.5	0.2%
Lighting Energy Saving	2	50	295	112	401,42	56	0.2	0.0%
Optimization of Operating Conditions	11	4,126	10,581	3,993	14,374,681	2,004	0.4	0.9%
Total	25	30,363	18,398	6,943	24,993,453	3,485	1.7	1.5%

Note 1: Calculation method of annual benefits: annual power saved *1 kWh electricity charge – NT$2.65
Note 2: Carbon Reduction is calculated as 0.502kgCO_2e/ kWh based on the emission coefficient announced by the Energy Administration in 2020
Note 3: ROI calculation method: Investment / Annual Benefits
Note 4: Power Saving Rate: power saved in 2021 / total power consumption in 2020 (based on Bureau of Energy)

Statistics of Solar Power Generation

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total	Unit
Power Generation kWh	290,168	263,360	269,152	265,176	234,512	256,608	258,632	243,120	357,800	**943,110**	3,381,638	kWh
Sunshine Hours	-	-	2,274	2,511	2,172	2,381	2,353	2,185	2,596	**2,250**	2,340	Hours / Year
Generation Efficiency	-	-	118	106	108	108	110	111	138	**419**	152	kWh

Note 1: Calculated based on the average monthly power consumption of 339 kWh per household in 2020 announced by Taipower (data taken from the official website of Taipower)

The purchased power used in the manufacturing process is the most important source of our overall carbon footprint. Therefore, we are committed to reducing the generation of purchased power and continue to invest in renewable energy. To support the government's energy transition policy, in 2012, ChipMOS installed the solar energy panels on the roofs of Tainan fab., and signed the contract with Taipower for green power supply; subsequently, in 2019, the second solar power generation system was built. In 2021, the whole fab. was set up in a unified plan to expand the use of renewable energy in the northern fab. In 2021, 4 additional solar power generation systems were completed, with the capability up to 990.45 KW (Hsinchu fab., Hukou fab., Zhubei fab. 2 and Tainan fab.). Over the past 10 years, the accumulated solar power generation has reached up to 3,381,638 kWh, which can satisfy the monthly electricity consumption of nearly 9,975 households.

4 Energy Saving Category

- Equipment Energy Resource Reduction
- Smart Energy Saving
- Lighting Energy Saving
- Optimization of Operating Conditions

Total Investment
30,363 thousand dollars

Total Carbon Reduction
3,485 T-CO_2e

Power Saving Rate
1.5%

To actively achieve the carbon reduction goal, ChipMOS' the next stage of development planning will focus on the self-generation and self-consumption of solar energy, by planing to complete the solar energy installation of 990.45kw in 2021, and achieves the target of building 4.5Mw renewable energy by the end of 2023. Once the in-house solar energy facility planning is complete, for the mid-and long term, the Company will assess the possibility of purchasing and developing other green energy sources, to realize the more ambitious reduction goal.

2021complete
990.45kw
SolarEnergy Installation

2023complete
4.5Mw
Renewable Energy

4.2.5 GHG Inventory

305-1~2, 305-4~5, 305-7, TC-SC-110a.1, TC-SC-110a.2

Main Responsibility

Environmental Safety, Health and Energy Management Committee

Passed third-party verification

Since 2009, all fabs have conducted annual independent GHG inventory and passed third-party verification.

Scope of Inventory

Direct greenhouse gas, indirect GHG emissions from energy and other indirect GHG emissions

Basis of Inventory

International standard ISO 14064-1

ChipMOS actively responds to the global trend of carbon reduction, brings mitigation and adaptation of climate change into important issues in operation management, and sets the Environmental Safety, Health and Energy Management Committee as the authority and responsibility function to promote carbon management issues. Since 2009, each fab has independently implemented check, established a GHG emission check, and identified key GHG emission sources in the production process for management. We conduct verification every year in accordance with ISO 14064-1 to ensure data quality and provide credible carbon management information to stakeholders. In 2021, the planned implementation was transformed into ISO 14064-1:2018, which would more accurately control the carbon emission management.

In 2021, the Company's GHG emissions were about 249,783 tons CO2e; the analysis found that ChipMOS' total GHG emissions (Category 1 + Category 2), 99.38% are Category 2 emissions generated by purchased power, Category 1 emissions were less than 1% of the total emissions, and no fluorine-containing gas was used. In light of ChipMOS' emission structure, an energy-saving team has been established internally, to actively conduct energy-saving and carbon reduction management programs for various energy-consuming equipment. In addition to meeting the 1% energy saving requirement of the Bureau of Energy every year, the Company also replaces outdated equipment and adjust control parameters, to improve energy efficiency. For Category 1 emissions less than 1%, we also strengthen control and promotion for low-carbon actions in daily operations, and reduce the use of natural gas, and gasoline and diesel used official vehicles.

ChipMOS regularly conducts greenhouse gas check and continuous reduction within the organizational boundaries every year. Since 2020, it has taken the initiative to add Category 3 verification based on with ISO 14064:2018. The items include: indirect GHG emissions generated by transportation (including "upstream / downstream transportation and distribution of goods", "business travel activities") and indirect GHG emissions generated by products used by the organization (including "purchased goods" and "solid / liquid waste disposal activities"), so as to find out the best feasible carbon reduction focus and actively invest in reducing GHG emissions.



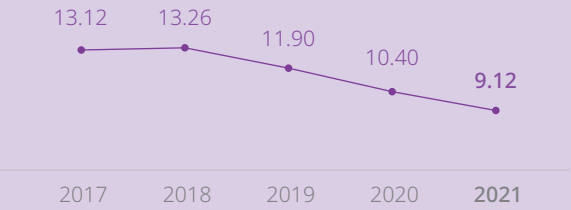
2021 Emissions and Intensity of Categories 1 and 2

	2017	2018	2019	2020	2021	Unit
Category 1	1,863.67	2,283.88	2,447.61	1,988.64	**1538.44**	Ton-CO_2e
Category 2	233,455	242,700.61	239,476.16	237,416.00	**248,244.64**	Ton-CO_2e
Total	235,318.67	244,984.49	241,923.77	239,404.64	**249,783.08**	Ton-CO_2e
Emission Intensity (Categories 1 + 2)	13.12	13.26	11.90	10.40	**9.12**	Ton-CO_2e/ Revenue (NT$ Million)

Note: The power emission coefficient - 0.502 KgCO_2e/ kWh announced by the Bureau of Energy in 2020 is taken as the calculation basis for 2021.

Emissions and Intensity of Categories 1 and 2

Unit: Ton-CO_2e/ Revenue (NT$ Million)



2021 Category 3 and 4 Emissions

Unit: Ton-CO_2e

Emissions		Calculation Boundaries and Assumptions	Emissions
Category 3	Emissions from upstream transport and distribution for goods	Inventory the GHG emissions generated during the transportation of the materials and consumables procured during the year	64.26
	Emissions from Downstream transport and distribution for goods	Inventory the GHG emissions generated during the product shipment, and count the consumption of gasoline and diesel used by vehicles	224.13
	Emissions from Employee commuting	Employees commute by the means of cars, scooters, or public transportation.	3,699.57
	Emissions from Business travels	Employees' business trips include the transportation of land, marine, and air transportation, such as HSR within Taiwan.	78.43
Category 4	Emissions from Purchased goods	1. Materials and consumables procured related to the productions in fabs.	5,092.47
		2. Emissions related to the production of purchased energies (power and oil), but not included in Category 1 and 2.	45,756.96
	Emissions from the disposal of solid and liquid waste	Inventory of waste disposals, such as the annual treated volume of waste (life garbage and recycles)	1,559.48
		Total	56,475.30

Note 1: GWP: Global warming potential (citing IPCC: the fifth announcement in 2013)

Benchmark Year for GHG Calculation

Unit: Ton-CO_2e

Category	Type of Fab	Hsinchu fab.	Zhubei fab.	Zhubei fab. 2	Hukou fab.	Tainan fab.	Tainan fab. 2
Category 1 + Category 2	Benchmark Year	2018					
	Total Emissions in the Benchmark Year	53,656.11	47,191.78	8,111.19	31,029.43	94,134.83	10,861.15
	Benchmark Year Setting Description	Starting year of consistency check of each fab					
Category 3 + Category 4	Benchmark Year	2020					
	Total Emissions in the Benchmark Year	13,575.38	12,480.11	3,181.47	7,828.85	23,542.31	5,360.37
	Benchmark Year Setting Description	Included in Category 3 and 4 verification according to ISO 14064:2018					



4.2.6 Gas Emission Control

Air pollution has adverse effects on climate, ecosystem, air quality, biological habitat, agriculture and human and animal health. ChipMOS actively invests resources to strengthen air pollution equipment, and achieves the effect of improving air quality through resource injection. Meanwhile, the emission data related to air pollution shall be regularly detected in accordance with various control standards of local regulations on gas emission.

In view of the characteristics of the product production process, ChipMOS only produces a small amount of Volatile Organic Compounds (VOCs), Sulfur Oxides (SOx), Nitrogen Oxides (NOx) and particles in Zhubei fab. and Tainan fab; other fabs have no controlled stationery pollution sources requiring inspection. and Tainan fab. In 2017, Zhubei fab. and Tainan fab adopted the Regenerative Thermal Oxidizer (RTO Furnace), and obtained the air pollution operation permit from the Environmental Protection Bureau, with the VOCs detection results of meeting the regulatory emission standards. Through the treatment of energy-saving and environmental friendly VOCs control equipment, the emission concentration was lower than the regulatory limit. Sampling inspection shall be carried out every year according to the permit requirements. In 2021, the removal efficiency of Zhubei fab. was 92.5%, and 91.4% for Tainan fab. The sampling results met the air pollution discharge standards.



Note: According to the regulations, Tainan fab. conducts the testing of SOx, NOx and particles before extension, so the testing data for the year of 2019 will be adopted from 2019 to 2021.

VOCs Emission

Unit: ton/year

Fab Area	Discharge Port	2017	2018	2019	2020	2021	Allowable Value of Local Competent Authority
Zhubei fab.	P102	1.472	-	-	-	-	<0.6kg/hr (35.89t/year)
	P103	1.682	-	-	-	-	
	P105	1.726	1.752	1.314	2.102	1.840	
Tainan fab.	P103	0.963	1.314	1.226	1.314	1.051	<0.6kg/hr (1.94 t/year)
	P106	0.613	0.350	0.263	0.438	0.438	
Total		6.456	3.416	2.803	3.854	3.329	

SOx

Unit: ton/year

Fab Area	Discharge Port	2017	2018	2019	2020	2021	Allowable Value of Local Competent Authority
Zhubei fab.	P105	-	5.256	5.256	5.256	1.577	≤100 ppm (7.13 t/year)
Tainan fab.	P103	-	-	-	-	-	2.039 t/year
	P106	-	1.314	1.051	1.051	1.051	
Total		-	6.570	6.307	6.307	2.628	

NOx

Unit: ton/year

Fab Area	Discharge Port	2017	2018	2019	2020	2021	Allowable Value of Local Competent Authority
Zhubei fab.	P105	-	3.767	3.767	3.767	3.416	≤150 ppm (10.968 t/year)
Tainan fab.	P103	-	-	-	-	-	0.68 t/year
	P106	-	0.438	0.175	0.175	0.175	
Total		-	4.205	3.942	3.942	3.591	

Particle

Unit: ton/year

Fab Area	Discharge Port	2017	2018	2019	2020	2021	Allowable Value of Local Competent Authority
Zhubei fab.	P105	-	0.613	0.613	0.613	0.613	≤50 mg/Nm^3 (0.88 t/year)
Tainan fab.	P103	-	-	-	-	-	0.408 t/year
	P106	-	0.263	0.066	0.066	0.066	
Total		-	0.876	0.679	0.679	0.679	

4.3 Water Resources Management

303-1, 303-2, 303-3, 303-4, 303-5

4.3.1 Identification of Water Risks and Opportunities

To cope with the huge water consumption, cherishing and making good use of water resources is the policy that ChipMOS has been actively promoting, and it is also an important part of the sustainable development of the Company. Although Taiwan has abundant rainfall, it flows into the sea due to restriction of the terrain, and the storage capacity is insufficient due to reservoir siltation. The actual collection of available water is not much. In addition, the extreme change of the global climate has prolonged the impact of the dry season. Enterprises or people are facing the risk of water shortage. Therefore, it is more important to make good use of water resources and identify relevant risks and opportunities.

51 water risks in total, including two 2 water risks and 9 moderate water risks; 19 water opportunities; 3 major water opportunities; 2 moderate water opportunities, total 70 risks and opportunity items.

Water Risks and Opportunities





Major Water Risks

- 12 Water supply interruption
- 13 Extreme water shortage

Major Water Opportunities

- 13 Water efficiency
- 14 Waste water recovery
- 18 Adaptability

Moderate Water Risks

- 11 Drought
- 22 Water price change
- 23 Water control regulations
- 24 Quality / quantitative discharge standard of drainage water
- 25 Mandatory water efficiency, water saving, recycling or process standards
- 27 Uncertainty of new regulations
- 40 Flood
- 47 Seasonal or annual variation in water supply
- 49 Plastic particles

ModerateWater Opportunities

- 8 Production process
- 15 Green building

Major Water Risks

	Water supply interruption	Extreme Water Shortage
Risk Description	The water supply interruption caused by natural or other human factors has affected the operation of the Company or its vendors.	Extreme water shortage caused by natural or other human factors, with the severity increasing with time.
Location of Occurrence	Within the Organization / Vendor	Within the Organization
Time of Occurrence	Short term / long term	Long Term
Potential Impact	1. Increase of direct cost (short term) 2. Decrease of operational income (short term) 3. Operation disfunction of the Company (long term)	1. Decrease of operational income 2. Operation disfunction of the Company
Financial Connection	1. Increase of the cost of carried (purchased) clean water sources 2. The fab. cannot operate normally due to water supply interruption, resulting in a daily loss of turnover between NT$100 Million and NT$200 Million. 3. The water volume of each incoming water tank can last for 2-7 days. It is estimated that the water supply in the fab will be interrupted for one day in 2025, and the production must be maintained by waterwheel, with the cost increased by NT$1.83 Million. It is estimated to be NT$2,046,000 in 2030 and NT$3,224,000 in 2050.	1. The fab cannot operate normally due to water supply interruption, resulting in a daily loss of turnover between NT$100 Million and NT$200 Million. 2. The water volume of each incoming water tank can last for 2-7 days. It is estimated that the water supply in the fab will be interrupted for one day in 2025, and the production must be maintained by waterwheel, with the cost increased by NT$1.83 Million. It is estimated to be NT$2,046,000 in 2030 and NT$3,224,000 in 2050.
Management Practices	1. The Hukou fab. built the anti-drought wells for 1,080 CMD in 2021. 2. Entering contracts with water truck provider in advance for the dry seasons, to meet the water consumption required by the fabs.	

Major Water Opportunities

	Water use efficiency	Recycling of wastewater	Adaptability
Risk Description	Improve the use efficiency of operating water.	Recycling process or reusing of water for people's livelihood.	Increase their resilience to the impact of climate change.
Location of Occurrence	Within the Organization	Within the Organization	Within the Organization
Time of Occurrence	Middle Term	Middle Term	Middle Term
Potential Impact	Decrease of Operating Costs	Decrease of Operating Costs	Adaptation to climate change
Financial Connection	The reduction in water charges (sewage treatment fee + tap water fee) caused by the reduction in water consumption is NT$16.4 Million.	The reduction in water charges (sewage treatment fee + tap water fee) caused by the reduction in water consumption is NT$16.4 Million.	The cost of waterwheel will be reduced by NT$223,000 by 2025, and NT$250,000 by 2030, and NT$394,000 by 2050.
Management Practices	Investment in recovery system	Investment in recovery system	1. The Hukou fab. built the anti-drought wells for 1,080 CMD in 2021. 2. In 2022, it is expected to build a process water recycling equipment 550 CMD in Zhubei fab.



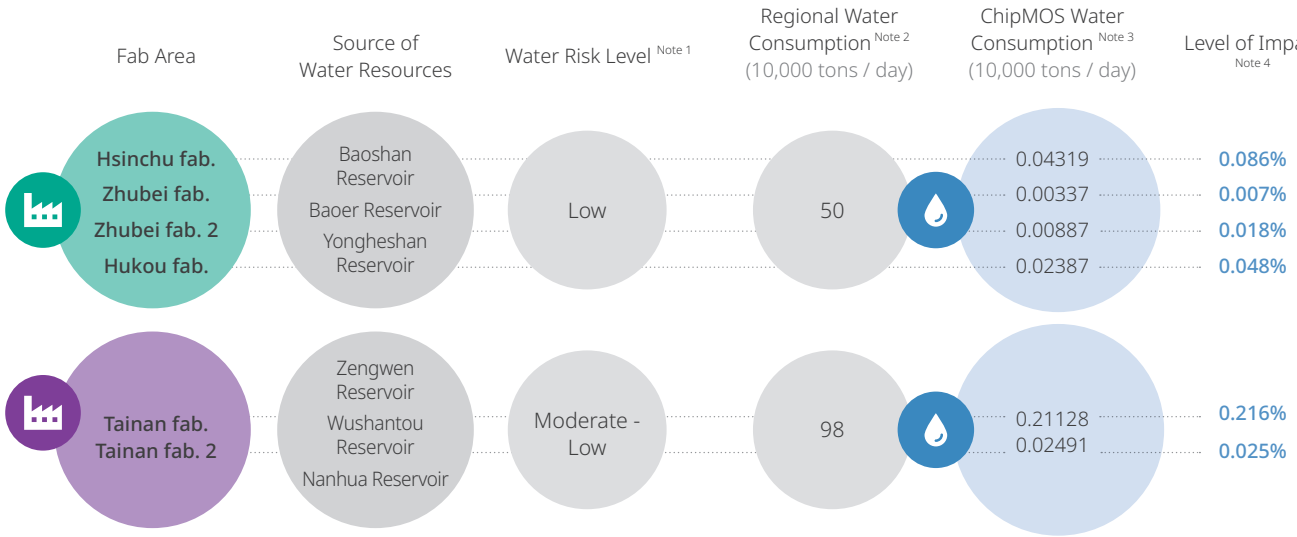
4.3.2 Water Resources Risk Management

In addition to the in-fab. water quality inspection and control, we set clear goals, formulate water use strategies, do a good job in source water saving and process water recovery, and give consideration to environmental responsibility and revenue growth. As a result, since 2015, in Tainan fab. the amount of water recovered from the process has been greater than the amount of tap water used every day, minimizing the impact of operation on the environment. In the third quarter of 2020, a new 2,700 CMD process water recovery equipment would be started to cope with the rapid expansion of production capacity and the relative increase of water consumption.

About water resources management, in addition to saving water and recycling water, we also improve the water resource efficiency of the supply chain through the water footprint check mechanism. Moreover, we conduct a check in accordance with ISO 14046 and actively invite third-party units for verification, in order to improve the reliability of data. Since 2014, ChipMOS has completed the ISO 14046 water footprint verification of its products, and has passed the third-party certification, so as to effectively master the water resource status of production and provide customers with reference. The products that completed their check include: LCD Driver IC (bare crystal flip chip), LCD driver IC (COF), gold bump 8 "and 12" ball grid array package (BGA), quad flat non-lead package (QFN), etc.

ChipMOS actively monitors the use of water resources. During the dry season, we track the storage capacity of the source reservoir every week, and each fab controls the storage capacity of high liquid level >95% every day. If it is lower than the early warning value, we immediately confirm whether the water supply system inside and outside the fab is normal, so as to facilitate subsequent emergency treatment. We continue to collect water resource use data, and use the risk assessment tool of " Aqueduct Water Risk Atlas " of the World Resources Institute to identify the risk level of water supply in the area where each fab. is located, so as to strengthen the water conservation policy. In 2021, the total water intake of ChipMOS was 1,798.515 million liters, which was also used as the benchmark value for water resource recovery and reuse. Through the data of water resources access sources and total water intake, it is helpful to understand the overall water use of ChipMOS, as well as the related potential impacts and risks. Currently, all fabs of ChipMOS are in the low or mid-low area of water resource pressure.

2021 ChipMOS Water Source Impact and Risk Level



Note 1: The water risk level is based on "the Aqueduct Water Risk Atlas" of the World Resources Research Institute.
Note 2: Based on the total daily consumption of tap water in the region of the tap water company.
Note 3: Average daily tap water consumption of each fab in 2021.
Note 4: Level of Impact = water consumption of each fab of ChipMOS / regional water consumption.

Water Intake(in Million Liters)

Fab Area	Water Source	2017	2018	2019	2020	**2021**
Hsinchu fab.	Tap Water	147.595	153.368	147.703	153.452	**157.199**
Zhubei fab.	Tap Water	50.872	43.959	63.995	65.170	**12.253**
Zhubei fab.	Ground Water	399.710	408.248	446.141	554.929	**650.131**
Zhubei fab. 2	Tap Water	27.665	26.304	28.256	30.031	**32.304**
Hukou fab.	Tap Water	89.958	89.690	81.931	81.437	**86.886**
Tainan fab.	Tap Water	742.978	781.888	943.653	994.405	**769.073**
Tainan fab. 2	Tap Water	11.148	30.895	56.376	69.829	**90.669**
Total		1,469.926	1,534.352	1,768.055	1,949.253	**1,798.515**

Note: Groundwater (well water) is mainly used in the processes of Zhubei fab. ChipMOS obtains the legal water right certificate issued by Hsinchu County Government every year.



4.3.3 Recycling of Process Water



Over the past 14 years, the accumulated recovered water has reached **10,304.628 million liters** = **4,122 International standard swimming pools**

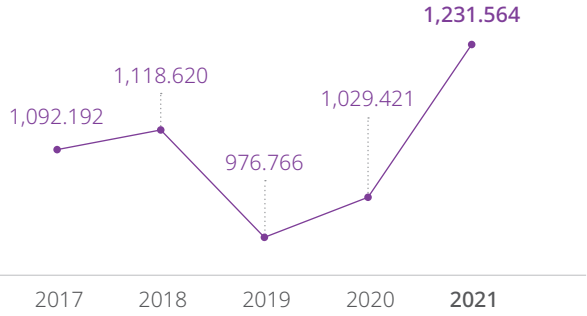
2022 It is expected to invest NT$10.6 million in Zhubei fab to build 550 CMD of process water recycling equipment, with an estimated annual water recycling volume of 200.7 million liters.

ChipMOS Tainan fab imported the process water recovery equipment in 2008. Through technical cooperation with equipment manufacturers and external organizations, the process water recovery plant has been built to absorb the water discharged from the cutting process of the plant. In 2015, the grinding process drainage recovery filtration equipment has been imported for water resource recovery and reuse. The process water can be recycled and reused for processes through ultrafiltration membrane. With the increase of production capacity, the process water consumption increases. In 2020, ChipMOS invested NT$20,600,000 to build the process water recovery equipment 2,700 CMD. It is estimated that the annual water recovery volume will be 837.2 million liters, effectively improving the water use efficiency. The new cutting process drainage recovery equipment was put into operation in September 2020. The annual wastewater discharge decreased from 654.333 million liters (2020) to 493.844 million liters (2021), with a reduction of 160.489 million liters (24.53% less than the previous year). Over the past 14 years, the accumulated recovered water has reached 10,304.628 million liters, equivalent to nearly 4,122 international standard swimming pools saved.

In 2022, it is expected to invest NT$10.6 million in Zhubei fab to build 550 CMD of process water recycling equipment, with an estimated annual water recycling volume of 200.7 million liters.

Processing Water Recycling

Unit: Million Liters



During the production and operation in the fab, the consumption of water resources will be affected by many factors, such as the volatilization of air conditioning heat dissipation. A total of 490.699 million liters of water was consumed in 2021, having an decrease of 6.40% compared with that in 2020. Due to the new water recyling equipment, the water consumption will be decreased.

Water Consumption

Unit: Million Liters

2017	2018	2019	2020	2021
409.064	440.330	467.192	524.246	490.699

Note 1: Calculated according to 2.5 million liters of an international standard swimming pool (FINA).

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4.3.4 Wastewater Treatment and Discharge

Rivers play an important role in providing water resources, and also provide important habitats for many diverse animals living by water and grass. Therefore, maintaining clean rivers is also an important part of ChipMOS' overall environmental plan. Through the statistics of the discharge volume divided by water quality and discharge destination, we detect the quality of process wastewater, and carry out effective management and continuous improvement.

The wastewater in ChipMOS fabs is discharged after proper treatment, which meets the current regulatory discharge standards, and is regularly tested according to the licensing requirements. Hsinchu fab and Zhubei fab 2 and Hukou fab have no process wastewater. Hsinchu fab and Tainan fab are located in the Science Park, and Hukou fab is located in the industrial zone, where the wastewater is discharged after unified treatment by the park sewage treatment plant and the industrial zone sewage treatment center. Zhubei fab is also treated by the wastewater treatment plant. After confirming to meet the discharge water standard, the waste water is discharged to the receiving water body approved by the Environmental Protection Authority. Zhubei fab and Tainan fab independently set up the On-Line to monitor the wastewater discharge and ensure the quality of the discharged water. In 2019, considering the risk of pollution discharge from rainwater drainage ditches caused by leakage of chemical tanker during filling, Tainan fab set the water gate at the rainwater drainage outlet in 2020, in order to avoid leakage and impact on the environment. In 2021, about 1,307.816 million liters of wastewater were discharged, having a decrease of 8.22% compared with that in 2020, mainly thanks to the reduction of 160.489 million liters of water intake after the new cutting process drainage recovery equipment was put into operation.

Discharge Capacity

Unit: Million Liters

Fab Area/Project	2017	2018	2019	2020	2021	Treatment Meth-od	Final Discharge Destination
Hsinchu fab.	118.076	122.695	118.162	122.762	**125.759**	Unified Treatment in the Park Area	Kehyea River
Zhubei fab.	467.021	434.432	492.003	603.619	**639.643**	Self-discharge Out-side the Fab	Douzipu River
Zhubei fab. 2	5.533	5.261	5.651	6.006	**6.461**	Self-discharge Out-side the Fab	Fengshan River
Hukou fab.	24.081	24.555	23.468	23.626	**23.919**	Unified Treatment in the Industrial Zone	Qiedong River
Tainan fab.	442.963	499.497	650.401	654.333	**493.844**	Unified Treatment in the Park Area	Dazhou Drainage Line
Tainan fab 2	3.188	7.582	11.177	14.662	**18.190**	Unified Treatment in the Park Area	Dazhou Drainage Line
Total	1,060.862	1,094.022	1,300.863	1,425.007	**1,307.816**	-	-

Note: Hsinchu fab., Zhubei fab. 2, Hukou fab have no process wastewater, and only domestic sewage is discharged.

Discharge Water Detection by Water Quality

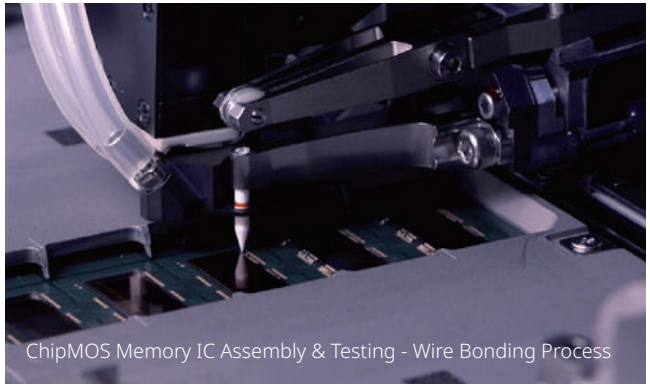
Fab Area/ Item	Guiding Standards	pH Value		Chemical Oxygen Demand (COD) (mg/L)		Suspended Solids (SS) (mg/L)		Ammonia Nitrogen (NH_3-N) (mg/L)		Copper (Cu) (mg/L)		Nickel (Ni) (mg/L)	
		Regulatory Limit	Actual Value	Regulatory Limit	Actual Value	Regulatory Limit	Actual Value	Regulatory Limit	Actual Value	Regulatory Limit	Actual Value	Regulatory Limit	Actual Value
Zhubei fab.	Discharge Water Standard	6-9	7.7-7.8	100	10.6-18.1	30	1.8-4.8	30	1.57-2.07	1.5	0.015-0.015	0.7	0.009-0.009
Tainan fab.	Permissible Standard for Sewage Sewers in the Southern Taiwan Science Park, Ministry of Science and Technology	5-10	7.6-7.7	450	35.4-43.8	250	21.4-39.5	60	6.88-6.98	3	0.101-0.028	1	ND-0.030
Tainan fab. 2		5-10	7.8-8.0	450	21.5-39.3	250	2.2-3.0	250	12.40-34.00	3	0.072-0.096	1	ND

Note 1: The water quality inspection items that ChipMOS gives priority to are mainly the process water in Zhubei and Tainan fabs, such as waste water from electroplating, etching, grinding and other processes, and waste water generated from the use of organic, ammonia, electroplating solution and other raw materials.
Note 2: Hsinchu fab., Zhubei fab. 2, and Hukou fab. are the testing fabs, so there is no test data for the process discharge water.
Note 3: The actual test value is the minimum to maximum values of the test results filed to the competent authority. ND indicates below detection limit.

4.4 Recycling 301-1, 301-3, 306-1~5, TC-SC-150a.1

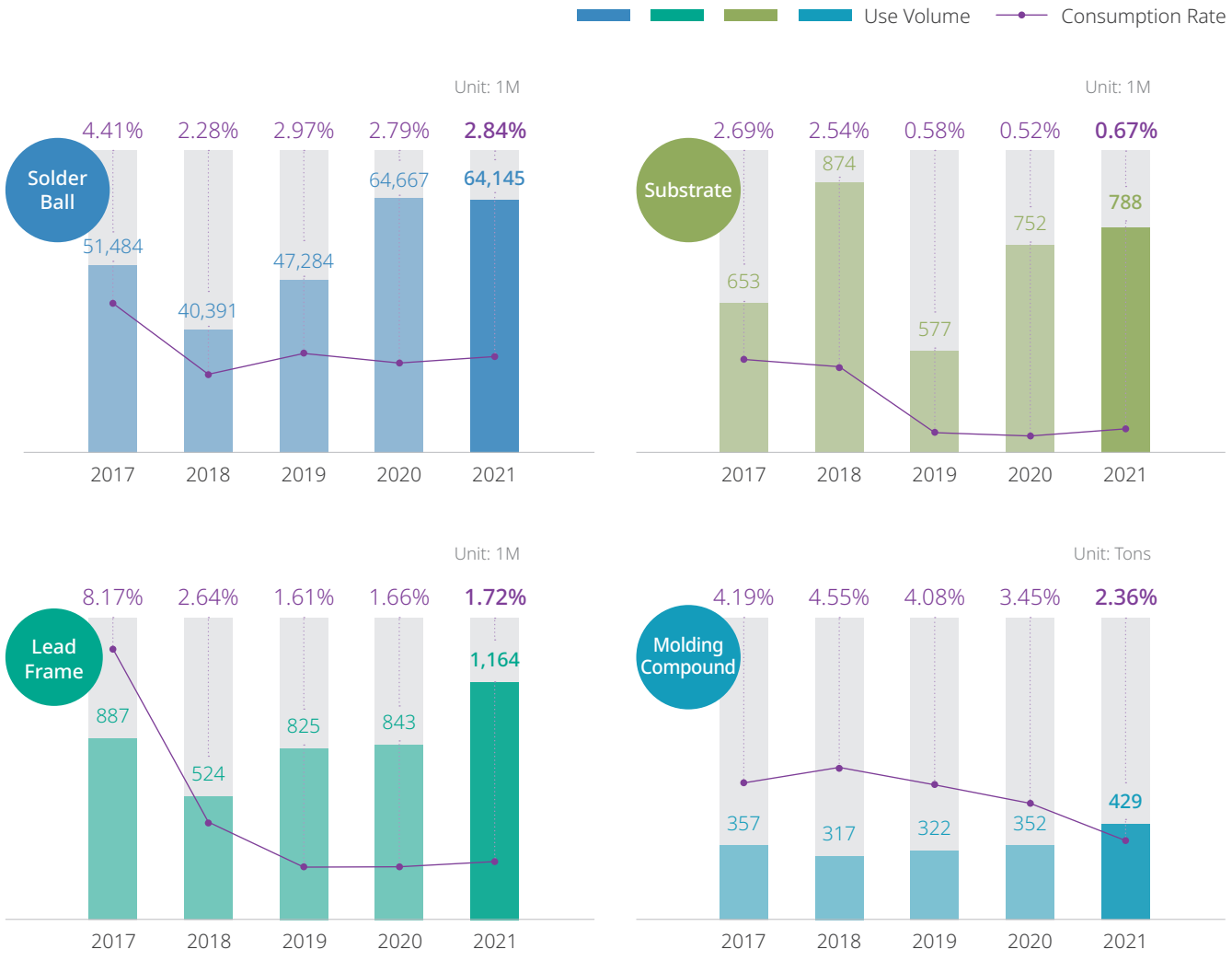
4.4.1 Reduction of Material Source

ChipMOS provides complete semiconductor back-end process services. The main raw materials for packaging, testing and materials include Solder Ball, Lead Frame, Substrate, Molding Compound, etc. We continue refining the production process, strive to improve the source, reduce waste, and understand the use of various materials by analyzing the annual material consumption rate. During 2017-2018, we continued optimizing the use of substrates and lead frames between production machines to reduce the consumption of invalid materials. Through the consolidation and utilization of materials, the switching consumption of molding compound was reduced, and the major raw material consumption was greatly improved. In the recent three years, in the consumption rate of the major raw materials, the part of compounds has been continuously improved and decreased year by year; and the remaining raw materials have been optimized the utilization efficiency, and reached the target loss value has been achieved. The target values of raw material consumption for 2021 are: solder ball (3%); lead frame (1.9%), substrate (0.6%), compound (4%); the target values of consumption are adjusted based on the planned product mixes to be produced for the year.



ChipMOS Memory IC Assembly & Testing - Wire Bonding Process

Consumption of Non-renewable Raw Materials



Note 1: Consumption Rate = (actual use volume – BOM standard use volume) / BOM standard use volume x100%
Note 2: BOM= Bill of Materials



4.4.2 Recycling of Packaging Materials

ChipMOS provides professional and vertically integrated packaging and testing services. During the transportation of customers' supplied chips and IC products, we need to use wafer boxes and trays as the carrying tools, in combination with cartons and sponge buffer materials to achieve the effects of product protection. In order to reduce waste generation and reduce environmental load, we recycle and reuse reusable packaging materials.

During the IC testing and production, good products, secondary products and poor products are classified according to the product yield. In addition to using trays for loading, Velcro tapes (good products) used to fix the material trays will be replaced with PP tape for shipping and recycling after all test processes are completed. The secondary products and poor products are partially retested or scrapped according to the customer's instructions. The trays originally loaded are 100% recycled, screened according to the material specifications and standards, and then reused in the production process. Statistics of Main Packaging Materials for Recycling from 2017 to 2021 listed below:

Reusing Packaging Materials

Item (Unit)		2017	2018	2019	2020	2021
Tray (Pcs)	Purchase Volume	1,113,020	1,117,000	1,054,500	1,198,050	**1,235,250**
	Reused Volume	1,567,080	1,551,803	1,584,081	1,411,776	**1,849,440**
	Reused Rate (%)	141%	139%	150%	118%	**150%**
Carton (Tons)	Purchase Volume	14.5	16.9	20.8	22.5	**24.3**
	Reused Volume	14.8	17.4	22.1	24.5	**26.8**
	Reused Rate (%)	102%	103%	106%	109%	**110%**
Rubber Band (kg)	Purchase Volume	2,332	2,734	2,122	2,297	**2,229**
	Reused Volume	1,794	2,359	1,877	2,065	**2,030**
	Reused Rate (%)	77%	86%	88%	90%	**91.%**
Wafer Box (Tons)	Purchase Volume	0	0	0	0	**0**
	Reused Volume	58.3	77.98	113.7	137.4	**139.1**

Note 1: Main packaging materials are recycled and reused in ChipMOS fabs.
Note 2: Reused rate = Recycling volume / purchase volume (%)
Note 3: The statistical value of cartons is corresponding to large cartons used by wafer for shipment, and the corrugated core paper is made of 100% recycled waste paper.
Note 4: The main source of the wafer boxes is the original box used for the purchase of products supplied by customers and the recycling after the chips are cut off the assembly line. ChipMOS has specially assigned persons clean to remove the labels and dirt on the boxes and then recycle the same for shipment. Therefore, there is no purchase volume.
Note 5: The purchased rubber bands are used for some of the customers' fail products, which shall be returned together with the finished products, so they cannot be recycled in the fab. The customers whose defective products are handled by ChipMOS can obtain rubber bands and trays for recycling after scrapping.

4.4.3 Proper Waste Disposal

In order to ensure that the wastes generated under the operation of ChipMOS comply with the environmental, safety and health treatment procedures, in addition to its own operation activities, ChipMOS also inspects the waste related impacts caused by upstream / downstream activities of the value chain, and comprehensively grasps the impact on the environment. Based on the ISO 14001 Environmental Management System, ChipMOS conducts environmental impact assessment and response management every year from the perspective of product life cycle, including raw material supply, in-fab production and manufacturing, and waste disposal.

The wastes generated in the upstream and downstream stages of ChipMOS have relatively low environmental impacts. For the upstream (raw material stage), ChipMOS adopts green materials to make the products free of environmentally harmful substances (see the 5.3 Green Products for details); for the downstream (waste treatment) , ChipMOS entrusts qualified manufacturers to handle it according to law and conducts regular audit and supervision. The hazardous waste generated by the production and manufacturing in the fab has relatively high environmental impacts. We further develop risk / opportunity and action measures or target management schemes to minimize the impacts on the environment.

ChipMOS has promoted the waste reduction plan year by year, and together with the functions like process, fab affairs, etc., extended the concepts of "Life Cycle" and "Source Management", and sought for reduction and recycling plans from the process and machine production process, and driven the circular economy in the fab, and made full use of resources through reduction, reuse, recycling and other ways, while taking into account economic development and environmental protection. In addition, the fab promotes "ISO 14051 Material Flow Cost Accounting", in order to master various information as the basis for management improvement, so that waste can become a resource in the circular economy, and then improve the value of resource reuse.

Waste Disposal in 2021

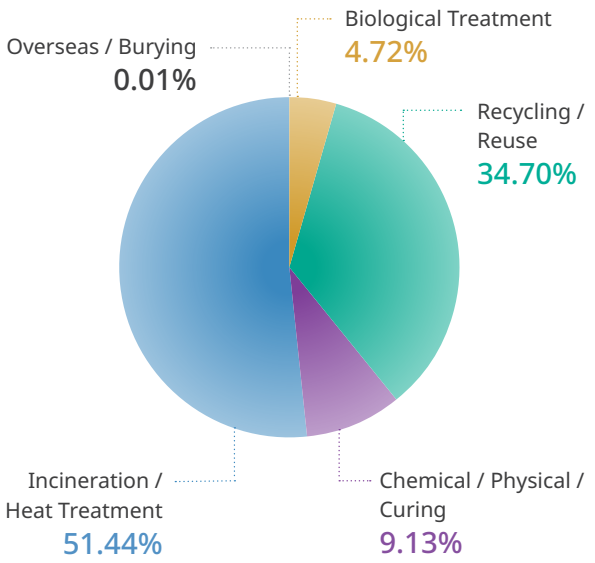
Unit: Tons

Classification	Biological Treatment	Recycling / Re-use	Chemical / Physical / Curing	Incineration / Heat Treatment	Overseas / Burying	Total	Reuse Rate
Nonhazardous	159.58	1,023.72	155.98	817.43	0.08	2,156.79	47.47%
Hazardous	0	148.61	152.67	920.76	0.17	1,222.21	12.16%
Total	159.58	1,172.34	308.65	1,738.18	0.25	3,379.00	-
Waste Proportion	4.72%	34.70%	9.13%	51.44%	0.01%	100%	34.70%

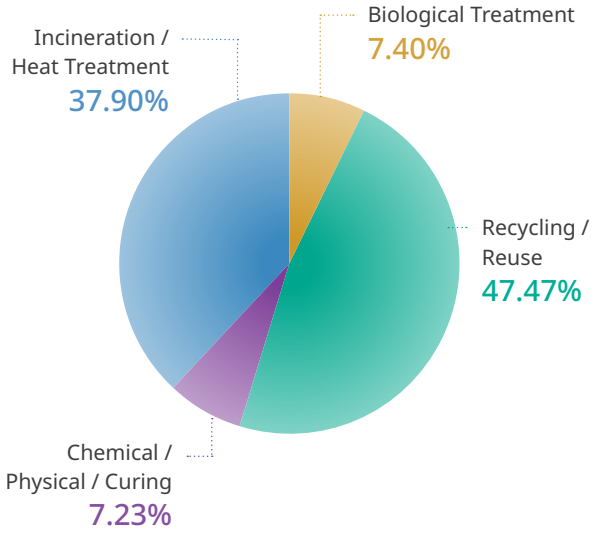
Note 1: The waste disposal conforms to the "Waste Disposal Law" and the qualified scavenger / processor is entrusted to dispose of the waste off the site. ChipMOS regularly audits the joint declaration, monitoring system and final disposal flow of the scavenger / processor.
Note 2: Overseas / Burying:
(1) Burying (nonhazardous): waste dust/ash shall be buried.
(2) Overseas treatment (hazardous): parts and components (waste printed circuit boards) and waste electronic parts and components' leftover products and defective products (IC/Wafer). The export of wastes shall be subject to the application for the Consent of Export of Goods, Post Export Shipping Order, Network Copy, and Receiving Records of the treatment plant in accordance with the Basel Convention.
Note 3: The scopes of waste statistics in the table covers all fabs of ChipMOS (Hsinchu fab./Zhubei fab./Zhubei fab. 2/Hukou fab./Tainan fab./Tainan fab. 2)



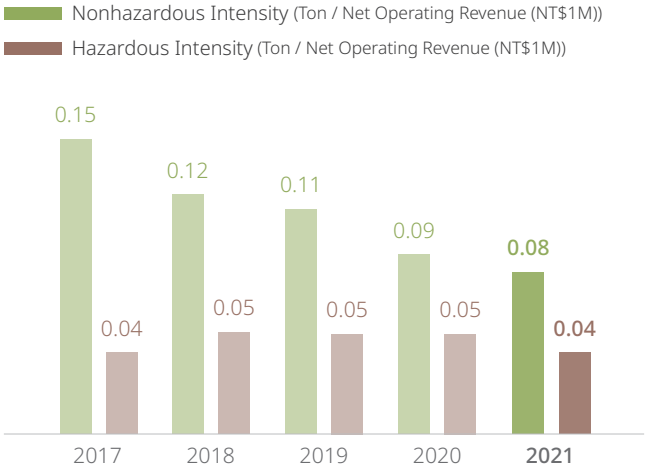
Waste Disposal Proportion in 2021



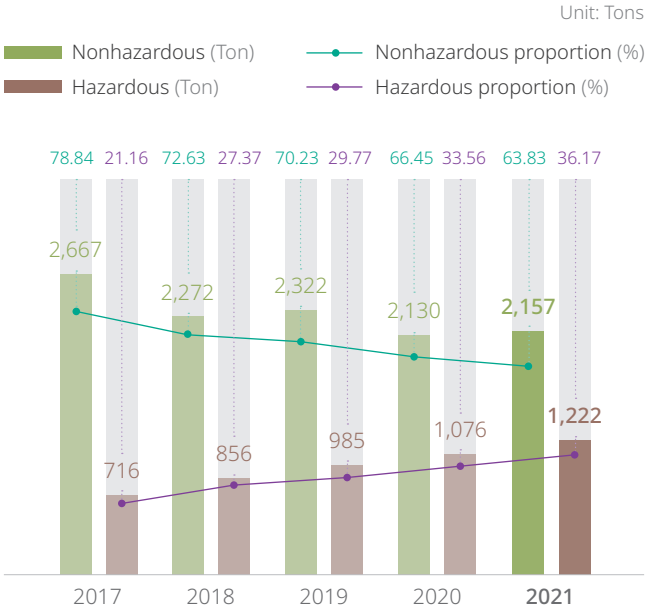
Nonhazardous Waste Disposal Proportion in 2021



Waste Intensity in 2021



Weight and Proportion of Waste over the Years





Selected Cases of Waste Reduction and Improvement in 2021

Project	Target	Effects
E-Run Card input by the Production Info	Reduce the waste of APG packaging production process card	APG packaging production process card reduced by **60%**
Reduce the use of filter elements of cleaning machine	Reduce the use of filter elements	Filter elements of empty box cleaning 3station reduced by **50%**
Reduce the amount of waste cutting cloth	Reduce the use of cutting cloth	Cutting cloth reduction - up to **36** rolls per year
Reduce the use of MF heavy industrial product - R/C paper	Reduce the paper consumption of MF heavy in-dustrial products	Reduce paper use by **10%** per month
Reduce the waste of ion exchange mould compound	Reduce the ion exchange mould compound of MK Lay-791 Ice Water Machine	Reduce the ion exchange mould compound of MK Lay-791 Ice Water Machine by **20%**
Management of empty coolant bottle recycling	Recycling of empty coolant bottle	Recovery rate of empty chemical barrels reaching **100%**
Degumming detergent and plastic waste reduced	Recycling wafer box without degumming deter-gent and reducing the use of electrostatic bag	Degumming agent reduced by **2,358**g, and electrostatic bag reduced by **2,160**
PI (BL302H) consumption reduction plan	PI (BL302H) consumption reduction	PI (BL302H) consumption reduced by **7.5**g/lot — **1**g/lot
Epidemic Prevention Investigation Form E Plan	Paperless Epidemic Prevention Investigation Form	Reduce the use of paper for the Epidemic Prevention Investigation Form by **100%**, changed from paper to electronic form

Note: This Form describes the waste reduction plan proposed by relevant production units of the Company and the actual achievements.

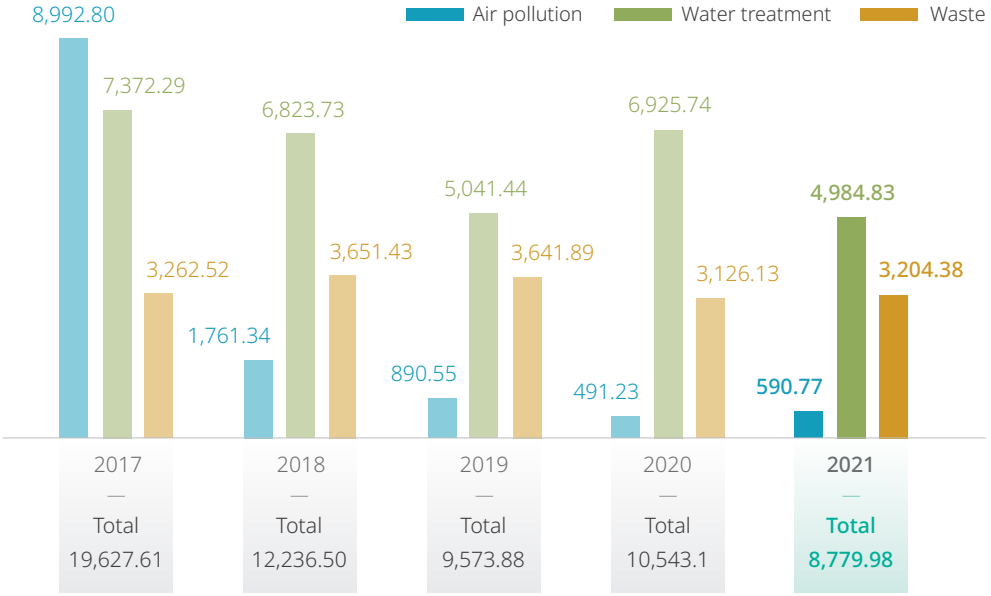
4.4.4 Environmental Protection Expenditure and Investment

Regularly track and analyze the environmental protection expenditure, which helps evaluate the implementation efficiency of environmental measures and internal cost-benefit analysis. ChipMOS annually compiles the environmental protection cost to invest in the software and hardware equipment related to the environment, including improving and upgrading air pollution control, water treatment and waste treatment, and committing to reducing environmental impacts.

Environmental protection expenditure and investment in 2021, including environmental protection operation, environmental protection prevention equipment and maintenance expenditure, with a total cost of about NT$87,799,800.

Environmental Protection Expenditure and Investment

Unit: NT$10,000



Note 1: For the air pollution project, a new air pollution high-efficiency treatment equipment (RTO Furnace) was built from 2017 to 2018, and the relevant air injection equipment has been improved to ensure that the gas emission concentration is stable below the regulatory limit. From 2020, only equipment improvement and maintenance operation costs are included.

Note 2: In 2020, water recovery equipment for cutting process was added, so the cost of wastewater project was relatively high.

CHAPTER

5

Products and Value Services

NT$47.90 Million

In 2021, the benefits of the improvement proposal would reach NT$47.9M, continuously improving ChipMOS' high-quality competitiveness.

0 Case

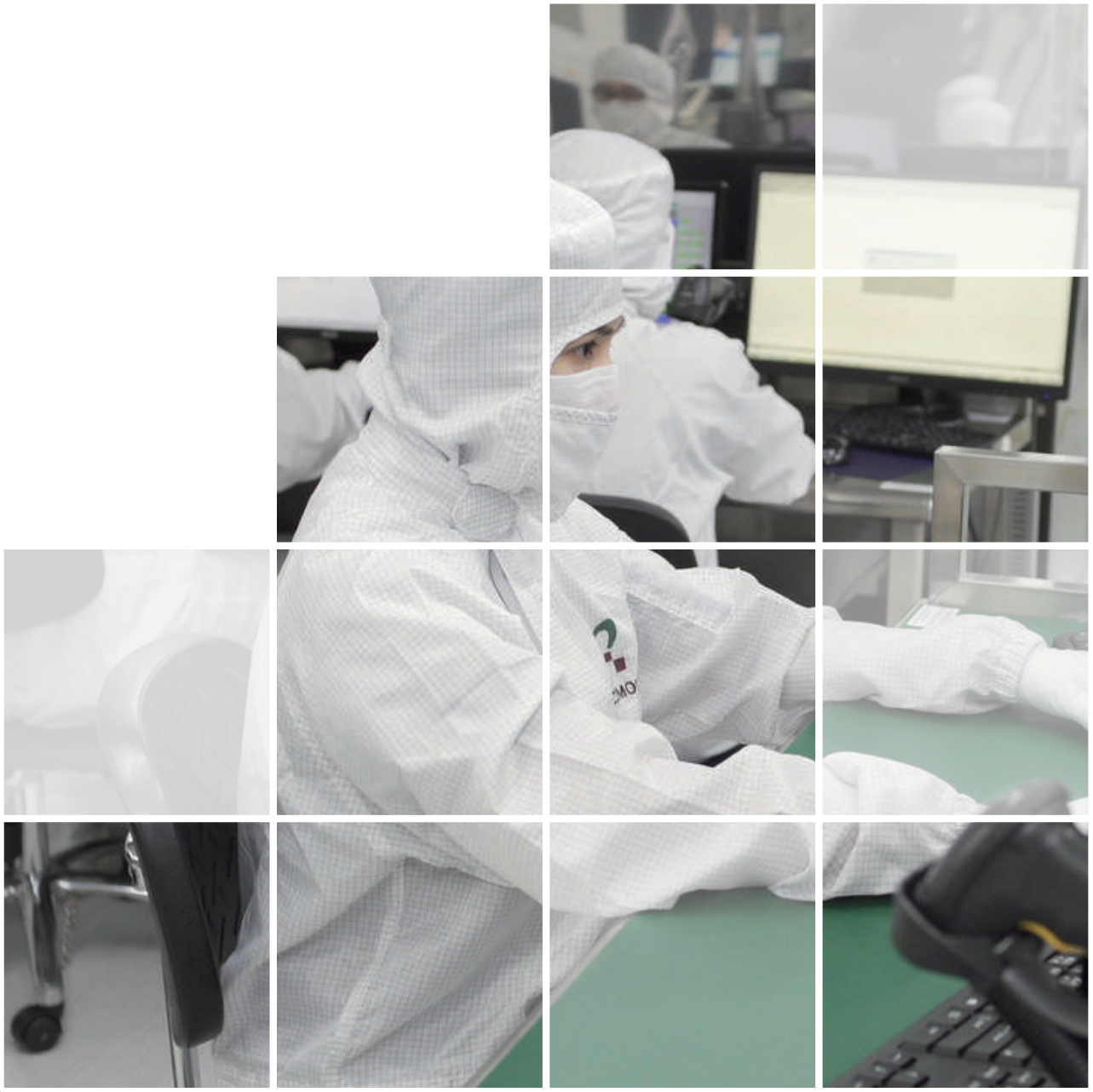
Focus on customer privacy. There have been no customer complaints about customer information in the past five years.

100%

ChipMOS all fab area has been ISO 9001, IATF16949, ISO 26262 and ISO/IEC 17025 certified.

100%

Implemented IECQ QC 080000, introduced green materials, and ensured that products did not have harmful substances.



Management Approach

Policy

Insist the spirit of customer service and continuous improvement, to provide the all-rounded products and services and become the long-term and trustworthy partner

Commitments

Promises that the products and services delivered to customers can meet customer needs and have market competitiveness and timeliness

Resources

- ESG Committee
- Dedicated units for customer service and quality management

Specific Actions

- Mechanism to handle customers' issues
- Implement the green product management system (GPM)
- Continuous plant-wide promotion of the improvement proposal

Evaluation Mechanism

- Customer satisfaction survey
- Customer audits from time to time
- QC 080000 management system

5.1 Customer Service

103-2, 103-3, 418-1

Master Customer Needs and Achieve Service Satisfaction

Timely information
ChipMOS is more than just a supplier, but rather a customer-oriented production site and a trusted partner

Effective measures
Effective measures can solve problems and meet requirements at one time

Comprehensive thinking
Consider customer needs from the customer's point of view

Immediate implementation
Immediate / punctual implementation of customer requirements and specifications

All year round
365 days, 24 hours, uninterrupted provision of customer products and services

5.1.1 Multi-dimensional Communication Pipelines, Ensuring Real-time and Accurate Reply

ChipMOS attaches importance to customer feedback and suggestions, and provides multiple channels to receive customer feedback as an important basis for internal growth and refinement. Keep a smooth communication channel with customers, listen to customers' voices and exact needs, take immediate inspection, evaluation and analysis for customers' opinions and suggestions, and provide customers with specific improvement plans. According to the customer satisfaction survey results in recent three years (on a scale of 5), all evaluation items have reached the 2021 target, and the overall satisfaction level has reached more than 3.5 points. In the spirit of sustainable development, we will actively understand customer needs to improve customer satisfaction. We will also gradually increase the target score for the medium and long term in view of the customer satisfaction goal, so as to achieve the sustainable operation and growth of the Company.



Customer Meetings

Regular meetings with customers

Frequency: Set the frequency of regular meetings according to the attributes of each division and customer, and communicate with customers

Purpose: Specifically understand customer needs and idea

Onsite Visit

Visit customer and actively communicate

Frequency: Visit customers irregularly

Purpose: Listen to customers' voices and understand their exact needs. However, as being affected by the pandemic in 2021, most customers mainly used video or telephone connection.

Evaluation of Outsourcers

Evaluation data from customers

Frequency: Monthly / Quarterly

Purpose: Understand customer feedback and suggestions

Customer Satisfaction Survey

It was actively sent by ChipMOS, mainly by the top three customers of each division. In 2021, 22 copies were distributed and 22 copies were returned.

Frequency	Annually
Contents	"Quality", "Technical Capability", "Hazardous Substance Management", "Delivery" and "Service Satisfaction".
Purpose	Fully understand the customer's satisfaction in respect of various operations
Response Mode	Divide the feedback results into short-term and long-term improvement items. The short-term improvement projects will be reported at the weekly and monthly meetings of the production line. The relevant responsible units will put forward improvement plans for projects with customer feedback and lower than 3 points, and formally reply to the customers. For long-term improvement projects, relevant plans are put forward and tracked in regular weekly and monthly meetings with customers, in order to truly handle and master customer needs.

Customer Satisfaction Survey Results in Recent 5 Years

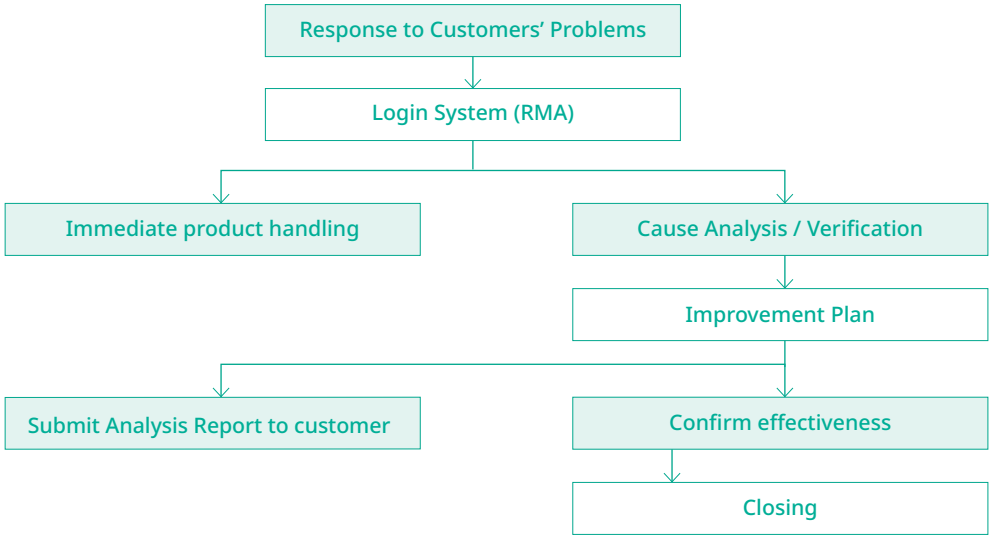
Item / Year	2017	2018	2019	2020	2021
Quality Level	3.68	3.87	3.97	4.15	**3.99**
Technical Capability	3.71	3.9	3.95	4.24	**3.99**
Hazardous Substance Management	4.34	4.45	4.41	4.53	**4.60**
Lead Time Achievement	3.75	3.96	4.00	4.06	**3.92**
Service Satisfaction	3.73	4	4.04	4.18	**4.17**
Overall Scores	3.82	3.87	3.81	4.12	**4.02**

5.1.2 Perfect Customer Problem Handling Mechanism

In order to effectively deal with customer complaints, ChipMOS has established a clear customer complaint handling process for the feedback of abnormal customer quality. The quality service function serves as the main responsible unit between the customer and the fab. When the quality service window of ChipMOS receives the customer's quality problem feedback, it will immediately log in to the system and conduct impact batch investigation, then implement isolation and marking, and further convey the customer information to the relevant responsible units for the real cause investigation and verification. Put forward improvement measures according to the special needs of customers or standard 8D analysis methods, and track the implementation results of follow-up improvement measures. For customer complaints, the investigation of abnormal causes must be completed within 5 days after the formal registration of the case. Effective countermeasures must be put forward, so as to carefully and timely solve customer problems.

Other non-quality oriented opinions are effectively communicated through the diversified communication channels provided by the Company, in order to meet customer needs and comprehensively improve customer satisfaction in respect of product quality, yield, technology, delivery date and service.

Customer Problem Handling Procedure



ChipMOS is committed to improving customer satisfaction performance. With the diversification of products and the growth of shipment volume year by year, we continue improving product quality, actively strengthen internal education and training, and improve customer service processing capacity. As a result, the customer complaints are declining year by year, the closing rate is also reaching 100%. ChipMOS also actively investigates the real causes of customer complaints, strengthens preventive measures to thoroughly solve customer complaints, consolidates customer cooperation and trust, and creates win-win results

Number of Customer Complaints in Recent Five Years

Year	2017	2018	2019	2020	2021
Number	39	36	32	24	26

5.1.3 Customer Privacy and Information Protection

ChipMOS attaches importance to customer privacy and intellectual property rights. Any information related to customers is treated as confidential documents for control. We have set up an electronic data leakage protection system to protect customer data. All customer confidential documents are protected by the TrustView. All internal documents of the Company have been written in the form of customer codes to avoid exposing customer names. Through quarterly vulnerability scanning, we can effectively deal with high-risk events.

In addition, ChipMOS has actively built an information security management mechanism. All fabs have passed the third-party verification of ISO/IEC 27001:2013 Information Security Management System. There have been no customer complaints related to customer information leakage in the past five years.



5.2 Product Quality

103-2, 103-3



"ChipMOS promises that the products and services delivered to customers can meet customer needs, and have market competitiveness and timeliness."

ChipMOS Quality Policy

- Product Quality — Meet customer's request
- Product Cost — Competitive on the market
- Product Delivery — On time delivery

5.2.1 The Quality System Has Passed the Third-party Quality Verification

ChipMOS fabs have passed ISO 9001 Quality Management System, IATF 16949 Quality Management System for Automotive Industry and ISO 26262 Road Vehicles - Functional Safety Certification. In addition, the electrical property testing field, electric quantity and temperature correction field and chemical analysis field of the Quality Laboratory have also passed the certification of the Taiwan Accreditation Foundation (TAF) ISO/IEC 17025 respectively. ChipMOS product quality and manufacturing conform to many international standard quality specifications and requirements.

ALL fabs of ChipMOS have passed the system
100%

- ISO 9001 Quality Management System
- IATF 16949 Quality Management System for Automotive Industry
- ISO 26262 Road Vehicles - Functional Safety Certification
- ISO/IEC 17025

Note: Hsinchu fab, Tainan fab (Tainan fab. 2 included), Zhubei fab, Zhubei fab 2. Hukou fab



Reliability System

In the efforts to improve product quality and reliability, ChipMOS has established a manufacturing quality control system that can maintain product reliability and high yield, and has the most advanced instruments to monitor and control product manufacturing quality and reliability, including:

Reliability Analysis, including: temperature cycling tester, pressure cooker tester and high accelerated stress tester.
Physical Property Failure Analysis, including scanning acoustic tomography and scanning electron microscope.
Electrical Failure Analysis, including semi-automatic probe station, curve tracer and DC testing machine.
Chemical Analysis, including atomic absorption, inductively coupled plasma and automatic potentiometric titrator.

Intelligent Production Imported to Improve Quality Protection

Since 2018, the Company has mobilized all staff to actively carry out the automatic intelligence factory. According to the products and environment, ChipMOS introduces big data, automatic program control, AI, automatic loading and unloading devices, laser mold cleaning machine, etc., integrates product logistics, information flow and talent flow, combines software and hardware technologies, and specifically improves production efficiency and product quality. We continue striving to promote automation projects in various product lines, maintain ChipMOS' professional technical competitiveness, and strive to provide customers with high specifications, high quality and high services.

Automated Project Sharing: Automated Optical Inspection: strengthen the ability of anomaly detection through big data and AI Artificial Intelligence
Recipe Management System (RMS): the system compares parameters in real time and stably controls product quality
Failure Detection and Classification (FDC) system: monitoring of key parameter, health index monitoring of machinery and equipment, real-time monitoring and early anomaly detection
Automated Guided Vehicle (AGV): monitor the concentration of suspended particles, maintain a dust-free environment, and ensure quality
Automatic Loading and Unloading Device: save manpower required for machine operation & improve operation efficiency, reduce MO abnormality, and ensure quality improvement
Laser Mold Cleaning Machine: laser automatic mold cleaning machine replaces manual mold cleaning to stabilize the mold cleaning quality of machine production



5.2.2 Establish the Correct Quality Awareness of Employees to Improve Quality

"In order to effectively improve product quality and customer satisfaction, we take the initiative to monitor, warn and prevent, so as to achieve quality management with risk thinking, thus minimizing product risks."

- Monitoring: Monitor quality index, strengthen internal audit mechanism, and implement improvement cycle
- Warning: Earlier warning, level deviation and shutdown
- Prevention: strengthen data analysis to achieve effective and immediate quality management



Action 1 Quality Awareness Publicity Activity

In order to implement the ChipMOS quality policy and ensure that it is effectively communicated to all ChipMOS employees, we have taken positive and positive actions. Since 2018, we have promoted quality awareness publicity activity, and continuously promoted the concept of quality awareness to employees in the form of physical and electronic bulletin boards through the Quality Concept Announcement and Automotive Quality Promotion and Sharing, thus ensuring that ChipMOS quality policies and concepts are deeply rooted in the hearts of the staff, and ChipMOS' determination to create high quality is clearly expressed to all stakeholders.

Action 2 Learn from each other and Innovate to Jointly Improve Product Quality

In order to ensure that the policies and objectives can be effectively and continuously improved, a set of continuous improvement mechanisms and activities are established to enable all employees to participate in quality management activities by means of activities at different levels, and rewards are provided according to the continuous improvement system. In addition, we provide proposal incentives to encourage colleagues to put forward effective solutions, strengthen the Company's quality culture, and continuously improve product quality and production efficiency. Two important quality control functions are: the Process Improvement Team (PIT) and the IDEA BOX (ID BOX). Through the proposal system and cross functional teams, we implement and promote the continuous improvement of the whole fab.

In 2021, there were 66 PIT proposals in the whole fab (33 related to technical development and improvement, and 33 related to system process improvement). There were 426 ID BOX proposals (199 related to engineering improvement and 227 related to process improvement). The benefits derived from the combination of the 2 kinds proposals amounted to NT$47.9 Million, of which the achievement rate of the PIT proposals exceeded 100% for consecutive years. In the future, we will continue taking incentive measures, such as proposal incentives, to encourage colleagues to communicate and brainstorm across departments, stimulate innovative idea and improve problem-solving ability, and continue improving ChipMOS' high-quality competitive advantages, and create a win-win situation with customers.

Achievement of PIT & ID BOX Proposals over the Years

Item	Proposal Activities	2018	2019	2020	2021
Target[Note 1]	PIT	32	33	33	32
	ID BOX	145	139	170	146
Number of Proposals	PIT	59	41	46	66
	ID BOX	651	718	511	426
Achievement Rate (%) [Note 2]	PIT	184	124	139	206.3
	ID BOX	449	517	301	292
Benefits [Note 3] (NT$10,000/year)	ID BOX	3,450	4,021	2,388	4,790

Note 1: The PIT & ID BOX set targets for the number of proposals annually, and count the performance of the number of proposals every month.
Note 2: Achievement Rate = number of proposals ÷ targeted number x 100%
Note 3: The benefits (NT$/year) are the costs saved after the improvement of the proposal.

5.3 Green Products

TC-SC-440a.1

5.3.1 Policies, Commitments and Objectives

In order to protect manufacturers, users and the earth's environment, ChipMOS sets strict standards for raw materials used in products. These standards are often higher than the provisions of domestic laws. With the goal of complying with international standards, ChipMOS will also conduct annual appraisal through a third-party impartial organization to ensure the effectiveness of ChipMOS's hazardous substance management mechanism. To ensure that the products manufactured by ChipMOS are safe for people and the earth. ChipMOS introduces green materials to make its products free of environmental hazardous substances, enhance its green competitiveness and pursue the sustainable development of the Company. We promise to:

- **Complying with environmental laws, regulations and customer requirement. And to provide the green products which meet the environmental related substances requirements.**
- **Establish the products environment assurance system, and promote product environmental consciousness for ChipMOS employees.**

According to the green product policy, the achievement performance of the annual objectives shall be counted at the end of each year, and the management items and objectives for the next year shall be discussed and formulated at the beginning of the next year. The target performance of green products is regularly reported to the management at the management review meeting to continuously and effectively manage the Company's product hazardous substances. In view of the goal of safe material management, we set that in the next three years, there will be no more than 0 customer complaints of abnormal product hazardous substances, and the compliance of material management regulations will be fully in line with international regulations.

5.3.2 Set GPM Green Product Management System

In order to ensure that the products provided to customers comply with the laws and regulations related to green products, we are very concerned about the management of raw material sources. Therefore, ChipMOS has built a Green Product Management System (GPM), in order to effectively manage the composition and analysis report of the vendors' materials, continuously adjust the internal relevant purchase requisition and acceptance process, and integrate the data with the green product management system into the automatic inspection mechanism to ensure that the raw materials that do not meet the green product requirements are not purchased or accepted.

Green Product Management System



5.3.3 Safety Material Management Process

ChipMOS defines the control items of prohibited and restricted hazardous substances according to the regulations on hazardous substances of customers and the requirements of relevant international environmental protection laws and regulations, and then controls them through the Advanced Product Quality Planning (APQP), new product introduction, process change and vendor management. Meanwhile, there is also a regular monitoring mechanism, including internal audit, third-party verification audit and incoming inspection. In case of any nonconformity, the operation shall be carried out in accordance with the exception handling process. In addition, the vendors shall submit the questionnaire of relevant hazardous substances, Material Composition Declaration (MCD), Certificate of Warranty and other relevant verification materials through ChipMOS GPM system.

5.3.4 IECQ QC 080000 Third Party Verification

The materials, products, packaging, parts and components (collectively referred to as "products") produced by ChipMOS and related vendors and outsourcers shall comply with the RoHS directives, ChipMOS specifications for banned and restricted of hazardous substances and customer requirements. We undertake to pay attention to the update of international regulations on hazardous substances in products at any time to ensure continuous compliance.

ChipMOS Taiwan fabs has obtained IECQ QC 080000 System Verification according to IECQ QC 080000:2017 Management System standards, which includes Hsinchu fab, Zhubei fab, Hukou fab, Zhubei fab 2 and Tainan fab (Tainan fab 2 included). These efforts also enable us to eliminate toxic substances from the manufacturing and recycling process, not only protecting employees and operators, but also avoiding land, air and water pollution. We strive to realize and advance sustainable global environmental ecology.

Control Scope of Hazardous Substances





CHAPTER

6

Products and Value Services

>50%

In the recent four years, the proportion of local sourced supplies have been more than 50%. The Company is committed to select the local quality vendors to enhance the development.

100%

264 vendors have signed the Declaration of Corporate Social Responsibility; the signature reply rate is 100%.

98.5%

In 2021, the average conformation rate of audited RBA vendors was 98.5%; the performance of the vendor management in the recent four years have been improving.

Outperforming Green Procurement Enterprise

For consecutive five years, the Company has been awarded as the "Outperforming Green Procurement Enterprise," recognized by Hsinchu County Government and Tainan City Government.



Management Approach

Policy

The suppliers are seen as the long-term partners and the RBA code of conducts are complied with as the guidelines of the supplier management, to grow and sustainably operate with the suppliers

Commitments

Establish the complete supplier management, to lead the suppliers for the compliance of RBA code of conducts while implement the ESG sustainability actions

Resources

- ESG Committee
- Vendor Management Committee

Specific Actions

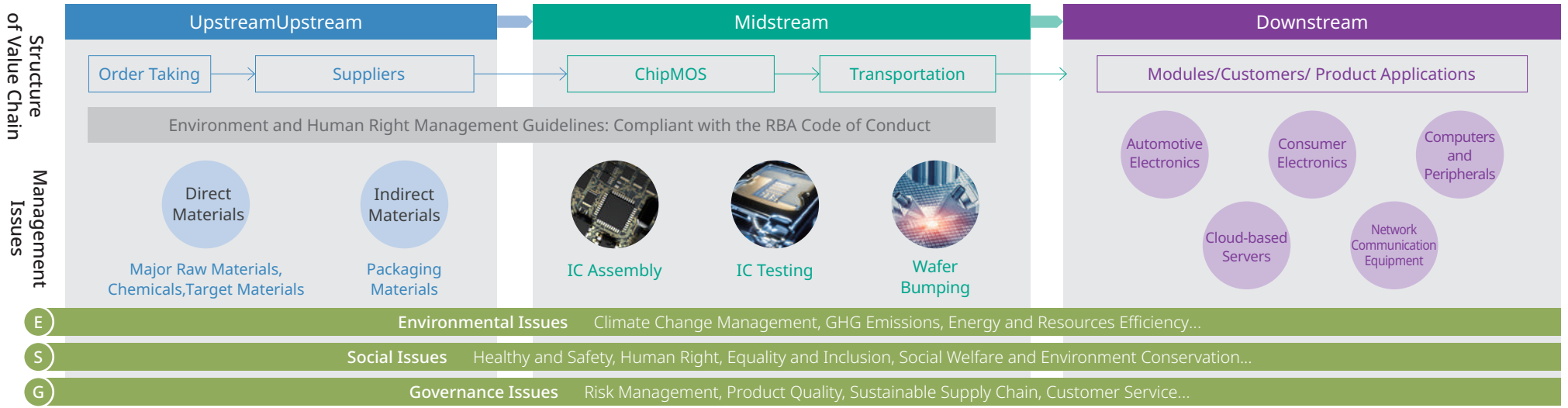
- Selection of new suppliers
- Supplier appraisal, audit, and continuous coaching for improvement
- Drive suppliers to procure 100% non-conflict minerals

Evaluation Mechanism

- RBA audit and customer audit
- Report of conflict minerals
- Sustainability evaluations by investment institutions

6.1 Sustainable Supply Chain Management

102-9, 204-1, 308-1, 308-2, 414-1, 414-2



For the details, please refer to: 2.2.3.3 Analysis Results of Material Topics

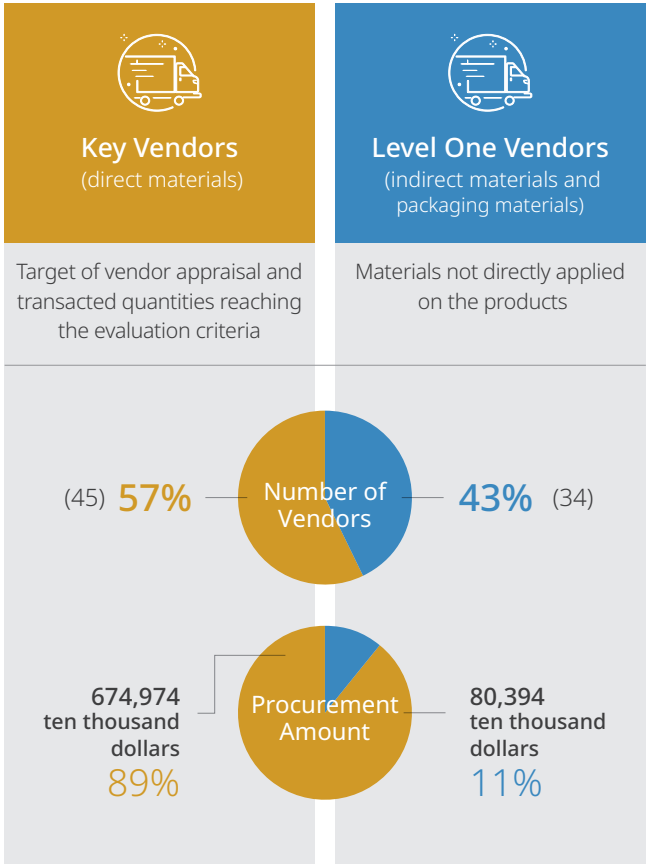
6.1.1 Sustainable Supply Chain

The production and operating activities of ChipMOS, not only create the direct economic values, more importantly, help the up- and downstream industrial chain to create the indirect economic values via the technology cooperation. By following the RBA code of conducts as the policy guidelines for the vendor management, it is committed to promote the local sourcing strategy and vendor coaching, seeking to improve the overall competitiveness and create the win-win situation.

The major procurement items of ChipMOS include the raw materials, machine and equipment, parts and component, plant affair facilities, information devices, among other things. Currently, the vendors with long-term relationship are more than 900; of which, the raw material vendors are essential to the Company's daily operations, including production and quality of shipped products, and accouting for 45% of the total annual procurement amount in 2021; which is most influential and direct to the production and operation, so it is listed as the key item for the vendor management. ChipMOS is committed to enhancing the Company's competitiveness and partnerships in the supply chains. The key material vendor barrier is established based on the annual procurement amount (greater than NT$5 million) and feature (the only supply source or unreplaceable), and control and coach these key vendors, to achieve the goal of effective management and continuous improvement.

For the management of the key raw material supply chain, the key materials for the Company's products include auric potassium cyanide (KAu(CN)2), substrates, gold wires, lead frames, molding compounds, among other things. By insisting the principle of good faith, the relationships with vednors are maintained; the operation and financial position evaluations for key vendors' are done, to ensure the stability of supplies. While establishing good partnership with vendors, other alternative materials and vendors are being developed, to increase the flexibility of supply sources. In 2021, there had no shortage of key raw materials.

Overview of Key Raw Materials Suppliers



6.1.2 Local Sourcing Strategy

"For the material procurement strategy, our first choice is the the local vendors and coach them; this approach not only reduces the carbon emission from transportation, but also supports the stable development of local economy, and creates jobs."

By enhancing the local sourcing strategy, ChipMOS reduces the supply chain risks, as well as the carbon emssion in the overall supply chain and creates the local jobs. The term "local vendor" refers to the manufacturing plants of vendors locate at the same area as the production bases of ChipMOS. For instance, if a manufacturing plant of a vendor locates in Taiwan, this is a local vendor to ChipMOS' plants in Taiwan. In 2021, 60% of the procurement expenditures was from the local vendors. In the recent years, the percentage of the local vendors has tended to increase continuously; however, in 2021, the foreign vendors were affected by the pandemic more seriously, and ChipMOS' countermeasure was to increase the inventory level of the materials supplied from out-of-Taiwan, to diversify the risk of material interruption due to longer delivery time and material shortage resulted from the pandemic. Looking to the future, we will insist the local sourcing strategy and spirit, to select quality vendors in Taiwan, and increase the proportion of local sourcing, while expecting to bring more jobs to Taiwan, and further enhance the development of overall local industries.

The Local Sourcing Trend in the Most Recent Five Years

Location of Vendor	2017	2018	2019	2020	2021
In Taiwan	48%	51%	53%	62%	60%
Out of Taiwan	52%	49%	47%	38%	40%

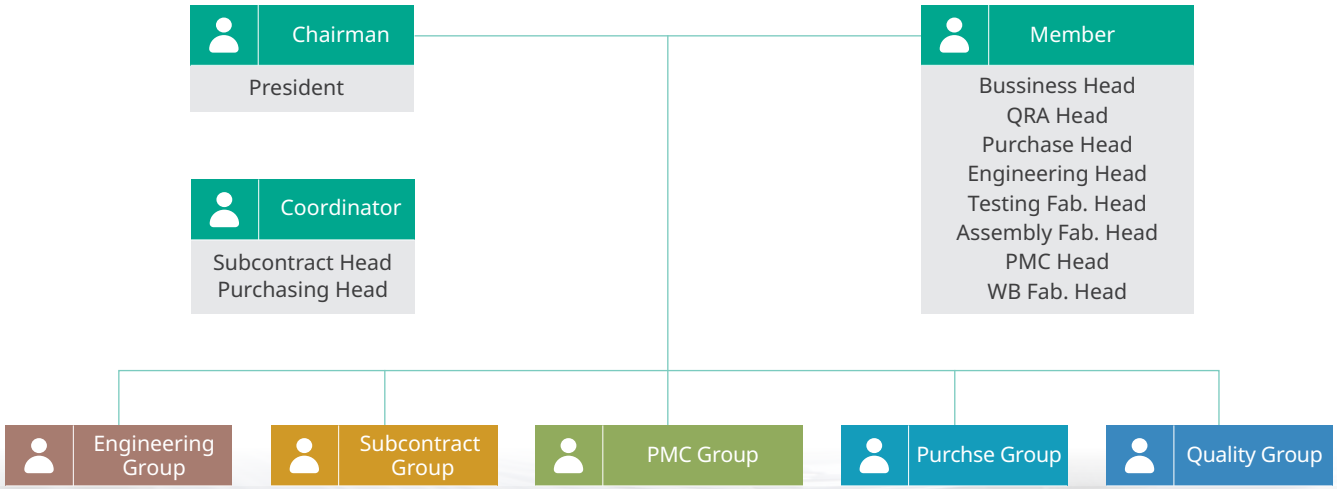
Note: Calculation targets are the key raw material suppliers

6.1.3 Vendor Management Committee

ChipMOS complies with the code of conducts of the Responsible Business Alliance (RBA) and applies such as the policy and guidelines to manage the vendors in terms of environment and human rights, and clearly specifies the five management scopes for vendors, including labor, health and safety, environment, professional ethics and management system.

ChipMOS has established the "Vendor Management Committee" consisting of five groups, namely engineering, subcontracting, production and material management, procurement, and quality. The Committee works in a cross-function way to implement the vendor management scopes together, including vendor selection, vendor audit, and vendor appraisals, to be committed to conform to the standards of RBA's code of conducts, and work with the vendors to grow together, and operate sustainably.

Vendor Management Committee



Standards for Vendors to Comply with

Vendor Integrity Policy

To ensure that vendors understand that ChipMOS insists the principles of ethic and integrity when conducting all business activities, when entering procurement contracts with the vendors, the terms of Regulations Governing Professional Moral Conduct are required; whenever any employee of ChipMOS or related vendor is found being unethical, the whistleblowing email:Audit_Committee@chipmos.commay be used. ChipMOS will handle the whistleblowing pursuant to the procedures, and keep strictly confidential of the whistle blower's information, be it an entity or individual; proper protective measures are taken pursuant to laws and regulations, and ChipMO shares the responsibility of complying with the Regulations Governing Professional Moral Conduct with vendors.

Vendors Sign the Declaration of Corporate Social Responsibility

ChipMOS is committed to conform to the standards of RBA's code of conducts, and to ensure the vendors understand such, we require certain vendors[Note 1] to sign the Declaration of Corporate Social Responsibility, which clearly requires the partners in the supply chain to fulfill the corporate social responsibilities together. From 2014 to the end of 2021, there were total 264 vendors have signed the Declaration of Corporate Social Responsibility; the signature reply rate is 100%.

Note 1: Based on the Enforcement Regulations of RBA, the certain vendors refer to service provider (HR agencies, cleaning janitors, security guards, stationed vendors, cafeteria service provider, and etc.), raw material vendors, and production equipment providers.

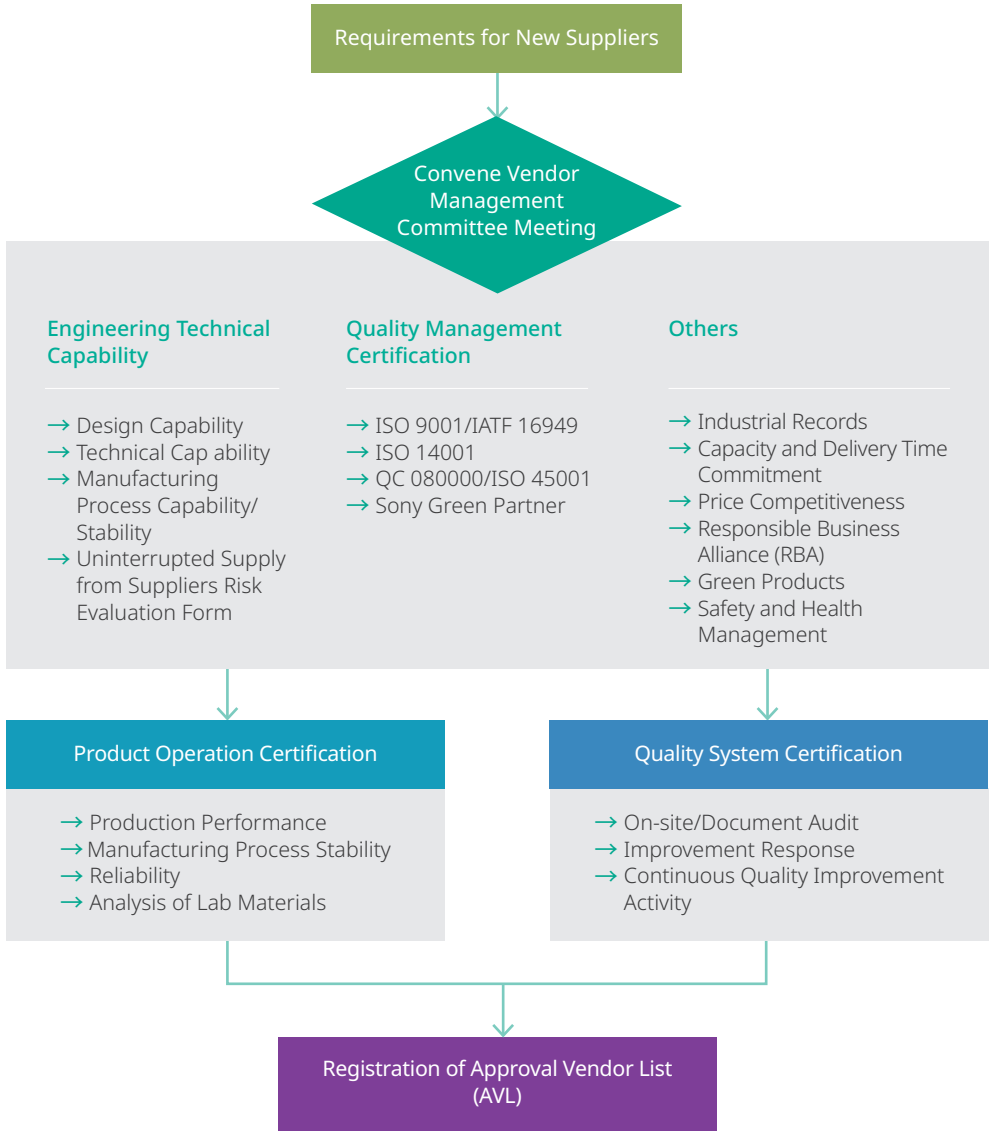
6.1.4 Selection of New Vendors

When evaluating new vendors, the Company complies with the RBA purpose and related codes, to investigate if the vendors insist the philosophy of environmental protection, occupational health and safety, and corporate responsibilities, and fulfill their responsibilities as corporate citizens, and if they have any past record of affecting environment, occupational health and safety and/or society. Any vendor with related records will be required to provide the report and improvement result, and the current practical implementation will be verified. Based on this, ChipMOS has built a set of new vendor selection process. When the unit in need request for new vendors, the Vendor Management Committee will evaluate, including for major dimensions: engineering technical capability, quality management system, price, service (including capacity and promise of delivery time), as well as the industrial history from the vendor's existing customers, to evaluate the risks of introducing the vendor in a holistic manner.

ChipMOS expects the vendors agree with our philosophy of the sustainable operation, and the requirement of ensuring product quality. We adopt the highest reviewing criteria for the evaluation; for the new vendors of the key materials, their certifications of international quality systems are verified, e.g. ISO 9001, ISO 14001, IATF 16949, and ISO 45001; implementation of the process management, green product, Responsible Business Alliance (RBA) and health and safety management are reviewed, to ensure the suppliers meeting the requirements in terms of environment and labor practices, including product quality, prohibition of hazardous substances, and employee protection.

The selection process of new vendors is as the following figure. These who pass the evaluation will be registered in ChipMOS' Approval Vendor List ("AVL") for subsequent daily management. In 2021, 2 new suppliers were added for more flexible deployment of supply and meeting customer needs.

Selection Process of New Vendors



6.1.5 Vendor Appraisal

Vendor Ranking

To ensure the normal operation of quality system in every vendor, ChipMOS schedules the audit plan for next year in every Q4 based on the appraisal scores from Q4 of last year to Q3 this year (frequency of audit is once a year). In 2021, quarterly appraisal result of each vendor of ChipMOS have reached B or higher (total 62 vendors). The standards will be insisted with, to improve with the vendors.

Appraisal Time Quarterly

Targets Qualified vendors of direct and indirect materials who have transaction during the quarter

- The vendors obtain A as the appraisal with certification of IATF 16949 or ISO 9001, or these who are not appraised but with certification of IATF 16949 or ISO 9001, may be audited via the quality system questionnaire.
- These who are appraised under B for any quarter (and scores between 70-90 points), or with any material irregularity and more than two of incidents are RMA/QAR related to materials that interrupt the product lines, or the irregularity is requested by customers for on-site audit, will be targets for the audit plans of next year.
- The audit definitions of the automotive vendors with IATF 16949 are as below: The appraisal result is A, and the audit is conducted every three year.

Appraisal Items

Quality	Delivery Time	Price	Engineering Ability
40%	20%	20%	20%

Approach The treatments and measures are categorized for A, B, C, and D four levels, to meet the expectation of society and ChipMOS

- Level A (appraisal scores more than 90 points): the quality of the supplied materials, engineering ability, delivery time and price are all deemed outstanding
- Leve B (appraisal scores 70 - 90 points): the quality of the supplied materials, construction ability, delivery time and price are all deemed normal
- In case of level C (appraisal scores 60 - 69 points), the vendors shall furnish the corrective measures within seven days, and will be re-audited by the Vendor Management Committee
- Being scored as level C twice in row will be disqualified from AVL.
- In case of level D (appraisal scores lower than 60 points), the vendors are disqualified from AVL directly

Vendor Audit

Schedule an audit plan for suppliers every year defined in "Supplier Management Measures", and the audits items based on the general direction of RBA. Review and clearly define the timing of evaluation through the audit plan, and explain the focus of the audit. 2021 for all suppliers. A total of 88 suppliers were audited for documents, of which 24 key direct material suppliers were assessed on site. In 2021, the compliance rate of RBA audit of all suppliers in the whole factory will reach 99%, and the audit compliance results in the past 4 years have been improved year by year.

Appraisal Time Annually

Targets Key material vendors

- The vendors obtain A as the appraisal with certification of IATF 16949 or ISO 9001, or these who are not appraised but with certification of IATF 16949 or ISO 9001, may be audited via the quality system questionnaire.
- These who are appraised under B for any quarter (and scores between 70-90 points), or with any material irregularity and more than two of incidents are RMA/QAR related to materials that interrupt the product lines, or the irregularity is requested by customers for on-site audit, will be targets for the audit plans of next year.
- The audit definitions of the automotive vendors with IATF 16949 are as below: The appraisal result is A, and the audit is conducted every three year.

Approach

a. Document review
b. Onsite evaluation for vendors is conducted regularly
c. For any disqualified vendors or any defect need to be rectified, the active coaching and training will be provided for improvement.

2021 Conformity of Vendor RBA Audit

Labor	Occupational Health and Safety	Environment
100%	99%	98%

Management System	Occupational Ethics
98%	99%

The Average Conformity of Vendor Audit Results in Recent 4 Years

2018	2019	2020	2021
96%	98%	98%	99%

Note: Calculation targets are 88 key material suppliers (30 in the north area and 58 in the south area)

Coaching and Training Vendors

Encouraging Vendors to Obtain the International Certifications

By correcting the defects found during the appraisal and audit, ChipMOS insists a positive and open attitude to discuss with the vendors, plus promotions and training from various aspects, to learn from each other while growing together, and ensuring no recurrence of defects. If vendors obtain certification of international standards, it is a plus for audit and evaluation. ChipMOS will keep on coaching vendors to obtain various certification of international standards.

Process of Coaching Vendors to Improve.





For instance, in light of the customers' needs for applications on automotive products, other than ChipMOS must be certified for the automotive international certification IATF 16949, the vendors' production qualities must be under tight controls. Therefore, other than including the automotive requirements in the annual quality audit surveys to vendors, the process audit form for the German vehicle supply chain quality management system VDA6.3 is required to be completed by the vendors for automotive products. It is ChipMOS's responsibility to enable suppliers to understand the requirements for automotive specifications better and obtain the certified quality via ChipMOS's audit and coaching process for suppliers; therefore, the percentage of suppliers obtaining IATF 16949 increased to 42% in 2021 from 37% in 2020.

Vendors Obtaining Certification of International Standards in 2021

ISO 9001	ISO 14001	ISO 45001	IATF 16949
97%	84%	33%	42%

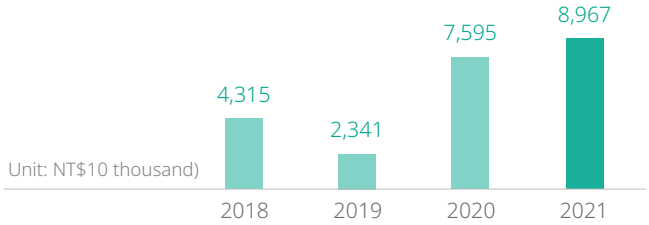
Note 1: Calculation targets are 88 key material suppliers (30 in the north area and 58 in the south area)
Note 2: ISO 45001 is the certification related to occupational health and safety; IATF 16949 is the certification for automotive products; the two certifications are relative difficult to obtain, but ChipMOS is actively coaching suppliers to move towards this goal.

6.1.6 Green Procurement



To promote the green procurement and consumption, ChipMOS's goal is to procure the materials and equipment lowering the environmental impacts and meeting the quality requirements, and procures the products with international and domestic environmental labels recognized by the Green Procurement Program of the Environmental Protection Administration. Owing to the active promotion of the Company, for consecutive 4 years from 2018 to 2021, the Company has been recognized as an "Excellent Enterprise for Green Procurement" by the Hsinchu County Government and Tainan City Government.

Statistics of Green Procurement Amounts in Recent Four Years



Note 1: The data of procurement amounts are based on the Company's filing to the Environmental Protection Administration for the disclosure on the "Private Enterprise and Organization Green Procurement Reporting Platform"
Note 2: In 2019, no green building material was procured, so the green procurement amount is relatively lower

6.2 Conflict Mineral Management

TC-SC-440a.1

Conflict minerals refer to the minerals mined by the criminal groups with armed conflicts an violating human rights, in particular gold, tin, tantalum, and tungsten mined in Democratic Republic of the Congo and neighboring countries, i.e. 3TG. For the corporate social responsibility and implementation of international justice, while being aligned with Dodd-Frank Act of 2010, H. R. 4173 passed by the U. S. Congress, and complying with the due diligence guides of Organisation for Economic Cooperation and Development (OECD), ChipMOS does not purchase the conflict minerals from the high-risk areas (Note 1), and oversees the supply chain to ensure the sources of materials, to avoid the conflict minerals are used in raw materials or during the production process. Our goal is to fully procure non-conflict mineral raw materials. Meanwhile, ChipMOS has made the following statement, to express the concern about the conflict mineral issues; to fully communicate the conflict mineral management requirements of ChipMOS, the statement is publicly disclosed on the Company's website:

- **ChipMOS fully supports and responses to the boycott of conflict minerals, undertakes to comply with Non-Used Conflict minerals Policy in the RBA code of conduct, does not accept conflict minerals (such as gold (Au), tantalum (Ta), tin (Sn), tungsten (W)) from the Democratic Republic of Congo and its neighboring countries which to be used directly or indirectly to subsidize armed conflicts.**
- **ChipMOS clearly communicated to its supplier and is committed to require suppliers to inform ChipMOS immediately upon knowledge of using conflict minerals in the products. ChipMOS's suppliers are required to execute "RBA Conflict Minerals Reporting Template (CMRT)" and "Non-Used Of Conflict Minerals Guarantee Letter".**



Note 1: Information of the conflict-affected and high-risk areas (CAHRA) of OECD (https://www.cahraslist.net)

Comforming to the Annual Filing Procedure of the U. S. Securities and Securities and Exchange Commission

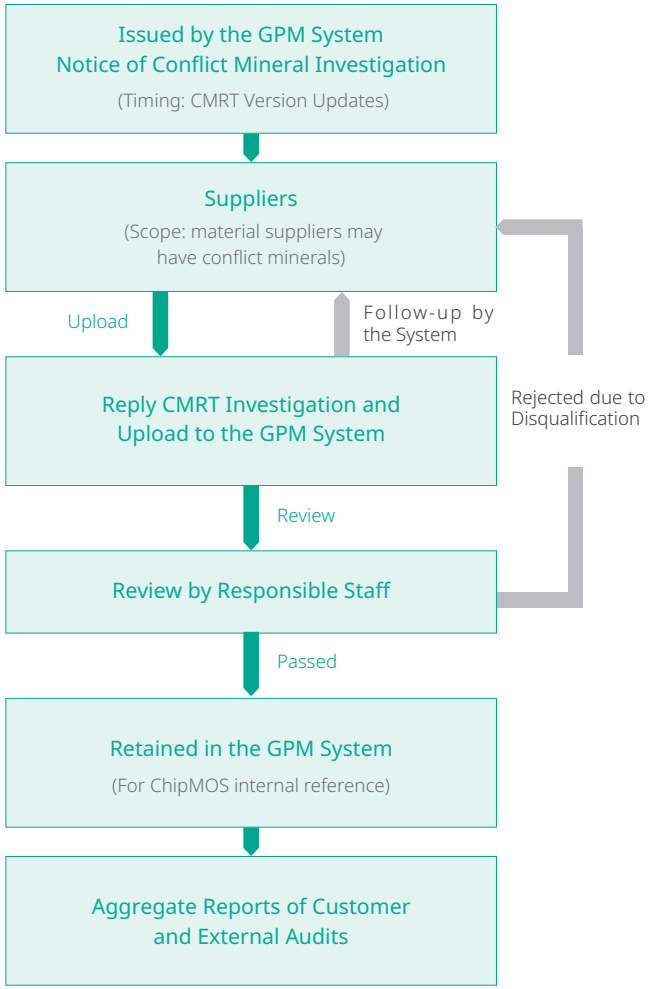
Requirements of the conflict minerals are the U. S. regulations, and mandatory to all public listed companies in the U. S. Since 2014, ChipMOS has included the filing of the conflict minerals in the annual financial reports filed to the SEC, clearly stating the survey process and the outcomes.

Drive Vendors to Procure 100% of Non-conflict Minerals

ChipMOS respects and continues monitor the international human right issues, while leading our vendor partners to investigate the sources of metals used in the products in detail and faithfully, to ensure the sources of gold, tin, tantalum, and tungsten are not from mines in the areas impacted by the conflicts and high-risk areasFor the replies from the vendors, ChipMOS conducts due diligence, to ensure the smelters are all 100% smelters and refineries in the qualified list of the Responsible Minerals Initiative (RMI), and the RMI qualifications of these smelters and refineries are verified quarterly.



Quarterly Confirmation of RMI Compliance of Smelters or Refiners



Note: Conflict Minerals Reporting Template, or CMRT

Sources of Minerals Are 100% Conforming to the Non-conflict Mineral Program.

All the sources of the materials and minerals from ChipMOS' supply chain have been 100% conforming to the non-conflict mineral policy from 2014 to 2021. All smelters have participated and passed the responsible procurement procedure verification by the Conflict-free Smelter Program (CFSP). Looking to the future, ChipMOS will continue to encourage vendors to implement the participation of CFSP.

For the vendors of the materials possibly containing conflict minerals, ChipMOS complies with CMRT for investigation. The key points of the investigation report are as following:

- In 2021 investigation to the raw material vendors, the vendors under the scope of conflict mineral management were 39 vendors in Taiwan.
- Among the raw material vendors related to the conflict minerals, the smelters include 47 for gold, 34 for tin, 1 for tantalum, and 24 for tungsten.
- The sources of metals contained in materials: gold was mainly from Japan and China; tin was mainly from Indonesia and China; tungsten was mainly from China; and tantalum was mainly from China an Japan; none of the metal was from the illegaal smelters in Democratic Republic of the Congo and neighboring countries.

CHAPTER

7

Inclusive Workplace

94.12%

Valuing the talent development, and the percentage of managers transferred from employees is as high as 94.12%.

100%

100% implementing the employment of mentally and physically disabled employees, and even exceeding the statutory requirement, while working with the groups of underprivileged to promote the employment.

80%

The employment contract renewal rate of the foreign laborers were 80% or higher during 2018-2021, and the foreign spouses have been employed as well.

>25%

The activities of the work-family balance nature are more than 25%, and it is committed to create a working environment with positive supports.



Management Approach

Policy

Comply with the domestic and international labor regulations, implement the human right protection, committed to the diverse and inclusive, health and friendly workplace environment with employee growth.

Commitments

Value and take care of employees, establish a good salary and benefit system, talent cultivation program, implement the work-family balance, and create a happy and harmonious workplace

Resources

- ESG Committee and Environmental Safety, Health and Energy Management Committee
- Dedicated unit for human resource management

Specific Actions

- Diverse and equal talent recruit management
- Competitive overall rewards and long-term incentives
- Talent incubation and diverse self-learning
- Overall health management and safety protection

Evaluation Mechanism

- RBA audit, internal audit and customer audit
- Sustainability evaluations by investment institutions

7.1 Attraction and Retention of Talents

102-8, 103-2, 103-3, 202-2, 401-1, 405-1, TC-SC-330a.1

7.1.1 An Equal Employment Environment

" We emphasize the human rights at work and the equal remunerations; there is no difference between females and males. Equal and fair job opportunities are provided to the employees, and no difference due to race, gender, age, mental and physical disability, religion, or ethnicity."



Workforce Structure

In 2020, COVID-19 pandemic raged all over the world, and severely impact the global economy; the semiconductor industry was also challenged considerably. Under the impacts of pandemic, the economic patterns have changed; the demands in markets like remote working and IoT have increased significantly. ChipMOS grasped the market trends, and actively invested in the digital transformation, which in turns enabled ChipMOS defied the trend and grew continuously; in 2021, with the expansion of AI and 5G applications, the semiconductor industry has been innovating, progressing, and driving the economic growth. ChipMOS also accelerated the development of the related technologies; meanwhile, with increase demands from various fields, the Company has continued to expand the capacities for driver IC and memory packaging and testing, driving the related talent demand, and creating more excellent jobs.

As of December 31, 2021, the full-time employees in Taiwan and the overseas subsidiary were 5,547; 5,540 are employees in Taiwan, accounting 99.87%; seven employees in the overseas subsidiary, accounting 0.13%. In the following sections, the statistic boundary is limited to the employees in Taiwan.

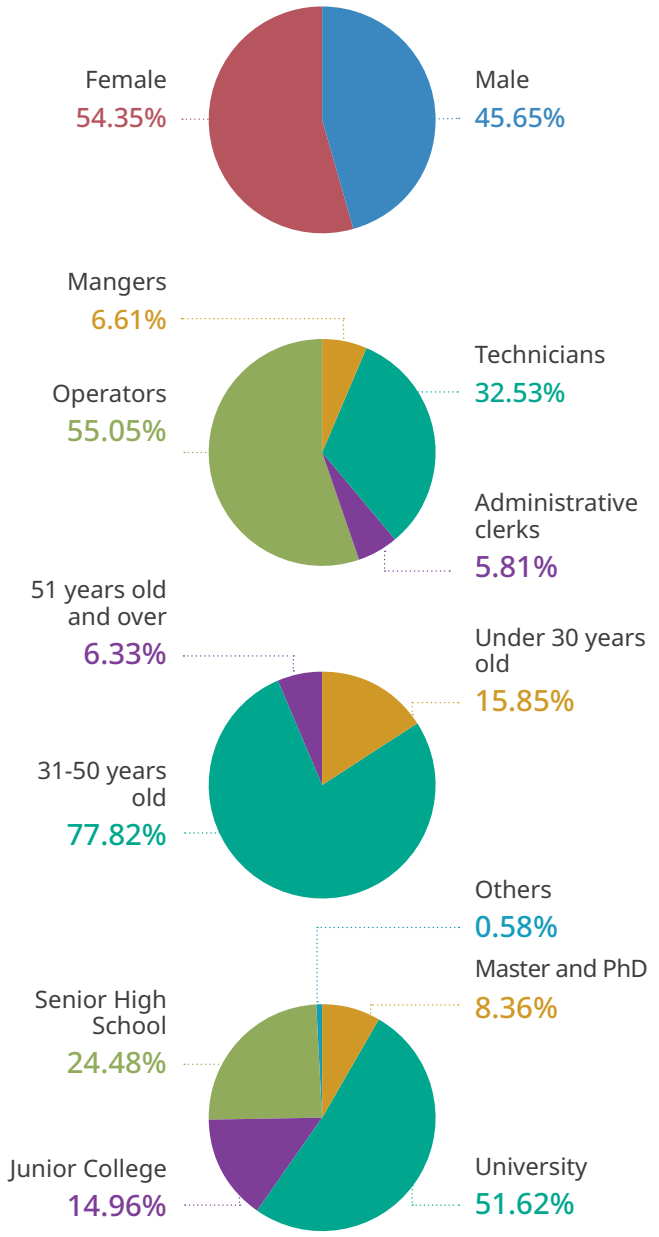
For the age structure of employees, ChipMOS complies with the regulatory and statutory requirements, not hiring child labor. The average age is 38.45 years old, and the major workforce are people in their youth and middle adulthood. The age group of 31-50 years old accounts 77.82% in all employees; 15.85% is under 30 years old, and 6.33% for 51 years old or older. Since the Company's major revenue comes from the production lines of packing and testing plants, the majority of employees is the operators, accounting for 55.05%; followed by the technicians, accounting for 32.53%; mangers account for 6.61% and administrative clerks are 5.81%.

ChipMOS regulary review the composition of the workforce structure of employees; other than conforming to the regulations, the Company formulates the strategies to recruit excellent talents, to hire competent professionals for maintaining the industrial competitiveness. In 2021, the percentage of masters and PhDs hired was 12.73%, and 52.17% was bachelors, to adapt to the feature of the semiconductor industry that the technologies have been continuous improving.

Distribution of Employee Demographic

			Male	Percentage	Female	Percentage	Total	Percentage
Identity	Non-regular	Taiwanese nationality	2,372	93.79%	2,050	68.08%	4,422	79.82%
		Foreign spouse	0	0	10	0.33%	10	0.18%
	Regular	Taiwanese nationality	13	0.51%	10	0.33%	23	0.42%
		Foreign laborer	144	5.69%	941	31.25%	1,085	19.58%
	Total		2,529	100%	3,011	100%	5,540	100%
Type of Position	Mangers		289	11.43%	77	2.56%	366	6.61%
	Technicians		1,447	57.21%	355	11.78%	1,802	32.53%
	Administrative clerks		177	7.00%	145	4.82%	322	5.81%
	Operators		616	24.36%	2,434	80.84%	3,050	55.05%
	Total		2,529	100%	3,011	100%	5,540	100%
Age	Under 30 years old		354	14.00%	524	17.40%	878	15.85%
	31-50 years old		2,016	79.71%	2,295	76.22%	4,311	77.82%
	51 years old and over		159	6.29%	192	6.38%	351	6.33%
	Total		2,529	100%	3,011	100%	5,540	100%

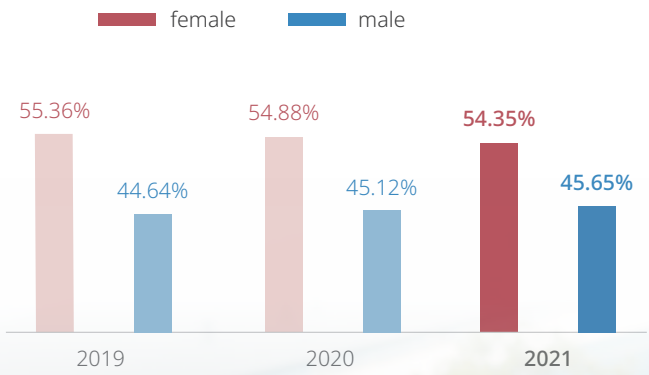
Note 1: The base date of data is the in-service workforce on December 31, 2021.
Note 2: There are 23 regular Taiwanese employees, including 15 contracted employees with disabilities, 2 advisers, 5 short-term contracted employees, and 1 intern.



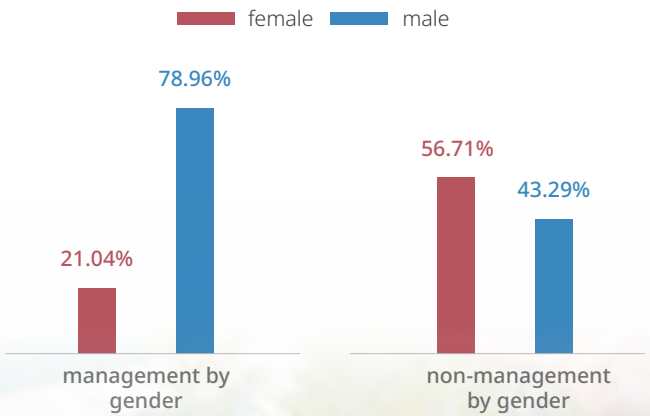
Female Workers

In our actively diverse workplace environment, female employees accounted for 54.35% of all employees in 2021, and the ratio of male/female employees over the years has been almost 1:1, showing that we applies meritocracy, and gender is not our concern when selecting talents; employees are treated equally, and be it recruitment or promotion, gender does not matter. We will continue to monitor the issues of female employees. While respecting the pursuit of each employee's goals, we also continue to optimize the relevant benefit system, so that more female employees will stay for longer, to continuously exert their personal values and make contributions to the Company and society.

Proportion of Male and Female Workers in the Past Years



Proportion of Male and Female Workers in Management and Non-Management





7.1.2 Diversity and Inclusion

Diversity Policy for Employment

The nationality distribution of ChipMOS employees, Taiwanese nationality accounts for 78.74%, foreign nationality is 21.26%, mainly Filipino nationality. The Company provides proper care for foreign workers, the renewal rate of foreign workers during 2018 to 2021 has been above 80%. Other than the Filipino migrant workers, in 2021, due to the impact of the COVID-19 pandemic on the talent market, the Company started to hire foreign spouses to promote the employment rate, regardless of nationality, to provide foreign spouses with learning opportunities and enable them to acquire skills, while also reducing the Company's shortage of workforce, and thus a win-win situation is achieved. In terms of management, ChipMOS's management are 100% of the locals.

ChipMOS's Principles of Care for Foreign Workers

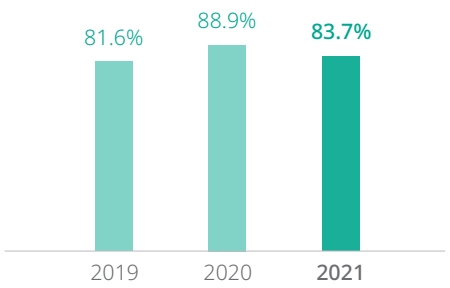


The Proportion of Local Residents Employed as General Staff in 2021

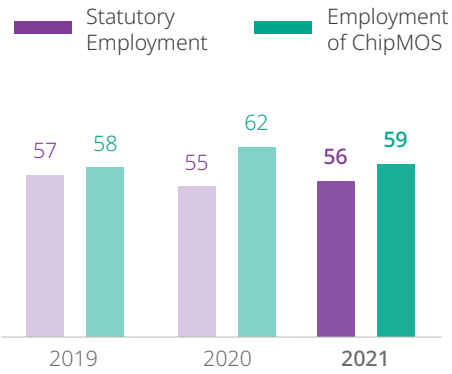
Category	Local	Non-local	Subtotal	Proportion of local resident
Hsinchu fab.	534	117	651	82.03%
Zhubei fab.	654	174	828	78.99%
Zhubei fab. 2	220	48	268	82.09%
Hukou fab.	184	53	237	77.64%
Tainan fab.	2311	649	2960	78.07%
Tainan fab. 2	176	54	230	76.52%
Total	**4,079**	**1,095**	**5,174**	**78.84%**

Note: Local residents refers to the Taiwanese employees

2019-2021 Employment Renewal Rate of Foreign Workers



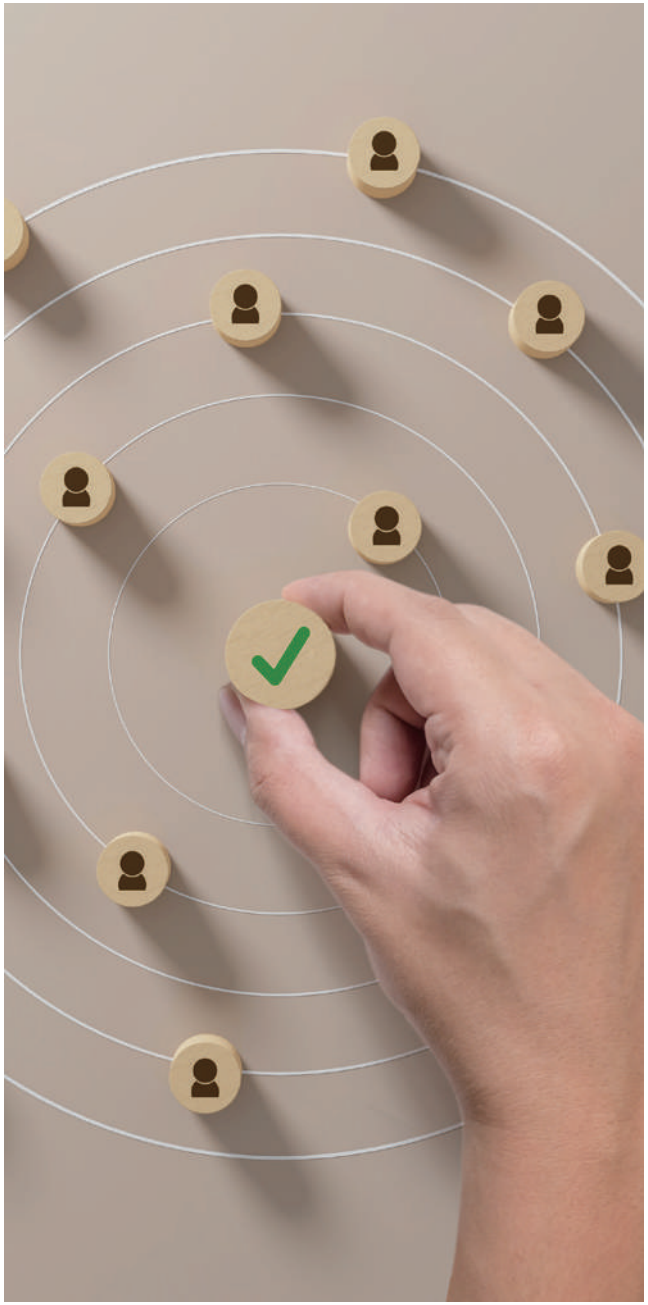
Headcounts for Disable Employees in Recent Three Years



Note: The number of disabled headcounts to be hired is based on 5,608 insured of the labor insurance as of December 1, 2021.

Provide Employment Opportunities for the Disabled

ChipMOS creates a diverse and friendly workplace, and employs the disabled. As of the end of December 2021, 39 disable employees have been employed (equivalent to 59 disabled employees in total), or an employment rate of 1.06%, exceeding the statutory standards. Furthermore, to promote the employment of disabled, we are committed to caring for the employment opportunities of underprivileged groups, by working with the associations for the visually and hearing impaired, to recruit these disabled. In 2021, more than 50% of the disable employees in ChipMOS came from the collaborative channels with the underprivileged groups. To create a friendly working environment for hearing-impaired employees, the production lines purchased of translation machines as an assistance for hearing-impaired employees to adapt to the workplace successfully; their jobs are also appropriately adjusted depending on their learning progress; meanwhile, visually impaired massage therapists are employed in the plants to provide services. The guide dogs are permitted to enter the plants to accompany them to work and assist the visually impaired to walk safely. In the future, we will continue to spare no effort to provide diverse employment channels, for providing suitable job positions for disabled, and create a barrier-free and friendly working environment.



7.1.3 Talent Operation

ChipMOS is actively positioning for the multi-dimensional markets, catches market trends and product growth opportunities immediately, and continuously reserves innovation and talent momentum to improve ChipMOS's competitive advantages continuously. Through various recruitment channels, other than the recruiting sites, the official website, campus cultivation activities, and participation in government projects, we also actively cultivate social media platforms, including LinkedIn and Facebook, and actively establishes interpersonal networks with industry elites to improve the precision of recruitment and seeking the most competent talents. Meanwhile, through various internal and external education and training systems, the professional skills of employees are improved; by providing various benefit measures and a good working environment, the employees may share the operating results and be cohesive.

In 2021, ChipMOS continued to monitor the issue of youth incubation, invests resources to cultivate the campus, and actively recruits outstanding young talents. The statistics shows that in 2021, total 966 new employees were hired in ChipMOS, and 50.10% of them are young people under 30 years old, continuing to inject vitality and enthusiasm into ChipMOS.

Number of New Recruits in 2021

	Male		Female		Total	
Age	Number of people	%	Number of people	%	Number of people	%
30 years old and under	262	47.64%	222	53.37%	484	50.10%
31-50 years old	280	50.91%	190	45.67%	470	48.66%
51 years old and over	8	1.45%	4	0.96%	12	1.24%
Total	550	100%	416	100%	966	100%

Diverse Recruitment Channels

ChipMOS continues to monitor and catch the market trends. Due to the increasing production demands in the semiconductor industry, we actively reserve talent momentum to maintain the competitive advantages in the industry. In the post-pandemic era, ChipMOS adjusts its recruitment policy, using digital tools and flexible strategies, to replace the original offline recruitment activities with the online interview process. In 2021, 412 employees were hired through digital media channels, accounting for 42.65% of the new recruits. Meanwhile, the diverse recruitment channels are expanded: in addition to recruiting sites, the official website, employment service centers, employee's recommendation, substitute civilian servicemen for R&D, the Company increases unconventional flexible working patterns and recruits a total of 129 short-term contracted workers and part-time workers; the Company also actively cultivates in campus, planning industrial-academic collaborations, as well as actively cooperates with the government's employment programs by participating in the "The Youth's Employment Ultimate Program" and "Secure Employment Program," seeking to contact more talents willing to work through promotional channels of the public sector, while enjoying the benefit of reducing the cost of recruitment.

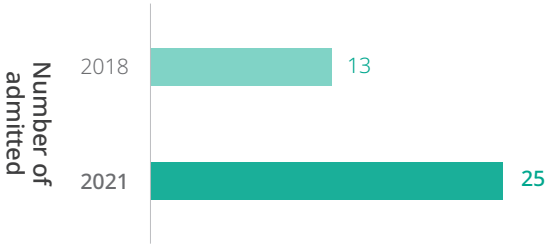
The Percentage of New Recruits Sources in 2021



The Youth's Employment Ultimate Program

In 2018 and 2021, ChipMOS participated in the "The Youth's Employment Ultimate Program" planned by the Workforce Development Agency, MOL. The purpose is to integrate the resources from industries, schools, and trainings, to enhance the willingness of hiring youth, providing practical vocational training to youth, to increase employment opportunities for young people aged 15-29 years old. Total 38 people were admitted to this program in the two years. After deducting these who resigned early, 81.58% of them participated in the training, and total subsidy of NT$2.48 million was applied and received, a remarkable result.

Participation in The Youth's Employment Ultimate Program in 2021



Note: The amount of grants in 2021 is an estimate and the allocation is expected in 2022.

Secure Employment Program

Affected by the COVID-19 pandemic in 2021, the unemployment rate rose. ChipMOS actively participates in various government employment benefit measures, to assist and stabilize the employment of citizens. Since September 2021, the Company has participated in the government's Secure Employment Program, to provide high-quality jobs and increase the willingness of the people to work; as of December 2021, total 23 people applied for this program and have been successfully hired.

7.1.4 Cultivation in Campus and Recruitment for Young Students

ChipMOS is committed to semiconductor testing and packaging related academic research and technological innovation. Insisting the original intention of cultivating high-quality talents, through the exchange between the academic technologies and industrial practice, students are able to experience the real work in a workplace before entering the society. It is hoped that young students are able to better understand the industry trends, and also affirm and verify with what they have learnt in school, to enhance the competitiveness of the new generation young people in the workplace and offer more stage for them. Furthermore, it promotes the concept of corporate culture and job vacancies, and encouraged young students to accept the embrace of the semiconductor industry.



Therefore, we go to colleges and universities every year to recruit various professional talents. In 2021 we participated in 8 campus talent recruitment activities; meanwhile, we plan industrial-academic collaboration. In addition to the previous college partners, five schools, including Minghsin University of Science and Technology, China University of Science and Technology, Chung Hua University, Southern Taiwan University of Science and Technology, and Kun Shan University of Science and Technology have signed with us for the internship, scholarship and grants collaborations. On top of the previous summer internship opportunities, additional semester-based and academic-year internships have been offered to provide students with more choices. Through the internship, students further learn about ChipMOS's corporate culture and on-site work conditions. We look forward to promote the practical experience opportunities for "integration of learning and application; employment upon graduation" with more schools.



Industrial-Academic Collaboration Projects

Projects	Description of Collaboration	Collaborating Colleges	Number of Retained Employees	Total Number of Participants in the Project	Retention Ratio	Remark
Interns	Providing six-month internship projects for students entering their fourth year in the departments of the collaborating colleges to enhance their employment competitiveness.	Chung Yuan Christian University National University of Kaohsiung Minghsin University of Science and Technology China University of Science and Technology Chung Hua University Kun Shan University of Science and Technology Southern Taiwan University of Science and Technology	25	68	36.76%	Number of Retained Employees: Employed by ChipMOS after internship
Scholarships and grants	Encouraging outstanding students by providing scholarships and grants, seeking to help and incubate professional talent in the semiconductor field through the scholarship and grant program.	Chung Yuan Christian University Minghsin University of Science and Technology China University of Science and Technology Chung Hua University Kun Shan University of Science and Technology Southern Taiwan University of Science and Technology	36	52	69.23%	Number of Retained Employees: scholarships and grants applicants employed by ChipMOS Total Number of Participants in the Project: number of the applicants for scholarships and grants
Employment-oriented program	Realize the philosophy of talent incubation including industrial-academic links and integration of learning and applications. Through courses, seminars, internships, and employment, it is helpful to incubate talents needed by enterprises.	Chung Yuan Christian University Southern Taiwan University of Science and Technology	14	376	3.72%	Number of Retained Employees: employees retained by ChipMOS after attending the employment-oriented program
Industrial-academic classes	Implement connections from academic expertise to industrial practice; talent is incubated via on-site practice and machine operations.	TransWorld University Far East University Kao Yuan University Kun Shan University of Science and Technology	18	40	45%	Number of Retained Employees: employees retained by ChipMOS after full participating for 4 years Industrial-academic classes

Note 1: Retention ratio = number of retained employees/total number of project participants * 100%
Note 2: The statistics of the industrial-academic classes are from 2015 to 2018. We have continued to sign collaborations with colleges, but the classes failed to be organized due to the impact of the COVID-19 pandemic; we will continue to seek opportunities of collaboration in the future.
Note 3: The cumulative number of participants is the cumulative number of participants since the establishment of industrial-academic collaborations since 2013

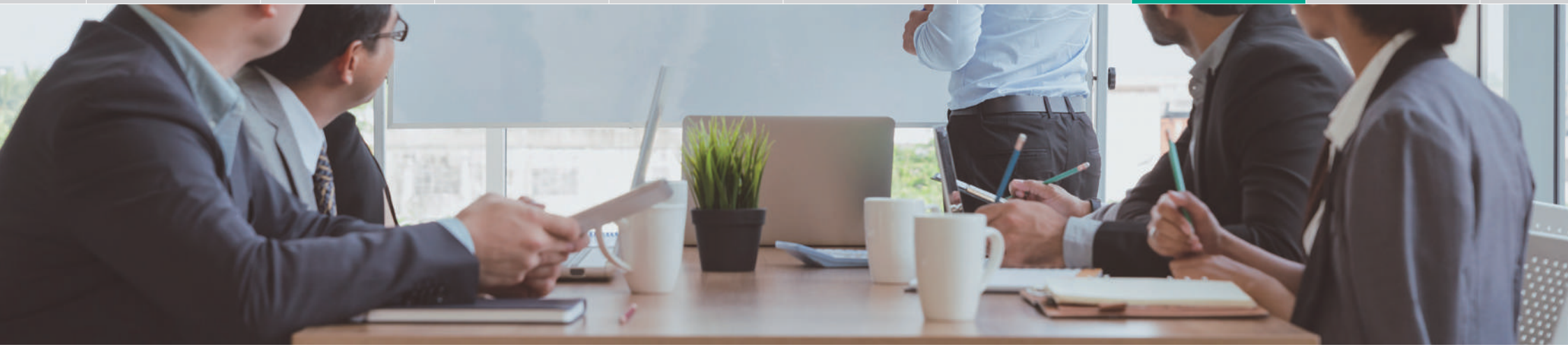


7.1.5 Activating the Organization and Trigger Potentials in Employees

ChipMOS deeply understands that the continuous growth and sustainable operation of an enterprise need to rely on the efforts and contributions of all employees."Talent" is the most important asset we value. By providing a excellent working environment, competitive benefits, complete education and training, and a healthy working environment, not only employees are willing to stay in their jobs, but also willing to recommend the Company to others, and thus forge closer partnerships with the Company.

In addition to the external recruitment, we are committed to implementing an internal job transfer system, making internal job vacancy information transparent, and providing employees with a complete and flexible development space. The flow of internal talents is promoted, and the diverse professional skills of employees are developed, to expands a broader career planning, while taking into account of the overall organizational and personal career development needs through this approach. In 2021, due to the serious labor shortage in the semiconductor market, various companies have adopted preferential policies, resulting in the increased incentives for employees to change jobs, and the turnover rate was 1.12%; the rate of successful matching for internal transfer was 67.63%, lower than 73.58% in 2020, but a certain level was kept. In 2021, to encourage employees to recommend external outstanding talents and reinforce the internal willingness of employees to transfer positions for better work skills, a system of recommendation bonuses for activating talent was established. There are 25 qualified candidates, including 20 self-recommended and 5 recommended external talents; which was helpful to retain outstanding talents.

ChipMOS values and cherishes every talent, and regularly reviews and enhances the talent retention measures. For the resigned employees, the line manager and the HR department conduct resignation interviews and care, to understand the reasons of the resignation, provide assistance as much as possible, and offer internal job transfer opportunities timely. A smooth employment channel is provided to the previous employees who are willing to return to the Company. In 2021, the Company offered the employee return reward program to encourage outstanding employees to return to the Company. In 2021, there were 25 returned employees, including 17 direct employees and 8 indirect employees, as a continual promotion for the circulation of talents. We also actively build a talent pool. Not only for the data analysis of workforce, but also we grasp the strengths of employees and take the initiative to provide opportunities for certain suitable employees to rotate and exert their strengths, to realize the goal of suitable talents for suitable places.



Resigned Employees in 2021

	Male		Female		Total	
Age	Number of people	%	Number of people	%	Number of people	%
30 years old and under	87	21.32%	97	28.95%	184	24.76%
31-50 years old	310	75.98%	236	70.45%	546	73.49%
51 years old and over	11	2.70%	2	0.60%	13	1.75%
Total	**408**	**100%**	**335**	**100%**	**743**	**100%**

2019-2021 Turnover Rate Statistics

2019	2020	2021
0.76%	0.75%	**1.12%**

Note: Turnover rate = number of people resign in the current year ÷ average number of people in service or the year [(Number of employee at the beginning of the year + number of employee at the end of the year)/2] x 100% ÷ 12



7.2 Employee Incentives and Benefits

201-3, 401-2, 401-3, 405-2

7.2.1 The Competitive and Fair Remuneration System

Talents are not only the value creator of an enterprise, and a key element for the sustainable growth of an organization, but also the most important strategic resource for a company in a rapidly developing competitive environment. To recruit and retain outstanding talents, we provide a comprehensive remuneration system and good working conditions. The remuneration includes salary, allowances, and bonus. ChipMOS's remuneration policy aims to support the Company's goals; externally, it is to maintain the competitiveness of the salary level in the human market, and internally, it is to recognize the performance of employees, and reward outstanding personnel as the encouragement to partners who grow together with the Company.

Regular Review

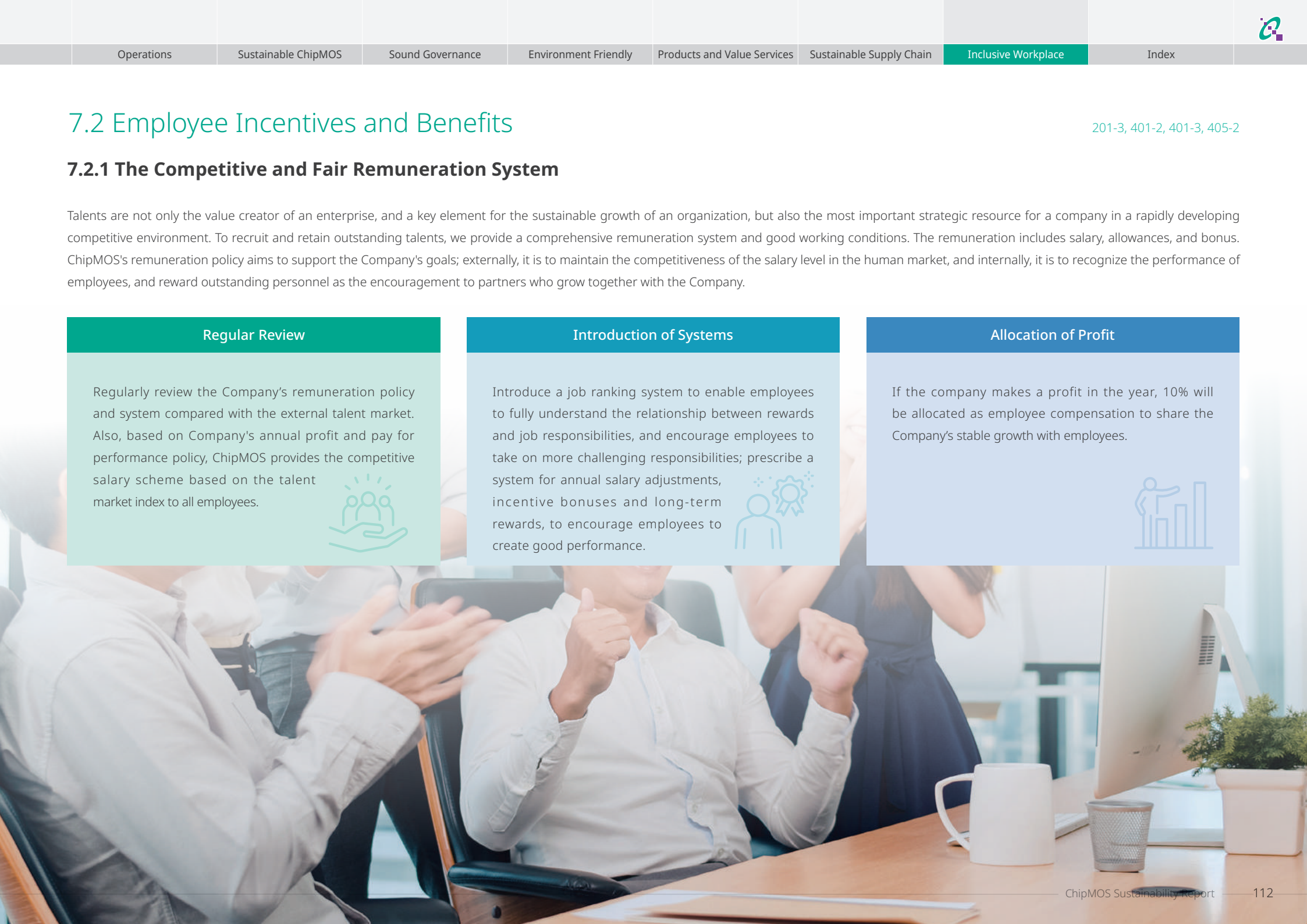
Regularly review the Company's remuneration policy and system compared with the external talent market. Also, based on Company's annual profit and pay for performance policy, ChipMOS provides the competitive salary scheme based on the talent market index to all employees.

Introduction of Systems

Introduce a job ranking system to enable employees to fully understand the relationship between rewards and job responsibilities, and encourage employees to take on more challenging responsibilities; prescribe a system for annual salary adjustments, incentive bonuses and long-term rewards, to encourage employees to create good performance.

Allocation of Profit

If the company makes a profit in the year, 10% will be allocated as employee compensation to share the Company's stable growth with employees.



Implement the Salary Policy of Equal Pay for Equal Work

ChipMOS's remuneration policy and salary standard are aligned with the policy of equal pay for equal work, and no difference for all ChipMOS's locations in Taiwan. ChipMOS always applies the policy with rigorous attitude and regulations.

Fair Remuneration

Realize the value of the same remuneration for the same work

During the hiring process, insist on the principle that there shall be no different remuneration for the same position due to gender, race, religion, age, marriage and work location, and that treatment shall be fair.

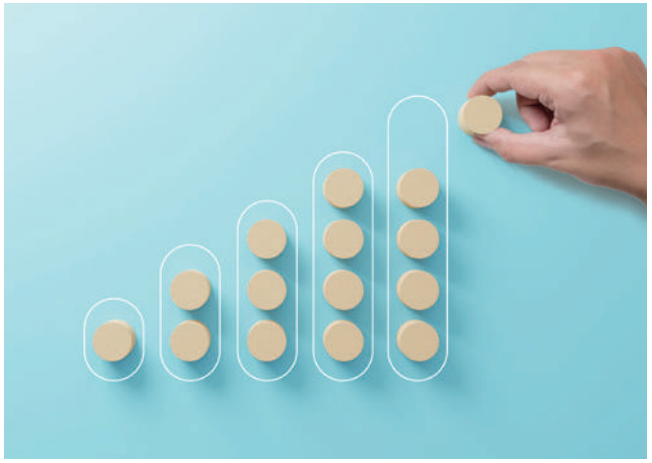
Gender-Equal Remuneration Policy

For the same job position, we have the identical evaluation criteria, i.e. when female and male employees of the same job level create performance and value for the Company, the appraisal indicators are based on their performance.

Salaries and Benefits Expenses

(Unit: NT$ 100 million)

	2019	2020	2021
Employee salary expenses	51.4	49.7	**56.7**
Other benefit expenses	9.4	10.4	**10.9**

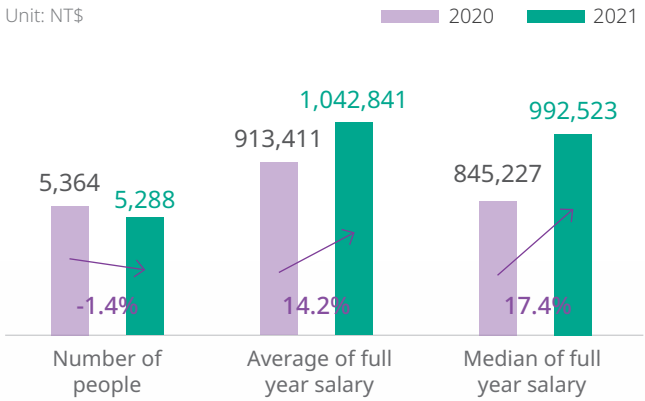


Differentiated by job type of ChipMOS in 2021, the female-male salary ratio of indirect personnel was 1:1.11, and the female-male salary ratio of direct personnel was 1:1.17. The difference is mainly due to performance and qualifications; the standard salary of entry-level female and male personnel are complied with Taiwan's labor law and regulations in 2021, and the competitive salaries were reviewed based on employees' positions, job description, educational background, and reference of salary survey report. There is no salary difference because of the gender.

	Remuneration Proportion		Ratio of Standard Salary to Basic Salary of Lower-level Personnel
	Indirect Personnel	Direct Personnel	
Female	1	1	1.23
Male	1.1	1.17	

Note 1: The 2021 regulatory requirement of the basic salary in Taiwan was NT$24,000.
Note 2: The remuneration proportion is calculated on the permanent employees in-service on December 31, 2021, and received full amount of salaries and bonuses in 2021.

In 2021, the full-time non-management employees, the average salary, the median of salary, and the differences between the aforesaid three and in 2020 are as following:





7.2.2 Long-Term Incentive Measures

"Talents are the key to ChipMOS's sustainable and competitive operation. In order to recruit and retain outstanding talents, we continue to optimize retention programs for encouraging employees serving in ChipMOS."

For more than 5 consecutive years, the annual salary adjustment rate is about 3%~5%; the actual rate adjustment is linked to individual performance to encourage employees with excellent performance; we conduct model employee selection activities every year to recognize the outstanding performance of grassroots employees; praise the long-term employees with bonuses and trophies at the year-end paty , and thank the senior employees for their long-term commitment and contribution to the company.



Double-track promotion system

Based on their capabilities and performance, employees are promoted to managerial or project/technical positions.

Seniority award and the employees of year

- The long-term endeavors and contributions made by employees to the organizations are recognized
- Outstanding employees are praised to remain models for the team

Salary adjustment and rewards

- In the last five years, the salary adjustment has been about 3% to 5%, to maintain the Company's overall competitiveness
- The Company's operating results are linked to employee performance, to distribute incentive bonuses and employee remuneration as timely encouragement

Service bonus

Improve competitive advantages; employ and develop excellent talent

Patent rewards

Encourage employees to brainstorm,and stimulate their creativity.

Proposal rewards

- Recognize the improvement suggestions proposed by employees regarding, working processes, technologies, or systems
- Enhance technologies, improve process capabilities, for a good internal cycle

Benefit and Leave System

We provide a vacation system that is superior to the law, and expand the coverage of group insurance to employees' family members, so that employees can properly take care of the health and life of family members after work, bringing more protection.

The system and practice of ChipMOS superior to the law

Insurance	✓ Provide group insurance benefits, including life insurance, injury insurance, medical insurance, cancer insurance, ✓ The insurance costs of employees and their dependents (including parents, spouses and children) are fully borne by ChipMOS
Bereavement Leave	✓ 6 days of paid leave is permitted for bereavement of one's grandparents, spousal grandparents. ✓ 3 days of paid leave is permitted for the bereavement of other direct relatives.
Friendly Measures	✓ Resident convenience store, non-profit coffee machine ✓ Milk collection room, book reading room, billiard room, billiard room ✓ Exclusive outdoor smoking area
Convenient Life	✓ Meals served in the staff cafeteria ✓ Complimentary supper and breakfast for night shift staff ✓ 105 self-owned dormitories and 174 leased dormitories ✓ Provide free shuttle service for technicians, foreigners and employees in Kaohsiung area ✓ Free car parking spaces - 1,335 cars, 1,606 locomotives ✓ Pregnant women and special needs employees reserve exclusive parking spaces
Mental Stress Relief	✓ Employee Assistance Program (EAP) ✓ Free massage by the visually impaired therapists
Life Care	✓ Festival DIY/seminars with celebrities ✓ Discount at contracted merchandisers (711 merchandiser in total)

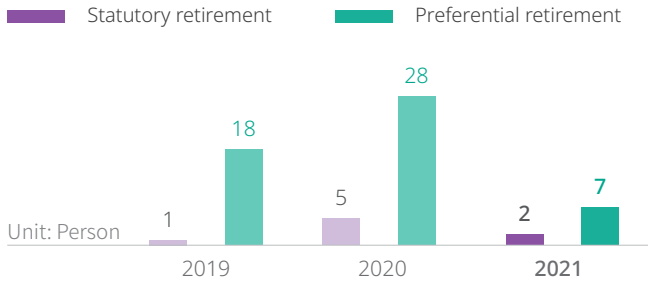


Retirement System

We understand that employees will start a new life after retirement. In order to assist employees to make the preparation for dealing with changes after retirement, the company develops the policy and regulations based on the law for securing the authorities of pensions. Furthermore, the Pension Supervision Committee regularly reviews the pension accounts and consult with the accounting firm to update the regulations of pension management.

Applicable Legal Basis	Labor Standards Act	Labor Pension Act
Retirement Conditions	Statutory retirement: • People who have worked for more than 15 years and are at least 55 years old • Those who have worked for more than 25 years • Those who have worked for more than 10 years and are over 60 years old Preferential retirement: • Those who have worked for more than 10 years, and the seniority plus age is 58	-
Pension System	Old system pension - company pension account	New system pension - individual pension account
Implementation	• Established the "Retirement Reserve Supervision Committee". • Provision of pension in full according to law • As of 2021, the reserve funds under old pension system has amount of approximately NT$450 million.	• Promoted by 6% of the employee's monthly salary • Employees who joined ChipMOS prior to June 30, 2005 (inclusive), had freely choose to adopt the new pension scheme would enjoy the new pension.
Retirement Allowance as a Percentage of Salary	Employer: 2% Employee: 0%	Employer: 6% Employees: 0%~6%
Proportion of Employees Participating in the Pension System	100%	100%

To show our appreciation for the contributions that senior employees have made during their long years of service, and to provide them the best care post-retirement. Moreover, ChipMOS also provides "preferential retirement" plan more favorable than statutory regulations, so that the senior employees can apply for their needs.





7.2.3 Full-Rounded Insurance Plans



ChipMOS provides social insurance that complies with laws, protects the basic rights and interests of employees, and also provides group insurance benefits that are superior to laws, covering life insurance, injury insurance, medical insurance, cancer insurance, etc., as well as travel insurance for business trips. We not only take care of employees, but also care about the healthy life of their family members. In order to allow employees themselves and their family members to have complete pensions and inpatient medical care in the event of a serious illness, so that the family economy can be supported, ChipMOS has been providing family-oriented group insurance, and fully pay the insurance costs of employees and their dependents (including parents, spouses, children) for over 16 years, with an average annual investment of more than NT$20 million in insurance costs.

We arrange special personnel to serve employees, so that employees can have a deep understanding of group insurance benefits and rights and improve the efficiency of application operations. By providing face-to-face consultation and claims reception, ChipMOS and the insurance agency work hand-in-hand to help and to care for our employees and their families.

2021 Employee Group Insurance

Subject of Insurance	Number of Insured	Premiums paid by the Company	Number of Claims	Actual Claim Amount	Rate of Claim
Employee	5,561	17,679,600	633	17,237,093	97%
Parent	4,291	6,035,315	426	4,787,176	79%
Spouse	1,929	1,353,459	141	1,732,084	128%
Children	3,119	994,746	139	534,319	54%
Total	14,900	26,063,120	1,339	24,290,672	93%

Note 1: laim amount ÷ insurance expenses
Note 2 : The number of insureds is based on the insured roster in December 2021, including changes in new arrivals or departures in the month



7.2.4 Encouragement to Birth

Maternal Health Protection

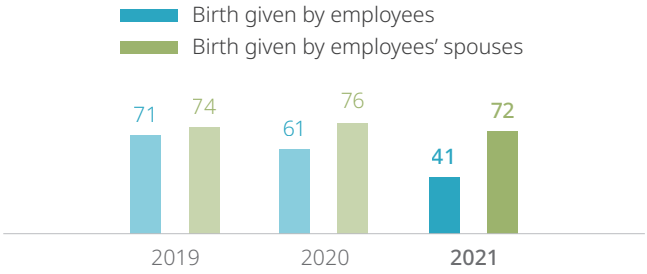
ChipMOS actively protects maternal health, and establishes a "maternal health protection system" to report and control cases. For female employees who are pregnant, less than 1 year after giving birth, and still breastfeeding after 1 year, conduct Health risk assessment and hazard confirmation, and then based on risk classification management improvement suggestions or work adjustment, implement case-by-case protection to maintain the health balance of mothers and babies, and ensure the health of all female employees. In 2021, a total of 76 pregnant and lying-in women will be assisted in health risk assessment and hazard confirmation, with a total of 75 first-level management and 1 second-level management (taking hazard prevention measures, reducing weekly working hours and assisting in adjusting work content).

Childbirth Measures and Benefits

Cash gift for birth	NT$2,035,000 Subsidy for the past three years 395 beneficiaries in the past three years
	Provide a maternity subsidy of NT$5,000 per employee, with a proportional increase for twins or more
Daycare Measures	31 The number of appointed store with postpartum nursing care and childcare center
	Actively develop appointed store such as postpartum nursing care, daycare center and kindergartens, and provide employees with a secure childcare care resource from birth, childcare to kindergarten
Milk Collection Room	25 The number of people using the milk collection room in 2021
	In addition to providing milk collection time for employees, it also strives to create a safe and comfortable breastfeeding environment. Each factory has a milk collection room, and provides high-quality equipment such as medical grade milk collectors and sterilizers for factory workers to use.

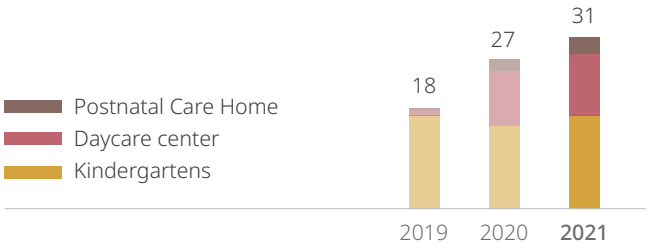
Number of births

Unit: people



The number of appointed store with postpartum nursing care and childcare center

Unit: people





Parental Leave

In order to enable employees to balance work and family, ChipMOS, in accordance with the Regulations for Implementing Unpaid Parental Leave for Raising Children and the Act of Gender Equality in Employment, both male and female employees can apply for parental leave without pay after half a year of employment. In 2021, a total of 65 people will apply for parental leave, including 6 male employees and 59 female employees.

Before the expiry of the suspension period without pay, we will take the initiative to care for the employees, confirm the employees' willingness to reinstate and arrange reinstatement-related matters in advance; after reinstatement, we will also provide sufficient education and training to help employees quickly transition to their original positions. In 2021, the retention rate of childcare leave is 80.56%, which fully demonstrates ChipMOS's concept of work-family balance.

2021 Parental Leave Status in ChipMOS

Item	Male		Female		Subtotal
	Number of People	Proportion	Number of People	Proportion	
[A] Number of eligible applicants in 2021	148	58%	106	42%	254
[B] Actual number of applicants in 2021	6	9%	59	91%	65
[C] Number of people expected to return to work in 2021	8	18%	37	82%	45
[D] Actual number of people reinstated in 2021	3	11%	25	89%	28
[E] Actual number of people reinstated in 2020	7	19%	29	81%	36
[F] Number of people who have continued to work for one year after reinstatement in 2020	5	17%	24	83%	29
Application Rate	4.05%		55.66%		25.59%
Reinstatement Rate	37.50%		67.57%		62.22%
Retention Rate	71.43%		82.76%		80.56%

Note: Calculation formula: application rate=[B]÷[A] X 100%, reinstatement rate=[D]÷[C] X 100%, retention rate=[F]÷[E] X 100%

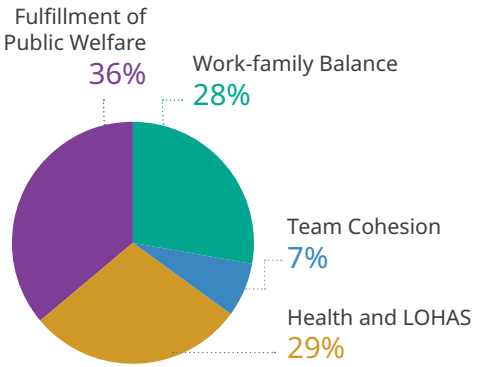
7.2.5 Cares for Employees



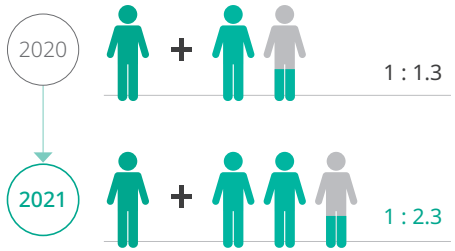
ChipMOS carries out employee welfare activities based on "Healthy Lives", "Family Fun" and "Team Cohesion". More than 25% of the work-home balance activities are planned in the 2021 annual plan. In 2021, the ratio of family members in employee activities is 1:2.3, that is, each employee brings an average of 2 to 3 family members to participate in company activities, which is higher than the ratio of 1:1.3 in 2020, which shows that ChipMOS continues to improve the relationship between employees and their families. Increase company recognition.

In 2021, ChipMOS will invest a total of more than NT$76.2 million in employee welfare. The sources of funds include the company's turnover and employee salary promotion. At the same time, the funds will be used in diversified welfare activities, so that more employees can enjoy the company's welfare. Improve happiness and job satisfaction.

2021 Employee Welfare Activities



The ratio of family members in employee activities



Team Cohesion

Team Contests
Through team tacit understanding and strategic analysis, build a sense of team belonging, and unite team centripetal force

Sports Club
Club subsidies are provided quarterly. The total subsidy in 2021 is NT$143,000

Departmental Dinner
Subsidies for departmental dinners every six months. In 2021, NT$ 2.81 million dollars will be subsidized, effectively condensing departmental emotions

Department Outing
Employees participate in the itinerary planning together, and can be held across departments to promote mutual interaction and affection, subsidized once a year, with a total subsidy of NT$538,000 in 2021

Family Fun

Non-Toxic Vegetable Garden
Cooperate with sheltered workshops and experience the hard work of farming, and arrange courses on local agricultural knowledge and planting DIY activities, so that employees can enjoy a happy holiday with their family and friends.

Petit Tour of Voluntary Tea Pickers
Cooperate with environment-friendly tea gardens to lead employees and their families to experience the Hakka tea-picking culture. Combined with natural education, they can experience the most authentic tea fragrance through tea kneading, tea tasting, and tea consumption, so as to achieve entertaining and entertaining.

Beach Cleaning
Regular beach cleaning activities are held every year, and employees and their families are invited to jointly protect the local coastline and educate the next generation to care for the earth.

Healthy Lives

Daily Leisure

Friendly Measures

- ✓ Contracted convenience store in the plants, and non-profit coffee machines
- ✓ Breastfeeding rooms, library, billiard rooms, and table tennis rooms
- ✓ Exclusive outdoor smoking area

Convenient Life

- ✓ Meals: cafeteria is provided to employees, and the night shifts are provided with night snack and breakfast free of charge
- ✓ Employee dormitories are provided
- ✓ Shuttle buses: free shuttle bus services for technicians, foreign workers and employees living in the Kaohsiung area
- ✓ Free parking spaces for cars and scooters, with exclusive parking spaces are reserved for pregnant women and employees with special needs

Health Promotion

- ✓ Free health examination (once per year)
- ✓ Monthly in-house treatment by physicians

Benefit System

- ✓ Gift vouchers and money: birthday/ three major festivals/ year-end gratitude
- ✓ Bonuses: no-absence/ performance bonuses/ irregular incentives
- ✓ Other: subsidies for weddings and funerals/ free group insurance of employees

Mental Stress Relief

- ✓ Employee Assistance Program (EAP)
- ✓ Free massage by visually-impaired therapists

Life Experience

- ✓ Festival DIY/seminars with celebrities
- ✓ Discount at contracted merchandisers (Total: 771)



7.3 Talent Development

404-1, 404-3

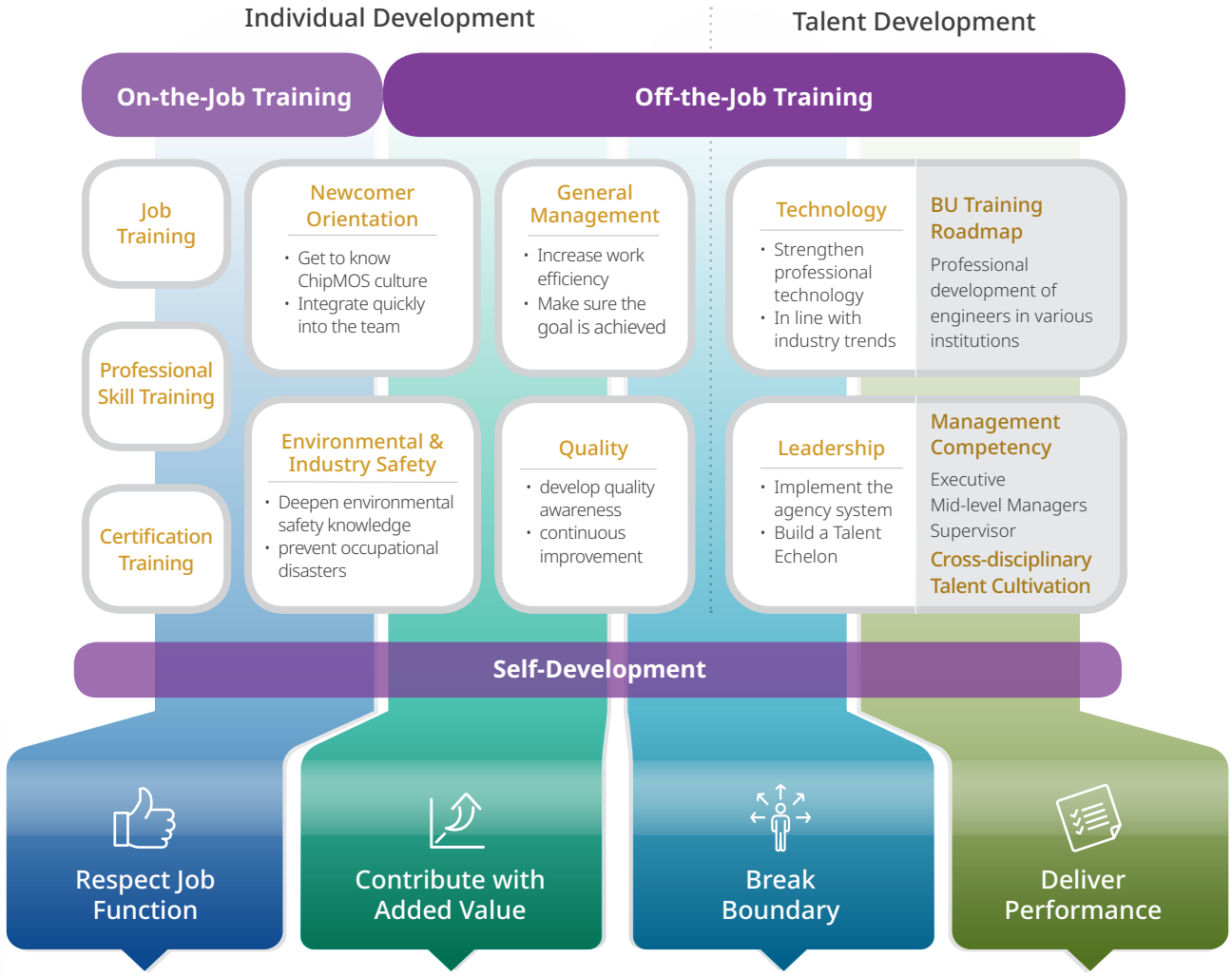
7.3.1 Strategic Talent Development Creating Talents and Demonstrating Diverse Values

Talents are the key factor in the implementation of sustainable management. Following the spirit of the TTQS talent development quality management system, ChipMOS has formulated the "Talent Development Quality Management Manual" as the guiding principle of talent training, in order to establish a complete talent development framework system, integrate Internal and external resources provide diversified, equal and rich learning and development opportunities for employees in various trainings such as leadership management, engineering technology, work efficiency, quality management, and new employees, cultivate and improve employee capabilities, and help employees grow together with the company.

In response to ChipMOS's transformation of smart factories into the wave of digital transformation, ChipMOS's talent development strategy in 2021 focuses on talent transformation and diversified learning, and continues to redefine talent standards and specifications for key positions. At the same time, it uses the data of the talent pool to analyze excellent the characteristics of employees and the development history of the company, explore various feasible development of employees in the organization, and use data to drive talent transformation strategies to achieve the goal of "playing human capital, creating growth momentum, and creating value".



ChipMOS Training System

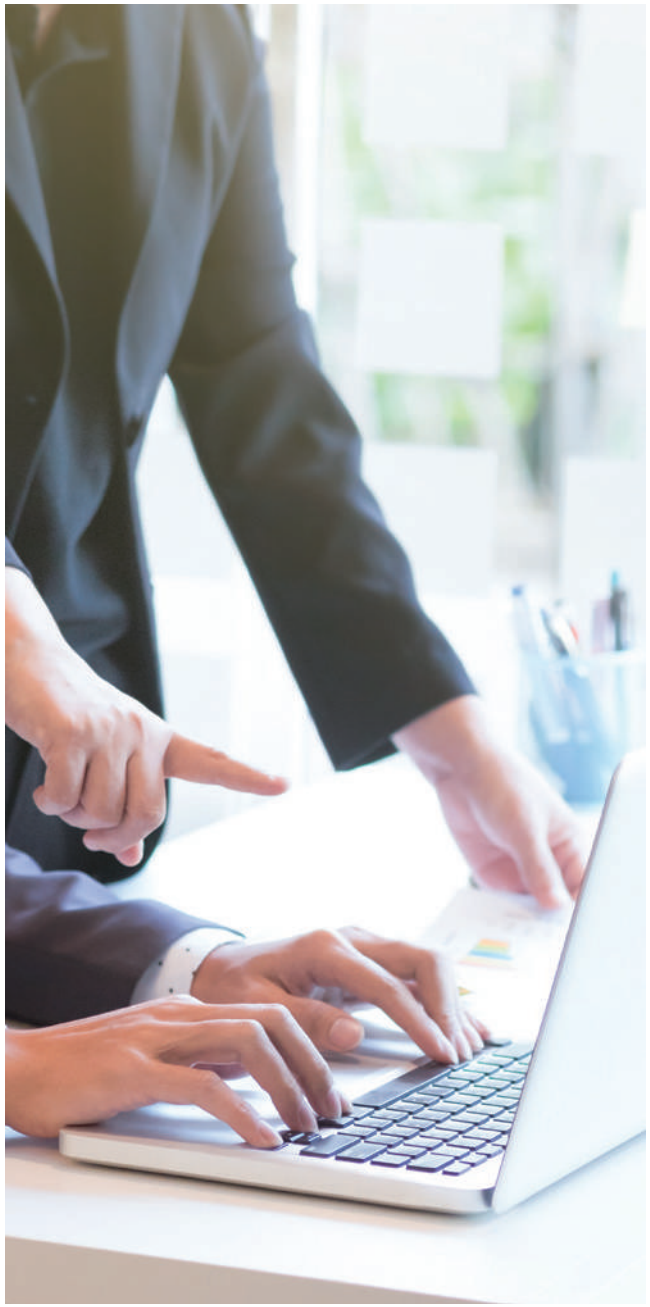


Through the talent pool of ChipMOS, we will provide suitable potential talents when there are job vacancies, predict future manpower needs, and customize personnel capacity development and training plans. In 2021, 30% of the talent specifications for key positions (ministerial level) will be established. The internal talent circulation rate (rotation/promotion/transfer) is 67.63%; the proportion of supervisors being transferred from employees is as high as 94.12%. ChipMOS will continue to invest in the establishment and inventory of talent specifications for key positions, The transformation, cultivation and development of key talents enables the organization to move towards the goal of sustainable development of talents.

In 2021, we have invested about NT$3,798,482 in the learning and development of employees. Each employee has an average of about 146.25 hours of learning and training courses, and the course satisfaction is 4.7 points (out of 5 points).

Average Hours of Training

		Female	Male	Total
Managers (Supervisor above the class level (excluding the Project Section Manager/Project Manager)	Actual number of people	289	77	366
	Training hours	42,422.32	11,891.48	54,313.80
	Average training hours	146.79	154.43	148.40
Technicians (Engineer/Technical Supervisor/Production Line Leader)	Actual number of people	1,445	354	1,799
	Training hours	335,588.10	59,676.43	395,264.53
	Average training hours	232.24	168.58	219.71
Administrative clerks (Administrator/ Project Section Manager/ Project Manager/ Team Leader/ Switchboard)	Actual number of people	166	140	306
	Training hours	36,734.44	25,694.42	62,428.86
	Average training hours	221.29	183.53	204.02
Operators (Technician/Foreman)	Actual number of people	616	2,430	3,046
	Training hours	52,147.87	242,697.97	294,845.84
	Average training hours	84.66	99.88	96.80
Total number of employees participated in training	Number of people	2,516	3,001	5,517
	Hours	466,892.73	339,960.30	806,853.03
Average hours of training per employee	Hours	185.57	113.28	146.25



7.3.2 Incubation of Leadership for Management

ChipMOS has management functions for managers at all levels, and plans the annual theme management function development plan according to the needs of the organization's strategic goals. Themes for 2021 include questioning ability, decision-making ability, planning and organizing ability, etc. Use a variety of learning methods, such as guidance methods, case discussions, situational simulations, etc. , to allow supervisors to break through the thinking framework and improve leadership.

Supervisor

Use interactive online teaching and situational simulation exercises to train supervisors to make efficient plans, make good use of resources, and effectively track them, so that various tasks can be executed in place.

Mid-level Managers

Use the teaching method of discussing and managing cases to guide supervisors to think comprehensively and improve the quality of decision-making.

Executives

Using video teaching and practical exercises, guide supervisors to establish a positive attitude to ask questions, and use appropriate questioning techniques to guide subordinates to break through habitual thinking and find the real cause of problems.

In order to effectively inherit the management experience and corporate culture, we continue to promote the necessary learning blueprint for new supervisors. The lessons are taught by experienced supervisors who have been certified by internal lecturers. Through teaching and learning, the leadership team in the organization is more closely linked. In 2021 the completion rate of new supervisors will be 100%, with a total of 229 person-times .

Number of Managers Trained in the Past Three Years

2019	167 Management Trainees	856 Hours	→	Average person-hour	5.13 Hours
2020	172 Management Trainees	728 Hours	→	Average person-hour	4.23 Hours
2021	229 Management Trainees	882 Hours	→	Average person-hour	3.85 Hours

Description: during 2020-2021, due to the impact of the pandemic, some courses were conducted online, so the average hours were fewer than the previous two years



7.3.3 Professional Talent Cultivation

ChipMOS has set up an education and training committee. Through the education and training committee, they plan the blueprint of each BU program, formulate and implement the BU program training plan every year, and ensure the effective operation of the BU program. Plan and systematically take root in the professional ability of employees, and cultivate a professional talent team that is competitive and meets the needs of the organization. In 2021, a total of 1,702 BU professional engineers will be cultivated. ChipMOS integrates product flow, information flow and talent flow in series, builds models from big data analysis, and accelerates the intelligent operation of factories, so as to achieve the goal of transforming smart factories and developing AI intelligence. Through online course lectures, e-newsletters, internal publications and other learning channels, employees are trained to have the correct concept of smart factories, and a total of 766 people with related skills have been cultivated throughout the year.

In response to the transformation of a smart factory and the need for a large amount of data processing, ChipMOS plans to conduct a series of courses on "EXCEL Functions and VBA Programs", so that employees can automate data, solve repetitive tasks and improve work efficiency. Total of 398 people completed the trainings. Considering the inheritance of experience, ChipMOS also has plans to train VBA seed lecturers in various BUs. It is expected that in 2022, through seed lecturers, this skill will be passed on and spread, bringing sustainable benefits to the organization.

2021 Training Project & Effectiveness

Training Projects	Hours	Evaluation of Effects
EXCEL function and VBA program	2	-
EXCEL VBA Basics	48	• 50 employees participated in the training • Train 50 internal lecturers and 50 reports in 2021
EXCEL VBA advanced (web crawler)	20	• 11 employees participated in the training • Train 11 internal lecturers and produce 11 programs in 2021

7.3.4 Diverse Learning Channels and Self-learning Resources

In line with the post-pandemic era, ChipMOS adopts a multi-learning talent development strategy - active learning, fragmented time, single focus, wanting to learn, and various learning modes. Learning is no longer limited to classroom classes or online courses, not only through visual and auditory e-newsletters, videos, podcasts, etc., but also through the use of internal communication software to set up study groups to share new technological knowledge and industry knowledge with employees through the role of editors Knowledge of various topics such as messages, English, etc., to interact with employees or respond to their needs. Employees can learn through various channels anytime and anywhere, and have more sensory fun in different learning experiences. In the 2021 annual plan, 55% of the courses are integrated into the design of independent learning.

E-paper sent via e-mails
92 issues 13,622 Clicks/ Course Takers

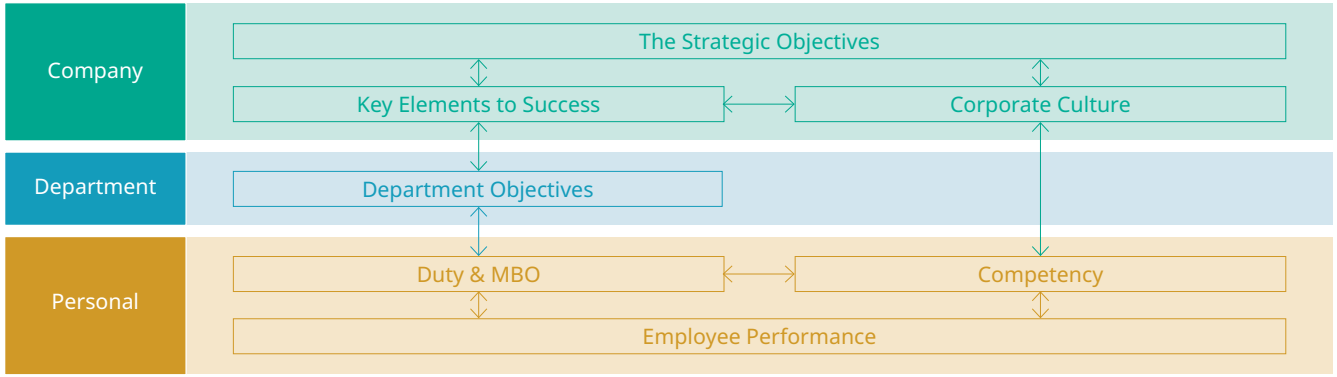
Team+ e-paper
77 issues 26,290 Clicks/ Course Takers

Optional online courses
74 issue 1,406 Clicks/ Course Takers



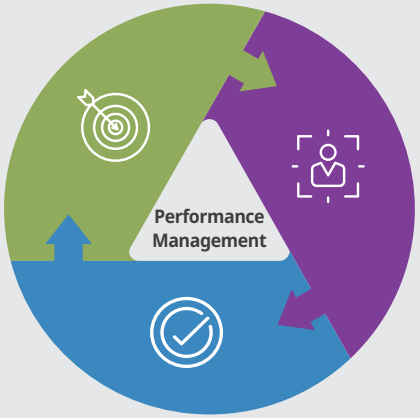
7.3.5 Performance Management and Development

Performance evaluation of all full-time employees is routinely carried out in each year. By formulating annual objectives, promoting bi-lateral communications between employees and managers, and aligning the efforts of all employees, we can achieve enhance corporate competitiveness and overall operational performance. And based on the performance evaluation results, it is truly reflected in the human resource management systems such as internal transfer, promotion management, and rewards. For employees whose performance does not meet expectations, the supervisor will coordinate with the employees to formulate improvement plans, give employees time and opportunities to improve performance, and achieve the goal of improving performance together with the organization and the team.



At the beginning of year: Setting the goals

- The plan includes:
  - Key Performance Areas
  - Goals
  - Competency/Behaviors
  - Personal Development Plans
- Reach the consensus with managers.



Mid-term review: Tracking the goals and adjustment

- Employees:
  - Goal tracking
  - Review and adjustment
- Managers:
  - Feedbacks and communications

Year-end review: one-on-one meeting

- Employee self-evaluation
- Performance interview
- Managers' feedbacks

Methods of Performance Appraisal

Targets	All Employees
Method	Goal Management and Competencies Management
Objectives	To align with the company's goal, the performance management assists the employees to focus on the contribution with the strategic way.
Approach	➡ At the beginning of the year, set a performance plan and objectives ➡ In the middle of the year, review and feedback; if there are changes in the scope of work/objectives, the performance plan can be adjusted ➡ At the end of the year, employees fill-in the self-assessment based on their performance and conduct the one on one meeting with managers



Implementation Results

The regular employees of ChipMOS and those who meet the performance appraisal methods during their employment are all subject to regular performance appraisals. In 2021, a total of 5,323 employees received regular performance, accounting for 96.48% of the company's total. Divided by gender, 2,423 male employees accepted regular performance, accounting for 96.30% of the total male employees at the end of the reporting period.2,900 female employees accepted regular performance, accounting for 96.63% of the total female employees at the end of the reporting period.

Types of Employees	Male			Female			Total		
	Total number of employees at the end of reporting period	Number of employees to be reviewed for performance	Percentage (%)	Total number of employees at the end of reporting period	Number of employees to be reviewed for performance	Percentage (%)	Total number of employees at the end of reporting period	Number of employees to be reviewed for performance	Percentage (%)
	A	B	C=B/A	D	E	F=E/D	G=A+D	H=B+E	I=H/G
Operators	616	601	97.56%	2,430	2,353	96.83%	3,046	2,954	96.98%
Administrative clerks	166	162	97.59%	140	132	94.29%	306	294	96.08%
Technicians	1,445	1,371	94.88%	354	338	95.48%	1,799	1,709	95.00%
Mangers	289	289	100.00%	77	77	100.00%	366	366	100.00%
Subtotal	2,516	2,423	96.30%	3,001	2,900	96.63%	5,517	5,323	96.48%

Note 1: The annual performance appraisal period is from January 1st to December 31st of the current year
Note 2: Indirect employees who have been on the job for less than 3 months and direct employees who have been on the job for less than 1 month are not required to undergo performance evaluation.
Note 3: The total number of employees at the end of the reporting period does not include part-time employees, dispatched employees, and fixed term contract employees.



7.4 Safeguarding Human Rights

102-41, 402-1, 406-1, 408-1, 409-1, 412-1, 412-2



"Following the international labor and human rights standards of the Labor Standards Act and the Responsible Business Alliance Code of Conduct, and committed to protecting the rights and interests of all employees and all personnel in the supply chain"

Pursuant to the main spirit of the United Nations Global Covenant (UNGC), Universal Declaration of Human Rights, International Labour Organization (ILO), and the OECD Guidelines for Multinational Enterprises, ChipMOS has established management procedures. Aside from protecting the human rights of employees, it also extends the influence to suppliers to protect the interests of all personnel in the supply chain.

We establish a fair and open selection mechanism in recruitment and appointment, and recruit talents according to actual business needs. Comply with the Labor Standards Act, the Gender Work Equality Act and the Employment Services Act and other relevant laws and regulations, and the code of conduct of the Responsible Business Alliance, provide equal employment opportunities and working environment in a legal way, The shortest notice of operational changes It also complies with laws and regulations. In the past three years, there has been no violation of labor laws or punishments, which shows ChipMOS's efforts and achievements in human rights protection.

SpecificImplementation of Human Rights

Freedom of Choosing Job	✓ Develop and communicate to all employees and other stakeholders policies and procedures prohibiting inhumane management of employees ✓ Manage employees in accordance with personnel rules and regulations, and there shall be no disciplinary deduction of wages ✓ The company shall not force labor, punish employees and deprive employees of their basic rights and interests for various reasons ✓ Strictly prohibit the use of forced labor, prison labor and bonded labor ✓ Strictly resist any mortgage documents, collection of deposits or mortgage salary
Child Labor and Youth Labor	✓ Develop policies and procedures to effectively protect young workers, student workers, interns, apprentices ✓ Strictly enforce not to employ children under the age of 16 ✓ Young workers between the ages of 16 and under 18 may not perform work that may endanger their health or safety, including night duty or overtime
Anti-Discrimination and Anti-Harassment	✓ Respect every worker, prohibit discrimination in the recruitment process, and prevent any harassment from happening ✓ Implement equal pay for equal work and gender equality wage policy ✓ Carry out hazard identification and risk assessment investigation of illegal workplace violations, and educate employees to prevent discrimination and harassment

Human Rights Related Education and Training

To protect employees' interests and fulfill the corporate social responsibilities, ChipMOS has promised to conform to RBA 7.0 code of conducts, to ensure employees fully understand their own interests, healthy and safe working fields, environmentally protective actions, Regulations Governing Professional Moral Conduct of the Company, and the implementation of human right education and corporate social responsibilities in the management system. All employees must receive the human right education and trainings since onboard. In 2021, there were total 810 employees trained, and the total training hours were 847.18 hours. The employees received RBA and other in-the-job human-right courses were 69% of all employees.

Complete Human Rights Risk Assessments for All Sites

ChipMOS conducts an annual risk assessment of labor rights and ethics to ensure that human rights risks in the entire plant are effectively controlled and to reduce or eliminate various labor rights and ethics risksSince 2013, we have implemented the RBA Responsible Business Alliance Code of Conduct Self-Assessment Questionnaire (SAQ) and internal audit operations to review and confirm human rights risk assessment operations every year. The SAQ evaluation results of all ChipMOS factories are all ≥85 points, all of which are low-risk factories. Through active self-assessment, we will improve human rights-related measures and create an equal working environment.

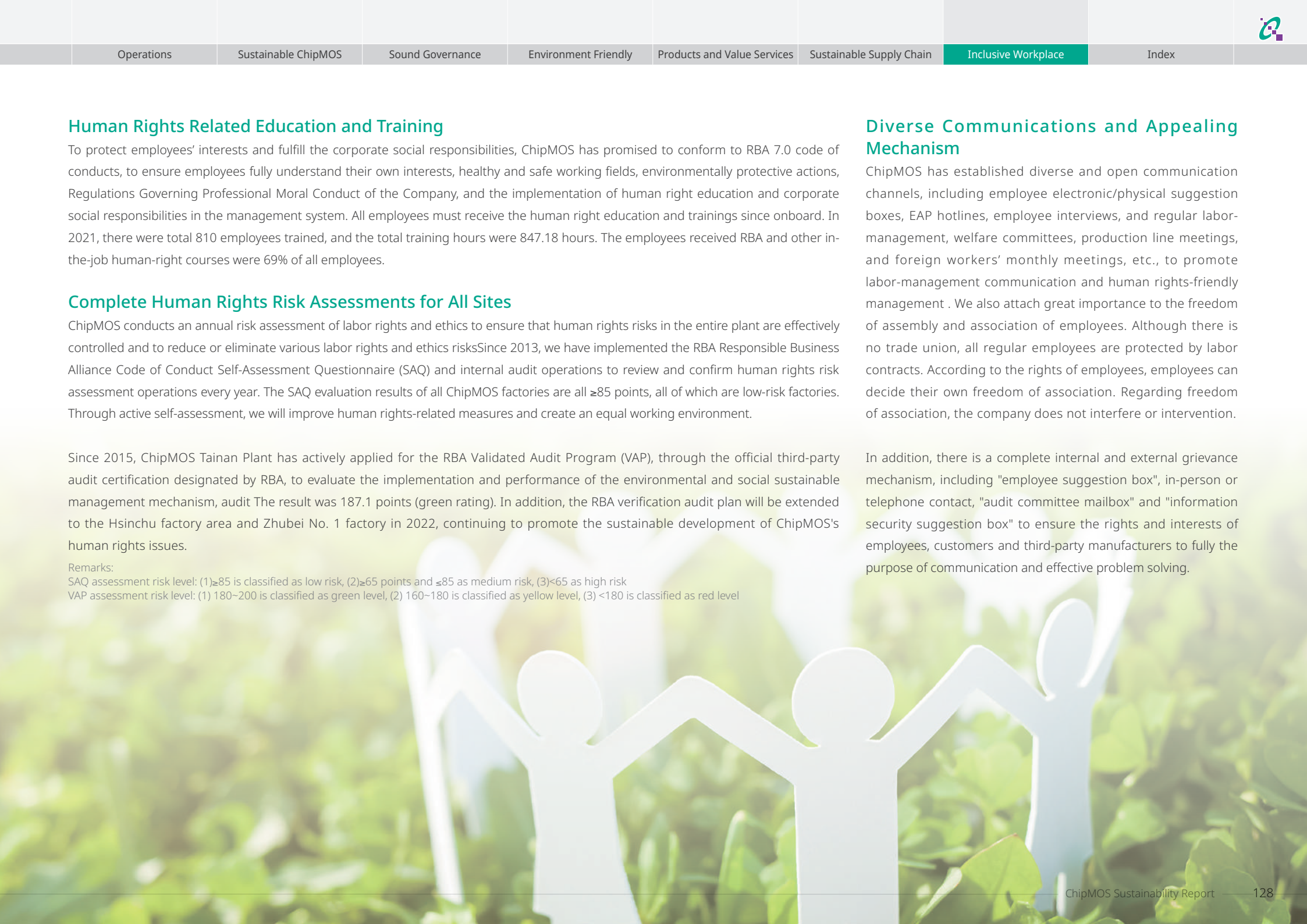
Since 2015, ChipMOS Tainan Plant has actively applied for the RBA Validated Audit Program (VAP), through the official third-party audit certification designated by RBA, to evaluate the implementation and performance of the environmental and social sustainable management mechanism, audit The result was 187.1 points (green rating). In addition, the RBA verification audit plan will be extended to the Hsinchu factory area and Zhubei No. 1 factory in 2022, continuing to promote the sustainable development of ChipMOS's human rights issues.

Remarks:
SAQ assessment risk level: (1)≥85 is classified as low risk, (2)≥65 points and ≤85 as medium risk, (3)<65 as high risk
VAP assessment risk level: (1) 180~200 is classified as green level, (2) 160~180 is classified as yellow level, (3) <180 is classified as red level

Diverse Communications and Appealing Mechanism

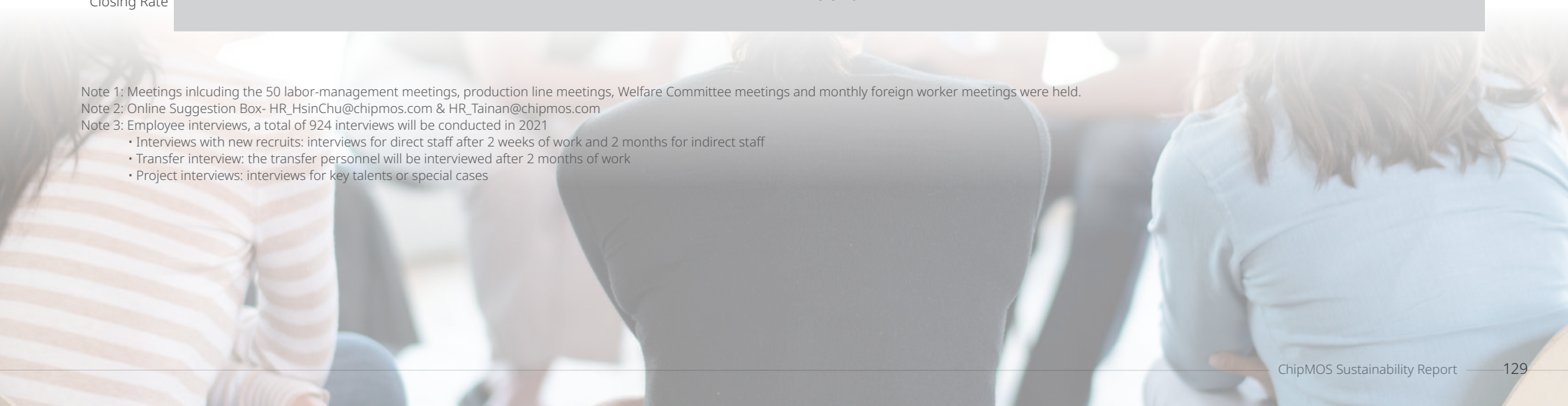
ChipMOS has established diverse and open communication channels, including employee electronic/physical suggestion boxes, EAP hotlines, employee interviews, and regular labor-management, welfare committees, production line meetings, and foreign workers' monthly meetings, etc., to promote labor-management communication and human rights-friendly management . We also attach great importance to the freedom of assembly and association of employees. Although there is no trade union, all regular employees are protected by labor contracts. According to the rights of employees, employees can decide their own freedom of association. Regarding freedom of association, the company does not interfere or intervention.

In addition, there is a complete internal and external grievance mechanism, including "employee suggestion box", in-person or telephone contact, "audit committee mailbox" and "information security suggestion box" to ensure the rights and interests of employees, customers and third-party manufacturers to fully the purpose of communication and effective problem solving.



Reflection Channels	Meetings Note 1	Employee suggestion box Note2	Contact in person/ via phone calls	Employee Interview Note 3	Audit Committee Mailbox	Information Security Suggestion Box	EAP Hotlines	Others
Description of Duties	Protect the legitimate rights and interests of employees and promote employees' understanding of the company's policies	employees express their opinions anonymously, including physical and electronic suggestion boxes	employees express their opinions	Learning and Adjustment Issues for Newcomers, Transfer and Project Interviewers	For illegal, improper events or damage to their own rights and interests	Issues related to organizational information security	Psychological consultation, medical consultation, management consultation	Grievances referred by external entities
Level Responsible	Executives	Division level managers	Division level managers	Division level managers	Department Head, Independent Director or Audit Committee (depending on the accused)	Management Representatives of Information Security Management Committee	Outsource a management consulting company, and notify the company if the circumstances are serious (such as suicide, violence, etc.)	Division level managers
Number of cases	16	15	13	3	0	0	4	5
Email/Tel	-	Online Suggestion Box	Human Resources Department Employee Relations and Medical Care Section	-	Audit_committee @chipmos.com	ISMS@chipmos.com	0800-025-008	-
Case Closing Rate	100%							

Note 1: Meetings inlcuding the 50 labor-management meetings, production line meetings, Welfare Committee meetings and monthly foreign worker meetings were held.
Note 2: Online Suggestion Box- HR_HsinChu@chipmos.com & HR_Tainan@chipmos.com
Note 3: Employee interviews, a total of 924 interviews will be conducted in 2021
- Interviews with new recruits: interviews for direct staff after 2 weeks of work and 2 months for indirect staff
- Transfer interview: the transfer personnel will be interviewed after 2 months of work
- Project interviews: interviews for key talents or special cases



There will be no major labor disputes in 2021; in 2021, a total of 56 related opinions and responses from employees will be received, and all feedback will be responded to and processed immediately. The acceptance and closing rate is 100%, and there are no special cases [Note 1], and there is no delay. or accumulated cases. If there is a complaint of sexual harassment, it will be investigated and tried by the handling committee, and it will be coordinated and completed in accordance with laws and regulations; the medical office will also share articles related to gender relations from time to time, and in accordance with the regulations of Article 6 of the Occupational Safety and Health Law, to carry out the harm of illegal workplace violations in the company Identification and risk assessment surveys to educate employees to prevent incidents of gender discrimination.

Note 1: Evaluate whether it is a special case according to the actual situation of the case, such as violation of national laws, company regulations or cases that may affect the operation of the company

ChipMOS's Unique Communication Channel

Chairman's talk

It is held irregularly every year, and a total of 3 sessions will be held in 2021. In addition to face-to-face communication with employees, he also shared the company's future operating strategies and policies, giving employees more work support and positive force.

Leader lunch meeting

In order to get closer to the grassroots supervisors and further listen to the problems at work, a total of 3 foreman/colleague meal meetings will be held in 2021 Through the meeting between the chairman and the foreman/employees, listen to the voices of employees and give encouragement and assistance.

Company Publication – ChipMOS Quarterly

Since its establishment in 2001, it has published a total of 80 volumes for 21 years. Selected articles are published every quarter, including important company policies, patented technologies, interviews with senior executives, CSR columns, and event sharing.



7.5 Healthy and Safe Workplace

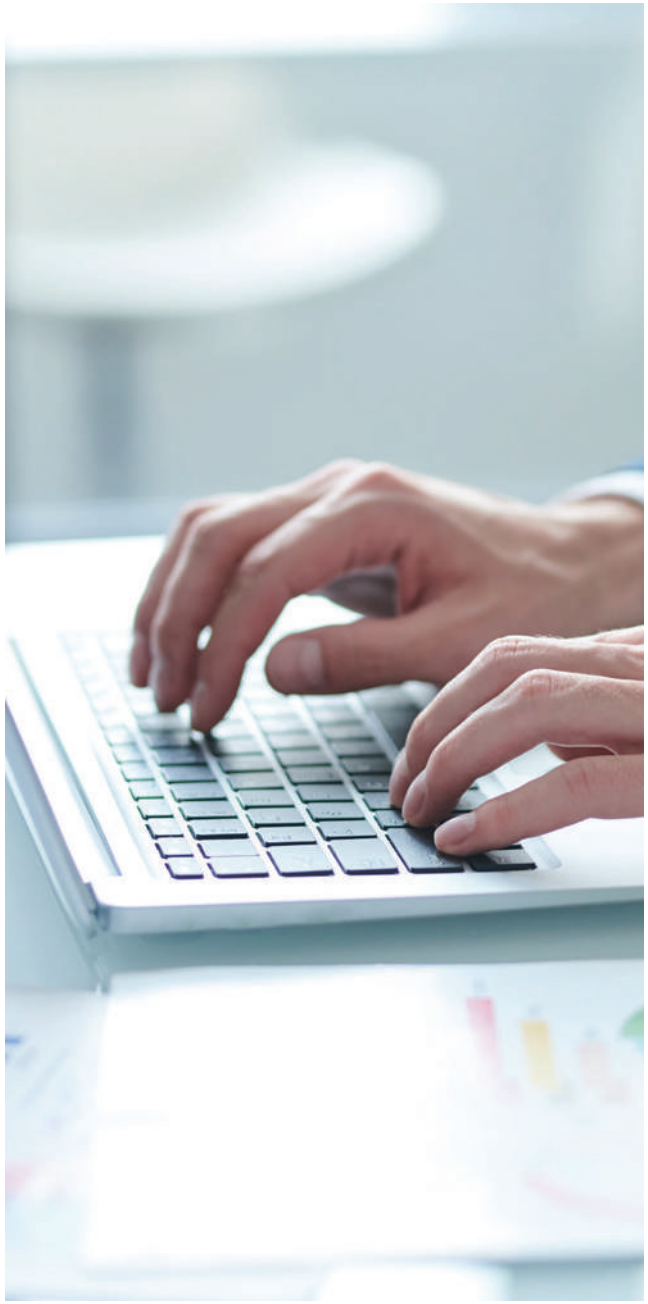
103-2~3, 403-1~7, 403-9~10, TC-SC-320a.1



ChipMOS actively creates a safe, friendly and happy workplace, and is committed to providing a safe and hygienic working environment, protecting the physical and mental health of employees, and formulating "safety and hygiene policies" to prevent occupational accidents and continue to provide a healthy and safe working environment. as the target. We promise to "comply with all health regulations and related regulations; provide a safe and healthy working environment to prevent the occurrence of occupational disasters and diseases; strengthen internal and external communication, pay attention to the views of customers, nearby residents and employees; establish goals and continuously improve safety and health performance" . Let ChipMOS continue to move towards a healthy and safe workplace with sustainable development.

7.5.1 Safe Working Place with Continuous Improvements

ChipMOS attaches great importance to the safety and health issues of employees and non-employees who are active in the factory. Only a safe and hygienic working environment can allow all workers to work with peace of mind and create high efficiency and high-quality work performance. We adopt a systematic management model, all factories continue to promote the ISO 45001 occupational safety and health management system, and through third-party verification, the implementation of work environment safety and health management operations and in line with international management trends. The coverage of the management system includes the routine and non-routine activities of all workers in the factory, as well as the safety and health risks that may be derived, covering 100% of the scope. The Company regularly implements safety and health risk and opportunity identification in the Plants every year, to continuously reduce potential risks. Whenever any change in work, occupational disasters, false alarms, or legal updates occur, the related safety and health risks are re-identified, analyzed, assessed, and control any time.



Environmental Safety, Health and Energy Management Committee

Management Committee for each plant, the Committee is chaired by level one managers, and all heads of department and members of the Committee participate thoroughly. Every three months, the regular Committee meeting is held, which conforms the legal requirement. Among the members, more than one-third are the labor representatives, and these representatives are employees elected via a public procedure. In 2021, the Committee proposed 46 proposals and 46 proposals were completed. The relevant outcomes include the completion of 15 cases of ISO 14001. Of which, the PI (BM302H) consumption reduction program in Zhubei fab. reduced the risk score from 180 points to 60 points, or a reduction of 67%. For ISO 45001, 22 cases were completed; of which, the oven equipment fire risk reduction program in Tainan fab. had the risk score to be reduced from 1,000 points to 150 points, or a reduction of 85%; In terms of ISO 50001, . TB building 2F/3F/4F/5F clean room in Tainan fab, the DC FFU rotation speed was properly adjusted (from 1,200RPM to 1,100RPM), and reduced the annual power consumption of the whole TA building by 0.56%.

A total of 46 proposals are submitted in 2021, the completion rate **100%**

Item	Hsinchu fab.	Zhubei fab.	Zhubei fab. 2	Hukou fab.	Tainan fab.
Total Number of Members in the Committee	15	15	14	14	21
Number of Labor Representatives	5	5	5	5	8
Percentage of Labor	33%	33%	36%	36%	38%

Hazard Identification, Risk Management, and Incident Investigations

Through the preventive mode of risk management and autonomous training in each fabs of ChipMOS, each employee's awareness of work safety and health is improved. Based on the established safety and health risk identification and assessment procedures, with the implementation of ISO 45001 system training courses by employees in every fab every year, the probability of risks and severity level are identified via the elements including hazard severity, frequency of occurrence and accident probability by conducting hazard identification and risk assessment procedures for each routine and non-routine operations from the five aspects, namely personnel, machinery, materials, engineering methods and the environment, to analyze the resulting major occupational safety and health risks, and find out the improvable hazard points, plan and propose corresponding control methods, corrective measures and goals/ management plans for reducing risks and avoid accidents. In 2021, based on major occupational safety and health risks, 22 improvement plans were proposed and all were completed as scheduled.

Item	Hsinchu fab.	Zhubei fab.	Zhubei fab. 2	Hukou fab.	Tainan fab.	Tainan fab. 2	Total
Items of Hazard Identification	871	827	331	617	2,026	367	5,039
Number of Unacceptable Risk	5	4	2	2	5	2	20
Number of Established Management Programs	5	3[Note1]	2	2	7	3	22
Numbers of Completed Management Programs	5	3	2	2	7	3	22
Completion Rate	100%	100%	100%	100%	100%	100%	100%

Note 1: There are four unacceptable risk items in Zhubei fab. 1; of which, maintenance and emergency leakage handling for the etching equipment at the machine are combined into the same management plan for implementation.

If the workplace is concerned with imminent danger, workers may stop work and retreat to a safe place on their own without endangering the safety of other workers, and the Company will not impose disciplinary actions. For incidents, investigations and improvements are conducted pursuant to each corresponding procedure set forth in the "Instructions for Work Injury Management and Incident Investigation," and reviews are conducted in the meetings of the Environmental Safety, Health and Energy Management Committee, to avoid similar incidents from re-occurrence.

Continuously 5 major occupational safety management

To enhance the safety and health management of the fabs, ChipMOS has corresponding management mechanisms for chemicals, procurement, machinery equipment, contractors and contingency drills, explained as below:



Chemical Safety Management

All chemicals in the fabs shall be submitted for review procedures, to ensure compliance with regulations and ChipMOS's internal standards. Establish a complete list of use for all chemicals in Chinese and English, and provide appropriate protective equipment and personal protective equipment (PPE) to protect the health of employees.

For places where chemicals are stored, set up leakage-proof facilities; where solvents and gases are stored in the fabs, set up independent compartments and strictly limit the amount to be taken and storage methods. Moreover, pursuant to Article 11 of the Occupational Safety and Health Act, the risk levels of total 375 chemicals are assessed based on the health hazards, distribution status, and consumption, and the classification management measures are adopted. Based on different risk levels, the Company takes control measures, include isolation (pipeline supply) or engineering control (local exhaust/closed operation, overall ventilation), to reduce risks. The Company insists to continuously promote the chemical classification management system, reviews the safety protection measures for the storage and use of chemicals in the fabs, and improves the work safety of employees in a holistic manner.

Process of Chemical Safety Management

Safety Identification before Procurement	Building the List and Quantity under Control	Exposure Measurement and Grading Assessment	Prescribe protective measures and protective equipment requirements	Regular inspection of environmental monitoring and control measures

Machinery Equipment Safety

Before introducing of various machines and equipment to the fabs, an evaluation application form must be submitted. Hazard identification and safety protection (such as emergency stop buttons and safety interlocks) should be inspected at each stage, including introduction, installation, and acceptance. During installation, equipment manufacturers are required to comply with contractor's safety management matters, procedures for various safety management measures are prescribed to comply with operational safety and health requirements; the hazard signs in both Chinese and English are posted on machine undergoing maintenance and services, for the domestic and foreign employees to understand the hazards of the machine and take appropriate safety protection measures. For the employee getting jammed incident in 2021, other than review again the addition of details to the operation SOP, the settings of the safety interlocking device are adjusted to ensure the optimization of safety protection.

Contractor Management

Before introducing of various machines and equipment to the fabs, an evaluation application form must be submitted. Hazard identification and safety protection (such as emergency stop buttons and safety interlocks) should be inspected at each stage, including introduction, installation, and acceptance. During installation, equipment manufacturers are required to comply with contractor's safety management matters, procedures for various safety management measures

are prescribed to comply with operational safety and health requirements; the hazard signs in both Chinese and English are posted on machine undergoing maintenance and services, for the domestic and foreign employees to understand the hazards of the machine and take appropriate safety protection measures. In 2021, none of the fabs had any occupational safety and health incident for the contractor's staff.

Item		Hsinchu fab.	Zhubei fab.	Zhubei fab. 2	Hukou fab.	Tainan fab.	Tainan fab. 2	Total
Number of Contractors in 2021		72	124	41	60	130	61	488
2021 Assessment Rating	Class A (excellent, retained)	0	6	2	1	13	0	22
	Class B (good, retained)	72	118	39	59	117	61	466
	Class C (three-month suspension)	0	0	0	0	0	0	0
	Class D (disqualified)	0	0	0	0	0	0	0

Procurement Safety Management

ChipMOS has established a set of procurement safety management procedures, requiring the contracting and procurement procedures for engineering or services to include the “safety and health requirements,” including purchasing/leasing machines, tools, equipment, materials, raw materials, and personal protective equipment. When signing the contract, executing and accepting, these requirements serve as the basis for requirements, confirmation and delivery of results, to meet the safety and health requirements and ensure that all operations are operated safely.

Emergency Drills



ChipMOS is committed to improving employees' awareness of safety and health. The passive training requirements in the past have been effectively transformed into a training mode of autonomous management and autonomous training by us, and trainings at all levels are expanded for improving the adaptability, to implement the goal of occupational safety for all employees. In addition to the education and training for employees pursuant laws, to avoid the management risks of contractors, relevant education and training are required to be conducted, as well as the requirements for safety and health training and toolbox safety meetings before entering the fabs are also reinforced.

In terms of contingency drills, based on the risk assessment results, for the possible types of incidents such as fires, earthquakes, typhoons and chemical disasters, we all take actions through the three indicators of "Prevention", "Early Warning" and "Action"; ChipMOS conducts autonomous department drills, or works with relevant governmental agencies to implement large-scale drills. Through scenario simulation and practice, the employees’ awareness of hazards and their contingency capabilities are improved, and greatly reduce disasters and losses. At the same time, members of the contingency team should conduct contingency education and training at least once every six months, to improve the contingency capabilities of the contingency team members.

The number of drills in each factory

Hsinchu fab.	Zhubei fab.	Zhubei fab. 2	Hukou fab.	Tainan fab.	Tainan fab. 2
3	7	3	3	14	7

Remarks: As the Tainan fabs (including Tainan fab. 2) have more employees, and the plant is a packaging and testing fab, with risks different from the testing fabs, the number of drills is more than other fabs.

Operating Environment Monitoring

Pursuant to the "Enforcement Procedures for Labor Operation Environment Measurement," ChipMOS conducts labor operation environment monitoring every six months periodically. Before the monitoring is conducted, the persons in charge of the operating venues are called for a meeting, to discuss the type of work exposure, identify and analyze hazards, and collect data. Based on the analysis results, the "Operating Environment Monitoring (Including Sampling Strategy) Plan" is drafted to ensure that all hazard exposure factors are included in the monitoring. The monitoring results are managed according to the type of assessment as follows, and published throughout the fabs to inform all employees.

2021 Environment Monitoring Results

Monitoring Item/ Fab	Hsinchu fab 1	Zhubei fab.	Zhubei fab. 2	Hukou fab.	Tainan fab.	Tainan fab. 2
CO_2	Y	Y	Y	Y	Y	Y
Illuminance	Y	Y	Y	Y	Y	Y
Noise (person)	Y	Y	Y	Y	Y	Y
Noise (environment)	N	N	Y	Y	Y	Y
Organic	NA	Y	Y	Y	Y	Y
Specialty chemical	NA	Y	NA	NA	Y	Y
Dust	NA	Y	NA	NA	Y	NA

1. Y: means tested and meeting the standard; N means tested but failing to meet the standard. NA stands for not applicable/not tested for the item
2. Explanation of failure to meet the standard and preventive measure: Hsinchu fab 1: one point for the air compressor room (noise>90db); Zhubei fab.: one point for the air conditioner room (noise>90db). Preventive measures: The air compressor/air-conditioning room is not a normal work area for employees. As required by laws, "noise area signs are posted" outside the concerned machine rooms and "protective equipment (earplugs) are provided"

Occupational Disaster Management

Under the effective operation of the safety and health management mechanism and system, in 2021, there was no death due to work injury for either employees and non-employees in ChipMOS. The severe employee occupational injury incidents in fabs Note 1 were six cases, 0 case for non-employees; the total recordable occupational injuries Note 2 were six cases; there was no amount of monetary loss due to any lawsuit related to employees' health or safety violations.

The averages of the "Frequency-Severity Indicator (FSI)," "Disabling Injury Severity Rate (SR)," and "Disabling Injury Frequency Rate (FR)" of all employees of the Company are better than other electronic parts and component manufacturers. The Company will continue to enhance the ability of colleagues to recognize hazards, and create the company safety culture in the future, so that every ChipMOS employee goes to work happily and goes home safely.

Note 1: Serious occupational injury incidents refer to disabling injury incidents (excluding commuting to and from work) reportable to the competent authority as required by law.
Note 2: Recordable occupational injuries = death cases + disabling injuries (excluding minor injuries)

Disabling injury statistics in the past 3 years

ChipMOS FSI Target 0.16

	2019	2020	2021
Disabling Injury Frequency Rate (FR)	0.51	0.35	**0.54**
Disabling Injury Severity Rate (SR)	26.31	5	**9**
Frequency-Severity Indicator (FSI)	0.12	0.04	**0.07**
Working Hours	11,859,733	11,276,088	**11,167,944**

Note 1: Formula of Disabling Injury Frequency Rate (FR) = (number of disabling injuries × 106) ÷ total working hours experienced
Note 2: Formula of Disabling Injury Severity Rate (SR) = (days charged for disabling injuries × 106) ÷ total working hours experienced
Note 3: Frequency-Severity Indicator (FSI) = (FR×SR÷1000)1/2
Note 4: The total working hours of employees in 2021 was 10,951,272 hours; the total working hours of non-employees was 216,512 hours
Note 5: The FSI target value of FSI, is the average FSI of other electronic parts and components manufacturers during 2019-2021.

Statistics on Work Injury and Days Charged for Disabling

Number of Work Injuries **6**

Days Charged for Disabling **104**

Note 1: Employee Injury Incident Type : Exposure to chemicals 1 case、Fall injury 3 case、Cut wound 1 case、Pinch 1 case.
Note 2: The number of non-employee injuries and days of loss is 0 for each fab
Note 3: Employees refer to those who are employed by the Company to work for wages and insured with the labor insurance by the Company; non-employees refer to those who engage in operational activities in the Company but not employees.

7.5.3 Create Occupational Safety of All Employees

Architecture Promoting Occupational Safety of All Employees



In 2021, ChipMOS' safety and health management was planned towards the direction of full participation, under the promotion model of enhancing worker participation, consultation and communication, including review of procedure documents, participation in monitoring operating environment, joint incident investigation and hazard identification, while building a management system including the communication of opinions.

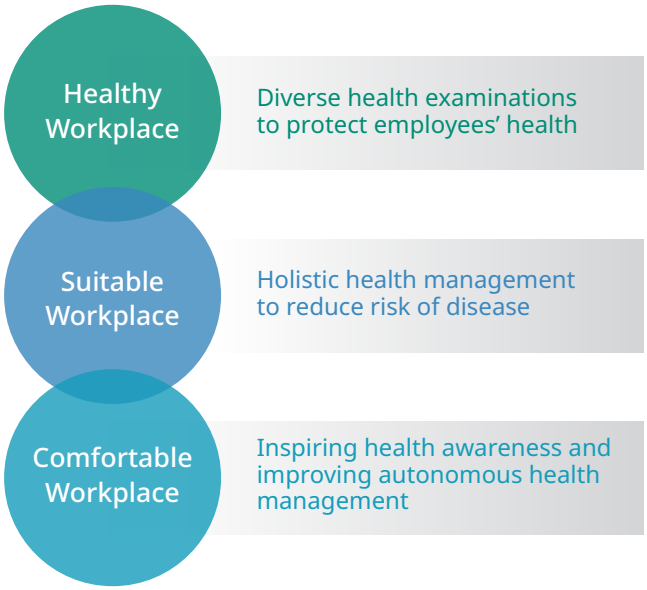
Pursuant to the prescribed Environmental Safety, Health and Energy Communication Management Procedures, employees may raise opinions related to occupational safety and health, communicate and consult to managers or accountable units, or raise opinions to the labor representatives of the Environmental Safety, Health and Energy Management Committee via phone, e-mail, and various meeting, and propose discussion in the meetings of Safety Committee at each fab. For the communication of relevant occupational safety and health laws and regulations in the fabs, employees may inquire about the announcement on the Company's electronic bulletin board, or refer to the publications, education and trainings, or announcements issued in-house, for safety and health information. Meanwhile, for the communication and promotion to various stakeholders, diverse communication channels (promotional seminars, emails, phone calls, and orders) are also applied, or reply to the stakeholders of the handling situation by recording the "Environmental Safety and health Communication and Opinion Form," while promoting the Company's safety, health and environmental policies to customers, contractors, suppliers and stakeholders, for preventing and reducing negative impacts on occupational safety and health.



In order to build the occupational safety of all employees, and improve the safety awareness, ChipMOS has prescribed the Instructions of Environmental, Safety and Health Education and Training, as the basis of the annual occupational safety and health education and training plans. The trainings are conducted by the nature of workers; other than the general safety and health education, the education and trainings also provided for occupational safety and health supervisors/managers, operators of dangerous machine or equipment, special operators, and occupational health nurses. For the occupational safety and health education and training to contractors, it is handled pursuant to the Management Procedures for Contractor's Safety, Health and Environmental Protection, to implement the occupational safety and health education and training as enhancement of workers' safety and health awareness.

Moreover, activities such as praising excellent environmental safety and health units and personnel are promoted, to enhance the participation of all units. The Environmental Safety, Health and Energy Communication Management Procedures are prescribed to encourage employees to propose in terms of environmental safety, health and energy. Employees may raise their concerns to managers, or consult with the Safety and Environmental Office or Factory Service, without worrying that the Company will act against the employees. The Company does not impose disciplinary actions against employees who report hazardous conditions in the fabs, and expects to encourage the employees to actively propose improvements regarding daily business and the environment through the in-house proposal incentive system, to prevent disasters. Through activities, the safety and health awareness of employees are enhanced, and the sense of honor is stimulated via praises, to achieve the objective of improving the safe and healthy working environment.

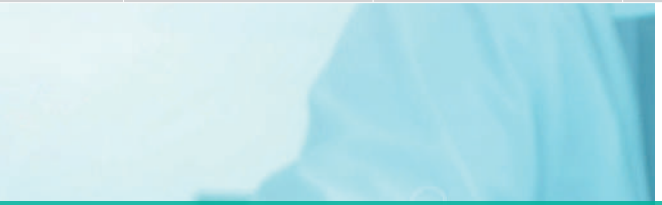
7.5.3 All-rounded Protection of Healthy Workplace



ChipMOS values the health of employees, and believes that healthy employees are an important foundation for an corporate to succeed. The Company seeks to prevent any occupational diseases from occurrence through preventive measures, and emphasizes on the promotion of health management and enhancement; a holistic health management program is planned by a dedicated medical team, to implement employee health management, health risk management and health care, for continuous protection of employee health, as well as enhancing employees' awareness of self-health management. Meanwhile, in order to ensure the health of non-employees working in the fabs, ChipMOS provides necessary medical consultation and assistance, as well as avails medical resources for all workers to use.

ChipMOS is committed to protecting the health interests of workers; it not only observes laws and regulations related to medical personnel, but also specifies the relevant confidentiality obligation in the contract with the contractor to keep the workers' health information confidential; we prescribe the "Labor Health Service Program" annually, report and review the implementation outcomes in the Occupational Safety, Health and Energy Management Committee every quarter, for continuously creating a holistic healthy workplace environment that is "safe, healthy, suitable, and comfortable."





Healthy Workplace: diverse health examinations to protect employees' health

ChipMOS conducts the annual health examination for employees. For 19 years in row, the Company has planned a variety of screening programs and frequencies better than peers, to continuously keep the health of employees in check, and achieve early detection and timely treatment. Similarly, we value the health of non-employee workers in the fabs; ChipMOS fulfills the responsibility of supervision and management, and requires outsourced vendors and contractors to implement the health examinations and care of their workers pursuant to laws and regulations, for moving towards to the goal of all workers' physical and mental health.



Employee Health Examination	31 Screening Items 99.6% Achievement Rate	Discuss with professional specialist annually to establish the examination items superior to regulatory requirements, such as additional examination items including liver cancer, ovarian cancer, colorectal cancer, and cardiac enzymes, to implement care for employee health.
Managers' Health Examination	100% Achievement Rate	The annual program with fixed-amount subsidy is adopted, with the evaluation done by the onsite physician for the individual's physical condition in advance, to provide recommended examination items; numerous major health examination packages are provided for managers to choose and combine flexibly, to achieve effective screening benefits.
Physical Examination for Newcomer	100% Completed Before Onboard	The Company pays the employees to have a physical examination before onboard, and strictly requires that they must complete and confirm their health conditions before onboard, in order to reduce the risk of infectious diseases in the fabs and protect the health of the employees in the fabs.
Specially Operations Health Examination	134 Participate in the Examination 100% Completion Rate	As required by law, the examination are taken for the person with specially operations, such as dust operations, nickel operations, and n-hexane; in the recent 5 years, there has been no work-related irregularity comprehensively deemed as Level 3 or 4; for the Level 2 irregularities, all have completed with onsite physician's assessment, health instruction, re-examination tracking, and labor allotment measures, to reduce the risk of occupational diseases.
ChipMOS E-Health System	100% Report Conversion Completion Rate 100% Complete Report Retention Rate	Since 2010, the online platform, "ChipMOS E-Health System" has been established, to completely retain the employee's health examination reports over the years, and provide employees to inquire their own health examination reports, health consultation and management for health service registration.

Employee's Feedback

When I attended the health examination of the Company in recent years, I've learn something was wrong; as I didn't feel any apparent illness, I just took it to heart. However, the active follow-up by the doctor and the nurse of the Company made me realize the importance of follow-up, and if I did not receive treatment immediately, there would be serious consequences. Thanks to the Company's health care, I can work with peace of mind.

Suitable Workplace: holistic health management to reduce risk of disease

In order to maintain the safety and health of employees and prevent the occurrence of occupational diseases, the Instruction of Health Management Operation and the preventive plans for irregular workload-induced disease; new recruits complete physical examinations before onboard, and the examination results are classified for management and the cardiovascular disease risk is analyzed through evaluation tools; these who have high-risk are arranged with physician health guidance or fitness assessment, as an implementation of holistic health management.



Occupational Disease Risk Management	24 Level 2 Management 0 Occupational Disease Cases	For employees working in workplaces of special hazardous operations, the annual health examinations and onsite environmental measurements are conducted to control potential health risk factors; while providing health management measures, including appropriate personal health instruction, re-examination follow-up, and suitable labor allotment, to achieve early detection and immediate treatment, for reducing the risk of occupational diseases.
Prevention of Overwork-related Illness	4,080 Employees Assessed with Irregular Load 62% High Risk Improvement Rate	The issue of employee overwork has been monitored continuously. Since 2014, high-risk employees have been screened out annually, and connected to the unit head for workload assessment; for which the onsite physician identifies the danger factors, to adjust their works, and complete the follow-up improvement tracking, to ensure that the concerned employees are physically and mentally healthy, and achieve work-life balance.
Abnormal Management of Health Examination	75% Improvement Rate for Level 5 47% Improvement Rate for Level 4	Establish a classification management mechanism for irregularities, and implement corresponding measures based the level of irregularity; follow-up and tracking are required with Level 5, the ones with high irregularity, and a fitness assessment by physicians is arranged, with work adjustment suggestions; for Level 4, the ones with moderate irregularity, follow-up and tracking, or in-fab health consultancy is arranged.
Cardiovascular Disease Prevention	5,706 Employees Analyzed for Risks 54% Improvement Rate for High Irregularity	The employees with high risk of cardiovascular disease are analyzed through screening tools, and the physicians are arranged to offer health instructions and fitness assessment, to adjust their works, and complete the follow-up improvement tracking.
Risk Assessment for Middle-aged and Elderly	998 Employees Took ECG Examination 1,026 Employees Work Ability Index Assessment	To ensure the safety and health of middle-aged and elderly workers in the fabs, a holistic ECG examination was conducted for employees over 45 years old, to screen for the risk of heart disease. In 2021, the middle-aged and elderly workers' work ability assessment process was planned, and completed at the end of the year. The work fitness index level was analyzed, and those with a lower index were further assessed for the competency. It is expected to be fully completed by the end of April 2022, to ensure that the overall work fitness status achieve the purpose of protection for the health of middle-aged and elderly workers.
Reinstatement Evaluation for Work Injury	17 Persons Work Injury Care 3 Employees' Work Adjusted	Reinstatement assessments are conducted in phases based on the severity of employees' injuries, through the onsite visiting of in-house labor health service physicians with occupational safety and health personnel and related departments, to provide the concerned employees with the job function evaluation, and consultations and suggestions of job redesign or adjustment, to encourage early reinstatement, for accelerating their recoveries, both physically and psychologically.
Respiratory Protection Equipment Evaluation	61 Employees for Physiological Evaluation	Physiological evaluation and fit test are conducted for the employees' physiological condition and protection needs, to ensure the employees to have the ability to use respiratory protective equipment correctly, and the protective equipment protects effectively, to avoid injury.



Comfortable Workplace: inspiring health awareness and improving autonomous health management

To ensure the physical and mental health of employees, it is expected employees will acquire health-related knowledge, continuously manage their own health and practice health-promoting behaviors, to achieve a balance between physical and mental health.

Inspire Health Awareness	10 Articles of Healthy Tips 241 Employees Took Tests 82 Attendees in Health Seminars 9.7 Points of Satisfaction (out of 10 points)	Based on the annual ranking of employees' health issues, the topics of health education have been publicized continuously. In 2021, the Heart and Brain Health Tips were publicized, with tests designed. The Company has continued to hold celebrity health seminars, and invited Professor Yan Zong-Hai, from Toxicology Department, Linkou Chang Gung Memorial Hospital, to share "How to Face the Unknown Future of COVID-19 and Food Safety."
Injury and Illness Management	823 Employees for Nursing Services 32 Employees for Care to Disease/ Unpaid Leave	Implement the cares for injuries and illnesses, prescribe the caring mechanism for treatment of injuries and illnesses, as well as unpaid leave/ reinstatement due to injuries and illnesses, to care the individual cases continuously until the case is closed based on their circumstances; in the fabs, sufficient first-aid equipment are prepared, with automated External Defibrillator (AED) installed in each fab for emergencies of workers in the fabs, to treat immediately and reduce the risk of injury and illness.
Epidemic Prevention Management	7 Employees under Management of Notifiable Infectious Diseases 911 Employees under Management of High-Risk Personnel for Pandemic Containment 6,200 COVID-19 Rapid Test Kits Procured 3,966 Employees Tested for COVID-19	The current status of COVID-19 has been monitored, and individual pandemic containment tracking management is conducted for the employees with high-risk; the Company cooperates with medical institutions, to set up the test stations in the fabs for testing, and rapid testing kits have been procured, and availed to these employees with high-risk (coming back and forth from high-risk areas, business trips, new recruits, and contractors) in the fabs, for effective control, to maintain the operations and the health of all employees in the fabs.
Flu Vaccination	217 Employees Vaccinated	Since 2010, the annual influenza vaccination event has been conducted. In recent years, the employees have been very willing to receive vaccine, demonstrating the effect of health awareness promotion.
Cancer Screening	6 Screening 214 Employees for Oral Cancer Screening	The employee health examination program also covers various cancer screenings. In 2021, the examination items include oral cancer, colorectal cancer, liver cancer, lung cancer, prostate cancer and breast cancer. The cancer screening items better than the regulatory requirements are provided every year, by collaborating with the National Health Administration, to promote the early detection of precancerous lesions for appropriate treatment, and thus the occurrence of cancer is interrupted.
Employee Assistance Program	751 Employees Promoted 5 Employees Counselled 5 Articles of Self-Motivation	Since 2011, the "Employee Assistance Program (EAP)," has been promoted by working with external professional counselling institutions, to provide employees with professional resources to solve their issues related to work, family and mental health. Distributing EAP folds and small cards to new recruits, with promotion during the orientation.
Badge of Accredited Healthy Workplace	All Fabs Have Obtained the Badge of Accredited Healthy Workplace	Since 2009, the Company has actively applied for the label every three years, with all fabs obtaining the autonomous certified health promotion labels; the Company is committed to the implementation of cigarette-free workplace and planned promotion of health promotion, to continuously create a healthy workplace.

7.6 Social Engagement

413-1, 413-2

In 2021, as the global pandemic has not yet eased, in light of the pandemic containment experience in 2020, we replaced offline activities with diverse approaches. Amid the most severe pandemic situation in Taiwan, we worked with the employees to overcome the challenges with Taiwan via corporate power, and implement the feedback to the society concretely.

1,486 people
Beneficiaries

3,321 hours
Input hours

11,376 attendees
Volunteer Workers

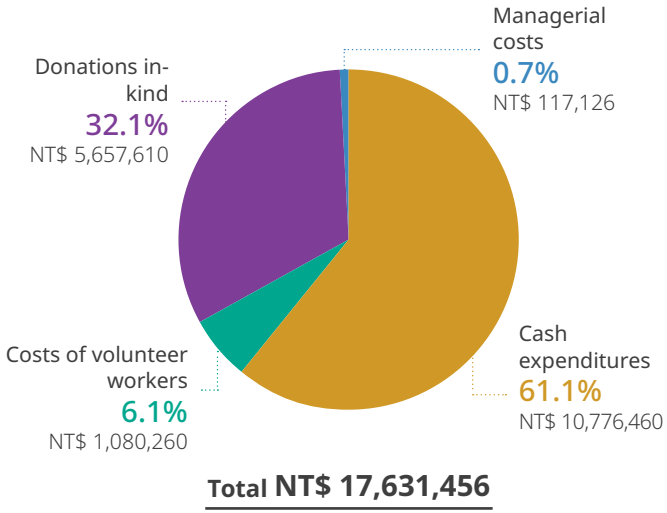
NT$ 17,631,456
Social Engagement Investment Amount

16.38 tons
Reduced carbon emission/year

With the two major visions, namely "Environmental Sustainability" and "Public Welfare Practice," ChipMOS has developed four major development aspects, including "Environment-Friendly," "Community Feedback," "Care to Underprivileged," and "Talent Incubation," echoing the 17 UN Sustainable Development Goals (SDGs for short), while focusing on five SDGs (SDG 2, SDG 3, SDG 4, SDG 11 and SDG 14). By referring to the "Community Investment Evaluation Model" developed by the London Benchmark Group (LBG), the various expenditures, including cash, time, in-kind, and management costs for social engagement are managed, and the possible subsequent positive effect resulted from these inputs are evaluated.



Social Engagement of ChipMOS

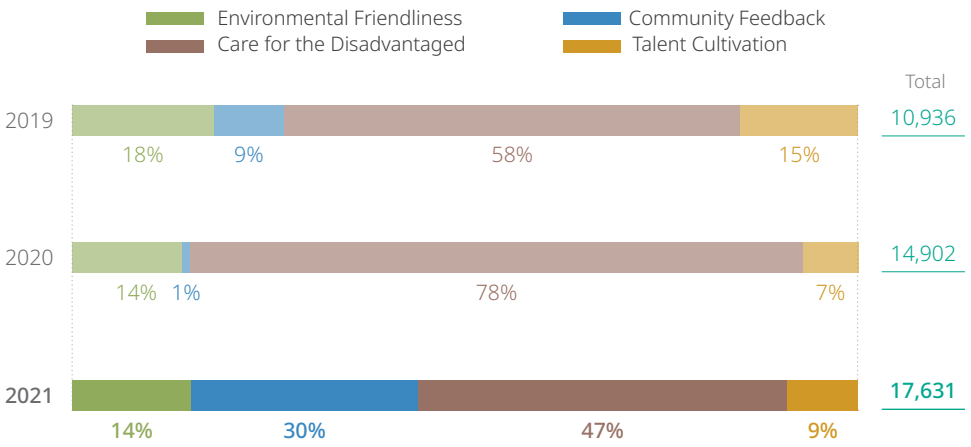


Total NT$ 17,631,456

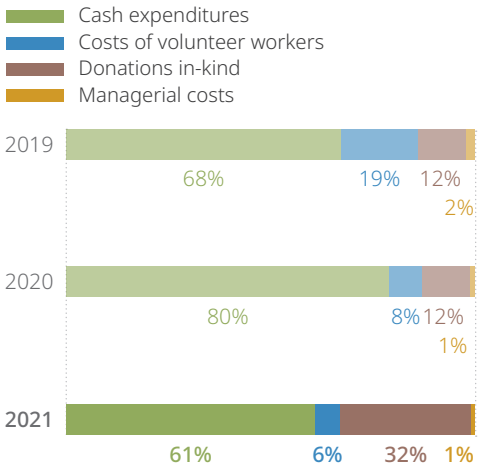
Note: Volunteer input cost is calculated based on the input time x the average salary (hourly rate) of non-managerial positions in ChipMOS of the current year, rather than the actual invested amount

Public Welfare Development Aspect

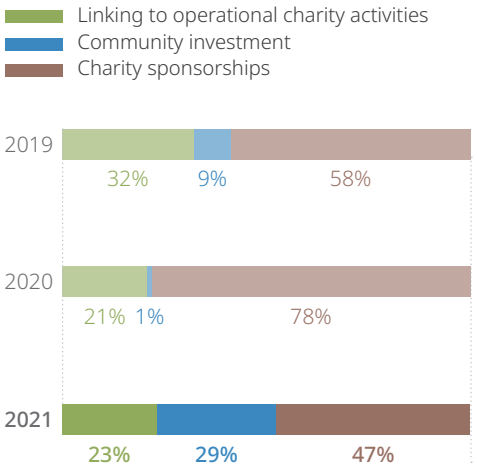
Unit: NT$ 1,000



Type of Investment



Application Aspect



*Because the input cost of volunteers is adjusted to the average salary (hourly salary) of non-manager positions in the year, the calculation basis of the total investment amount of social engagement in 2019-2021 is reconciled.

Execution Benefits

Vision	Development Aspect	Description	Corporate Benefits	Social Benefits
Environmental Sustainability	Environmental Friendliness	▪ Love the Earth, Starting from Love What's around You ▪ Join ChipMOS, Be Eco-Friendly, Sustainable, and Love the Earth ▪ Support Local Peasants and Be Friendly to the Land	▪ 1,103 Volunteers Attended ▪ Enhanced Corporate Image, with One Award ▪ News Coverage, for One Article in Total	▪ 92 Direct Beneficiaries ▪ Reduce Carbon Emissions by about 16.38 Tons/Year Note ▪ 7 Beneficiary Organizations
	Community feedback	▪ Create Community-Friendly Care, with Sustainable Use of Medical Resources ▪ Safeguard the Local Community during the Pandemic Containment Period ▪ Spreading Love amid the Pandemic, Rolling up Sleeves for Public Welfare	▪ Total 174 Volunteers Attended ▪ Enhanced Corporate Image, with Three Certificates of Appreciation	▪ Total 1,461,500 CC Accumulated for Blood Donation ▪ Six Beneficiary Organizations
Fulfillment of public welfare	Care for the Disadvantaged	▪ Support Taiwan's Agriculture with Actions ▪ Uninterrupted Care to Children in Rural Place and Underprivileged ▪ Diverse Employment Opportunities for the Physically Challenged	▪ 10,099 Volunteers Attended ▪ News Coverage for Four in Total ▪ Enhanced Corporate Image and Received 12 Certificates of Appreciation	▪ Directly Benefited 1,213 People ▪ 17 beneficiary organizations
	Talent Incubation	▪ Industrial-Academic Collaboration	▪ Incubate Professional Talents of Semiconductors	▪ Supported 181 young students ▪ 4 Beneficiary Organizations

Note: For pandemic containment in 2021, only lunch boxes were available from February to April, so the Meatless Days were in only nine months.

Highlighted Activities during the Pandemic Containment Period in 2021



Support Taiwan's Agriculture with Actions

- Helping the local fruits affected by the pandemic: the Company, with Southern Taiwan Science Park Bureau, adopted total 3,000 pineapples from Guanmiao, Tainan, to share with ChipMOS employees, and donate to elementary schools in the rural places in Hsinchu/Tainan, and public welfare organizations
- Procuring for toxic-free produces from public welfare organizations with employees: pears from Zhuolan, Miaoli for total 1,408 pears, and toxic-free rice from Tainan, 200 kilograms total



Safeguard Local Communities

- Donated NT$2.89 million to the Hsinchu County/ Tainan City Police Department, for purchasing three police patrol cars, to facilitate the front-line police officers for pandemic containment tasks
- Funded Hsinchu County Government NT$1 million to purchase pandemic containment materials, to protect the health of the elderlies at home in Hsinchu
- Funded Tainan City Government with NT$1 million with vendors, to purchase household rapid testing kits, and provided them to families employing household foreign workers, free of charge



Revive the Industrial Economy

- The Company opted to procure the hand-made eco leather cases of ID card from the local Taiwanese leather hand crafters as the anniversary gifts in 2021, for totaling NT$2,778,300



Uninterrupted Care to Children in Rural areas and the Underprivileged

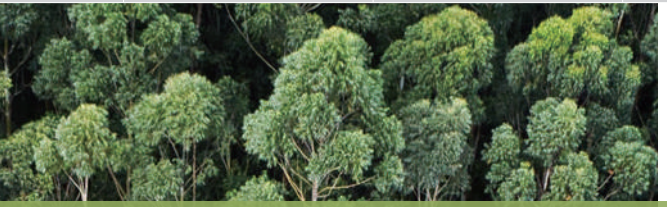
- Responding to the traditional lantern art events in Taiwan, the Company sponsored the 2021 Taiwan Lantern Festival in Hsinchu City, to make lanterns for the Year of the Ox, and donated the lanterns to six elementary schools in rural places in Hsinchu/ Tainan and Taiwan Fund for Children and Families, Tainan Branch
- Worked with the public welfare organization, Child Welfare League Foundation, to make the 2022 charity desk calendars; total 421 copies were sold, as the support to underprivileged children in diversified ways

Stakeholder's Feedback

Principal He,
Mei Hua Elementary School,
Jianshi Township, Hsinchu County

Thanks to ChipMOS' public welfare care, greatly helped the children's life and learning.For instance, the donated computers enable children to search for information and do their homework online in the classroom; ChipMOS invited children to perform Atayal percussion on the stage for the Company's Family Day, giving them a great stage experience and self-confidence; and the participation in Family Day Fair event mesmerized children in a joyful atmosphere.On Christmas Eve, great Christmas gifts were brought to children, warmed their hearts, fulfilled their dreams, and made them grateful.Such attentive public welfare care demonstrated how ChipMOS fulfilled its social responsibilities other than their endeavors to the core business, so touching and appreciated.





Environmental Sustainability

ChipMOS is a major global packaging and testing manufacturer, with great influence on society and the environment. Taking the increasingly challenging situation of global warming and climate change in recent years into account, how to lead all employees from the Company to love the Earth in a sustainable way, has become ChipMOS' key development goal. Various plans are conducted based on the two major aspects, "environmental friendliness" and "community feedback." For the implementation strategy, we start from the Company internally, and work with the community. Other than taking care of the surrounding environment, we also use our social influence to work with the employees to love the Earth with diverse approaches. It is expected to take practical actions for fighting against climate change and global warming together.



Environmental Friendliness

Targets in 2021	2021 Outcomes of Implementation	Targets in 2022
✓ Continuous Implementation of Environmental Protection Programs ✓ 9 of Promotional Events for Environmental Protection Awareness	**Continuous Cultivation** ➡ **Air quality purification in Zhubei, Hsinchu County:** in 2021, the Company won the award "Excellent Adoption Unit in the Air Quality Purification District" by the Hsinchu County Government ➡ **Road cleaning in Zhubei, Hsinchu County:** adopted 2.8 kilometers in total ➡ **Fabs in Hsinchu and Tainan Science Parks** – adoption of two pieces of public green lands in the Science Parks ➡ **Adoption of public restroom in Tainan City**, total one restroom ➡ **Working with suppliers to start a low-carbon diet; total 16.38 tons of carbon reduced** ➡ **Clean the Beach, Reduce Plastic, and Love the Earth in Tainan City:** 137 employees and their family members participated together; 365 kilograms of garbage along the coastline were cleaned up. **Annual Events** ➡ **Create a new life with waste paper, DIY eco-friendly seed balls:** 100 employees participated ➡ **Supporting local toxic-free produces in Taiwan, for total two events:** Hsinchu fab - Miaoli pear adoption, total 1,300 pears Tainan fab - Tainan toxic-free rice adoption, total 200KG ➡ **Friendly Land, Volunteer Petit Trip for Hsinchu Tea Picking:** Total 48 employees and 98 family members participated, and visited a toxic-free tea garden as a half-day tea picking volunteer	✓ Continuous Implementation of Environmental Protection Programs ✓ 9 of Promotional Events for Environmental Protection Awareness



Highlighted Eco-friendly Actions

Create a new life with waste paper, DIY eco-friendly seed balls: invested **NT$56,520**, with **100** volunteer participated

In 2021, we invited employees to use recycled pulp in various colors, combining with various plant seeds, to exert their creativity for making colorful and eco-friendly seed balls. Not only allowing employees to relieve stress during the creation process, the recycled waste paper was also reused, and would be decomposed and returned to the land after nourish new plants, making the earth to be better.

Clean the Beach, Reduce Plastic, and Love the Earth in Tainan City: **NT$28,430** was invested; **137** volunteers participated; **365** kilograms of garbage/waste along the coastline were cleaned up.

ChipMOS has continued to support the “Coastal Beach Cleaning Event” of the local Environmental Protection Agency. The said event called 137 employees and their family members to serve as volunteers for the eco beach cleaning on Yuguang Island, Anping, Tainan. Total 365 kilograms of garbage and waste was cleaned from the beach on Yuguang Island, returning a clean and pollution-free coast to the Earth.

Supported local toxic-free produces in Taiwan - **204** employees adopted **1,300** toxic-free pears; and **108** toxic-free pears were donated to Hsinchu Ren'ai Senior Citizens' Home

The Shuanglian Pear, a collaboration between the society and enterprise initiated by the teachers and students of Chung Yuan Christian University, adopts the toxic-free Asian pears grown by local peasants in the peripheral of Zhuolan, Miaoli. The adoption expenses from ChipMOS, not only fed back to the local peasants, part of the expenses were also allocated to the local elementary schools in Zhuolan as the development fund for the schools and community.



Charity rice adoption for developmentally challenged in Tainan - **200** employees adopted **200** kilograms of organic Koshihikari rice; **50** people participated in the vegetable picking experience event at the shelter farm

For the first time, the Company cooperated with Tainan Lotus Heart Garden Shelter Farm to purchase the toxic-free rice grown by disabled in Tainan City, as a direct action to help disabled for their life care and employment issue.

Starting from the daily diet, the Company worked with suppliers to promote low-carbon diet - cumulative **2,240** participants in 5 years; the low-carbon diet in 5 year cumulatively reduced carbon emissions by about **104** tons

Since 2017, the Company has worked with the group meal supplier, to introduce CAS organic vegetables into the Company's meals; one day regularly every month is designated to provide the "CAS organic vegetables" and one day as Meat-Free Day (i.e. vegetable meal and fruit meal only). In 2021, corresponding to the Company's internal pandemic containment policy, Meat-Free Day were implemented for nine months (January, and May-December 2021), reducing carbon emissions by about 16.38 tons. It is expected to lead employees to support organic cultivation for protecting land with practical actions from the daily diet, jointly promote the new concept of healthy diet, and reduce carbon and protect the Earth together.

Calculated on the basis of approximately 36.4 kilograms of carbon dioxide emissions per kilogram of meat produced; source: the Ministry of Health and Welfare (https://www.mohw.gov.tw/cp-16-25465-1.html)



Community feedback

Targets in 2021	2021 Outcomes of Implementation	Targets in 2022
✓ The total number of social engagement volunteers increased by 5% comparing to the base year, 2018	**Continuous Cultivation** ➡ Funded the medical equipment in neighboring hospitals ➡ 246 bags of blood donated, an increase of 134 bags from 2020 ➡ Total 11,376 participant for the social engagement and public welfare fulfillment volunteers in 2021. **Annual Events** ➡ Funded three police cars of to the local police station, increasing the energy of the police resources ➡ Funded the local government for purchasing rapid testing kits/ pandemic containment materials, to safeguard the health of locals	✓ The total number of social engagement volunteers increased by 5% comparing to the base year, 2018 [Note]

Implementation description: In 2021, due to the impact of the pandemic and cooperation with the Company's pandemic containment policy, the scheduled social engagement - visually impaired massage volunteer event was suspended from May 2021 to December 2021; therefore the total number of social engagement volunteers in 2021 failed to achieve the goal. However, during the suspension of the event, ChipMOS still ensured that the partner massage therapists continued to have a stable source of income during the pandemic, without being affected.

Note: Considering that the number of social engagement events has saturated in recent years, with uncertain pandemic situation, the 2022 goal is set as a 5% growth from the base year.





Highlighted Actions for Community Feedback

Invested resources to safeguard the community immediately during the pandemic containment period - donated NT$2.89 million to the Hsinchu County/ Tainan City Police Department for purchasing three police patrol cars; funded Hsinchu County Government NT$1 million to purchase pandemic containment materials; funded Tainan City Government NT$1 million with vendors to purchase household rapid testing kits.

The pandemic elevated in Taiwan since May 2021; considering the increased confirmed cases of COVID-19, ChipMOS immediately donated NT$2.89 million to Hsinchu County and Tainan City Police Departments for purchasing three police patrol cars for increasing the energy of police resources. Meanwhile, it also funded the Tainan City Government and the Hsinchu County Government with NT$1 million with vendors, respectively, to purchase household rapid testing kits and pandemic containment materials, seeking to make all the efforts to safeguard the health of locals amid the severe pandemic in Taiwan.

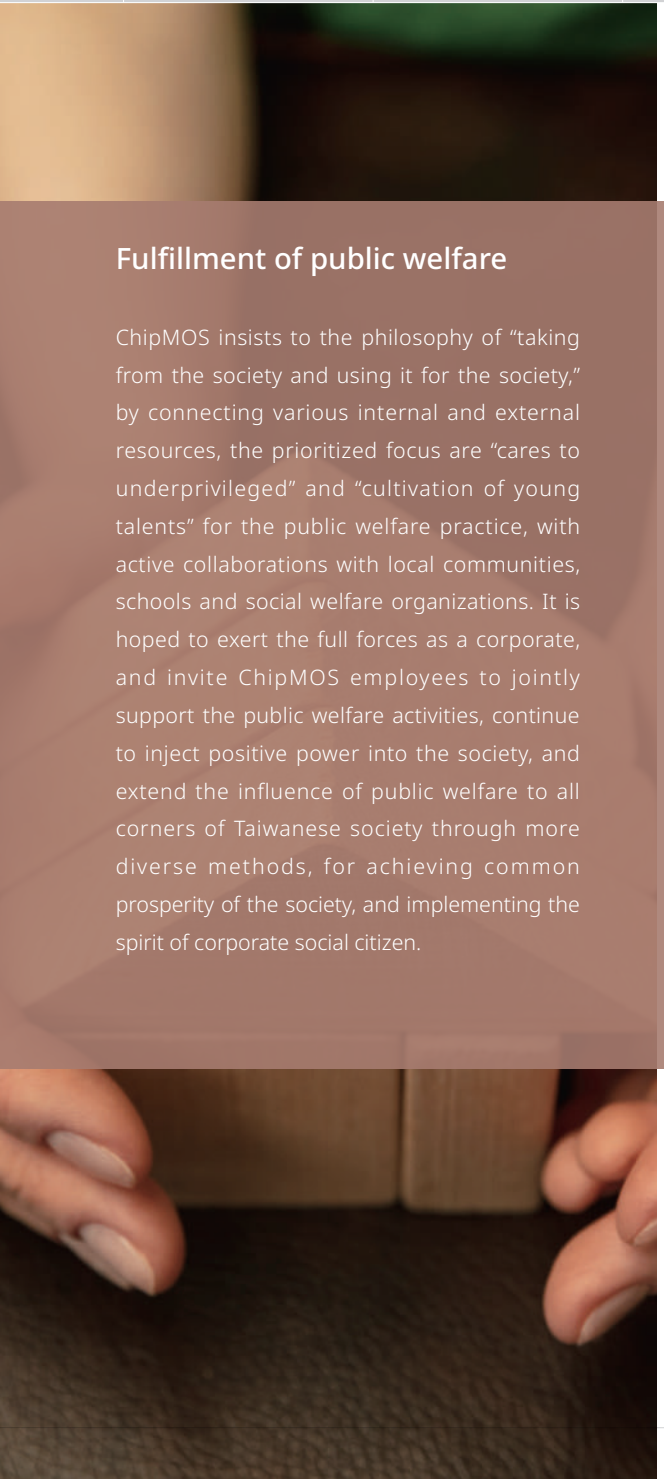
The Company funded medical equipment in neighboring hospitals - since 2008, total NT$4,783,360 has been donated to nearby hospitals to purchase medical equipment resources

ChipMOS has funded the nearby hospitals in Hsinchu for long time, including Hsinchu Mackay Hospital, Hsinchu Branch of National Taiwan University Hospital, and Hsinchu Branch, China Medical University Hospital. In 2021, ChipMOS funded NT$180,000 to Hsinchu Mackay Hospital and NT$600,000 to Hsinchu Branch, China Medical University Hospital, to replace basic medical equipment for improving the high-quality basic medical services, so that employees and community residents will be taken care of well when seeking medical services.

Spreading love amid the pandemic, rolling up sleeves for public welfare - for 21 years in row, total 4,245 employees rolled up their sleeves to donate blood, and 5,846 bags of blood have been donated

Since 2001, ChipMOS has worked with Hsinchu and Tainan Blood Donation Centers, to regularly hold the annual public blood donation event. In 2021, affected by the COVID-19 pandemic, the number of blood donors in Taiwan declined, resulting in insufficient blood inventory. ChipMOS called on 174 employees to donate blood for public welfare. For 21 years in row, 4,245 people have donated 5,846 bags of blood. It is expected the love and the blood of ChipMOS employees will be continued in more people in need.





Fulfillment of public welfare

ChipMOS insists to the philosophy of "taking from the society and using it for the society," by connecting various internal and external resources, the prioritized focus are "cares to underprivileged" and "cultivation of young talents" for the public welfare practice, with active collaborations with local communities, schools and social welfare organizations. It is hoped to exert the full forces as a corporate, and invite ChipMOS employees to jointly support the public welfare activities, continue to inject positive power into the society, and extend the influence of public welfare to all corners of Taiwanese society through more diverse methods, for achieving common prosperity of the society, and implementing the spirit of corporate social citizen.

Care for the Disadvantaged

Targets in 2021	2021 Outcomes of Implementation	Targets in 2022
9 Events of Continuous Welfare Fulfillment	**Continuous Cultivation** ➡ **Passing on happiness and sending warmth of the public welfare –** Christmas gift adoption plan, total 402 underprivileged children's wishes were adopted ➡ **Public welfare coffee program –** total income in 2021 was NT$62,230, and one rural elementary school in Hsinchu was benefitted. ➡ **Uninterrupted incomes for visually impaired massage therapists during pandemic period –** 17 visually impaired massage therapists were benefitted in 2021 **Annual Events** ➡ **Support Taiwan's agriculture with action -** "Adopt Pineapples" one Taiwanese produce and seven external public welfare organizations were benefited, with the total investment of NT$227,550 ➡ **Revive the industrial economy –** ChipMOS selected a local Taiwanese manufacturer for the anniversary gifts, with total investment of NT$2,778,300 ➡ **Spreading Love with Lanterns for Lantern Festival to Rural Villages –** invested NT$244,970 and total seven schools/ social welfare organizations were benefited ➡ **2022 ChipMOS X Child Welfare League Foundation Charity Desk Calendar Adoption –** Total 421 desk calendars have been adopted ➡ **Support the disabled to create their own values, leather DIY experience event**	9 Events of Continuous Welfare Fulfillment Note

Note: Eight events were held in 2021. Due to the impact of the pandemic, the goal of nine event failed to be achieved as scheduled. It is expected that the 2022 goal remains to hold nine events.

Highlighted Actions for Cares to Underprivileged

Support Taiwan's agriculture with action - "Adopt Pineapples" -
NT$**227,550** was invested, with **348** beneficiaries

The continued COVID-19 pandemic in 2021 impacted the export of Taiwanese fruit, resulting in slow sales and falling prices of pineapples to be harvested, and thus affecting farmers' livelihoods. To mitigate the losses of Taiwanese farmers, ChipMOS supported local farmers in Tainan with concrete actions. Partnering with Southern Taiwan Science Park Bureau, 3,000 pineapples were subscribed from the "Tainan Agriculture Product Marketing Company" and shared with employees, social welfare groups, and rural primary schools in Hsinchu and Tainan areas. Total seven external public welfare groups were benefited.

Reviving the industrial economy - NT$**2,778,300** invested

To revive Taiwan's industrial economy affected by the pandemic, the ChipMOS Welfare Committee specifically selected the eco-friendly leather ID card cases made by local leather craft manufacturers in Taiwan. Total 6,000 identification card cases were ordered as gifts to employees. Not only helping Taiwanese craft manufacturers challenged by the pandemic, but also convey the warmth to each ChipMOS employee with the pure hand-made crafted gift.

Spreading Love with Lanterns for Lantern Festival to Rural Villages - invested NT$**244,970** with **348** beneficiaries

In 2021, to support and respond to Taiwanese traditional lantern art events, ChipMOS particularly sponsored Hsinchu City Government, by producing 10,000 small lanterns as souvenirs for the 2021 Taiwan Lantern Festival; the lanterns were later donated to six rural elementary schools in Hsinchu and Tainan and Taiwan Fund for Children and Families, for rural and underprivileged children to experience Taiwanese traditional culture and enjoy the fun of making lanterns by themselves.



Christmas gift adoption program - cumulative investment of NT$841,469 for seven years in row; cumulative volunteer hours of 1,047 hours; cumulative 2,037 beneficiaries

Since 2015, for each warm Christmas Eve, ChipMOS has cooperated with local social welfare organizations and rural elementary schools, to invite ChipMOS employees to be Santa Claus for underprivileged children, to realize each Christmas wish drawn by these children. In 2021, in addition to the original partners, Ai Lin Community Care Association of Hsinchu County, Mei Hua and Jianshi Elementary School in Hsinchu County, Jiaxing Elementary School in Jianshi Township, Hsinchu County, and particularly rural elementary schools in Tainan (Dongyuan Elementary School, Longqi Elementary School, and Xinguang Elementary School) were added, and total 402 children's wishes were fulfilled.

2022 ChipMOS X Child Welfare League Foundation Charity Desk Calendar Adoption - NT$71,570 was invested, with 421 charity desk calendars purchased

To be more diverse when practicing public welfare, ChipMOS cooperated with the welfare organization Child Welfare League Foundation for the first time, to jointly produce the charity desk calendars. Meanwhile, ChipMOS employees were invited to purchase the paintings of children from rural villages with love, as a direct support with actions. Meanwhile, the income from the charity desk calendars were donated directly to the Child Welfare League Foundation to fund the children and adolescent underprivileged or in the rural villages.

Public welfare coffee program - cumulative NT$532,460 was raised for 6 years in row (the total revenue of coffee machines over the years), and cumulative 347 school children were benefited

The public welfare coffee program launched in 2016 has entered its sixth year in ChipMOS. With charity coffee machines set up in the office areas of the three fabs, employees are invited to assist the public welfare during works, to help more kids in rural villages in need. In 2021, we learned that Xiuluan Elementary School in Hsinchu County was in lack of resources as it is a school in a rural village. After the assessment, the Company donated the income from the Hsinchu fab, NT$61,800 of the year, with accumulated balance of donations over the years, NT$22,200, for total NT$84,000 to the school to add window screens to classrooms. It is hoped that the love of ChipMOS employees is helpful to children in rural villages for a more comfortable learning environment.

Support the disabled to create their own values, leather DIY experience event - 25 disabled youths were benefitted

In 2021, the Tainan fab particularly invited the Tainan City Rehabilitation Youth Motivation Association, to lead employees to experience leather DIY. Other than relieving employees' stress and experience the beauty of crafting by experiencing event at work, the event also supported the disabled to be able to apply their own power to create their own value, and thus have a stable income.

Cultivation of Young Talents

Targets in 2021	2021 Outcomes of Implementation	Targets in 2022
9 Events of Continuous Welfare Fulfillment	Continuous Cultivation → The industrial-academic collaborated with 181 students, an additional 156 students from 2020, with total NT$1,611,000 invested	9 Events of Continuous Welfare Fulfillment Note





Highlighted Actions for Cultivation of Young Talent

Root in Campus, and Cultivate Talents of Semiconductor Packaging and Testing: total NT$**1,611,000** has been invested to benefit **181** students

Since 2013, ChipMOS has successively launched a series of industrial-academic collaborative projects with ten colleges and universities in the neighborhood, including summer internships, scholarships and grants, employment-oriented programs and industrial-academic classes. With multi-year cultivation, 568 students have been benefitted. Since 2021, to continue to cultivate and enhance the relationship between the Company and colleges, the new semester internship opportunities have been added; scholarships, grants, and internship allowances are provided as the substantive assistance to underprivileged students, to reduce the financial burden of their families. In the 2021 Industrial-Academic Series Projects, total NT$1,611,000 has been invested to continuously motivate outstanding young students to apply what they've learned for diverse development.

Appendix 1: GRI Standards Content Index

★ ChipMOS Material Topics

GRI Standards	Number	Disclosure	Chapter/Explanation	Page
GRI 102 General Disclosures	102-1	Name of the organization	About This Report	2
	102-2	Activities, brands, products and services	1.2 Main Products and Services	12
	102-3	Location of headquarter	1.1 About ChipMOS	12
	102-4	Number of countries where the organization operates	1.1 About ChipMOS	12
	102-5	Nature of ownership and legal form	About This Report 1.1 About ChipMOS	2 12
	102-6	Markets served	1.2 Main Products and Services	12
	102-7	Scale of organization	1.1 About ChipMOS 1.3 Operational Performance and Tax Governance	12 16
	102-8	Information on employees and other workers	7.1 Attraction and Retention of Talents	102
	102-9	The organization's supply chain	1.1 Main Products and Services 6.1 Sustainable Supply Chain Management	12 93
	102-10	Significant changes to the organization and its supply chain	About This Report	2
	★ 102-11	Precautionary principles or approach	3.3 Risk Management	48
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	102-14	Statement from senior decision-maker	Message from the Chairman	3
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	102-17	Mechanisms for advice and concerns about ethics	3.2 Ethical Management	47
	★ 102-18	Governance structure	3.1 Corporate Governance	41
	102-22	Composition of the highest governance body and its committees	3.1 Corporate Governance	41
	102-40	Stakeholder groups	2.2 Materiality Analysis	25
	102-41	Collective bargaining power	7.4 Safeguarding Human Rights	127
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	102-44	Key topics and concerns raised	2.2 Materiality Analysis	25
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	102-46	Defining report content and topic boundaries	2.2 Materiality Analysis	25
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	102-49	Changes in reporting	About This Report	2
	102-50	Reporting period	About This Report	2
	102-51	Date of most recent Report	About This Report	2

★ ChipMOS Material Topics

GRI Standards	Number	Disclosure	Chapter/Explanation	Page
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	103-2	Management approach and its components	2.2 Materiality Analysis	25
	103-3	Evaluation of the management approach	2.2 Materiality Analysis	25
GRI 200: Economic Disclosures				
★ GRI 201 Economic Performance	201-1	Direct economic value generated and distributed	1.3 Operational Performance and Tax Governance	16
	201-3	Defined benefit plan obligations and other retirement plans	1.3 Operational Performance and Tax Governance 7.2 Employee Incentives and Benefits	16 112
★ GRI 202 Market Presence	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	7.1 Attraction and Retention of Talents	102
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GRI 204 Procurement Practices	204-1	Proportion of spending on local suppliers	6.1 Sustainable Supply Chain Management	93
★ GRI 205 Anti-corruption	205-1	Operations assessed for risks related to corruption	3.2 Ethical Management	47
	205-2	Communication and training about anti-corruption policies and procedures	3.2 Ethical Management	47
	205-3	Confirmed incidents of corruption and actions taken	3.2 Ethical Management	47
★ GRI 206 Anti-competitive Behavior	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	3.2 Ethical Management	47
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	301-3	Reclaimed products and their packaging materials	4.4 Recycling	78
★ GRI 302 Energy	302-1	Energy consumption within the organization	4.2 Climate Change and Energy Management	60
	302-3	Energy intensity	4.2 Climate Change and Energy Management	60
	302-4	Reduction of energy consumption	4.2 Climate Change and Energy Management	60
	302-5	Reductions in energy requirements of products and services	4.2 Climate Change and Energy Management	60
★ GRI 303 Water and Effluents (2018)	303-1*	Mutual influences of shared water resources	4.3 Water Resources Management	72
	303-2*	Management of discharge-related impacts	4.3 Water Resources Management	72
	303-3	Water withdrawal	4.3 Water Resources Management	72

Note 1: Except for GRI 303 and GRI 304 adopted the Y2018 edition; GRI 306 adopted the Y2020 edition, the other GRI indicators adopted Y2016 edition.
Note 2: * is the management approach of the topic

★ ChipMOS Material Topics

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★ GRI 303 Water and Effluents (2018)	303-4	Water discharge	4.3 Water Resources Management	72
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GRI 305 Emissions	305-1	Direct (Scope 1) GHG emissions	4.2 Climate Change and Energy Management	60
	305-2	Energy indirect (Scope 2) GHG emissions	4.2 Climate Change and Energy Management	60
	305-4	GHG emissions intensity	4.2 Climate Change and Energy Management	60
	305-5	Reduction of GHG emissions	4.2 Climate Change and Energy Management	60
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★ GRI 306 Waste (2020)	306-1*	Waste generation and significant waste-related impacts	4.4 Recycling	78
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	306-4	Waste diverted from disposal	4.4 Recycling	78
	306-5	Waste directed to disposal	4.4 Recycling	78
★ GRI 307 Environmental Compliance	307-1	Non-compliance with environmental laws and regulations	4.1 Environmental Protection Policy	59
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GRI 402 Labor/ management Relations	402-1	Minimum notice periods regarding operational changes	7.4 Safeguarding Human Rights	127
★ GRI 403 Occupational Health and Safety (2018)	403-1*	Occupational health and safety management system	7.5 Healthy and Safe Workplace	131
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	403-3*	Occupational health services	7.5 Healthy and Safe Workplace	131
	403-4*	Worker participation, consultation, and communication on occupational health and safety	7.5 Healthy and Safe Workplace	131
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	403-6*	Promotion of worker health	7.5 Healthy and Safe Workplace	131

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Note 2: * is the management approach of the topic

★ ChipMOS Material Topics

GRI Standards	Number	Disclosure	Chapter/Explanation	Page
★ GRI 403 Occupational Health and Safety (2018)	403-7*	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	7.5 Healthy and Safe Workplace	131
	403-8	Workers covered by an occupational health and safety management system	7.5 Healthy and Safe Workplace	131
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★ GRI 404 Training and Education	404-1	Average hours of training per year per employee	7.3 Talent Development	121
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★ GRI 405 Diversity and Equal Opportunity	405-1	Diversity of governance bodies and employees	3.1 Corporate Governance 7.1 Attraction and Retention of Talents	41 102
	405-2	Ratio of basic salary and remuneration of women to men	7.2 Employee Incentives and Benefits	127
GRI 406 Non-discrimination	406-1	Incidents of discrimination and corrective actions taken	7.4 Safeguarding Human Rights	127
GRI 408 Child Labor	408-1	Operations and suppliers at significant risk for incidents of child labor	7.4 Safeguarding Human Rights	127
GRI 409 Forced or Compulsory Labor	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	7.4 Safeguarding Human Rights	127
GRI 412 Human Rights Assessment	412-1	Operations that have been subject to human rights reviews or impact assessments	7.4 Safeguarding Human Rights	127
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GRI 413 Local Communities	413-1	Operations with local community engagement, impact assessments, and development programs	7.6 Social Engagement	141
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GRI 414 Supplier Social Assessment	414-1	New suppliers that were screened using social criteria	6.1 Sustainable Supply Chain	93
	414-2	Negative social impacts in the supply chain and actions taken	6.1 Sustainable Supply Chain	93
★ GRI 416 Customer Health and Safety	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	There is no health and safety violations for ChipMOS products and services in 2021.	-
★ GRI 417 Marketing and Labeling	417-2	Incidents of non-compliance concerning product and service information and labeling	There is no information and labeling violations for ChipMOS products and services in 2021.	-
	417-3	Incidents of non-compliance concerning marketing communications	ChipMOS did not violate marketing-related regulations in 2021	
GRI 418 Customer Privacy	418-1	Substantiated complaints regarding concerning breaches of customer privacy and losses of customer data	3.4 Information Security Management 5.1 Customer Service	54 84
GRI 419 Socioeconomic Compliance	419-1	Non-compliance with laws and regulations in the social and economic area	3.2 Ethical Management	47

Note 1: Except for GRI 303 and GRI 304 adopted the Y2018 edition; GRI 306 adopted the Y2020 edition, the other GRI indicators adopted Y2016 edition.
Note 2: * is the management approach of the topic

Appendix 2: Sustainability Accounting Standards Board (SASB) Index

Topic	Code	Unit	Accounting Metric	Chapter/Explanation	Page
Greenhouse Gas Emissions	TC-SC-110a.1	Ton-CO2e	1. Gross global Scope 1 emissions 2. Total emissions from perfluorinated compounds	4.2 Climate Change and Energy Management	60
	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	4.2 Climate Change and Energy Management	60
Energy Management in Manufacturing	TC-SC-130a.1	Gigajoules; %	1. Total energy consumed 2. Percentage grid electricity 3. Percentage renewable	4.2 Climate Change and Energy Management	60
Water Management	TC-SC-140a.1	M3; %	1. Total water withdrawn 2. Total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	All ChipMOS fabs are not located in High or Extremely High Baseline Water Stress	-
Waste Management	TC-SC-150a.1	Ton; %	Amount of hazardous waste from manufacturing, percentage recycled	4.4 Recycling	78
Employee Health & Safety	TC-SC-320a.1	-	Description of efforts to assess, monitor, and reduce exposure of employees to human health hazards	7.5 Healthy and Safe Workplace	131
	TC-SC-320a.2	NT$	Total amount of monetary losses as a result of legal proceedings associated with employee safety and health violations	There were no incidents of such employee safety and health violations in 2021.	-
Recruiting & Managing a Global & Skilled Workforce	TC-SC-330a.1	%	Percentage of employees that are 1. Foreign nationals 2. Located offshore	7.1 Attraction and Retention of Talents	102
Product Lifecycle Management	TC-SC-410a.1	%	Percentage of products by revenue that contain IEC 62474 declarable substances	ChipMOS is not an end product manufacturer, no applicable content	-
	TC-SC-410a.2	By Product	Processor energy efficiency at a system level for: (1) servers, (2) desktops, and (3) laptops	ChipMOS is not an end product manufacturer, no applicable content	-
Materials Sourcing	TC-SC-440a.1	-	Description of the management of risks associated with the use of critical materials	5.3 Green Products 6.2 Conflict Mineral Management	90 99
Intellectual Property Protection & Competitive Behavior	TC-SC-520a.1	NT$	Total monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	3.2 Ethical Management	47
Activity Metrics	TC-SC-000.A	thousand wafers/piece	Total production	1.3 Operational Performance and Tax Governance	16
	TC-SC-000.B	%	Percentage of production from owned facilities		

Appendix 3: Sustainable Development Goals (SDGs) Index

Sustainable Development Goals (SDGs)		Target	Chapter	Page
 SDG3 Good Health and Well-Being	Ensure healthy lives and promote well-being for all at all ages	3.8 Access to quality essential health-care services 3.d Early warning, risk reduction and management of national and global health risks	7.2 Employee Incentives and Benefits 7.5 Healthy and Safe Workplace 7.6 Social Engagement	112 131 141
 SDG4 Quality Education	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	4.4 Increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment 4.7 Ensure that all learners acquire the knowledge and skills needed to promote sustainable development 4.a Upgrade education facilities	7.1 Attraction and Retention of Talents 7.3 Talent Development 7.6 Social Engagement	102 121 141
 SDG6 Clean Water and Sanitation	Ensure availability and sustainable management of water and sanitation for all	6.3 Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials 6.4 Increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater 6.a Wastewater treatment and recycling	4.3 Water Resources Management	72
 SDG7 Affordable and clean energy	Ensure access to affordable, reliable, sustainable and modern energy for all	7.3 Improvement in energy efficiency every year	4.2 Climate Change and Energy Management	60
 SDG8 Decent Work and Economic Growth	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	8.3 Promote development-oriented policies that support productive activities and creativity and innovation 8.5 Achieve full and productive employment and decent work, including for young people and persons with disabilities, and equal pay for work of equal value 8.7 Take immediate and effective measures to eradicate all forms of child labor 8.8 Protect labor rights and promote safe and secure working environments for all workers	3.1 Corporate Governance 7.2 Employee Incentives and Benefits 7.1 Attraction and Retention of Talents 7.4 Safeguarding Human Rights 7.5 Healthy and Safe Workplace	41 112 102 127 131
 SDG11 Sustainable Cities and Communities	Make cities and human settlements inclusive, safe, resilient and sustainable	11.6 Reduce the adverse per capita environmental impact of cities, including air quality and more	7.6 Social Engagement	141
 SDG12 Responsible Consumption and Production	Ensure sustainable consumption and production patterns	12.2 Achieve the sustainable management and efficient use of natural resources 12.5 Substantially reduce waste generation through prevention, reduction, recycling and reuse	4.2 Climate Change and Energy Management 4.4 Recycling	60 78
 SDG13 Climate Action	Take urgent action to combat climate change and its impacts	13.3 Introduced TCFD for early response to climate change and mitigation actions	4.2 Climate Change and Energy Management	60
 SDG16 Peace, Justice and Strong Institutions	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	16.5 Substantially reduce corruption and bribery in all their forms 16.6 Formulated "Regulations Governing Professional Moral Conduct"	3.2 Ethical Management	47
 SDG17 Partnerships for the Goals	Strengthen the means of implementation and revitalize the global partnership for sustainable development	17.14 Enhance policy coherence for sustainable development 17.16 Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships	3.4 Information Security Management 5.1 Customer Service 6.1 Sustainable Supply Chain Management	54 84 93

Appendix 4: Independent Third Party Assurance Statement

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INDEPENDENT ASSURANCE OPINION STATEMENT

ChipMOS TECHNOLOGIES INC. 2021 Sustainability Report

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

Scope

The scope of engagement agreed upon with ChipMOS includes the followings:
1. The assurance scope is consistent with the description of ChipMOS TECHNOLOGIES INC. 2021 Sustainability Report.
2. The evaluation of the nature and extent of the ChipMOS's adherence to AA1000 AccountAbility Principles (2018) and the reliability of specified sustainability performance information in this report as conducted in accordance with type 2 of AA1000AS v3 sustainability assurance engagement.
3. The assessment of disclosure to be in conformance with the applicable SASB industry standard(s) in this report as conducted in accordance with type 1 of AA1000AS v3 sustainability assurance engagement.

This statement was prepared in English and translated into Chinese for reference only.

Opinion Statement

We conclude that the ChipMOS TECHNOLOGIES INC. 2021 Sustainability Report provides a fair view of the ChipMOS sustainability programmes and performances during 2021. The sustainability report subject to assurance is materially correct without voluntary omissions based upon testing within the limitations of the scope of the assurance, the information and data provided by the ChipMOS and the sample taken. We believe that the performance information of Environment, Social and Governance (ESG) are correctly represented. The sustainability performance information disclosed in the report demonstrate ChipMOS's efforts recognized by its stakeholders.
Our work was carried out by a team of sustainability report assurors in accordance with the AA1000AS v3. We planned and performed this part of our work to obtain the necessary information and explanations we considered to provide sufficient evidence that ChipMOS's description of their approach to AA1000AS v3 and their self-declaration in accordance with GRI Standards: Core option and SASB Standard(s) were fairly stated.

Methodology

Our work was designed to gather evidence on which to base our conclusion. We undertook the following activities:
- a review of issues raised by external parties that could be relevant to ChipMOS's policies to provide a check on the appropriateness of statements made in the report
- discussion with managers on ChipMOS's approach to stakeholder engagement. Moreover, we had sampled 2 external stakeholders to conduct interview
- interview with 18 staffs involved in sustainability management, report preparation and provision of report information were carried out
- review of key organizational developments
- review of the extent and maturity of the relevant accounting systems for financial and non-financial reports
- review of the findings of internal audits
- the verification of performance data and claims made in the report through meeting with managers responsible for gathering data
- review of the processes for gathering and ensuring the accuracy of data, followed data trails to initial aggregated source and checked sample data to greater depth during site visits
- the consolidated financial data are based on audited financial data, we checked that this data was consistently reproduced
- review of supporting evidence for claims made in the reports
- an assessment of the organization's reporting and management processes concerning this reporting against the principles of Inclusivity, Materiality, Responsiveness and Impact as described in the AA1000AP (2018)
- an assessment of the organization's use of metrics or targets of SASB Standard to assess and manage topic-related risks and opportunities.

Conclusions

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

Inclusivity

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

Materiality

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

Responsiveness

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

Impact

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

Performance information

Based on our work described in this statement, specified sustainability performance information such as GRI Standards disclosures disclosed in this report, ChipMOS and BSI have agreed upon to include in the scope. In our view, the data and information contained within ChipMOS TECHNOLOGIES INC. 2021 Sustainability Report are reliable.

GRI Sustainability Reporting Standards (GRI Standards)

ChipMOS provided us with their self-declaration of in accordance with GRI Standards: Core option (For each material topic covered by a topic-specific GRI Standard, comply with all reporting requirements for at least one topic-specific disclosure). Based on our review, we confirm that sustainable development disclosures with reference to GRI Standards' disclosures are reported, partially reported or omitted. In our professional opinion the self-declaration covers the ChipMOS's sustainability topics.

SASB Standards

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

Assurance level

The high level assurance provided is in accordance with AA1000AS v3 in our review, as defined by the scope and methodology described in this statement.
The moderate level assurance provided is in accordance with AA1000AS v3 in our review of SASB Standard(s).

Responsibility

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

Competency and Independence

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

For and on behalf of BSI:

Peter Pu, Managing Director BSI Taiwan

AA1000 Licensed Report 000-4/V3-P3T7K

...making excellence a habit.™

Statement No: SRA-TW-2021029
2022-06-14

Taiwan Headquarters: 2nd Floor, No. 37, Ji-Hu Rd., Ni-Hu Dist., Taipei 114, Taiwan, R.O.C.
A Member of the BSI Group of Companies.

Appendix 5: ISO-Certified Fabs at ChipMOS

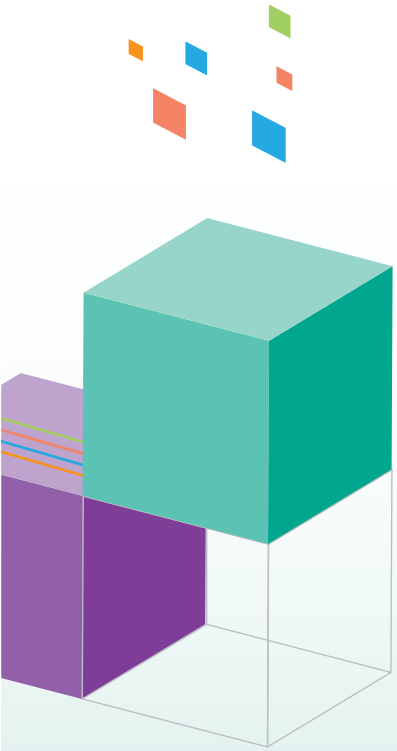
Item	Hsinchu fab.	Zhubei fab.	Zhubei fab. 2	Hukou fab.	Tainan fab.
ISO/IEC 27001:2013 Information Security Management System	✓	✓	✓	✓	✓
ISO 9001 Quality Management System	✓	✓	✓	✓	✓
IATF 16949 Automotive Quality Management System	✓	✓	✓	✓	✓
ISO 26262 Road Vehicles - Functional Safety Standard System	✓	✓	✓	✓	✓
IECQ QC 080000 Hazardous Substance Process Management System	✓	✓	✓	✓	✓
ISO 17025 Laboratory Management System (Calibration)					✓
ISO 17025 Laboratory Management System (Reliability)					✓
ISO 17025 Laboratory Management System (Chemical)		✓			
ANSI/ESD S20.20	✓	✓	✓	✓	✓
SONY Green Partner		✓			✓
ISO 14001 Environmental Management System	✓	✓	✓	✓	✓
ISO 14064-1 Greenhouse Gas Emission	✓	✓	✓	✓	✓
ISO 50001 Energy Management System	✓				✓
ISO 45001 Occupational Safety and Hea3lth Management System	✓	✓	✓	✓	✓
ISO 14051 Material Flow Cost Accounting					✓
ISO 14067 / PAS 2050 Carbon Footprint					✓
ISO 14046 / Water Footprint		✓			✓
Taiwan Green Building Label (from the Ministry of Interior)	✓ (Qualified Grade)				✓ (Silver Grade)
Taiwan Green Factory Label (from the Ministry of Economic Affairs)					✓

Note 1: The boundaries of assurance for Tainan fab also covers Tainan fab. 2
Note 2: Certification of ISO 17025 Laboratory Management System is only implemented on Zhubei fab and Tainan fab, which are the only two fabs with laboratories
Note 3: Hsinchu fab, Zhubei fab. 2 and Hukou fab are testing plants, and due to the nature of their products, they are excluded from the scope of assurance for SONY Green Partner

Appendix 6: 2019-2021 Awards and Recognition

No.	Date	Name of the award	Organizer
Economic & Social			
1	2019	2019 Excellent Enterprise for Adopting Electronic Invoice	National Taxation Bureau of the Northern Area, Ministry of Finance
2	2019	5th Corporate Governance Evaluation: Ranks among 21-35% in terms of evaluation results	Taiwan Stock Exchange (TWSE)
3	2019	Excellence in Corporate Social Responsibility Award, Top 50 Large Enterprises, CommonWealth Magazine	CommonWealth Magazine
4	2019	Taiwan Corporate Sustainability Awards, Top 50 Sustainable Corporate Sustainability Awards	Taiwan Institute for Sustainable Energy (TAISE)
5	2019	Taiwan Corporate Sustainability Awards, Top 50 Corporate Sustainability Report Awards, Gold Medal	Taiwan Institute for Sustainable Energy (TAISE)
6	2019	Corporate Sustainability Award	BSI British Standards Institution Taiwan
7	2019	Silver Medal, Talent Quality-management System	Workforce Development Agency, Ministry of Labor
8	2019	Award of Excellence for the Promotion of Workplace Equality	Southern Taiwan Science Park Bureau
9	2019	Best Supplier Award	CHIPONE
10	2019	Excellent Partner Award	Asahi KASEI Microdevices Corporation
11	2019	No. 1 in Annual Assessment	MXIC
12	2020	8th Corporate Governance Evaluation: Ranked among the top 21-35% of all TWSE-listed companies	Taiwan Stock Exchange (TWSE)
13	2020	Top Green Companies in Asia	MORS Group
14	2020	Taiwan Corporate Sustainability Awards, Top 50 Sustainable Corporate Sustainability Awards	Taiwan Institute for Sustainable Energy (TAISE)
15	2020	Taiwan Corporate Sustainability Awards, Top 50 Corporate Sustainability Report Awards, Platinum Award	Taiwan Institute for Sustainable Energy (TAISE)
16	2020	No. 1 in Annual Assessment	MXIC
17	2021	8th Corporate Governance Evaluation: Ranked among the top 5% of all TWSE-listed companies, Ranked among the top 10% of all electronics companies with market cap above NT$10 billion.	Taiwan Stock Exchange (TWSE)
18	2021	Taiwan Corporate Sustainability Awards, The Best Sustainable Corporate Sustainability Awards	Taiwan Institute for Sustainable Energy (TAISE)
19	2021	Taiwan Corporate Sustainability Awards, Top 50 Corporate Sustainability Report Awards, Gold Medal	Taiwan Institute for Sustainable Energy (TAISE)
20	2021	Corporate Sustainability Outstanding Award	BSI British Standards Institution Taiwan
21	2021	2020 Award of Excellence for the Promotion of Workplace Equality	Southern Taiwan Science Park Bureau

No.	Date	Name of the award	Organizer
Environmental			
1	2019	1st Annual Enterprises Protection Award and Excellent Enterprises for Environmental Protection	Environmental Protection Administration, Executive Yuan
2	2019	Outstanding Contribution Award for Sponsoring Air Quality Purification Zone, Silver Medal	Environmental Protection Administration, Executive Yuan
3	2019	Continued Performance for Going Green in the Factories	Southern Taiwan Science Park Bureau, MOST
4	2019	Business and Personnel for Promotions of Occupational Safety and Health	Southern Taiwan Science Park Bureau, MOST
5	2019	Excellent Enterprise for Green Procurement	Environmental Protection Bureau of Hsinchu County and Tainan City
6	2019	Energy-Saving Benchmark Award	Environmental Protection Bureau, Tainan City Government
7	2019	Sponsorship of Air Quality Purification Zones	Hsinchu County Government
8	2019	Promotion of Environmental Friendliness - Eco-friendly Vehicles	Hsinchu County Government
9	2020	Special Contribution Award for Sponsoring Air Quality Purification Zone	Environmental Protection Administration, Executive Yuan
10	2020	Excellent Enterprise for Green Procurement	Hsinchu County Government/Tainan City Government
11	2020	Excellent Enterprise for Air Quality Maintenance and Low-Carbon and Energy Conservation - Energy-Saving Benchmark Award	Tainan City Government
12	2020	Sponsorship of Air Quality Purification Zones	Hsinchu County Government
13	2021	Special Contribution Award for Sponsoring Air Quality Purification Zone	Environmental Protection Administration, Executive Yuan
14	2021	Excellent Enterprise for Green Procurement	Environmental Protection Bureau of Hsinchu County and Tainan City
15	2021	Occupational Safety and Health Excellent Company	Hsinchu Science Park Bureau
16	2021	Southern Taiwan Science Park- The Best Company for Saving Energy	Southern Taiwan Science Park Bureau
17	2021	The Best Company for Saving Energy	Tainan City Government
18	2021	Air Quality Purification Zones - Excellent Sponsor	Hsinchu County Government
19	2021	Air Quality Purification Zones - Excellent Company- Diesel Vehicle Emission Inspection	Tainan City Government



ChipMOS 南茂科技

www.chipmos.com

Hsinchu fab
No. 1, R&D Rd. 1, Hsinchu Science Park,
Hsinchu City, Taiwan (Headquarters)

Zhubei fab
No. 31, Xintai Rd., Zhubei City,
Hsinchu County, Taiwan

Zhubei fab. 2
No. 112, Zhonghe St., Zhubei City,
Hsinchu County, Taiwan

Hukou fab
No. 4, Rende Rd., Fengshan Vil., Hukou Township,
Hsinchu County, Taiwan

Tainan fab
No. 5, Nanke 7th Rd., Southern Taiwan Science Park,
Tainan City, Taiwan

Tainan fab. 2
No. 3, Nanke 7th Rd., Southern Taiwan Science Park,
Tainan City, Taiwan

Shanghai Subsidiary
Room 309-C, 6 Building , 990 Shenchang Rd, Minhang Dist.,
Shanghai City, China

U.S. Subsidiary
2890, North First Street, San Jose, CA 95134, U.S.A.

ChipMOS Website- ESG Section

Welcome to visit ChipMOS website to know more about us.

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