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UMC
Sustainability
Report

2023

UMC

Sustainability

Report

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In the post-epidemic era, despite the challenges posed by global inflation and geopolitical factors, and facing multiple challenges such as soaring raw material prices and declining consumer demand, UMC has remained committed to strengthening its business strategies and sustainable development to ensure steady growth and exert positive influence in all aspects of ESG (Environmental, Social, Governance).

In 2023, by continuing to implement UMC's Sustainability Strategy and Blueprint, we have deeply cultivated the three major aspects of ESG in a comprehensive manner. In terms of environmental sustainability, with reference to the Science Based Targets Initiative, we have announced more ambitious carbon reduction targets for 2030, gradually charting a course toward UMC's goal of 2050 Net-Zero emissions. We are set to establish our first R&D center for waste recycling, the Circular Economy & Recycling Innovation Center, at Southern Taiwan Science Park. Additionally, UMC has announced the Biodiversity and No Deforestation Commitment, which demonstrates our unwavering commitment to minimizing environmental impacts in multiple ways. In terms of employee care and development, UMC has long provided comprehensive employee benefits, embodying the spirit and principles of our Diversity and Inclusion Statement. We have established a diverse and inclusive workplace culture, striving to create a happy workplace where employees can find roles suited to their skills and interests. Our efforts in this area have been recognized by HR Asia as one of the "Best Companies to Work for in Asia". Also, in 2023, in order to nurture industry talent, deepen industry-academia collaboration, and support the development of outstanding semiconductor talent, UMC established the Chung-Laung Liu Doctoral Scholarship.

With the growing interest in ESG issues in the global capital markets, we saw a number of international changes in 2023, including the release of the International Financial Reporting Standards Foundation's (IFRS Foundation) Sustainability Disclosure Standards, and the finalization of the U.S. Securities and Exchange Commission's (SEC) Climate-Related Disclosure Rules in 2024. These developments have further strengthened the UMC team's long-held belief that "making ESG a reality" is the right choice. Our adherence to the principle of sustainable business operation and our practical response to the expectations of the environment and society continue to be recognized by the global community. In 2023, UMC continued to be listed as a constituent of the Dow Jones Sustainability Emerging Markets Index. At the same time, our MSCI ESG Rating was upgraded to AA, making us the only semiconductor company globally to receive a Double A rating from CDP Climate Change and Water Security disclosures for two years in a row. Moreover, UMC has consistently ranked in the top 5% of listed companies in the Corporate Governance Evaluation since its inception in 2015. UMC's exceptional performance has been acknowledged by both domestic and international communities.

Looking forward, we will continue to promote sustainable growth through green innovation and corporate responsibility, provide robust and innovative semiconductor manufacturing services to maintain the resilience and momentum of growth, and make significant contributions to global economic development and a sustainable environment and society.

Finally, we extend our sincere gratitude to everyone who supports UMC's sustainable development. We wish you all the best.



Jason Wang and Shan-Chieh Chien
Co-presidents and ESG Steering Committee Chairmen

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About This Report

This report is the non-financial information annual report of United Microelectronics Corporation (hereafter "UMC" or "the Company") for the 24th consecutive year since 2001. The report is available in both Chinese and English versions. Based on the principles of pragmatism, integrity, and mutual advancement, through the publication of this report, UMC aims to share the Company's short, medium, and long-term strategies, substantial actions, and performance in various dimensions of the economy, environment, and society (ESG) with stakeholders, in response to the concerns and expectations of the public regarding the development of UMC.

► Reporting Period: The information presented is from January 1, 2023 to December 31, 2023, which aligns with the period of the Company's annual report.

► Publication Frequency: Annually

- Previous edition: Issued in June 2023.
- Current edition: Issued in July 2024.
- Next edition: Scheduled to be issued in July 2025.

In support of environmental protection and a paperless policy, an electronic version of this report is posted on the Company website

Reporting Scope and Boundary

The reporting scope of this report covers revenue accounting for over 99% of UMC's consolidated financial statements. The entities in this report include UMC (fabs in Taiwan and Singapore) and its foundry subsidiaries, including Hejian Technology (Suzhou) Co., Ltd. (hereinafter "HJ"), United Semiconductor (Xiamen) Co., Ltd. (hereinafter "USCXM"), Wavetek Microelectronics Corporation (hereinafter "Wavetek"), and United Semiconductor Japan Co., Ltd. (hereinafter "USJC"), collectively referred to as the "UMC Group". For chapters in which the boundary scope information was affected on account of differing issues, special notes will be given in corresponding texts

Reporting Guidelines

The reporting guidelines which UMC was in accordance with while preparing for this report were listed below:

- GRI Sustainability Reporting Standards, Global Reporting Initiative (GRI)
- Semiconductors Sustainability Accounting Standard 2018, Sustainability Accounting Standards Board (SASB)
- Task Force on Climate-related Financial Disclosures (TCFD)
- Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies
- AA1000AP AccountAbility Principles
- UN Global Compact

External Assurance

In March 2024, DNV verified this report in accordance with the GRI Standards and AA1000 Assurance Standard (2008) TYPE II, providing high-level assurance. The assurance items covered not only reporting guidelines such as GRI standards, SASB standards, and TCFD, but also environmental and social indicators from UMC's Sustainable Strategy Blueprint. The related index tables and third-party assurance statements can be found in the appendix of this report. Moreover, financial data in this report is from the Company's financial statement, which has been audited by certified accountants Ernst & Young Accounting. And the greenhouse gas emissions inventory and reduction performance conform to ISO 14064-1:2018 standards and have been verified by a third party, DNV Business Assurance Co., Ltd..

Internal Control Process

This report is reviewed and approved by top managers of each division, and verified by a third party. After being compiled by the Corporate Sustainability Committee Office, the draft is submitted to the supervisor of the ESG Steering Committee and the Board of Directors for final approval before publication. Relevant procedures for preparation and verification of the sustainability report are included in the Company's internal control system to ensure reliability, timeliness, transparency and compliance of the reporting.

Draft

- Data/performance collection by relevant divisions and verified through a third-party assurance
- Complete the draft after approved by the top managers of relevant divisions

Compilation

- Compiled and edited by the Corporate Sustainability Committee Office

Publish

Reviewed and final approved by the supervisors of the ESG Steering Committee and the Board of Directors

- This report was submitted to the Board of Directors in the second quarter of 2024 (June 12th) and was approved.

Contact Information

Thank you for reading this report. For any questions or comment about content in the report, please contact:

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- Phone: + 886-3-5782258 / Fax: + 886-3-5782375
- UMC CSR mailbox: csr@umc.com
- Official Website: <https://www.umc.com/en/Home/Index>
- Sustainability Page: https://www.umc.com/en/esg/sustainability_overview
- For more real-time information, you are welcome to subscribe to UMC's quarterly ESG newsletters: https://www.umc.com/en/esg/sustainability_overview/Newsletter

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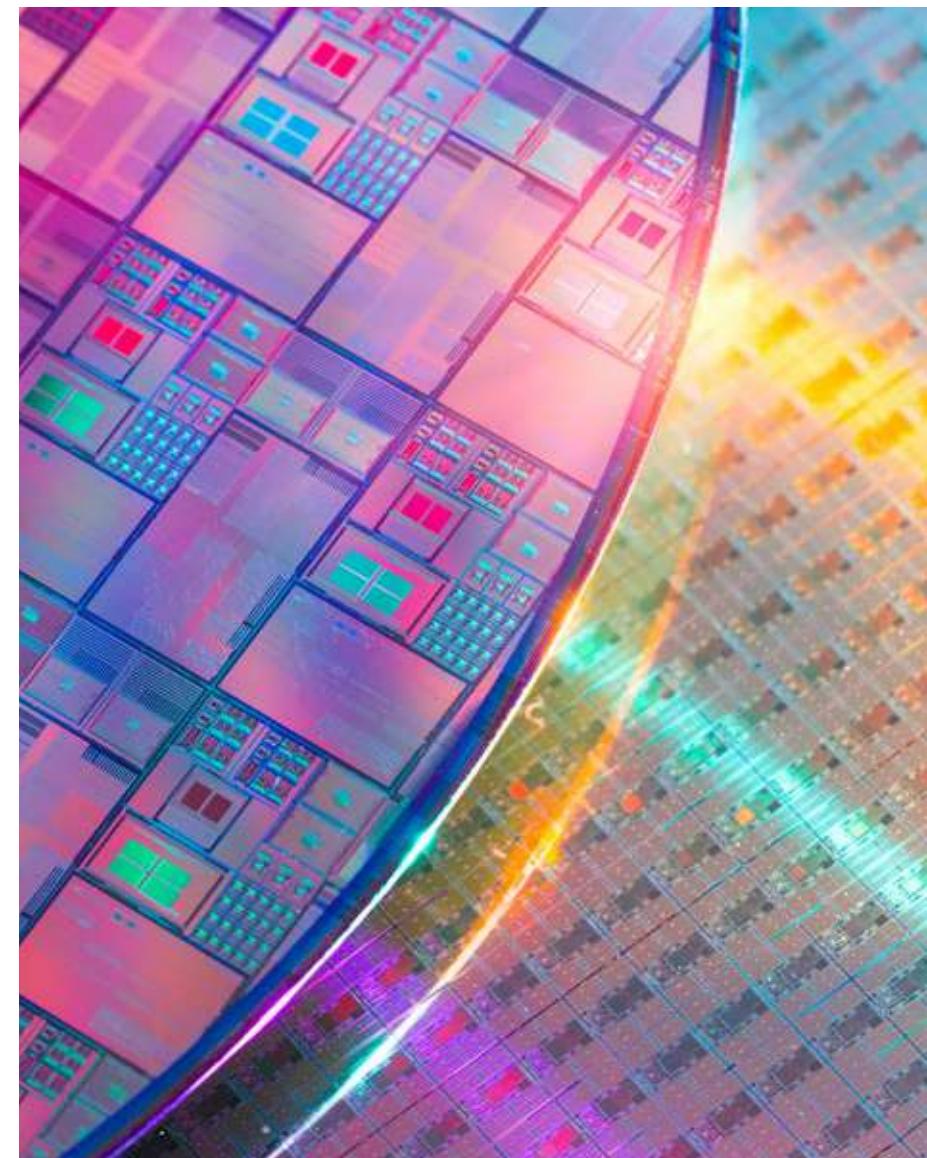
Established in 1980, UMC is Taiwan's first semiconductor company, and has grown to become a leading global semiconductor foundry. The company provides high quality IC production with a focus on both logic and specialty technologies to serve every major sector of the electronics industry. UMC's comprehensive technology and manufacturing solutions include Logic/Mixed-Signal, embedded High-Voltage, embedded Non-Volatile-Memory, RFSOI and BCD.

UMC led the development of the semiconductor industry in Taiwan. It was the first domestic company to offer foundry services, and the first semiconductor company to list on the Taiwan Stock Exchange. With approximately 20,000 employees worldwide, UMC offers robust process technologies and comprehensive foundry solutions, enabling customers to strengthen their competitive advantage in today's rapidly changing industry.

UMC has 12 wafer fabs located in Asia, four of which are advanced 12-inch fabs. The locations of our fabs offer customers a geographically diversified and resilient supply chain. In addition, UMC has an extensive network of sales offices in Taiwan, China, Europe, Japan, Korea, Singapore, and the United States to better serve customers.

UMC, with over four decades of manufacturing expertise, ensures industry-leading cycle times and defect densities. Comprehensive process control systems with advanced methodologies and a strong engineering team support fast product ramp. UMC's advanced automation, mature defect density, fast cycle times and more than 400,000 wafers per month (12-inch equivalent) capacity enable UMC to provide the most competitive manufacturing advantages to foundry customers.

Company Name	United Microelectronics Corp.
Date Founded	May 1980
Company Headquarter	No. 3, Li-Hsin Road 2, Hsinchu Science Park
Number of Employees	Approximately 20,000 employees, including those in worldwide affiliated companies
Total Capital Amount	Total capital of NT\$ 260 billion Paid-in capital amounted to NT\$ 125.298 billion
Main Operation	Professional integrated foundry services
Product Services	UMC's comprehensive IC processing technologies and manufacturing solutions include Logic/Mixed-Signal, embedded High-Voltage, embedded Non-Volatile-Memory, RFSOI and BCD.
Affiliated Businesses	Affiliated business operations including wafer manufacturing, electronics, optoelectronics, investment, insurance and trading
Consolidated Operating Revenues and Operating Costs	2023 annual revenue was NT\$ 222.533 billion and 2023 annual operating costs was NT\$ 144.789 billion



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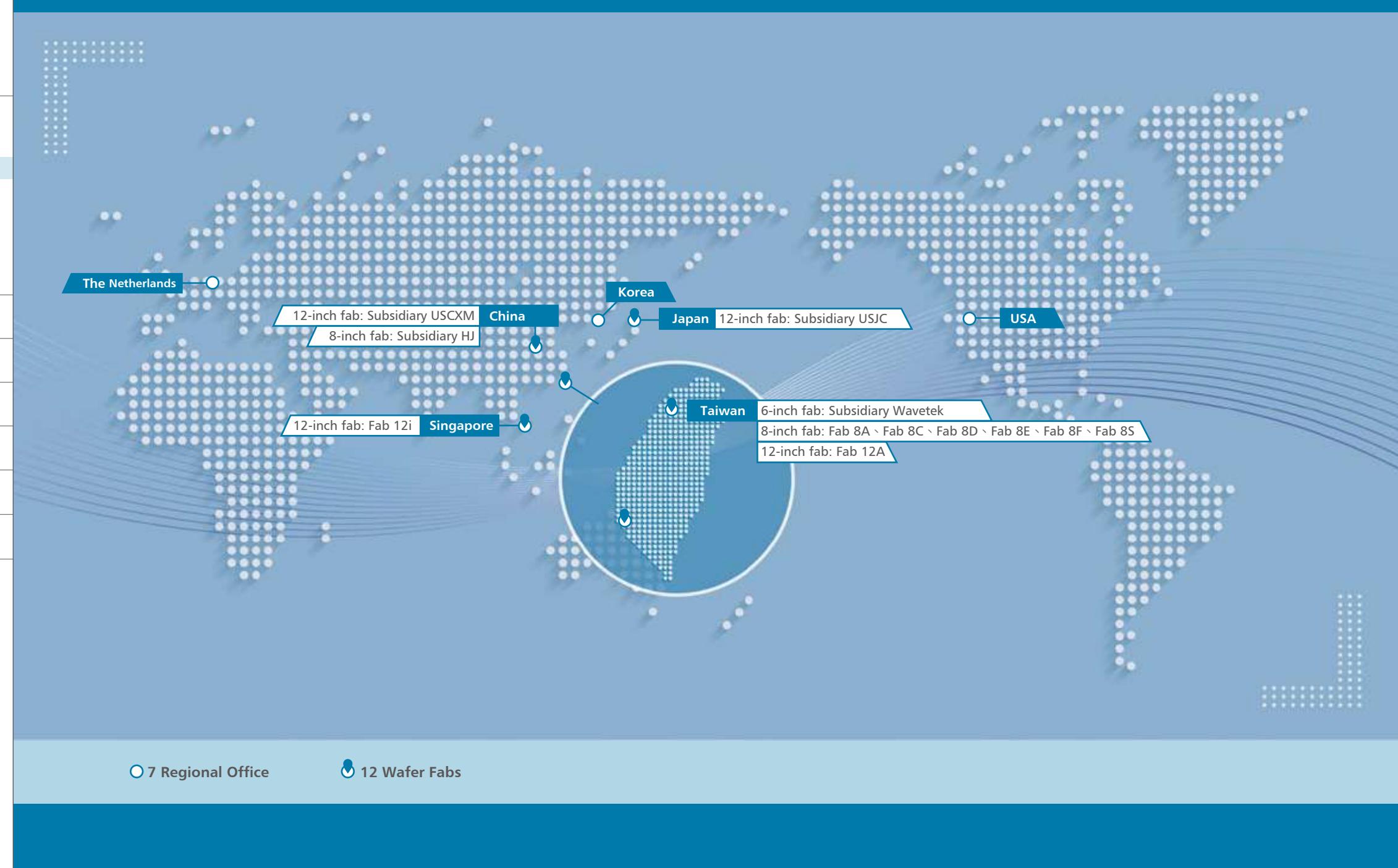
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Global Presence



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Public Participation

UMC actively builds and maintains productive relationships with governments and relevant organizations to communicate with key stakeholders on issues including industry development, technology, employee welfare, and environmental sustainability. Through membership in industry associations and non-profit organizations, UMC contributes its positions on the development of public issues and in the formulation of relevant industrial policies. In addition, UMC incorporates the sustainability initiatives and policies of governments and international organizations into its long-term planning. UMC established the "UMC Public Affairs Engagement Policy" and regularly reviews associations and organizations in which UMC is a member. UMC also monitors their publicly disclosed positions on climate change and whether they are aligned with the goals of the Paris Agreement.

Association Involvement

Unit: NT\$

Name of Organization	2020	2021	2022	2023
Allied Association for Science Parks Industries (ASIP)	954,000	1,008,000	1,008,000	1,008,000
Taiwan Semiconductor Industry Association (TSIA)	900,000	900,000	900,000	900,000
Semiconductor Equipment and Materials International (SEMI)	668,709	633,490	761,997	871,362
Association of Taiwan Net Zero Emissions (ATNZE)	-	-	241,667	150,000
Responsible Minerals Initiative	270,806	260,457	232,013	290,353
RE100	-	151,679	177,910	237,313
Taiwan Climate Partnership (TCP)	-	-	150,000	50,000
Taiwan IC Industry & Academia Research Alliance (TIARA)	-	100,000	100,000	100,000
Business Council for Sustainable Development of Taiwan (BCSD-Taiwan)	60,000	60,000	60,000	60,000
Taiwan Electrical and Electronic Manufacturers' Association (TEEMA)	42,000	42,000	42,000	42,000
Chinese Professional Management Association (CPMA)	20,000	20,000	20,000	20,000
Taiwan Carbon Capture Storage and Utilization Association	55,030	5,015	5,000	5,000
CommonWealth Sustainability League	-	95,238	-	-
Association of Atmosphere Protection in Taiwan (AAPT)	-	-	-	7,000
Total Amount	2,970,545	3,275,879	3,698,587	3,741,028

Costs of Association Participation

Unit: NT\$

Category	2020	2021	2022	2023
Trade association	2,970,545	3,275,879	3,698,587	3,741,028
Lobbying, interest representatives, or similar	0	0	0	0
Local, regional, or national political campaigns/ candidates	0	0	0	0
Others (e.g., spending related to ballot measures or referendums)	0	0	0	0
Total Amount	2,970,545	3,275,879	3,698,587	3,741,028

Note: the statistic cover UMC Taiwan and Singapore

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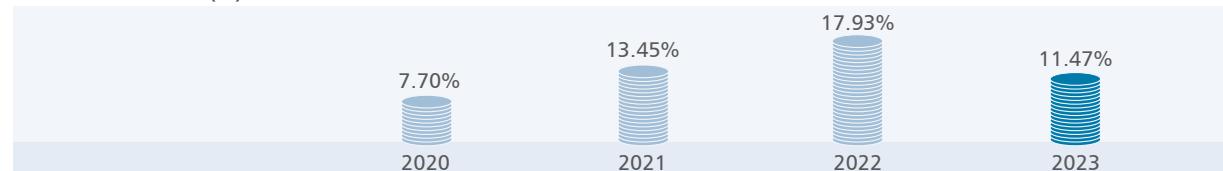
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Business Performance

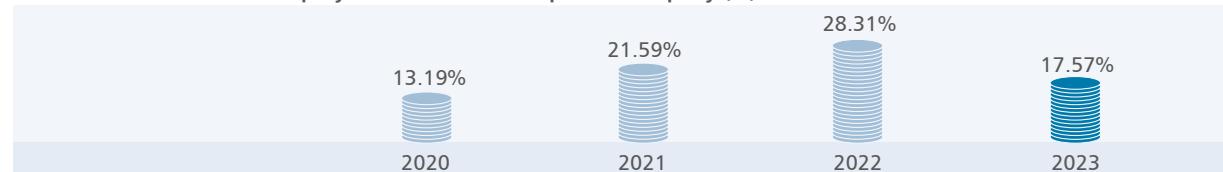
Sound operating performance is the foundation of corporate sustainability. In recent years, UMC has adjusted its business strategy and transformed into a leader focusing on specialty technologies, by strengthening its financial structure, expanding the capacity of cost-competitive production and optimizing its product portfolio. As a result, UMC has achieved outstanding performance in strategic positioning, technology, production capacity, yield, profitability and sustainable operation.

Profitability

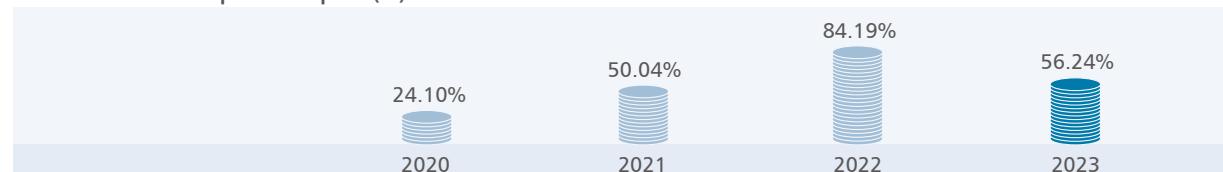
► Return on assets (%)



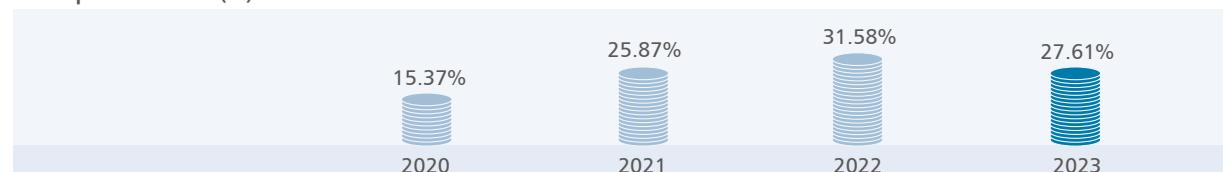
► Return on shareholders' equity attributable to the parent company (%)



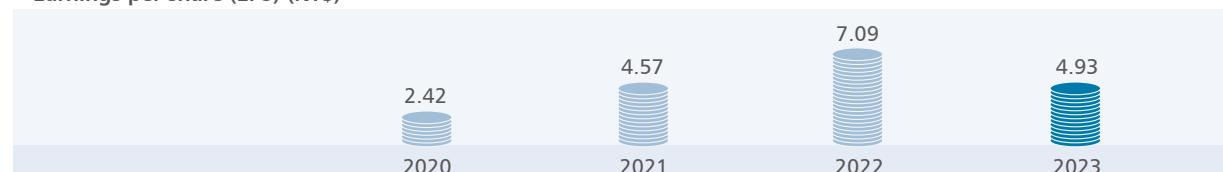
► Pre-tax income to paid-in capital (%)



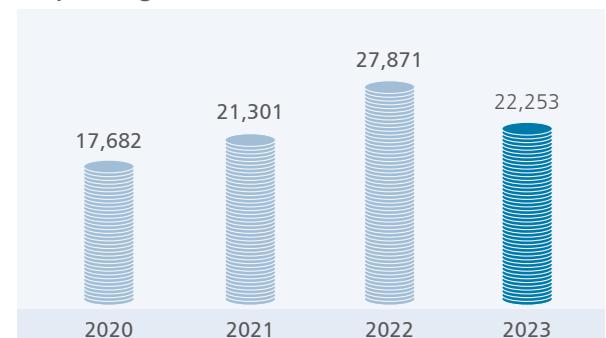
► Net profit margin (%)



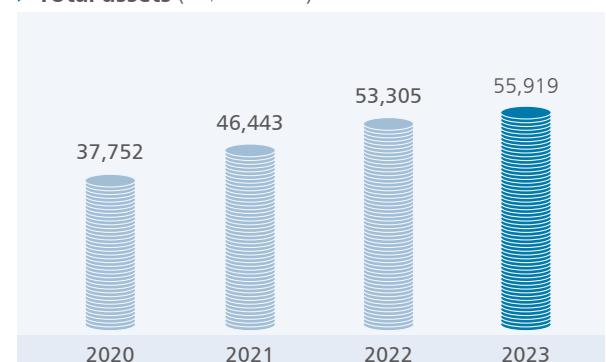
► Earnings per share (EPS) (NT\$)



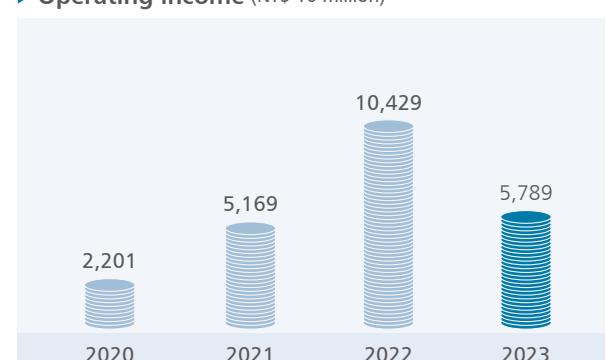
► Operating revenues (NT\$ 10 million)



► Total assets (NT\$ 10 million)



► Operating income (NT\$ 10 million)



Note: The above consolidated financial information is based on the Executive Yuan Financial Supervisory Commission approved international financial reporting guidelines. For parent company information, please refer to Page 163 of the Company's 2023 Annual Report.

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Sustainable Governance

UMC's sustainable development is built on the vision of "to strive for a better and more sustainable future that is centered on people, in harmony with the environment, and enables communities to thrive." The Company maintains good interaction with stakeholders to jointly pursue sustainable growth.



To strive for a better and more sustainable future that is centered on people, in harmony with the environment, and enables communities to thrive.



To pursue sustainable growth for the Company by embracing innovation and corporate responsibility, and to help customers meet the challenges of sustainable development.

Sustainable Governance Structure



The Board of Directors serves as the unit for the highest level of sustainable governance, and also plays a supervisory and guiding role to regularly reviews the progress of the sustainable strategy, and guides the management team to make adjustments when necessary. In addition, the effectiveness of ESG governance is supervised by the Nominating Committee, which is composed of all independent directors. The ESG Steering Committee appointed the Co-Presidents as the Chairmen to lead the senior executives (C-Suite) to meet every quarter, and to be in charge of determining UMC's ESG governance strategy and goals. The Chairmen of ESG Steering Committee report to the Nominating Committee and the Board of Directors annually on the Company's sustainable performance and plans, as well as key issues and countermeasures that stakeholders are concerned about.

With the Corporate Sustainability (CS) Committee and the Enterprise Risk Management (ERM) Committee under the ESG Steering Committee's supervision in order to ensure that ESG governance and corresponding policies are implemented from the top down. Sustainability affairs are mainly coordinated by the CS Committee and appointed the Chief Sustainability Officer as the Chairman, which is responsible for stipulating the direction and goals of sustainable development. The eight functional groups of the CS Committee appointed the vice presidents as the groups' chairs to review the performance and target achievements quarterly. The ERM Committee is responsible for coordinating risk management and controls in all aspects of the Company, and promoting relevant countermeasures for major risks. It has six risk groups that horizontally link three existing entity organizations and committees. The Company appointed the vice presidents as the chairs of the groups to review risk changes and management status quarterly, and update risk information on a monthly basis starting from the end of 2021. The representatives of the CS Committee and the ERM Committee report on the evaluation of risks related to corporate governance, environmental, and social issues, as well as plans and their effectiveness to the ESG Steering Committee quarterly.

The main points of the proposal reported to the Nominating Committee and the Board of Directors by ESG Steering Committee on October 25, 2023 include ESG activities and achievements, stakeholder communication, ESG future focus, and the timeline and progress of greenhouse gas emissions inventory and assurance, etc. A total of 10 key ESG issues were reported and communicated, including issues related to corporate governance, integrity management, risk management, information security, talent cultivation, social participation, workplace of happiness, climate change, circular economy, and biodiversity. Relevant major issues need to be reported to the Board of Directors for approval. In 2023, the cases related to sustainability approved by the Board of Directors include the achievement of employee's remuneration linked to ESG KPI, donation to UMC Science and Culture Foundation, and green investment including carbon abatement technologies, improvement of pollution prevention facilities and establishment of Circular Economy & Recycling Innovation Center.

UMC Sustainable Development
Best Practice Principles



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Sustainability Strategy and Blueprint

UMC is committed to integrating sustainable development with our business strategy. Based on the Company's core business of wafer manufacturing, UMC has formulated its Sustainability Strategy and Blueprint that are aligned with ten UN Sustainable Development Goals (UN SDGs). The Company also set corresponding goals of 2022, 2025 and 2030, and launch action plans to achieve those goals. In order to ensure stable operations and growth for the Company, and to positively contribute to all ESG aspects, striving to minimize any adverse impact on the society and the environment, the Company is committed to produce products with sustainable benefits. UMC aims to create ESG value together with our stakeholders for a better world.

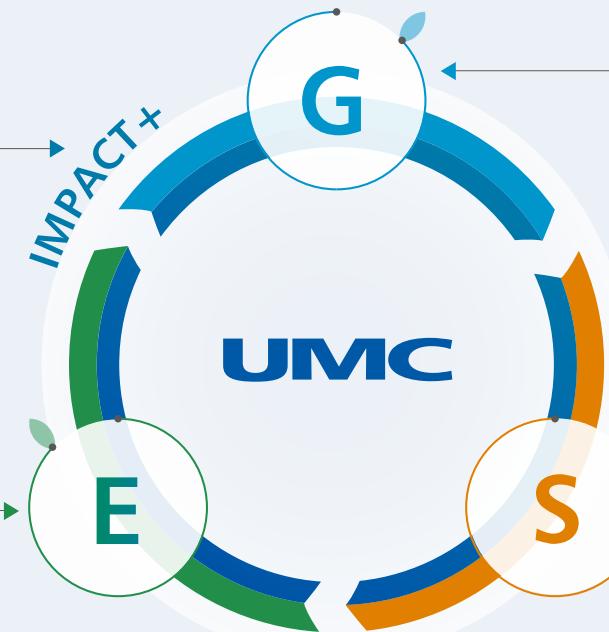
In 2021, the ESG Steering Committee formulated four sustainable strategic directions:

- Unleash the power of technology
- Integrate UMC's core capabilities
- Minimize environmental footprint
- Create social value

IMPACT+

Unleash the power of technology

Contribute to a better world by expanding the application of high-performance/low power consumption semiconductor products in health-related and eco-friendly field



Environment

Minimize environmental footprint

Practice low-carbon sustainability, promote renewable energy and net zero carbon emissions, and reduce the environmental impact of operations and products



Governance

Integrate UMC's core capabilities

Implement sustainable governance, exert UMC's core strengths, and work together with supply chain partners to strive for ESG vision



Social

Create Social value

Provide opportunities for employees, promote semiconductor education and public welfare



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Strategy	Item	Achievements	Goals	Location
 Unleash the power of technology	► Revenue from sustainable products as % of total revenue*	► 82.2%	► ≥79%	► ≥81%
	► Number of innovative energy-saving specialty process platforms (base year 2020)	► 3	► ≥5	► ≥10
	► Cumulative patents granted worldwide*	► 15,196 (425 for the year)	► >15,650	► >16,650
 Integrate UMC's core capabilities	► Ratio of satisfied customer	► 92%	► ≥90%	► ≥90%
	► Ratio of audit conducted to significant high-risk suppliers* NEW	► -	► 100%	► 100%
	► Ratio of Tier 1 suppliers who have included 'signing Employment Ethics Terms and Conditions Agreement' in their supply chain management requirements*	► 49.7%	► 80%	► 80%
 Minimize environmental footprint	► Percentage of carbon intensity reduction by suppliers within the project of 'low-carbon supply chain'**	► Annual goal achieved	► 10%	► 20%
	► Completion rate of biodiversity survey for Tier 1 suppliers* NEW	► -	► 100%	► 100%
	► Ratio of products produced by Industry 4.0 Smart Manufacturing Systems	► 43%	► 60%	► 80%
	► Reduction of water withdrawal per unit product	► 23.1%	► 25%	► 30%
	► Cumulative water savings (base year 2015)	► 5.47 million tonnes	► 6.1 million tonnes	► 8.6 million tonnes
	► Reduction of electricity consumption per unit product	► 23.8%	► 25%	► 30%
	► Cumulative energy savings (base year 2015)	► 771 GWh	► 818 GWh	► 1,000 GWh
	► Reduction of waste generated per unit product	► 37.6%	► 35%	► 50%
	► Cumulative waste reduction (base year 2015)	► 16,111 tonnes	► 22,000 tonnes	► 33,000 tonnes
	► Reduction of GHG emissions per unit product (with 2010 emissions scenario as the baseline)	► 50.3%	► 55%	► 60%
	► Reduction of GHG emissions (base year 2020)	► -	► -	► 42% (Scope 1+2) ► 25% (Scope 3)
	► Ratio of renewable energy in total electricity used	► 11.1%	► 25%	► 50%
	► Reclaimed water and desalinated water usage rate (Reclaimed water usage rate)	► 23.7%*	► 18%	► 32%
				3.3 Water Resources Management

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Strategy	Item	Achievements	Goals		Location
 Minimize environmental footprint	► Develop circular economy solutions/products	► 2 items in total	► 4 items in total	► 6 items in total	3.4 Waste Management
	► Ratio of in-fab resource conversion <small>Note 1</small>	► 15.1%*	► 22%	► 35%	
	► VOC reduction*	► 97.4%	► >95%	► >97%(new fabs) ► >95% (existing fabs)	3.5 Air Pollution Control
	► Key water pollution indicators better than regulated standards**	► 77.5%	► 60%	► 70%	3.3.3 Water Pollution Control
 Create social value	► Mid- and high-performance retention rate*	► 96.3%	► ≥ 93.5%	► ≥ 94%	4.2 Diversity, Equity and Inclusion in the Workplace
	► Proportion of women among managerial personnel*	► 22.4%	► 23%	► 24%	
	► Questionnaire survey coverage rate***	► 98.6%	► 98.9%	► 99%	4.1.2 Employer-employee Communication
	► Work engagement score***	► 81.7	► 80.2	► >80.5	
 Semiconductor education programs	► Disabling Injury Frequency Rate (FR) and Disabling Injury Severity Rate (SR) <small>Note 2</small>	► FR: 0.25 and SR: 11, which is better than the 3-year average for the semiconductor manufacturing industry (FR: 0.61 and SR: 38)	► Reduce to less than 1/2 of the 2023 three-year semiconductor manufacturing industry average	► Reduce to less than 1/3 of the 2028 three-year semiconductor manufacturing industry average	4.3.2 Maintain Workplace Safety
	► Number of partner institutions	► 27**	► 29*	► 30*	
	► Number of semiconductor promotion events	► 76**	► 62*	► 65*	
	► Annual number of participants	► 6,104**	► 3,200*	► 3,500*	
 Social participation activities	► Cumulative investment in semiconductor education (base year 2020)	► NT\$31.05 million**	► NT\$41.1 million*	► NT\$50 million*	5.2 Youth Talent Cultivation
	► Semiconductor Science Education for elementary school student and community	► 53**	► 17*	► 19*	
	► Number of events	► 4,268**	► 4,530*	► 5,100*	
	► Number of beneficiaries				5.1 Promote Common-Prosperity Society
 Employee volunteer hours	► Social participation activities	► 41,458**	► 39,500*	► 41,000*	
	► Number of beneficiaries	► 7,562**	► 7,100*	► 8,200*	
	► Employee volunteer hours				

Scope: *UMC; **UMC (Taiwan); ***UMC, subsidiaries HJ and USCXM; without any * remark is UMC Group (UMC, subsidiaries HJ, USCXM, Wavetek and USJC).

Note: 1. Ratio of in-fab resources conversion = (volume of in-fab resource conversion ÷ volume of total waste generated)

2. Calculation based on OSHA statistical model and the average announced.

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Dow Jones Sustainability Indices

Selected for the Dow Jones Sustainability Indices (DJSI)'s World Index, **top ranking** among semiconductor foundry peers, marking the Company's 16th consecutive year of inclusion and was also named a constituent of the Emerging Markets Index.

Member of
**Dow Jones
Sustainability Indices**

Powered by the S&P Global CSA



MSCI ESG Rating

Rated "**AA level**" in MSCI ESG Rating, while also again selected as a component in the MSCI ACWI ESG Leaders Index and MSCI Emerging Markets ESG Leaders Index.



FTSE4Good Index

Again selected as a component of FTSE4Good All-World Index, FTSE4Good Emerging Index and FTSE4Good TIP Taiwan ESG Index.

ISS ESG Corporate Rating

Rated "Prime" by ISS (Institutional Shareholder Services) ESG Corporate Rating for **7th consecutive year**.



UMC

Sustainability
Recognition



CDP Evaluation

Included in A List (Leadership Level) in both "Climate Change" and "Water Security" disclosure projects, the **only semiconductor firm globally to secure this double "A" recognition for two consecutive years**.

Best Companies to Work for in Asia Award

Selected as one of the "Best Companies to Work for in Asia" by HR Asia, an authoritative publication for HR professionals, out of over 300 companies.



Corporate Governance Accreditation Top 5%

Ranked in the top 5% of companies for the **9th consecutive year** by the Taiwan Stock Exchange and Taipei Exchange.

National Sustainable Development Award

Awarded the National Sustainability Award from the Executive Yuan, becoming the only company to **win the award four times** based on overall company performance since the award was held.



Taiwan Corporate Sustainability Awards

Awarded "Top 10 Taiwanese Companies Sustainability Model Award" and the "Corporate Sustainability Report Awards". UMC has won the **"Corporate Sustainability Report Awards" for 16th consecutive year**, and was awarded the highest Platinum award for the 6th time.

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Value Creation: Major Capital Investments and Output

UMC refers to the "Integrated Reporting Framework" of the Value Reporting Foundation (VRF) and describes the Company's six categories of operational investments and outputs.

Category	Capital Investments The Meaning of Each Capital to UMC Group	Key Investment Projects	2023 Corresponding Sustainable Outputs
 Financial Capital	Through operations and investments, the Company's daily operations, production and services are maintained.	Financial structure strengthening, cost-competitive capacity expansion, and product portfolio adjustment.	<ul style="list-style-type: none"> ▶ Total revenue (UMC) of NT\$ 61.0 billion ▶ Earnings per share of NT\$ 4.93
 Manufactured Capital	Including the investment and maintenance of the facilities used in wafer fabrication and integration fabs, as well as in production and R&D, in order to produce products that meet customer demands.	Capital expenditures of approximately USD\$3 billion were mainly invested in capacity expansion of Fab 12A and Fab 12i as well as product portfolio optimization for each fab.	<ul style="list-style-type: none"> ▶ Annual wafer shipments reached 3.202 million pieces of 12-inch equivalent wafers
 Human Capital	By providing a good and positive workplace environment along with proper training, employees' knowledge, experience, expertise, productivity and loyalty can be enhanced.	<ul style="list-style-type: none"> ▶ Education and training costs amounted to NT\$ 81.2 million. ▶ Salary and welfare expenses amounted to NT\$ 43.08 billion. 	<ul style="list-style-type: none"> ▶ Score of employee engagement: 81.7** ▶ Employee turnover rate of 6.8% ▶ Average NT\$ 4,074 training expense per employee
 Intellectual Capital	Including patents, research and development capabilities, and cooperation agreements that can enhance the company's competitive advantage or generate intangible assets that exceed the company's book value	<ul style="list-style-type: none"> The overall number of patents granted has been growing steadily, with emphasis on patent portfolio to protect intellectual property rights of its technologies. ▶ Invested NT\$ 13.3 billion in R&D. 	<ul style="list-style-type: none"> ▶ Obtained 425 domestic and foreign patents, with a total of 15,196 patents granted over the years* ▶ Ratio of satisfied customers: 92%
 Natural Capital	Committed to minimizing the various impacts of fab operations on the environment, including reducing natural resource consumption, decreasing pollution output, and promoting green procurement	<ul style="list-style-type: none"> Promoted "Green Action Plan" Plan to conserve water and electricity, and reduce waste and F-GHGs emissions. ▶ Environmental protection-related capital expenditures totaled NT\$ 3.12 billion* ▶ Green procurement amounted to NT\$ 131 million*** 	<ul style="list-style-type: none"> ▶ Water savings increased by 825,000 tonnes ▶ Electricity consumption reduced by 235,605 MWh ▶ Waste reduction increased by 2,411 tonnes. The volume of waste outsourcing reuse volume reached to 51,000 tonnes and the re-use rate was over 94% ▶ F-GHG emissions reduced by 620,000 tonnes of CO₂e*
 Social Relationship Capital***	The sum of resources or capabilities connected through social networks, including the maintenance of long-term partnerships with value chain partners and other stakeholders	<ul style="list-style-type: none"> ▶ Dedicated a total of NT\$75.68 million to social charity activities ▶ A total of 7,562 hours spent in corporate volunteering services. 	<ul style="list-style-type: none"> ▶ UMC Eco Echo Award Initiative awarded 3 NGO ecological conservation projects, 8 youth environmental initiatives, and 2 green innovation projects. ▶ UMC Energy Saving Service Team served 11 organizations and reduced about 1,004 tonnes CO₂e. ▶ UMC's public services have reached 41,458 person-times beneficiaries

Scope: Without any * remark is UMC Group (UMC and its subsidiaries HJ, USCXM, Wavetek and USJC); **UMC; ***UMC, subsidiaries HJ and USCXM; ****UMC (Taiwan).

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Determination of Material Topics

The sustainability report is one of the main channels which UMC Group communicates ESG issues to stakeholders. To ensure that the report focuses on material topics related to external stakeholders and its own operations, [UMC conducts the materiality analysis annually](#). In accordance with the GRI Standard: GRI 3 Materiality Topics 2021, material topics with significant impacts are identified through engaging with stakeholders and experts, and the assessing process for the positive and negative impacts. The results of the materiality analysis are then disclosed in the sustainability report to provide a comprehensive overview of UMC Group's management and performance in each material topic.

Process to Determine Material Topics

1 Understand UMC's Organizational Context

Understand links between UMC's activities, business relationships and the sustainability issues as well as identify major stakeholders

7 major categories of stakeholders

Referencing the nature of its businesses as well as the 5 key principles of AA1000 SES (Stakeholder Engagement Standard): Dependency, Responsibility, Tension, Influence and Diverse perspective, UMC identified a total of major categories of stakeholders including customers, employees, investors, suppliers, governmental agencies, community/NGOs, and media.

8 sources of sustainability issues

- ▶ International Sustainability Reporting Guidelines: GRI Standards, SASB Semiconductors Sustainability Accounting Standard, IFRS Sustainability Disclosure Standard
- ▶ ISO 26000 Guidance on Social Responsibility
- ▶ UN Sustainability Development Goals (SDGs)
- ▶ UN Global Compact,
- ▶ Code of Conduct, Responsible Business Alliance (RBA)
- ▶ Industry-related special issues
- ▶ Concerned issues in domestic/international ESG ratings, including DJSI index, MSCI ESG index or FTSE Global index, and etc.,
- ▶ Global Top 10 Risks by World Economic Forum (WEF)

19 sustainability issues

Reviewing the various sources mentioned above, a total of 19 sustainability issues were summarized. Few slight changes made for this year are:

- ▶ The issue "regulatory compliance" is now included as a basic management item: Following the current GRI Standards, this issue has been adjusted from a specific topic to a general disclosure requirement (GRI 2-27), and considering compliance as the basis of corporate operations.
- ▶ Optimizing the names of sustainability issues: Based on the various sources of aforementioned sustainability issues, the names of certain issues have been revised in response to international ESG trends, and to make the content of the issues more intuitive.

2 Identify Actual and Potential Impacts

To identify the actual and potential impacts of sustainability issues, the materiality assessment is conducted in accordance with the GRI Sustainability Reporting Standards and incorporating the principle of "Double Materiality" from the European Sustainability Reporting Standards (ESRS).

Inventory of positive/negative impacts

▶ Double Materiality

- (1) Sustainable Materiality: identify actual and potential impacts on the economy, environment, and people, including impacts on their human rights, across the Company's activities and business relationship. Define the types and location of impacts that may occur throughout the value chain.
- (2) Operational Materiality: review whether there are financial, reputational and operational risks associated with the sustainability issues related to the Company's operations or business relationships.

- ▶ **Sources for impacts inventory:** various management systems, government agencies' laws and regulations, or risk-management-related documents, and channels for collecting stakeholders' opinions, such as questionnaires, grievance mechanisms, etc.

3 Assess the Significance of the Impact

Quantify the impacts related to each sustainability issue through internal assessment, as well as the involvement of external stakeholder to better understand any concerns.

Double Materiality

▶ Sustainable Materiality

- ▶ **External Impact:** Through inventorying above-mentioned documents by various first-level divisions related to the issues, internal opinions have been consolidated to assess the positive and negative impacts that the Company's operations may have on each sustainable issue through quantifying the severity of impact and the likelihood of occurrence.

▶ Operational Materiality

- ▶ **Internal Impact:** Through reviewing the risk assessment results of sustainability issues via Enterprise Risk Management Mechanism, the significant impacts on the Company's own operations, including the impacts and occurrence probabilities on the Company's financial, operational, personnel, and reputation aspects can be identified

Involvement of External Stakeholders

- ▶ In order to understand the concerns of stakeholders, a survey was conducted with a total of 388 responses

- 156 responses: including investors, customers, key suppliers, government agencies, NGOs, and local communities.
- 232 responses: employees

Opinions from Experts

- ▶ To ensure objectivity and alignment with international trends, opinions from experts and benchmarks from peers and international sustainability ratings have been included in the materiality analysis to improve the contents assessed.

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4 Prioritize Significant Impacts

After analyzing collected statistics, material issues are prioritized in a materiality matrix based on the significance of their impacts.

- In order to prioritize the significant impacts of each sustainability issue, a materiality matrix was created using the X-axis to represent the severity of impact and the Y-axis to represent likelihood of occurrence.
- The products of X and Y values of each sustainable issue were used to identify the top 50% of issues with significant positive or negative impacts
- After internal review and discussion, the results of annual materiality analysis identified a total of 12 material topics

Positive Impacts



Sustainability issues with significant positive impact

- Governance and Economic Dimension:** ① Sustainable Supply Chain Management
② Innovation Management and Intellectual Property Rights Protection
③ Customer Relationship Management
Environmental Dimension: ① Climate Strategy and Action ② Energy Management
③ Water and Wastewater Management ④ Waste Management and Circular Economy
Social Dimension: ① Diversity and Inclusion ② Talent Attraction and Retention

Secondary topics

- ④ Risk Management ⑤ Information Security and Privacy Protection ⑥ Integrity Management
⑦ Product Responsibility and Lifecycle Assessment ⑤ Air Pollution Control ⑥ Biodiversity
③ Occupational Health and Safety ④ Human Capital Development ⑤ Human Rights
⑥ Social Contribution and Participation

Negative Impacts



Sustainability issues with significant negative impact

- Governance and Economic Dimension:** ① Sustainable Supply Chain Management
② Innovation Management and Intellectual Property Rights Protection
③ Customer Relationship Management
⑦ Product Responsibility and Lifecycle Assessment
Environmental Dimension: ① Climate Strategy and Action ③ Water and Wastewater Management
Social Dimension: ② Talent Attraction and Retention ③ Occupational Health and Safety
⑤ Human Rights

Secondary topics

- ④ Risk Management ⑤ Information Security and Privacy Protection ⑥ Integrity Management
② Energy Management ④ Waste Management and Circular Economy ⑤ Air Pollution Control
⑥ Biodiversity ① Diversity and Inclusion ④ Human Capital Development
⑥ Social Contribution and Participation

5 Determine Material Topics

The process of materiality assessment was verified by a third-party assurance provider for this report, and the results of the assessment were reported to and signed off by the ESG Steering Committee and the Board of Directors.

- The results of materiality analysis will serve as a reference for the Company's Sustainability Strategy Blueprint to determine short-, medium- and long-term goals. This will ensure that relevant strategies and goals encompass the expectations of stakeholders and respond to the identification and management of significant impact
- In addition to disclosing management guidelines and currently measures for GRI-specific topics in this Report, UMC also discloses the mid- and long-term management goals for each material topic. Based on these goals, effectiveness will be tracked and reviewed. Moreover, the Company continues to develop and integrate the materiality assessment into its enterprise risk management (ERM) system and framework. Sustainability issues that may have significant impacts on operations will be regularly reviewed

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Material Topics

● Direct Impact ○ Indirect Impact

Topic	Operational Significance to UM	Economic, Environmental, Social and Operation Impacts					GRI Specific Topic	SASB Topic	Corresponding Chapter
		UMC Group ^{Note1}	Suppliers	Investor	Customers	Society ^{Note2}			
Governance and Economic Dimension									
Sustainable Supply Chain Management	UMC has numerous upstream and downstream suppliers. Cooperation with global partners can improve sustainability performance in the overall value chain.	●	●				204 Procurement Practices 308 Supplier Environmental Assessment 414 Supplier Social Assessment	Materials Sourcing	1.3 Building Sustainable Supply Chain
Innovation Management and Intellectual Property Rights Protection									
Innovation Management and Intellectual Property Rights Protection	Strengthening UMC core competencies to provide wafer fabrication solutions that meet market trends and customer demands, thereby increasing revenue and enhancing corporate image.	●	●	○	●	○	UMC Specific Topic	Intellectual Property Protection and Competitive Behavior	2.1 Innovation and Technology Development 1.1.3 Legal Compliance
Customer Relationship Management									
Customer Relationship Management	Customer validation can enhance the competitiveness of UMC, and is the key foundation for UMC's long-term operation	●	○	○	●	○	UMC Specific Topic	Product Lifecycle Management	2.2 Customer Satisfaction 1.1.3 Legal Compliance
Product Responsibility and Lifecycle Assessment									
Product Responsibility and Lifecycle Assessment	Provide wafer foundry solutions that meet customer demand, ensure that products are free of hazardous substances, and minimize any impacts may have on the environment	●	●		●		UMC Specific Topic	Product Lifecycle Management	2.3 Product Responsibility
Environmental Dimension									
Climate Strategy and Action	Decent mitigation and adaptation strategies can reduce the direct and indirect impacts of climate change.	●	●	●	●	○	305 Emissions	Greenhouse Gas Emissions	1.2.5 Managing Climate Risks and Opportunities 3.1 Climate Action
Energy Management									
Energy Management	Good energy management practices can improve operational performance and also reduce the environmental burdens and carbon footprint	●		○	○	○	302 Energy	Energy management in Manufacturing	3.2 Energy Management
Water and Wastewater Management									
Water and Wastewater Management	Water is basic to semiconductor production. Effective water resources management can enhance competitiveness.	●	○			○	303 Water and Effluent	Water Management	3.3 Water Resources Management
Waste Management and Circular Economy									
Waste Management and Circular Economy	Reducing environmental load at all stages of a product life cycle is one of the important goals in UMC's environmental protection efforts.	●	●			○	306 Waste	Waste Management	3.4 Waste Management
Social Dimension									
Diversity and Inclusion	In terms of personnel selection, employment, education, and retention, there is no differential treatment based on gender, race, religion, political position, marital status, etc., so as to create harmony in the workplace and greater operational performance	●			●		405 Diversity and Equal Opportunity		4.2 Diversity, Equity and Inclusion in the Workplace

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Topic	Operational Significance to UM	Economic, Environmental, Social and Operation Impacts					GRI Specific Topic	SASB Topic	Corresponding Chapter
		UMC Group ^{Note1}	Suppliers	Investor	Customers	Society ^{Note2}			
Social Dimension									
Talent Attraction and Retention	Attracting and retaining talent can improve UMC's operational performance	●	○	○			401 Employment	Recruiting and Managing a Global and Skilled Workforce	4.2 Diversity, Equity and Inclusion in the Workplace
Occupational Health and Safety	Maintaining employee safety and health and providing a good workplace environment for employees are UMC's basic responsibilities.	●	●				403 Occupational Health and Safety	Employee Health and Safety	4.3 Protecting the Employees and the Work Environment
Human Rights	"Zero Tolerance" for various illegal violations in the workplace, prohibits any tangible or intangible discrimination and harassment in the workplace, and expects subsidiaries, joint ventures, suppliers, and partners to abide by the same policies	●	●				406 Non-discrimination 407 Freedom of Association and Collective Bargaining 408 Child Labor 409 Forced or Compulsory Labor		4.1 Enforce Human Rights Management

Note: 1. UMC Group includes the subsidiaries HJ, USCXM, Wavetek and USJC.

2. Society is considered among media, governmental agency, and community/NGOs

Secondary Topics

A total of 7 secondary issues are disclosed in this report with reference to the GRI specific topics

Topic	Direction of Response and Management	Corresponding Chapter
Risk Management	Carry out systematic management for major enterprise-level risks, strengthen the identification of/response to major risks in business continuity, and perform the required drills and adjustments for major risks.	1.2.1 Risk Management System 1.2.2 Risk Management and Countermeasures 1.2.3 Comprehensive Business Risk Management
Integrity Management	Establish good business conduct and ethics can ensure the sustainable operation of UMC and avoid operational risks caused by illegal or improper transfer of interests.	1.1.2 Integrity Management
Information Security and Privacy Protection	Strengthen information security awareness for all employees, and establish an information security framework that complies with regulations and customer needs to provide a safe production environment.	1.2.4 Commitment to Information Security Risk Management 1.1.3 Legal Compliance
Human Capital Development	Develop performance improvement plans for underperformers and providing coaching for improvements. Improve employee performance through regular education and training.	4.2.3 Strengthening Talent Cultivation
Air Pollution Control	Introduce and develop environment-friendly technologies to strengthen emission source reduction and pollutant prevention	3.5 Air Pollution Control
Biodiversity	Ensure that the impact of company operations on biodiversity ranges from No Net Loss (NNL) to Net Positive Impact (NPI)	3.6 Supporting Biodiversity
Social Contribution and Participation	Serve the community with core professional skills.	5.4 Enhancing Society Mutual-Prosperity

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Stakeholder Engagement

To maintain effective stakeholder communication, UMC formulated an engagement mechanism for the identification of and communication with important stakeholders via various engagement channels and regular information disclosure.

Principles for Communication with Stakeholders



Objectives

- ▶ Evaluate and understand the reasonable expectations and requirements of the stakeholders and providing appropriate responses to key ESG issues that the said stakeholders are concerned with.
- ▶ Consider all concerned issues and analyze the potential impact that each issue may exert upon the environment, society, economy, and business operations.
- ▶ Employ a system-based mechanism to continuously review and enhance corporate sustainability.

Major Stakeholders Significance to UM

	Customers	<ul style="list-style-type: none"> ▶ Customer products are the main source of revenue. UMC provides a full range of services to promote its growth as well as that of UMC customers, thereby achieving business sustainability and mutual benefit
	Employees	<ul style="list-style-type: none"> ▶ Employees are the foundation of a company's sustainable development. UMC provides competitive compensation and benefits, and a diverse learning environment for all employees to exercise their potential, in order to enhance the operational performance and efficiency of the Company.
	Investors	<ul style="list-style-type: none"> ▶ Investors provide a source of capital for a company. UMC transparently discloses its operational information and demonstrates the Company's operational effectiveness to increase investor support, stabilize the capital, and create value to attract investment.
	Suppliers	<ul style="list-style-type: none"> ▶ Suppliers are important partners in sustainable development. UMC promotes various economic, social and environmental collaboration programs to enhance the overall value of the supply chain
	Government Agencies	<ul style="list-style-type: none"> ▶ Government agencies set regulations for companies to follow. UMC strives to be a sustainable business by actively participating in communications and providing input that serves as a reference for policy formulation.
	Community/ NGO	<ul style="list-style-type: none"> ▶ Communities and NGOs are important sources of diverse opinions for sustainable development. UMC works together with them to enhance positive social influences through ongoing communication and collaboration.
	Media	<ul style="list-style-type: none"> ▶ The media serves as the communication bridge between the Company and stakeholders. UMC disseminates corporate information through media channels to help stakeholders obtain accurate information about the Company in a timely manner

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Mechanisms for Stakeholder Communication

Item	Content	Frequency
Stakeholders communication plan and implementation	<ul style="list-style-type: none"> ▶ Consultation and communication channels with stakeholders are established by respective group under the CS Committee. ▶ Designated personnel to receive, record and reply to messages from stakeholders and to come up with appropriate responding measures 	On-time
Assessment of stakeholder communication outcome	<ul style="list-style-type: none"> ▶ Stakeholder communication outcome reported, and key issues reviewed and responded to the CS Committee. 	Quarterly
Report major stakeholder concerns	<ul style="list-style-type: none"> ▶ Regularly report major communication issues to the Board of Directors. ▶ Report specific events to the Board of Directors through extraordinary (irregular) meeting 	Annually
Public disclosure	<ul style="list-style-type: none"> ▶ Annual financial reports, sustainability report, etc ▶ Press Releases ▶ UMC official website: The Stakeholder Area was established for stakeholder inquiry 	Stakeholder Engagement ▶  Annually As the occasion demands

Engagement Summary with Major Stakeholders

Stakeholder	Communication Channel/Frequency		Main Focus of Material Topics	Key Communication Outcome in 2023
	Periodic	Aperiodic		
	<ul style="list-style-type: none"> ▶ Quarterly: Town Hall meetings, Secretary forums, Employee Welfare Committee meetings, sexual harassment complaint hotline, mailbox for reporting fraud or professional ethics violation, e-suggestion and feedback platform, confidential complaint system, extension 12885 - ER help hotline, and MyUMC website ▶ Once every 6 months: Fab and Division meetings ▶ Annually: Employee satisfaction survey on benefits measures, service satisfaction survey, HR satisfaction surveys, employee work engagement survey 	eUMC information website for employees, BBS message boards, sexual harassment complaint hotline, mailbox for reporting fraud or professional ethics violation, e-suggestion and feedback platform, confidential complaint system, extension 12885 - ER help hotline, and MyUMC website	<ul style="list-style-type: none"> ▶ Occupational Health and Safety ▶ Talent Attraction and Retention ▶ Information Security and Privacy Protection 	<ul style="list-style-type: none"> ▶ Continue to promote a comprehensive personnel health management program, which will be focusing on the three aspects of safe working environment, employee health protection and work-life balance. ▶ Completed employee work engagement surveys to better understand the real needs of employees and their willingness to remain in their employment. ▶ Continue to implement industrial salary surveys and provide competitive performance-based and differentiated remuneration and welfare systems (including bonuses, salary, and stock shares). ▶ Continue to enhance the UMC welfare information platform to improve accessibility to employee benefits and discounts ▶ Strengthen communication of business strategies and directives and to continue the provision of up-to-date information of corporate performance. A total of 146 communication meetings were held. ▶ The e-suggestion opinion feedback platform received 242 opinions from various employees, and all cases (100%) have been closed.
	<ul style="list-style-type: none"> ▶ Communication and discussion meetings 	<ul style="list-style-type: none"> ▶ Online Service Platform MyUMC ▶ Questionnaire response ▶ On-site audit and discussion ▶ Voice of Customer (VOC) instant customer online complaint system ▶ Customer satisfaction monitoring 	<ul style="list-style-type: none"> ▶ Risk Management ▶ Information Security and Privacy Protection ▶ Sustainable Supply Chain Management ▶ Integrity Management 	<ul style="list-style-type: none"> ▶ Held 43 quarterly business reviews with 17 customers. ▶ The Enterprise Risk Management Committee coordinates the key departments of risk management and control to jointly review the internal and external risks of UMC, and consolidates the risk response action plans, providing customers with a safe production environment, and reducing the Company's operational risks. ▶ Continually leveraged an international professional security company's resources to help on inspecting the robustness of overall security as a trusted third-party certification, and the results are used as the basis for further improvement. ▶ Continuous customer services: Provided a total of 88 BCM / BCP pieces of risk management information.

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(Continued)

Stakeholder	Communication Channel/Frequency		Main Focus of Material Topics	Key Communication Outcome in 2023
	Periodic	Aperiodic		
 Investors	<p>Institutional shareholders ▶ Quarterly: Domestic and overseas investor conferences General Shareholders: ▶ Annually: General shareholder meeting, Financial reports ▶ Quarterly: Investor conferences, communications with institutional shareholders</p>	<p>Aperiodic ▶ Domestic and overseas seminars for investing institutions ▶ Written or face-to-face communication</p>	<ul style="list-style-type: none"> ▶ Integrity Management ▶ Information Security and Privacy Protection ▶ Risk Management ▶ Climate Strategy and Action 	<ul style="list-style-type: none"> ▶ Continue to hold shareholders meetings and investor conferences in accordance with the annual plan, and communicate with shareholders about the list of director candidates. ▶ Upload multimedia information of the financial and business report in the shareholders' section of the UMC official website. http://www.umc.com/English/investors/e.asp ▶ Work with the Financial Supervisory Commission (FSC) to complete corporate governance accreditation. ▶ Communicate the Company's ESG planning and performance through written and meeting formats according to the inquiries of investment institutions. <div style="display: flex; justify-content: space-between; align-items: center;"> Investors Overview ►  </div>
 Suppliers		<p>▶ Annually: Questionnaires and audit visits. Jointly implement ESH and corporate social responsibility program with suppliers</p>	<ul style="list-style-type: none"> ▶ Review reports or meetings ▶ Environmental health and safety, and corporate sustainability related management briefing 	<ul style="list-style-type: none"> ▶ Implemented anti-corruption measures and promoted the signing of "Employment Ethics Terms and Conditions Agreement". ▶ Completed conflict mineral surveys. All 25 suppliers who underwent the conflict mineral audit met UMC's requirements for conflict mineral management ▶ Held a Supplier Sustainability Seminar and Award Ceremony with the theme of "Sustainability and Prosperity" to promote the concept and policies of sustainable development, as well as to commend outstanding suppliers. ▶ Organized 56 ESH education and training sessions for contractors, with a total of 4,628 person-times trainees. ▶ Provide the latest health and safety regulations and information with contractors through collaboration through the jointly held promotional events.. A total of 16 events were held this year, with 1,386 contractors participating.
 Governmental Agencies		<p>▶ Monthly: Participate in the operations of the functional organizations of the Science Parks and Science Park Administrations</p>	<ul style="list-style-type: none"> ▶ Participate in public hearings and business seminars organized by governmental authorities 	<ul style="list-style-type: none"> ▶ Energy Management ▶ Occupational Health and Safety ▶ Social Contribution and Participation <ul style="list-style-type: none"> ▶ Played the role of coordinator for The Allied Association for Science Park Industries, facilitating regular discussions on relevant laws and regulations, and offering insights and recommendations based on operational experiences to form policy drafting. ▶ Participate in the Industrial GHG Voluntary Reduction Information Platform organized by the Industrial Development Bureau, Ministry of Economic Affairs, to strengthen exchange on energy conservation and carbon reduction issues. ▶ Invited by the Hsinchu Science Park Administration of the National Science and Technology Commission to serve as a member of the "Safety and Hygiene Expert Platform" to provide professional assistance, consultation, and fab visits to public institutions in the Park, hoping to improve the Park's safety management and execution capabilities.
 Community/NGO	<p>▶ Participate in the operations of outside associations ▶ Participate in community activities or seminars</p>	<p>▶ Sharing activities and exchange visits</p>	<ul style="list-style-type: none"> ▶ Human Rights ▶ Social Contribution and Participation ▶ Integrity Management 	<ul style="list-style-type: none"> ▶ Promoted volunteer work culture, serving a total of 41,458 person-times beneficiaries. ▶ Through the diversified semiconductor knowledge promotion program, UMC is committed to building inter-school relationships and fostering high-tech talent by partnering with 27 schools to host 76 semiconductor knowledge promotion events. A total of 6,104 person-times participants attended these events throughout the year.
 Media	<p>▶ Monthly: Company website updates</p>	<p>▶ Press releases, press conferences</p>	<ul style="list-style-type: none"> ▶ Risk Management ▶ Integrity Management ▶ Sustainable Supply Chain Management ▶ Energy Management ▶ Water and Wastewater Management 	<ul style="list-style-type: none"> ▶ Issued 36 press releases on corporate governance and sustainability management ▶ Quarterly newsletters are published to update the media on our sustainability progress. Topics shared in 2023 included "Turning Wastewater into Gold: The Practice of Recycled Waste Copper Sulfate" and "Highlights from UMC's Annual Supplier Sustainability Session." and etc. <div style="display: flex; justify-content: space-between; align-items: center;"> Press Center ►  </div>

Note: For channels of our stakeholder's engagement and contact information, please refer to UMC website: https://www.umc.com/en/Html/general_inquiries

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STAY 2025 Workplace Happiness Program: Being Employees' Best Support

From providing maternity leave that exceeds the legal requirements, to offering a five-star work environment, to encouraging employees to participate in social charity activities, UMC is committed to creating a diverse, inclusive, healthy, and safe work environment, allowing employees to assuredly utilize their talents while balancing work, family, and life.

Employees are UMC's most important asset. UMC appreciates the contribution and dedication of each and every employee to the Company, and therefore endeavors to create a friendly workplace environment in addition to complying with basic laws and regulations. UMC also focuses on issues such as declining birth rates, gender equity, and workplace support. Based on these social issues, we further conducted employee opinion surveys and engaged in industry exchanges to create the comprehensive "STAY 2025: Workplace Happiness - Make U Smile Program". This three-year plan is focused on creating a more open, trusting, and supportive environment at UMC, with the goal of becoming the best support for our employees, making a positive impact, and contributing to social prosperity.

Stability: Secured Employment

UMC is dedicated to establishing a work environment that ensures a work-life balance and offers a complete range of benefits. In order to provide peace of mind for employees who have children, UMC has partnered with the Southern Taiwan Science Park Bureau to establish a non-profit kindergarten exclusively for the children of the STSP employees. The Kindergarten offers high-quality, affordable, convenient childcare services. In addition to meeting legal requirements, UMC offers enhanced maternity and paternity leave starting in 2023. For example, female employees who have been with the company for less than six months can still receive full pay during their maternity leave, a benefit that exceeds the regulatory standard. UMC has also implemented a Flexible Scheduling System to help all employees balance work and family. These measures make UMC the first semiconductor company in Taiwan to provide both flexible working hours and increased maternity and paternity leave. UMC has implemented an upgraded version of the Employee Care Program, known as Employee Care Program 2.0, which aims to provide comprehensive physical and mental healthcare for employees. The program focuses on the top two causes of death in Taiwan and includes enhanced prevention and tracking mechanisms. Additionally, UMC offers free cross-screening for cancer and cardiovascular diseases to help reduce the incidence of sudden illnesses.

Trust: Friendly Environment

In 2023, UMC's headquarter in Hsinchu Science Park completed renovations to create a bright and fresh office environment. The Health Center, spanning over 130 square meters, is equipped with five-star facilities such as a lactation room and massage room. The lactation room is open around the clock, with no restrictions on usage time or frequency, providing convenience for new mothers to work with peace of mind. In addition to the hardware upgrades, UMC has decorated our campus with works by masters such as Paul Chiang and Katsuyoshi Inokuma. Upon entering the workplace, employees are greeted with an atmosphere reminiscent of an art gallery, as UMC integrates art into everyday office life. Additionally, UMC organizes art-related activities during art season, which brings more culture into the technology industry and inspires employees to engage with and understand art. This encourages innovation and stimulates new ideas within the Company.



Warm and family-inclusive UMC Family Day

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Newly-renovated employee lounge and dining area



Seminars on empowering women: Promoting diversity and inclusion, and inspiring female employees to jointly create value in the workplace.



Encouraging employees to participate in community service activities.

Alignment: LOHAS & Coherence

UMC is committed to creating an inclusive workplace that fosters a sense of belonging and self-achievement. We work together with employees to build a better future. Embracing the concept of "U Care We Care", UMC promotes Diversity, Equity, and Inclusion in the workplace, and our Diversity and Inclusion Statement has been signed by the Co-Presidents and Chief Sustainability Officer. This statement clearly states UMC's respect for each employee's uniqueness, and our care for every employee's opinion. UMC offers multiple channels and communities to help employees gain a sense of belonging and provides them with support. In 2023, the Company introduced comprehensive courses on diversity, equity, and inclusion to eliminate unconscious bias among all employees and foster a collective recognition of what an "inclusive workplace" truly means. We also continue to hold exemplary female leadership and management sharing seminars, at which senior executives and external experts are invited to share their insights and support our female employees' career development.

Yearn For: Social Charity

The dedication of UMC employees to caring for others is truly remarkable. To encourage a culture of volunteering and employee participation in community service, UMC has established incentive mechanisms, such as providing employees with 16 hours of paid annual leave to engage in public charity activities. These efforts align with UMC's commitment to social prosperity and furthering its orientation towards community involvement. By engaging in charitable activities initiated by different foundations, social clubs, and departments, UMC connects up internal and external resources, and aims to spread the Company's positive influence. This not only brings love to every corner of the society in need, but also allows participating employees to contribute their strengths; through volunteer activities, they find a sense of purpose outside their work. In 2023, 41,458 person-times individuals benefited, demonstrating the actions, compassion, and selfless dedication of UMC volunteer

From fostering a friendly workplace and caring for employees, to engaging in social charity activities, UMC's Workplace Happiness Program focuses on social issues and demonstrates the Company's commitment to employee care. In 2023, this dedication was recognized by HR Asia as one of the "Best Companies to Work for in Asia". Looking forward, UMC will continue to create a workplace where employees can comfortably focus on their work, find a sense of belonging, and achieve personal development; UMC will keep endeavoring to create the "Make U Smile" happy workplace. We aim to become an exemplary employer where employees feel secure and enjoy their work.



The Semiconductor Education Activity was showcased at Family Day, providing children with a better understanding of their parents' work.

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1 Leading in Corporate Governance

UMC continues to refine its corporate governance practices by establishing a rigorous corporate governance structure, strengthening the functions of the Board of Directors, and building a supply chain that emphasizes human rights, social responsibility, labor rights, safety, health, and sustainable development. In order to implement its business strategy, UMC continues to improve its corporate risk management mechanism and strengthen the supervision of all operational levels of the Company. Additionally, UMC is committed to establishing good business practices and ethical standards, living up to its core values of integrity and honesty, and focusing on protecting shareholders' rights and interests to realize UMC's vision.

Important Stakeholders ▶



Shareholders



Suppliers



Government

SDGs ▶



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY INNOVATION AND INFRASTRUCTURE



17 PARTNERSHIPS FOR THE GOALS

Performance Highlights 2023

Ranked in the top 5%
of the Corporate Governance
Evaluation conducted by the
TWSE and TPEx

9th
Consecutive
Year

External assessment
of the Board performance



Excellent

Formulated
"Incentive-based Compensation
Clawback Policy"



One of the only two
companies in Taiwan
received the certification
from the Taiwan Intellectual
Property Management
System (TIPS)



TIPS AAA
certificatio

The procurement amount
ratio of local suppliers in
each site



>50%

Tier 1 suppliers
completed the ESG &
RBA self-assessment
questionnaire



100%

Green procurement amount



NT\$
131
million

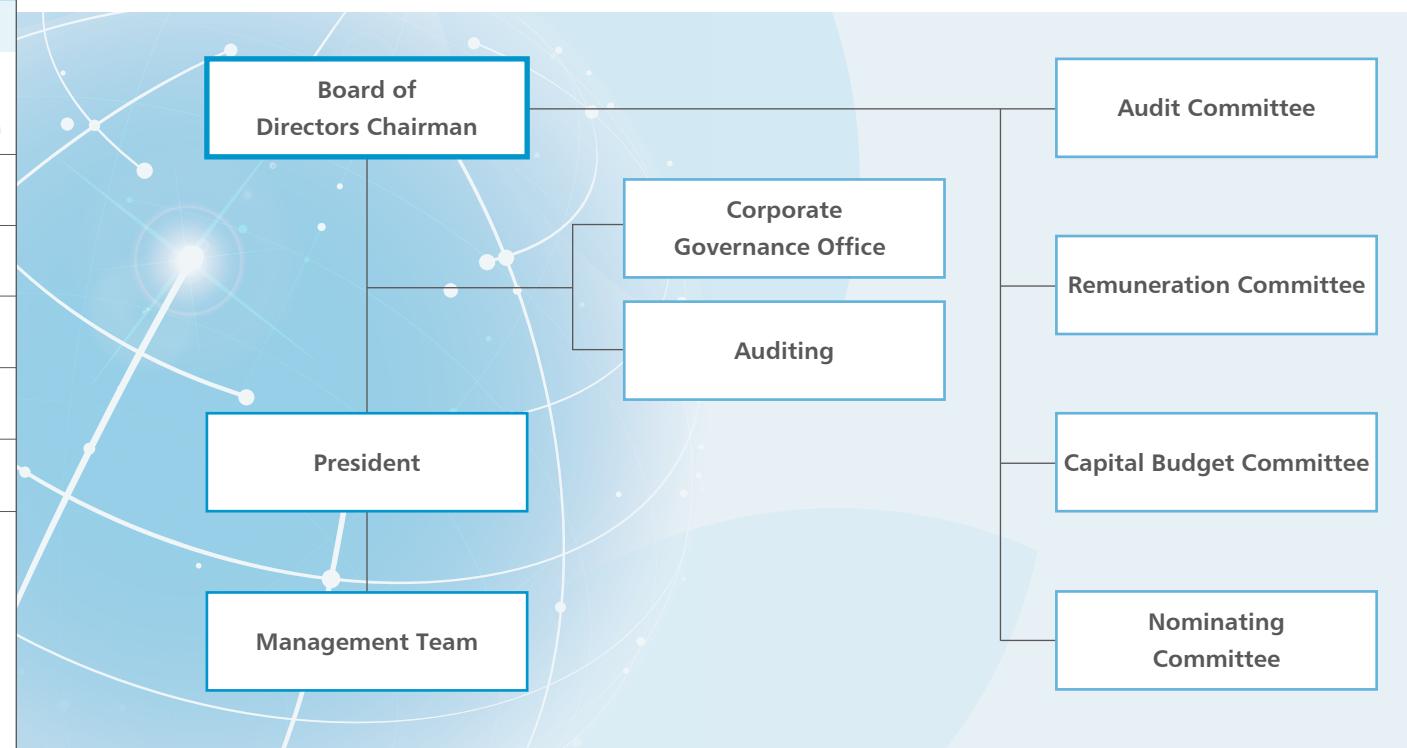
1.1 Enhancing Corporate Governance

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1.1.1 Operation of the Board of Directors

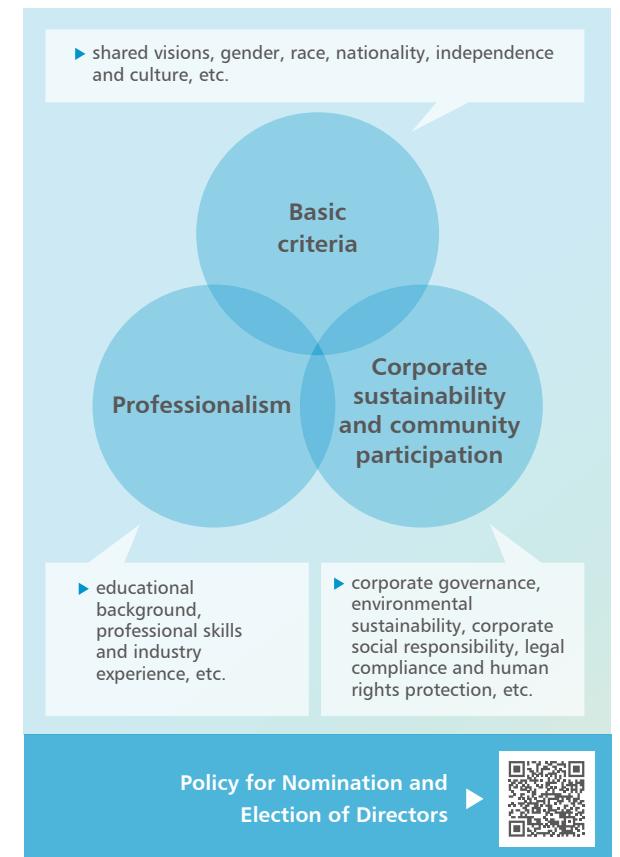
The UMC Board of Directors comprises nine members from different professional backgrounds, and is responsible for the Company's operations and supervision. The diverse academic and industry experiences of the board members are an asset to corporate decision-making and long-term strategy planning. Board type of the Company is one-tier system complied with the regulations, and the audit committee composed of all independent directors is in lieu of a supervisor. There are five independent directors and one non-executive director in the Board. Currently, two third of the director seats are filled by non-executive directors, including five seats for independent directors and one for outside director. Current board members were elected on July 7, 2021 for a three-year term. There are two female directors in the Board. Each independent director does not serve as an independent director concurrently for more than three listed companies. As of the end of 2023, the average tenure of all directors was 7.9 years.

In 2023, a total of six board meetings were held, and the average attendance rate was 100%, meeting the 80% requirement for board performance assessment. The ratio of total remuneration for board directors to the Company's after-tax net income was 0.94% in 2023.



Policy for the Nomination and Election of Directors

The composition of the Board should take into consideration the organizational culture, business model, and long-term development of the Company. The criteria established to ensure the diversity of the Board members shall include but not limited to the following three dimensions:



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Board of Directors

Board members are elected by shareholders according to director election regulations during shareholder meetings, and in compliance with the Board of Directors regulations and company constitution. The committees under the Board of Directors are nominated and approved by the Board according to company policy. All five independent directors qualified with professional qualification, work experience, limits of other mandate and independence of Regulations Governing Appointment of Independent Directors and Compliance Matters for Public Companies

	Title	Name	Gender	Member of Functional Committee	Professional and Background	Risk Management Experience	Attendance Rate	Age
	Chair of Board, Chief Strategy Office	Stan Hung	Male	None	<ul style="list-style-type: none"> ▶ Financial accounting and strategic management ▶ Electronics-related industry experience 		100%	64
	Director, President	Jason S. Wang	Male	None	<ul style="list-style-type: none"> ▶ Financial accounting and organizational leadership ▶ Electronics-related industry experience 		100%	61
	Director	S C Chien	Male	None	<ul style="list-style-type: none"> ▶ Engineering technology and organizational leadership ▶ Electronics-related industry experience 		100%	66
	Director	Ting-Yu Lin	Male	None	<ul style="list-style-type: none"> ▶ Financial accounting and strategic management ▶ Electronics-related industry experience 	<ul style="list-style-type: none"> ▶ Served as the chairman of Sunrox International Inc. and other companies, and the director of Unimicron Technology Corp. ▶ Experience in risk management of corporate operations 	100%	62
	Independent Director	Wenyi Chu	Female	<ul style="list-style-type: none"> ▶ Audit Committee member and financial exper ▶ Convener for Remuneration Committee ▶ Capital Budget Committee member ▶ Nominating Committee member 	<ul style="list-style-type: none"> ▶ Financial accounting and strategic management ▶ Electronics-related industry experience 	<ul style="list-style-type: none"> ▶ Served as the independent director of Winmate Inc. and LeRain Technology Co., Ltd. ▶ Experience in business administration, risk management of finance and strategy 	100%	57
	Independent Director	Lih J. Chen	Male	<ul style="list-style-type: none"> ▶ Convener for Audit Committee ▶ Remuneration Committee member ▶ Capital Budget Committee member ▶ Nominating Committee member 	<ul style="list-style-type: none"> ▶ Engineering technology and organizational leadership ▶ Electronics-related industry experience 	<ul style="list-style-type: none"> ▶ Served as the President of National Tsing Hua University and the Deputy Ministers of National Science Council ▶ Serves as the convener of UMC audit committee ▶ Experience in risk management of R&D activities and corporate governance 	100%	78
	Independent Director	Jyuo-Min Shyu	Male	<ul style="list-style-type: none"> ▶ Audit Committee member ▶ Remuneration Committee member ▶ Capital Budget Committee member ▶ Convener for Nominating Committee 	<ul style="list-style-type: none"> ▶ Engineering technology and organizational leadership ▶ Electronics-related industry experience 	<ul style="list-style-type: none"> ▶ Serves as independent director of Qisda Corporation, and Far Eastone Telecommunications Co., Ltd. ▶ Was the Minister of the Ministry of Science and Technology and the President of the Industrial Technology Research Institute ▶ Experience in risk management of technology institution and electronic industry 	100%	70
	Independent Director	Kuang Si Shiu	Male	<ul style="list-style-type: none"> ▶ Audit Committee member and financial exper ▶ Remuneration Committee member ▶ Convener for Capital Budget Committee ▶ Nominating Committee member 	<ul style="list-style-type: none"> ▶ Financial accounting and organizational leadership ▶ Banking and business decision making 	<ul style="list-style-type: none"> ▶ Serves as independent director of Yuanta Financial Holdings Co., Ltd. and Yuanta Commercial Bank Co., Ltd. ▶ Was formerly Chairman & President of Mega Financial Holding Co., Ltd. and Mega International Commercial Bank Co., Ltd., Chairman of Hua Nan Financial Holdings Co., Ltd., Hua Nan Commercial Bank Ltd. and Land Bank of Taiwan Co., Ltd. ▶ Experience in corporate finance and risk management of finance industry 	100%	73
	Independent Director	Wen-Hsin Hsu	Female	<ul style="list-style-type: none"> ▶ Audit Committee member and financial exper ▶ Remuneration Committee member ▶ Capital Budget Committee member ▶ Nominating Committee member 	<ul style="list-style-type: none"> ▶ Financial accounting and corporate sustainability ▶ Electronics-related industry experience 	<ul style="list-style-type: none"> ▶ Serves as the CEO of Global MBA in National Taiwan University, associate dean of international affairs of College of Management School in National Taiwan University, and the independent director of Unitech Printed Circuit Board Corp., and ANT Precision Industry Co., Ltd., director of Taiwan Insurance Guaranty Fund ▶ Experience in risk management of electronic and insurance industries 	100%	47

Note: 1. There are three seats occupied by members who also serve as administrative directors, namely the President and Chief Strategy Officer. The current positions of directors at UMC or at other companies are disclosed on page 16-19 of the UMC's 2023 Annual Report.

2. The board of directors have a diverse range of professional experience. Please refer to page 21 of the 2023 Annual Report and official website (https://www.umc.com/en/IR_Directors/directors_information) for more details.

3. Training programs on corporate governance, risk management, ESG, and corporate sustainability are arranged for directors and officers annually. Please refer to page 46-47 of the 2023 Annual Report for more details.

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Functional Committee

Committee	Accountability	Achievement in 2023
Capital Budget Committee	The Capital Budget Committee was established in October 2013, comprises independent directors and outside directors to assist in the company's long-term development strategy, financial planning and business performance. The Committee discusses plan implementations, modifies and follows up on the company's capital expenditure budget by auditing its cost-effectiveness and tracking its performance.	The Committee met five times, audited and approved capital budget expenses of NT\$ 23,071 million.
Nominating Committee	The Nominating Committee was established in December 2017, comprises independent directors to enhance management mechanism and to improve corporate governance. The Committee reviews the selection and performance assessment of directors and executives, and supervises issues related to environmental, social and corporate governance.	The Committee met three times, reviewed the Company's achievements in corporate sustainability, climate change, corporate governance, ethical management, risk management, and IP management, engaged with an external independent institution to conduct an assessment of board performance, and also approved the Employees' Compensation linked with ESG KPI achievement.
Audit Committee	UMC's Audit Committee assists the Board in its oversight responsibilities, and is responsible for tasks dictated by the Company Act, Securities Exchange Act, and other relevant laws. Since UMC is listed on the New York Stock Exchange (NYSE), the Company is also subject to the US laws for foreign issuers. The UMC Audit Committee comprises independent directors, of which three are financial experts. According to the terms and responsibilities stated in the Company's Audit Committee Charter, members shall convene at least four times per year.	A total of five meetings were held and the actual attendance rate was 100%. The Committee maintains good communication and contact channels with the Company's management, Chief Corporate Governance Officer, internal auditors and independent auditors.
Remuneration Committee	According to Regulations Governing the Appointment and Exercise of Powers by the Remuneration Committee of a Company Whose Stock is Listed on the Stock Exchange or Traded Over the Counter Act, UMC established the Remuneration Committee to strengthen corporate and risk management. In addition, to motivate and retain talent, the Committee reviews and supervises the remuneration system of the Company's directors and managers.	In 2023, the Committee convened five meetings in February, June, July, October, and December. For the actual attendance status of the Committee members, please refer to page 32 of UMC 2023 Annual Report.

Assessment of Board Performance

To implement corporate governance, enhance capability and review performance of the Board, UMC instituted the Rules for Performance Evaluation of the Board of Directors to assess the performance of the Board annually. The self-evaluation result of the 2023 performance of the Board, functional committees (including the Audit Committee, Remuneration Committee, Capital Budget Committee, and Nominating Committee), and individual board members was "Excellent", and the result was reported to the Nominating Committee and Board of Directors on February 27, 2024.

In addition to self-assessments, the performance of the Board assessed by an external independent professional institution or a panel of external experts and scholars at least once every three years in order to enhance the Board's operation. The Company engaged with an external independent institution, Taiwan Corporate Governance Association to conduct an assessment on board performance, and completed the evaluation on October 25, 2023. The report addressed a recommendation on renaming the Nomination Committee to the Sustainability and Nominating Committee, and improving the relevant rules and regulations of the ESG organization, in order to enhance the effectiveness and efficiency of the Board. The company will implement the improvement plan within the next year in accordance with the recommendations of the report.



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Conflict of Interest Management

UMC has established conflict of interest avoidance regulations for the rules of procedures of the Board of Directors, and the organizational charter of the Audit Committee as well as the Nomination Committee. If the matters to be discussed in the Board Meeting are involved with the interests of the directors or the legal person they represented, the directors shall explain the important points of the interests in the Board Meeting. If such interests are in conflict with the interests of UMC, the directors shall not participate in the discussion as well as the voting process, and shall not exercise their voting rights on behalf of other directors. In addition, the names of related directors, contents of important points and circumstances of withdrawal shall all be stated in the meeting minutes.

UMC has established the codes of integrity management, regulations for the management of related party transactions, codes of ethical conduct for directors and managers, and codes of ethics for employees. There are clear provisions on avoidance of conflicts of interests and the implementation of the codes of ethics for employees is reported to the Audit Committee. For the communication with stakeholders, UMC has set up a special section for stakeholders on the website and relevant regulations and information are disclosed in details. There is no shareholder with controlling power in the Company, neither undisclosed conflict of interest between stakeholders, such as directors, suppliers and customers. UMC also has a spokesperson and an e-mail box, and has assigned dedicated personnel to be responsible for handling the questions and suggestions of stakeholders. There is no reported conflict of interest for UMC.

Internal Audit

UMC has established the internal audit function under the direct jurisdiction of the Board for the following purpose and tasks:



Main Purpose

- ▶ Examine and evaluate the effectiveness of the internal control system.
- ▶ Evaluate the efficiency and effectiveness of business operations.
- ▶ Ensure reliability, timeliness, transparency, and legal compliance of reports.
- ▶ Provide timely suggestions for improvement to ensure the sustainability and effective implementation of internal control tasks.



Duties and Responsibilities

- ▶ Conduct an annual audit in accordance to the provisions of the Taiwan authorities and in the event of risks.
- ▶ Issue audit reports and track improvement.
- ▶ Regularly revise the internal control system and audit implementation details as well as annual internal control self-assessments.
- ▶ Communicate with independent directors and report to the Audit Committee and Board of Directors.

As UMC is listed on the New York Stock Exchange (NYSE), the Company is subject to US laws for foreign issuers. Since 2006, UMC has complied with the Sarbanes-Oxley Act Section 404 (SOX Section 404) and has been audited by the independent auditors annually. To date, the independent auditors have issued unqualified audit reports for UMC's internal control design and implementation performance.

For more details, please refer to the Company's website at ➤

Executive Compensation



UMC formulated, implemented and disclosed the "Incentive-based Compensation Clawback Policy" in 2023 to enhance the improvement of corporate governance effectiveness and ensures the best interests of the Company and its shareholders.

The performance evaluation and the policies, system, standards, and structure for salary remuneration of directors and executives are determined and reviewed by the Remuneration Committee. The committee members include independent directors who provide suggestions and guidance from an external perspective. The committee meets at least twice a year to review and ensure the competitiveness of compensation packages.

The remuneration of the president and vice president, including salaries, bonuses, severance payments, and retirement pensions, is disclosed in the Company's annual reports every year. UMC is committed to the advancement of the three aspects of **ESG (environmental, social, governance)**, and has formulated medium- and long-term goals for sustainable development. Therefore, in addition to the Company's competitiveness in the industry, the executives' overall compensation also takes the environmental sustainability developments and talent cultivation into consideration. ESG was added to key performance metrics for variable compensation in order to align the interests of executives with that of the Company, making corporate sustainability a common goal.

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Total Compensation		Performance Factor	
Fixed Compensation		Based on job duties and relative importance of the position and other factors	
Variable Compensation ^{Note}		According to the execution and achievement status of the operating strategy and objectives that the manager is responsible for. Financial Performance Index: Return on equity (ROE) %, operating margin (OM) % and earning per share (EPS), etc. Other Sustainability Index: Increasing revenue proportion and market share of sustainable products, integrate UMC's core capabilities, minimize environmental footprint, and create social value.	
Note: 1.In consideration of different purposes of reward, diversified compensation will be provided, such as performance bonuses, incentive bonuses, sign-on bonuses, employee compensation (profit sharing) and share option certificates, restricted stocks, et 2.The calculation is based on the actual cash compensation received in the current fiscal year			
Country	Ratio of maximum remuneration to median annual remuneration (%)		Ratio of % increase in highest total annual remuneration to % increase in median total remuneration
Taiwan	102.81		2.77
Singapore	21.72		1.51

Note: The calculation is based on those who were employed throughout the year of 2023.

Long-term Incentives

In order to attract and retain key talents for the achievement of its mid- and long-term objectives, UMC issued restricted stock awards for employees with a four-year performance evaluation period from 2021 to 2024. The performance indicators for the restricted stock awards are return on equity % (ROE%), operating margin % (OM%), earning per share (EPS), MSCI ESG ratings, intending to motivate employees to achieve performance goals and to create greater value for the Company and its stakeholders.

Clawback Policy

As an organization that highly values integrity, UMC believes that every employee is obligated to act in the Company's interests within legal limits and is responsible for preventing damages to or loss of the Company's interests. Violators of the Company's Code of Conduct shall pay back any benefit improperly obtained, and will be penalized according to the severity of the incident, including deduction of performance cash award, year-end bonus and profit-sharing bonus, demotion, removal from post, and, when necessary, legal actions. UMC expects all employees, especially executive level managers, to fulfill their management and supervision responsibilities, and strictly observe the Code of Conduct to ensure UMC's sustainable growth and development.

In addition, in order to enhance the improvement of corporate governance effectiveness, the Company formulated, implemented and disclosed the "Incentive-based Compensation Clawback Policy" in 2023, which clearly defines the circumstances under which the Company needs to claim back specific remuneration in the event of a major restatement of financial statements, ensures to comply with the best interests of the Company and its shareholders.

Executives' Stock Ownership Guidelines (Equity Policy)

In 2022, UMC established its Equity Policy for executives' ownership of the Company's stock, intended to strengthen the link between the interests of executives, company performance, and the interests of stockholders. The chairman and presidents are required to hold stock valued at least ten times their annual base salary. The requirement for other executive officers is at least 5 times their annual base salary. The actual achievement is reviewed every year to ensure the implementation of the policy. As of the end of 2023, 95% of the executives have reached the target which is ahead of schedule, and the rest of the executives are on the track.

Office	Title	Shareholding Value (Multiple of Base Salary)	Status ^{note1}
Stan Hung	Chairman & Chief Strategic Office		Meet
SC Chien	President	10X	Meet
Jason Wang	President		
Ming Hsu	Executive Vice President		
Oliver Chang	Senior Vice President		
Chitung Liu	Senior Vice President & Chief Financial Office		
TS Wu	Vice President		
C C Hsu	Vice President		
M C Lai	Vice President		
S F Tzou	Vice President		
Osbert Cheng	Vice President		
G C Hung	Vice President		
Steven Hsu	Vice President		
Jerry CJ Hu	Vice President		
Y S Shen	Vice President		
Steven S Liu	Vice President		
Francia Hsu	Vice President		
Mindy Lin	Vice President		
Linwu Kuo	Vice President		
Eric Chen	Vice President & Chief Human Resources Office		
Olivia Liao	Vice President & General Counsel		On Track

Note: 1.Shareholding value is calculated based on the average stock price during the 30 days prior to and including the evaluation date of December 31, 2023.

2.She joined UMC in October 2023, and the deadline for meeting the shareholding requirement is October 15, 2028.

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1.1.2 Integrity Management

UMC values its credibility. The Company is committed to maintaining the highest ethical standards and professional competence, and strictly requires its employees and business partners to abide by the applicable anti-corruption and anti-bribery laws and regulations no matter where business is conducted.

In order to comply with the above-mentioned global anti-corruption and anti-bribery laws and regulations, UMC has adopted three management methods of integrity management, namely to establish relevant regulations, to internal review and to external review for all employees and business partners. By gaining public trust through business integrity and ethics, the Company fulfills its corporate social responsibility and achieves sustainable development.

In view of the high correlation between anti-corruption regulations and conflicts of interest, UMC conducts internal investigations and management to address conflicts of interest, and actively prevents related risks by rotating job responsibilities among personnel with different roles and duties. In 2023, UMC did not receive any penalties for violating anti-corruption laws and regulations, and no proof of corruption or bribery was found in 2023.

④ Management of conflicts of interest: please refer to Chapter 1.1.1 "Operation of the Board of Directors"

Ways to demonstrate integrity in the workplace

UMC has initiated an analysis of the differences between its internal system and the ISO 37001 since 2023, and will continue to conduct risk assessments. The results of the aforementioned risk assessment will be used to optimize UMC's internal management.

Establish Relevant Regulations

▶ Relevant regulations

UMC has established the "UMC Code of Conduct" to declare the Company's emphasis on integrity and adherence to professional ethical standards in order to gain public trust and ensure the Company's sustainable growth and development. The Company has also developed the "UMC Anti-Corruption Statement" to emphasize its zero-tolerance policy towards corrupt behavior and to clearly define bribery, conflicts of interest, and avoidance of such conflicts. Additionally, the Company provides whistleblower channels for reporting corrupt behavior and protection measures for whistleblowers.

[UMC Code of Conduct](#)



[UMC Anti-Corruption Statement](#)



▶ Expand education and training

(1) Board of Directors

Directors for every board term receive training on anti-corruption policy and procedure communication. The nine directors of this term have all completed the training on December 15th, 2021, with a completion rate of 100%.

(2) All employees

UMC provides integrity-related education and training for new employees and provides relevant training materials on the Company's internal website. UMC requires all IDL employees to complete training and testing on anti-corruption and anti-bribery regulations. In addition, UMC strengthens the promotion of local legal knowledge for IDL employees in Singapore, emphasizing the importance of relevant laws and regulations.

Internal Review

▶ Internal control self-assessment operation

Through the annual internal control self-assessment operation, UMC requires all fabs, divisions and subsidiaries to conduct self-inspection on their business, including the awareness and assessment of possible risks in legal compliance and business ethics, and adjust the design and implementation of internal control systems to complete the self-monitoring mechanism. In addition, the Audit Division develops an annual audit plan according to legal regulations and risk considerations to conduct related audits. It regularly reports audit results to the Audit Committee and the Board of Directors and monitors improvements.

▶ Reporting system and channels

Employees and third parties can report any misconduct through the whistleblower channel anonymously, and UMC ensures those who report the misconduct in good faith are not subject to any retaliation. If an investigation shows that a reported violation by an employee is true, UMC will take disciplinary action in accordance with internal regulations.

Employees as well as third parties can also seek appropriate advice through consultation with the Human Resources Division or the employee care channel when they find any violation of ethics and norms, or encounter unequal treatment in the workplace, and then report such event.

④ Channels for communication: please refer to Chapter 4.1.2 Employer-employee Communication

External review

▶ Validated Assessment Program (VAP)

④ Performance of VAP: please refer to Chapter 4.1.1 Enforce Human Rights Management

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1.1.3 Compliance of Laws and Regulations

UMC's customers are located around the world, and the Company's operations span a number of countries. To ensure UMC's compliance with the laws and regulations of each country, thereby avoiding losses due to legal violations or avoiding profit losses due to large fines, the Company closely monitors all policy or regulatory changes that might impact its business or finances.

In 2022, UMC established the Global Compliance related unit for the cross-functional compliance. All divisions must comply with relevant legal laws and regulations, and a legal service platform has been set up to provide legal consultation and assistance on various legal issues across divisions. UMC also arranges training programs and courses on legal compliance, and provides prompt updates of the latest legal trends.

UMC remains in compliance with the laws and regulations by prompt updates, periodical self-assessment, and periodically review and improve internal regulations and confirm the items to be followed.

Training Courses for Legal Compliance

UMC provides regulatory training courses for legal compliance through online courses, on-site courses, and external courses. UMC arranges training for three levels of trainees based on global policy or local legal requirements: senior executives, highly related employees, and all employees. The training and testing include but are not limited to: anti-corruption laws, securities and exchange laws, anti-trust laws, privacy laws, trade secret laws, copyright laws, and export control regulations. New employees must complete courses and testing on intellectual property and trade secrets laws upon arrival. The aforementioned training courses and tests are offered routinely to strengthen compliance with the laws and regulations.

Legal staff also participate in external training courses to update their knowledge of amendments and latest news and details to ensure compliance with latest requirements.

Legal Compliance Status

In 2023, UMC did not receive any penalties for violating corporate governance, anti-corruption, anti-trust or other related laws and regulations, nor did UMC experience any privacy breaches or violations. There were also no incidents of managers violating insider trading laws. In addition, if there were any major litigation cases, they would be reported to the Audit Committee and the relevant communication and response mechanisms.

Moreover, UMC attaches great importance to the health and safety of employees. Related risks are controlled by various internal standard operating procedures, and regulations are regularly reviewed and improved upon. UMC did not incur any fines related to the health and safety of employees, or financial losses due to related judicial procedures in 2022.

The legal compliance status of UMC is summarized as follows:

► Anti-trust Laws

- UMC formulates and announces the Anti-Trust Policy, which is the guideline for internal divisions to follow when conducting business. The key points are:
 - a. key provisions of anti-trust laws,
 - b. code of conduct for business operations, and
 - c. countermeasures when related risks occur.
- The training materials are provided on the internal website, and training courses and tests are regularly held, which require all IDL employees to complete training and testing on anti-trust laws. In addition, UMC strengthens the promotion of local legal knowledge for IDL employees in Singapore, emphasizing the importance of relevant laws and regulations.

► Securities and Exchange Laws – Insider Trading

- UMC not only formulates and announces the "Policies and Procedures for Refraining from Insider Trading", but also keeps emphasizing the importance of not violating the insider trading laws to directors, management team and employees.
- The training materials are provided on the internal website, and training courses and tests are regularly held, which require all IDL employees to complete training and testing on insider trading knowledge in the Securities and Exchange Laws. In addition, UMC strengthens the promotion of local legal knowledge for IDL employees in Singapore, emphasizing the importance of relevant laws and regulations.

Legal Compliance Risk Management

UMC through the Enterprise Risk Management Committee, examines the internal and external risks faced by the Company. After evaluating and analyzing issues such as privacy protection, export control, and trade secrets, appropriate management and preventive measures have been taken, and it is believed that the impact on the Company is low.

◎ For more details, please refer to Chapter 1.2 Implementing Risk Management

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Trade Secret Laws and Regulations

Reaction and Precaution Measures Taken by UMC

Regarding the issue of protecting trade secrets, UMC has established several corresponding management measures and regulations, and has implemented internal inspection methods such as training and audits. In addition, UMC's "Key Trade Secret (KTS) System" has been completed and launched in 2022, and the Company will continue to promote the KTS system to all employees to maintain UMC's competitiveness.

UMC signs non-disclosure agreements with all suppliers and customers, and customer information is handled by specialized units to avoid the possibility of improper disclosure. The communication of information between vendors, customers, and the Company must also comply with the Company's management regulations and norms. UMC also provides information security promotion to customers and business partners, and retains complete training records.



Establish Relevant Regulations

► Relevant regulations

UMC formulates and announces "Trade Secret Protection Management Regulations" and the "Evidence Information Protection Procedures." The Company continuously reviews and implements the relevant regulations, or protects necessary evidence for suspicious cases. As of 2023, no trade secret related cases have occurred.

► Emerging issues

UMC also keeps abreast of changes in technology tools or laws and regulations, whether it is to promote information security risks that should be noted among employees regarding AI Chatbots, or to analyze the control of critical technologies under the National Security Act. All of these are within the scope of UMC's concern for trade secret issues.

► Training Courses

UMC provides intellectual property-related training for new employees and offers relevant training materials on internal website. The Company requires all IDL employees to complete training and testing on trade secret laws, emphasizing the importance of relevant laws and regulations.



External Review

► "Taiwan Intellectual Property Management System" (TIPS) AAA Certification

In 2021, UMC officially implemented the "Taiwan Intellectual Property Management System" (TIPS), which includes a system for reviewing the management of trade secrets by companies. In the 2023 verification, UMC passed the AAA-level certification and was awarded a certificate by the Industrial Development Bureau of the Ministry of Economic Affairs. Since the establishment of the TIPS system, only two companies have received this honor, demonstrating UMC's long-term investment and active implementation of the intellectual property management system.

Privacy Laws and Regulations

The Usage of Personal Data by UMC

UMC values the privacy rights of our product or service users, customers, suppliers, contractors, applicants, website visitors, and other individuals (collectively referred to as "Data Subjects"). UMC only collects and uses the personal data of Data Subjects within the necessary scope and for the purposes specified in the consent form and the Privacy Policy. The percentage of usage for secondary purposes is 0%.

Regarding the collection and use of personal data within the necessary scope, UMC has established clear collection methods, personal data categories, purposes and legal bases, ways to process personal data, cross-border transmission regulations, protection of minors, potential sharing of personal data, cross-border transmission limitations, Data Subject's rights, personal data retention periods and expiration destruction mechanisms, and has established personal data communication channels and related information security management measures.

The Data Subject can view UMC's "Privacy Policy", "Privacy Protection Procedure", and "Cookie Policy" through the following links. Data Subject can also communicate privacy-related needs through the "Data Privacy Request Form" or "Feedback Mailbox".

Privacy Policy ►

https://www.umc.com/en/Html/privacy_policy



Privacy Protection Procedure ►

https://www.umc.com/en/Html/privacy_protection_procedure



Cookie Policy ►

https://www.umc.com/en/Html/cookie_policy



Data Privacy Request Form ►

https://www.umc.com/en/Privacy_Request/privacy_request



Feedback Mailbox ►

z_website_privacyadmin@umc.com



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Impact and Implications of Privacy Protection Policy

UMC believes that, by providing open and transparent privacy policy information, Data Subject will be able to enjoy the rights to make independent decisions about their personal data. Data subject's trust in UMC will advance the Company's progress in corporate social responsibility, enhance overall awareness of privacy management in the industry, and will ultimately lead to a positive environment that respects and upholds privacy laws and regulations.

UMC provides regular training to enhance the understanding of global privacy laws and regulations to employees. Different levels of personnel will be made aware of their authority to handle personal data, storage restrictions, and the mechanism for reporting personal data security incidents. Personal data should also be protected in accordance with the "UMC's personal data file security maintenance plan and methods of disposing personal data after business termination".

UMC periodically reviews Data Subjects' consent forms and current retention of personal data in the Company, and establishes appropriate protection and security mechanisms to prevent personal data security incidents, such as accidental or unlawful damage, destruction, alteration, disclosure, access, transfer, storage, or other processing (collectively referred to as "Personal Data Security Incidents").

Region	Applicable Laws and Regulations	Specific Response Measure
European Union	General Data Protection Regulation (GDPR)	<ul style="list-style-type: none"> ▶ Through the operation of the UMC's Personal Data Protection Implementation Task Force, UMC ensures that the personal data of the Data Subject is well protected.
United States	California Consumer Privacy Act California Privacy Rights Act	<ul style="list-style-type: none"> ▶ UMC updates the Privacy Policy, Privacy Protection Procedure, and relevant documents such as consent forms and contracts in accordance with current laws or regulations.
Taiwan	Personal Data Protection Act	<ul style="list-style-type: none"> ▶ Providing relevant training materials on internal website
China	Personal Information Protection Law	

UMC's Personal Data Protection Implementation Task Force

Given that UMC's business and services are expanding globally, in order to implement the protection of personal data collected and utilized by UMC, and to avoid situations such as leakage, abuse, and being stolen that may cause harm to the Data Subject, UMC has referred to the Personal Data Protection Act of Taiwan, the General Data Protection Regulation (GDPR) of European Union, and the California Consumer Privacy Act (CCPA) and California's Privacy Rights Act (CPRA) of United States, and has established and announced the "Privacy Protection Procedure" to explicitly regulate UMC's management methods of Privacy Policy and personal data security incidents handling procedures, and UMC will continue to monitor global privacy laws and regulations to continuously optimize management processes and personal data security incidents reporting mechanisms.

According to the "Privacy Protection Procedure", if UMC discovers or receives the personal data security incidents, UMC's Personal Data Protection Implementation Task Force will address the following matters:

- ① Conduct an incident analysis within 24 hours of receiving the report. The incident analysis shall confirm the type and severity of the incident, the scope of impact, media exposure risk control, and the cause of the incident;
- ② Immediately after the incident analysis, UMC shall develop incident response procedures and contingency measures to prevent the incident from expanding and take evidence preservation measures to avoid changes or alterations to the original electromagnetic recording and evidence;
- ③ Once the incident is identified, UMC shall promptly communicate with the Data Subjects about the facts of the infringement and the measures taken in an appropriate manner;
- ④ UMC shall report the incident in a timely manner according to the laws. After the aforementioned procedure is completed, UMC's Personal Data Protection Implementation Task Force will also review the cause of the personal data security incidents and formulate improvement plans to prevent the incident from happening again. For more information, please refer to "Privacy Protection Procedure".

UMC has a zero-tolerance policy against any violation of the Privacy Policy and the Privacy Protection Procedure. UMC may impose disciplinary measures, including but not limited to imposing warnings or demerits on those who violate the Privacy Policy and the Privacy Protection Procedure. If an employee abuses others' personal data that is not within the scope of his or her duties and without obtaining approval of his or her supervisor, the Company may terminate the employee's employment without prior notice in accordance with Article 12, paragraph 4 of the Labor Standards Act. UMC may also file civil claims and/or criminal charges against employees who violate the Privacy Policy and the Privacy Protection Procedure, and seek for provisional remedies.

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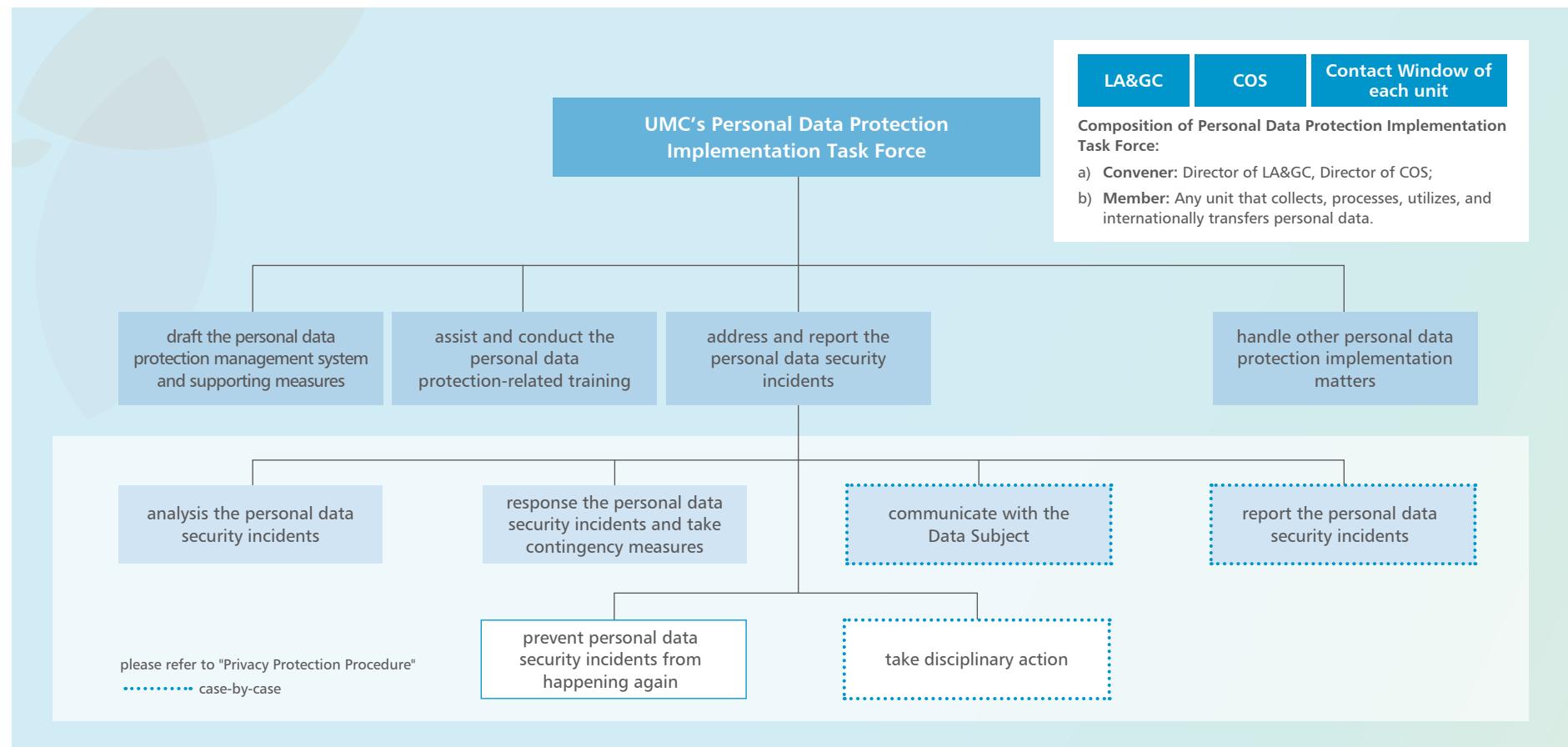
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Risk Reporting Mechanism

UMC has obtained the certification of ISO/IEC 27001, the international standards for information security management, and has set up system maintenance and management standard operating procedures. The prevention, notification, and response mechanisms for incidents that may cause personal data leakage are systematically supervised in accordance with the management regulations of the information security management division. In 2023, the Company received no complaints.

① Information security management: please refer to Chapter 1.2.4 Commitment to Information Security Risk Management

Complaint Handling and Resolution

UMC takes actions in accordance with the Privacy Policy and the Privacy Protection Procedure upon receiving notice of personal data security incidents. During 2023, no complaints about UMC's infringement of privacy rights were received by external personal data protection authorities, UMC's internal Data Privacy Request Form, feedback mailboxes, and MyUMC platform, indicating that UMC has successfully achieved the expected results in privacy management internal control mechanisms.

	External	Internal	
	personal data protection authorities	Data Privacy Request Form and feedback mailboxes	MyUMC platform
Compliant	0	0	0
Penalty	0		

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1.2 Implementing Risk Management

- 1.2.1 Risk Management System
- 1.2.2 Risk Management and Countermeasures
- 1.2.3 Comprehensive Business Risk Management
- 1.2.4 Commitment to Information Security Risk Management
- 1.2.5 Managing Climate Risks and Opportunities

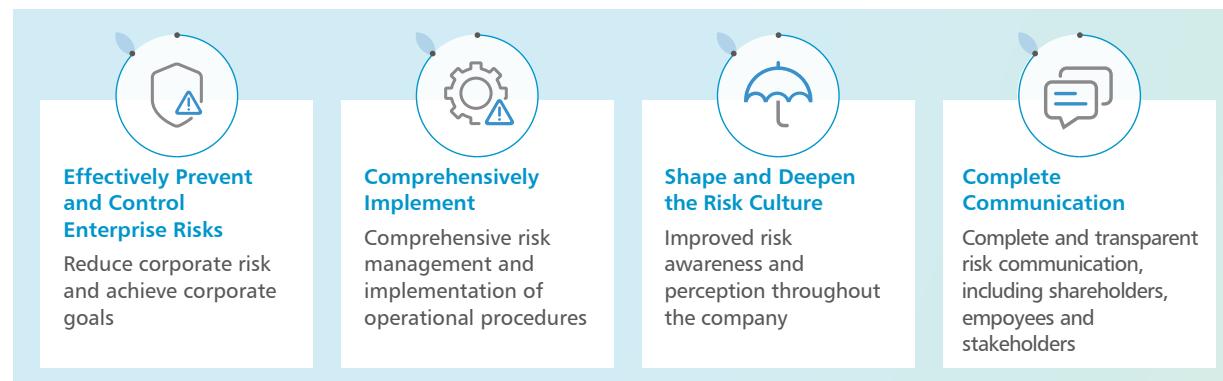
1.2.1 Risk Management System

UMC established an Enterprise Risk Management Committee in the second half of 2018 based on COSO enterprise risk management framework to strengthen the management and control of major risks at all levels of the Company. According to the Company's risk management policy, the committee serves to manage and prioritize countermeasures for major risks. In 2020, UMC completed the standard operating procedures of "Enterprise Risk Management Manual" for employees. Since 2021, UMC has been periodically cooperating with external consultants to audit the completeness of the Company's enterprise risk management. Additionally, starting from 2021, UMC conducts annual enterprise risk management training to ensure the comprehensiveness of risk management and establish a solid enterprise risk culture.

Enterprise Risk Management Policies

In order to maintain long-term stable operations, UMC actively conducts company-wide risk management through well-established management organizations and methods:

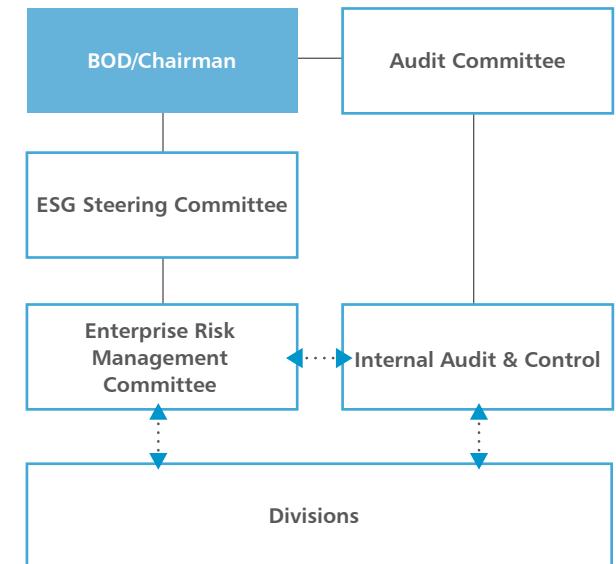
- ▶ Effectively preventing and controlling enterprise risks while simultaneously identifying potential opportunities
- ▶ Comprehensively implementing controls and management procedures in daily operations
- ▶ Shaping and deepening risk culture
- ▶ Establishing complete and transparent risk communication



Non-Executive Directors' Expertise in Risk Management

On the UMC board of directors, all non-executive directors possess industry experience in the technology industry or financial institutions before joining the current board. Meanwhile, they have accumulated professional knowledge in Enterprise Risk Management. During their tenure as directors at UMC, they participate in policy planning for enterprise risk management, review the Company's long-term strategies, supervise and guide the execution of the Enterprise Risk Management Committee, and assist the Company in improving its risk management culture and addressing potential crises arising from emerging risks. For details on the risk management experience of non-executive directors, please refer to Chapter 1.1.1 Operation of the Board of Directors.

Enterprise Risk Management Structure



Guided by the enterprise risk management policy, the Enterprise Risk Management Committee coordinates relevant departments to jointly review the internal and external risks that the Company faces, and facilitates risk response measures for company-wide major risks. The Enterprise Risk Management Committee is chaired by the Executive Vice President, who reports to the ESG Steering Committee to ensure alignment with the Company's sustainability strategy. ESG Steering Committee, overseen by the Nominating Committee of Board-level (composed of 5 independent directors), reports to the Board of Directors at least once a year to align risk management policies and report on risk results. Additionally, UMC enterprise risk management also incorporates with the Company's internal auditing and control functions, primarily overseen by the Audit Division and reports to the Audit Committee to ensure that the risks associated with operations have been effectively controlled.

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Enterprise Risk Management Mechanism

The Enterprise Risk Management Committee consolidates and evaluates risks in the areas of strategy, operation, finance, and hazard. According to the risk categories, the Committee sets the risk appetite that the Company can accept, evaluates the possibility of risk occurrence and severity of risk impact, creates a risk map, defines the priority order and risk level of risk items, and executes sensitivity analysis and stress testing of important financial and non-financial risks. Risk management plans are developed based on the level of risk the Company can accept and the costs it can afford.

On a monthly basis, each risk group conducts rolling monitoring and reviews the changes in the likelihood and severity of risks exposure. The risks status is subsequently reported to the Risk Management Office, in order to ensure the effectiveness of risk management plans and related control operations. Meanwhile, the Company also seizes business opportunities associated with risks to formulate company development strategies.

1 Risk Identification and Assessment

- ▶ Identify and assess the possibility of occurrence and the severity of their impact on the Company (including finance, operations, personnel, company reputation, etc.)
- ▶ Establish UMC risk pool and enterprise risks prioritization

Continuous Improvement

- ▶ Keep methodology, process, technique, and tool up to date to ensure the effectiveness and efficiency of risk management
- ▶ Learn from international and industry benchmarking methods, while considering UMC's internal needs, and continuously optimize relevant measures

2 Risk Response Strategy and Implementation

- ▶ Develop response actions of risks through sensitive analysis, stress testing and considering the Company's risk appetite
- ▶ Execute response actions for risks, and embed in internal control activities and management procedures
- ▶ Risk response strategy coordination/consolidation for inter-group risks

3 Risk Monitoring and Reporting

- ▶ Monthly rolling risk assessment to monitor the changes in the likelihood and severity of risks exposure
- ▶ Mitigation progress monitoring
- ▶ Summarize risk management progress for BOD review
- ▶ Annual internal auditing addressed in CSA reports along with regular third-party external audits to ensure effectiveness of internal management

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Risk Management Three Lines of Defense

UMC has a comprehensive enterprise risk management and internal control mechanism in place. The Company has established the roles, functions, and responsibilities within the three lines of defense model to ensure that UMC's risk management related objectives are achieved and that the risk governance structure operates effectively. The details are as follows:

First Line of Defense

► Functional units conduct self-assessment and management

Executing Unit: Each functional unit

- The first line of defense is to take each functional unit as the operational risk owner. Based on its functions and business scope, and according to its professional knowledge and understanding of its core business, each functional unit designs and supervises the control procedures of divisional business activities from the perspective of identifying where risks are most likely to occur and maintaining core competencies.
- Each functional unit is responsible for identifying, evaluating, controlling, and reducing risks generated by operational activities through techniques such as Failure Mode and Effects Analysis (FMEA).
- Each functional unit establishes internal control procedures in a timely manner and implements risk management procedures to ensure that all business executions are in line with business policies and objectives.

Second Line of Defense

► Robust risk management and compliance mechanisms

Executing Unit: The Enterprise Risk Management Committee

- Independent from the functional organizational structure, the Company's overall risk policy was formulated and the risk management process was established to assist and supervise the first line of defense in managing risks.
- The Committee assesses company-level significant risks and coordinates cross-organizational risk management operations to ensure comprehensive coverage of risk management.
- The Committee monitors risk changes and impacts within the Company's tolerable range, and regularly reports risk management effectiveness to the Company's senior management and board of directors.

Third Line of Defense

► Independent and impartial internal audit mechanism

Executing Unit: The Audit Division

- The Division, which is independent of enterprise risk management and daily risk management operations and reports to the Audit Committee in board-level directly, carries out independent auditing and evaluation to ensure the effectiveness of existing first-line internal control mechanisms and second-line risk management systems, and establishes audit plans in accordance with regulations and obtaining approval from the board of directors on an annual basis.
- The Division reviews the self-assessment operations of internal control systems of each unit and subsidiary, along with improving internal control deficiencies and abnormal issues discovered, as a reference source for the board of directors and the management to evaluate the effectiveness of internal control systems on an annual basis.
- The Division participates in important meetings of the Enterprise Risk Management Committee, and provides suggestions to ensure that policy compliance and implementation processes are consistent with performance objectives and risk tolerances selected by management.

External Audit of Enterprise Risk Management Process

UMC regularly engages third-party external consulting firms to conduct compliance audits of the Company's risk management processes based on the ISO 31000 Risk Management System Guidelines and the COSO ERM 2017 Enterprise Risk Management Framework. Through questionnaire surveys and examination of the actual operation of the Company's risk management, including risk governance, risk analysis and assessment, risk reporting, risk management capabilities, risk culture, etc., comprehensive evaluations of the completeness of risk management are provided, along with improvement recommendations reports. The results of the previous external consultant audit (2021) rated UMC as a company with mature enterprise risk management. A new round of external audit planning was initiated by the end of 2023.

Risk Culture Establishment

UMC is committed to establishing a comprehensive risk culture and continuously improving it to deepen the awareness and capabilities of all employees in risk management. Through measures such as the following, risk awareness and self-management are internalized into employees' DNA.

► Ongoing Risk Training:

Providing employees with comprehensive training courses on enterprise risk management and job-related risks to enhance their risk awareness. This includes training and drills related on company enterprise risk management, Business Continuity Management (BCM), the concepts of environmental health and safety risks, intellectual property rights, legal compliance and information security. Some examples of training conducted in 2023 include:

- "Introduction to UMC Enterprise Risk Management" course: A total of 9,788 employees completed
- "Business Continuity Management" course: A total of 9,588 employees completed BCM awareness promotion; 10 sessions of BCP drills were conducted

► Standardized Implementation of Core Business Risk Management:

Rigorous management processes are implemented from the assessment of new technologies or products to process development and mass production, ensuring standardized risk management to achieve risk prevention and control. During the assessment phase of new technologies or products, comprehensive evaluation and review process are required, considering aspects such as market demand, profitability, technical capability, environmental sustainability, etc., and incorporating considerations of potential risks. The evaluation results are reported to the Chief Technology Officer for approval before development begins. During the process development phase, project teams must follow the standard operating procedure - the "New Process Development Procedure," which includes Failure Mode and Effect Analysis (FMEA) for risk prevention management design, defining strict standards to prevent risks from impacting research and development results. During the mass production phase, adjustments to production methods such as processes, machinery, and materials must undergo the risk assessment management process of FMEA before changes are approved.

► Smooth Channels for Employee Risk Feedback:

Encouraging employees to proactively identify surrounding risks and use innovative thinking to uncover potential company risks and propose improvement suggestions. Establishing diversified risk communication platforms where employees can immediately report hazard, operation, strategy, financial, and other related risks 24/7. Using automated systems for management to ensure that relevant risk issues reported by employees are reviewed within the standard timeframe to achieve continuous PDCA management and risk communication effectiveness.

Related Communication Platform Channels:

- The Incident Reporting and Investigating System, The Inspection System, and The ESH Forum: Communicating relevant information and risks according to the Environmental, Safety, and Health Management System (ISO 14001/ISO 45001).
- The Improvement Proposal System
- Information Security and Confidentiality Protection E-mail and Hotline
- Whistleblower Reporting for fraud or violations of professional ethics
- CHO (Chief Human Resources Officer) mailbox

► Linking Risk Management Effectiveness with Incentive Measures:

UMC promotes the linkage of risk management with individual rewards through various management competition activities, annual bonuses, and employee restricted stock units. This system aligns rewards of employees and managers at all levels with the effectiveness of risk management and the achievement of performance goals. It aims to motivate individuals to prioritize their focus on accountability and effectively manage risks within their scope of responsibility or influence, thereby contributing to the achievement of both personal and company performance goals. Since 2021, personal performance evaluations have been systematically linked to key company performance indicators, and a portion of employee bonuses is also linked to the results of Environmental, Social, and Governance (ESG) performance indicators to reward effective risk management. This approach aims to collectively achieve the Company's operational performance and ESG-related KPI goals.

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1.2.2 Risk Management and Countermeasures

UMC identifies key risks and formulates countermeasures in four areas: strategy, operation, finance, and hazard. It also includes important risks related to environmental, social or corporate governance issues in the Company's operations. The growth of Taiwan's semiconductor industry outpaces the global average, and UMC is optimistic that Taiwan will maintain its leading position in the foreseeable future, driven by factors such as continued development of new process technologies and the clustering effect of equipment and material suppliers. However, the recent intensification of geopolitical risks due to competition among major powers, geopolitical conflicts and severe inflation leading to rising operating costs, urgent needs for green energy and carbon reduction measures due to climate change, as well as the global shortage of semiconductor talents with international perspectives have impacted the international development of companies. These factors may cause adverse effects on the Company's investments and operations, but they also present some noteworthy opportunities.

As a member of the supply chain, in addition to the emerging risks in the semiconductor industry, UMC monitors the global risk situation in the meantime. The Company refers to the Global Risk Report published by the World Economic Forum (WEF) every year to understand how risk trends are evolving and to start risk response measures as early as possible.

In response to the risks faced by UMC, appropriate risk-mitigation measures are developed within the framework of the Company's enterprise risk management operations. According to the categories of risks under each risk area, they are analyzed and discussed by the relevant dedicated units and then submitted to senior managers for approval to set the risk appetite, which is divided into 5 levels (Low, medium to low, medium, medium to high, high). For example, the risk category of property damage and business interruption, after discussions between the hazard division and the finance division, followed by analysis through financial models, the risk appetite was defined and finally approved by the CFO (risk appetite level: medium to low). For the risk category of investment strategy, after discussions with the business marketing division, the engineering division, the corporate planning division and the finance division, followed by analysis through financial models, the risk appetite was defined and finally approved by the Co-President (risk appetite level: medium).



Additionally, sensitivity analysis and stress testing are conducted for important risks. After evaluation, it is expected that the overall residual risks of the Company and its affiliates should fall within a manageable range under the implementation of various countermeasures.

Sensitivity Analysis and Stress Testing

Financial Risks

Risk Scope	Risk Issue	Risk Level (Likelihood, Severity)	Risk Description/Potential Impact	Sensitivity Analysis and Stress Testing	Countermeasures
Finance	Currency Exchange and Interest Rate Risk	M-L (M-H, M-L)	<ul style="list-style-type: none"> ▶ Fluctuating foreign exchange rates could result in FX losses and unexpected volatility in expenses when revenue or expense generated from operating activities is denominated in a currency different from the functional currency. ▶ Due to large exposure of loans, changes in interest rates could affect future cash flow 	<ul style="list-style-type: none"> ▶ Based on economic information provided by professional institutions, the Finance Division set economic scenarios and conducts sensitivity analysis & stress testing on a quarterly and demand basis to monitor the impact of exchange rate and interest rate fluctuations on the Company's net profit. The simulated results are reported to the Chief Financial Officer, and the division also formulates countermeasures to minimize risks. ▶ The simulated data for 2023 indicates that, even under the greatest fluctuations in exchange rate and interest rate, after implementing the appropriate measures, the overall net profit will remain controlled within the Company's acceptable range. 	<p>The Company applies natural hedges on the foreign currency risk to balance the assets and liabilities denominated in foreign currencies, and utilizes spot or forward exchange contracts to reduce foreign currency risk.</p> <p>The Company manages the tenor and borrows at fixed or floating rates to reduce interest rate risk</p>

Non-Financial Risks

Operation	Factors such as the Pandemic, Geopolitics, and Climate Change Have Pushed Global Inflation Higher, Making it More Difficult to Effectively Control Costs to Maintain Profitability	M-L (H, M-L)	<p>In recent years, countries have implemented loose monetary policies to save their economies from the impact of the COVID-19 pandemic, which has caused inflation and soaring interest rates. In addition, geopolitics, wars, and climate change continue to impact the stability of the supply chain, further increasing the cost of supplies. This would increase the overall operating costs of UMC, including soaring logistics and raw material costs, escalating labor wages, and rising equipment maintenance contract expenditures.</p> <p>To establish a financial simulation model and input key financial parameters (such as raw material and component costs, labor costs, patent fees, etc.) to understand the impact of these parameters on the Company's future profitability metrics such as gross margin (GM%) and return on equity (ROE). Actual simulation data indicates that the percentage increase in the prices of indirect materials, maintenance, and spare parts (IDM+RMP) serves as a sensitive factor affecting the gross margin. UMC sets different levels of countermeasures based on the extent of cost price increases to ensure the achievement of the Company's annual profit targets</p>	<ul style="list-style-type: none"> ▶ Actively introducing alternative materials and machines to increase sourcing flexibility and bargaining power ▶ Promoting continuous improvement and reduction of raw materials through innovative methods. ▶ Improving cross-fab parts management system and benchmark management to exert the effectiveness of integrated management. ▶ Increasing the in-house repair rate of machine parts. ▶ Strengthening the procurement risk assessment process and long-term contract review mechanism to reduce procurement costs with appropriate long-term contracts. ▶ Using digital transformation to increase personnel productivity and human capital utilization efficiency
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Strategy				
Risk Issue	Risk Level (Likelihood, Severity)	Risk Description	Potential Impact	Countermeasures
<p>! Emerging Risks</p> <p>Risks to the Company's Investment and Operations Caused by Intensified Competition among Countries and Future Countermeasures</p>	M-H (M-H, M-H)	<p>Strategic competition among major powers has led to industrial chain decoupling or de-risking measures, and international industries have seen ABC (anywhere but China) or even "Taiwan plus one" trends. The United States, Japan, South Korea, and the Netherlands have restricted exports of advanced semiconductor equipment to China, and China has retaliated by restricting the export of specific materials. In the future, a competitive dynamic appears to be developing between the two camps, led by the United States and China.</p> <p>Major powers have realized that semiconductors are not only essential components of technological products, but also critical strategic resources for the countries. Therefore, they have been actively developing domestic semiconductor manufacturing capabilities with state support.</p> <p>This competitive tension shows no sign of reversal in the short term and will continue to increase the uncertainty of future operations.</p>	<p>The impacts on UMC include costs, revenue, delivery schedule and investment plans, for example:</p> <ul style="list-style-type: none"> ▶ Relevant regulations and sanction measures will impact the stability of the semiconductor supply chain, which may affect production plans and delay the delivery of customer orders. ▶ Prohibiting the export of key equipment or materials to specific countries may affect UMC's global production footprint and even require urgent modifications to investment plans, resulting in the loss of potential business opportunities. ▶ Customers leave China factories due to ABC (anywhere but China) policy or concerns about product technology continuity, which affects the capacity utilization rate of UMC's China factories, resulting in a decline in revenue. ▶ Major countries' policy subsidies for local production and self-built semiconductor production capacity may further reduce UMC's market share and cost competitiveness in the industry. ▶ Rapid changes in policies will increase corporate compliance costs and management complexity, which may affect the Company's operating performance and strategic deployment. 	<p>Diversification of customer base and expansion of niche technologies: In addition to its existing business in North America and Asia-Pacific, UMC also plans to further expand its business in Europe, Japan and other regions. The Company also actively establishes niche technologies and analyzes long-term market trends for more opportunities.</p> <p>Strengthening the diversification of production locations and the flexibility of production allocation: In addition to the expansion plan in Taiwan, UMC continues to expand production capacity in Japan and Singapore to serve global customers with diverse production areas. And, we increase the flexibility of cross-regional and cross-fab support, and adjust production allocation and capacity expansion plans in a timely manner.</p> <p>Agilely tracking changes in the external environment, including global regulations, politics, and economic conditions: We evaluate the impact of external changes on the acquisition of production resources, the changes in customer demand, and take necessary risk response measures in a timely manner. Some practical measures have been taken: Establishing a tracking and risk monitoring mechanism for raw material supply chain to accurately track the component ratio and risk status of the countries where raw materials come from. Closely monitoring the national policies of important equipment and material exporting countries, and actively establishing second suppliers to diversify risks. Initiating mergers and acquisitions, forming alliances to build new facilities, and collaborating on capacity/technology at the appropriate timing in order to seize opportunities for international cooperation.</p>
<p>! Emerging Risks</p> <p>Geopolitical Environment prompts China to Build Domestic Semiconductor Manufacturing Capabilities and the Risks it Poses to Company's Development</p>	M-H (H, M-H)	<p>Due to the influence of the geopolitical environment and restrictions on the import of advanced technologies and equipment from the United States, Japan and Europe, China has been developing semiconductor supply chain autonomy, massively expanding mature node production capacity and actively subsidizing domestic manufacturers. It is estimated that as China semiconductor capacity continues to grow, the competitive situation will be more exacerbated and have lasting impact.</p>	<p>The impacts on UMC include orders, revenue, and profits, for example:</p> <ul style="list-style-type: none"> ▶ China's large-scale expansion in mature process capacity overlaps with UMC's production capacity. Moreover, Chinese semiconductor manufacturers may take advantage of government subsidies to trigger aggressive price competition to win customers, especially Chinese customers or customers serving the Chinese market, resulting in a decline in UMC's revenue and profits. ▶ Policy subsidies for China's IC design industry may impact the market share of other IC design companies, resulting in the loss of customer orders related to Taiwan's semiconductor foundries. ▶ Numerous emerging small and medium-sized semiconductor foundries in China, each focusing on the development of specific technologies, may challenge UMC's technologies development in mature process, leading to the loss of business. 	<p>Analyzing future market opportunities, improving individual customer demand management, and proactively establishing technological differentiation to increase the barriers of technology competition.</p> <p>Promoting structural cost improvement and productivity enhancement to maintain cost competitiveness.</p> <p>Utilizing the advantages of UMC Hejian and USCXM to actively serve Chinese customers, or European and American customers planning to enter the Chinese market, and creating opportunities for collaboration.</p> <p>Continuously following up on industry policies in China and actively seeking government communication to obtain equal subsidies.</p> <p>To respond to the competition in different market segments, the company adopts more diversified and flexible pricing strategies to win customer orders.</p>
<p>! Emerging Risks</p> <p>The Ongoing Risk to Stability of the Company's Operations Caused by the Tensions in Cross-Straits Relations</p>	M-L (M-L, M)	<p>The recent competition between the United States and China in politics, economy, and technology has become increasingly intense and obvious.</p> <p>Due to Taiwan's critical position in geopolitics and the technology industry chain, it will inevitably be affected by the complex and dynamic interactions among the United States, China, and Taiwan. According to analysis of cross-strait relations over the past few years, China is likely to continue to increase pressure on Taiwan, including military or paramilitary actions. This would increase the uncertainty of UMC's future business and operations.</p>	<p>The impacts on UMC include business, revenue, and delivery schedule, for example:</p> <ul style="list-style-type: none"> ▶ This situation may affect UMC customers' willingness to place orders, resulting in a decline in UMC's business and revenue. ▶ The supply of semiconductor raw materials may be delayed or interrupted by military or paramilitary actions of China, which may affect UMC's operational stability and customer delivery schedule. 	<p>Establish a cross-functional platform mechanisms to deal with geopolitical risks, closely monitor the dynamics of cross-strait relations, predict possible change scenarios, assess potential impact on UMC's operations, formulate corresponding risk mitigation measures, and conduct rolling reviews and management adjustments.</p> <p>With the guiding principle of minimizing the impact of Taiwan fabs and maintaining independent operations of overseas fabs, the Company plans and deploys contingency measures that can reduce the impact of operations.</p>

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Operations

Risk Issue	Risk Level (Likelihood, Severity)	Risk Description	Potential Impact	Countermeasures
<p>! Emerging Risks</p> <p>The Shortage of International Talent Affects the Company's International Development Strategy</p>	M-L (M, M-L)	<p>According to the operational development strategy of UMC, there is a need for international talent to meet requirements such as global expansion, fab expansion, digital transformation, specialized technology development, and market strategy planning. Through alignment with senior management and talent assessment, it has been identified that parts of international talent are lacking within the current organizational structure. This shortage may pose a risk of being unable to rapidly cultivate talents and pass on experience, thereby affecting the Company's long-term competitiveness. This may become increasingly severe as countries actively develop their own semiconductor manufacturing.</p>	<p>The impacts on UMC include the efficiency of organizational operations, development plan, and company image, for example:</p> <ul style="list-style-type: none"> ▶ The Company lacks sufficient international leadership talent, making it difficult to enhance the operational performance of overseas fabs (USCJ, 12) or further expand global footprint according to the UMC's operational plans. ▶ Due to the shortage of international talent with global perspectives and leadership qualities, the development of international innovation technology and global vision face difficulties. Consequently, it is difficult to timely expand or respond to business developments to maintain competitiveness in the semiconductor foundry industry. ▶ Insufficient internationalization in corporate management affects the diversified development of UMC's culture and image. 	<ul style="list-style-type: none"> ▶ Establish a competitive talent recruitment strategy, such as establishing global talent search mechanisms and recruitment channels, developing mechanisms for screening international talent and building talent pools, and utilizing innovative recruitment tools and methods. ▶ Develop and nurture international talent, such as implementing mechanisms for succession training and development of international talent, cultivating internal talent with international perspectives and leadership skills (strategic thinking/management abilities/communication/language proficiency) ▶ Creating a diversified organizational culture to meet the needs of international talent for adapting to the Company, such as aligning organizational design with the needs of international talent, cultivating a diversified organizational culture through training and managerial guidance.

Hazard

Risk Issue	Risk Level (Likelihood, Severity)	Risk Description	Potential Impact	Countermeasures
<p>! Emerging Risks</p> <p>International Green Energy Trend and National Energy Conservation and Carbon Reduction Policy increase Enterprise Operation and Investment Cost</p>	M (H. M)	<p>To reduce carbon emissions, governments around the world are taking proactive steps to limit or enhance carbon reduction requirements for enterprises. For example:</p> <ul style="list-style-type: none"> ▶ The Singapore government has imposed carbon tax since 2019 and announced that the carbon emission price per tonne will be raised gradually. In Taiwan, "Climate Change Response Act" was also promulgated in February 2023 including carbon-fee charging from enterprises. ▶ In response to international green energy trend, UMC declared that joined RE100 in 2021 and committed to using 100% renewable energy by 2050. In the meantime, it is estimated that potential customer demand for green energy coverage across the Company will increase gradually in the coming years. <p>For more detailed impact information, please refer to Chapter 1.2.5 Managing Climate Risks and Opportunities.</p>	<p>The impacts on UMC include operation and investment cost increasing, and resulting in the erosion of profits. For example:</p> <ul style="list-style-type: none"> ▶ The impact caused by carbon fee/tax in 3 years: no more than NT\$50 million of carbon tax per year in Singapore; no more than NT\$500 million of carbon-fee per year in Taiwan. (The calculation is based on NT\$300/tonne of carbon emission in TW). ▶ Phased goals are set according to RE100 to meet green energy requirements from customers: 25% and 50% of renewable energy are achieved in 2025 and 2030, respectively. It is estimated that an additional expenditure of no more than NT\$1 billion per year on purchasing renewable energy in 2025. 	<ul style="list-style-type: none"> ▶ Participate in governmental voluntary greenhouse gas reduction plan, promote greenhouse gas emission reduction plan, apply for carbon offsets projects for carbon credits, join carbon trade market to purchase carbon credits and offsets, evaluate introducing carbon-negative technologies. ▶ Arrange in advance to ensure access to lower-cost contracted renewable energy in external sites. <p>For other response and achievements, please refer to related chapters: 1.2.5 Managing Climate Risks and Opportunities, 3.1 Climate Action, and 3.2 Energy Management.</p>

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1.2.3 Comprehensive Business Risk Management

Business Continuity Management

As global risks continue to rise, UMC recognizes the importance of business continuity, which means providing uninterrupted services to strategic customers and key stakeholders. The ability to provide uninterrupted foundry manufacturing as well as diversified offering and excellent quality is the ultimate purpose of UMC's business continuity management.

The Business Continuity Management Committee operates based on the existing organization and responsibilities. The management team is in charge of resources integration, review of improvement plans, and operational recovery in the case of adverse events in order to protect the rights and interest of customers and stakeholders.

UMC Business Continuity Policy and Objective

UMC strives to offer competitive wafer foundry services while pursuing business sustainability. The Company aims to provide uninterrupted services to our strategic customers and serve in the interest of our stakeholders through appropriate risk management. Our business continuity policy and objectives are:

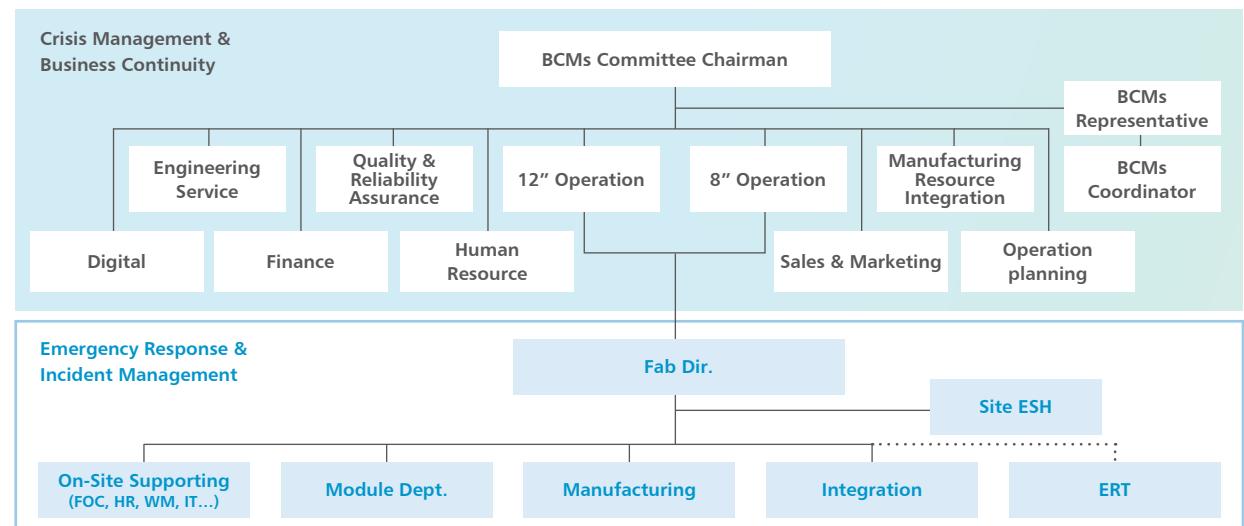


- ▶ UMC aims to provide customers with excellent and uninterrupted service.
- ▶ UMC ensures the effective of its business continuity system by implement system and integrate resources.
- ▶ UMC reviews and improves continuously to enhance the resilience of responding to various disasters before/ during/ after the disruption from business impact to ensure the utmost rights and interests of customers and stakeholders.



- ▶ Personnel safety is the top business continuity objective.
- ▶ Based on risk assessment results, the Company aims to develop various prevention measures and responses to reduce operational impact and shorten recovery time.
- ▶ UMC follows ISO 22301 management system standard and executes BCP drill on a regular basis to review the effectiveness of the business continuity plan and make continuous improvements.

BCM (Business Continuity Management) Committee Organization



I. Business Continuity Management Framework

UMC follows the ISO22301 standard to establish, implement, monitor and maintain the business continuity management system. The system's efficacy is regularly revised to ensure that business operations can continue during incidents or disasters without interruption.

All fabs and functional divisions have deployed emergency response and recovery plans for specific events such as earthquake, fire, chemical spill, power disruption, water shortage and material shortage. BCP Exercises are conducted every year in order to continually improve emergency response and recovery procedures.

Furthermore, the Company's Hsinchu headquarters, Fab8A, Fab8C, Fab8D, Fab8E, Fab8F, Fab8S, Fab12A in Taiwan, and Fab12i in Singapore, and USCXM in Xiamen, HJ in Suzhou, China and USJC in Japan subsidiaries have passed ISO 22301 certification sequentially from 2013 to 2024^{Note}.

Note: Currently, Wavetek conducts BCP (Business Continuity Plan) and exercise every year to find out opportunity for improvements

Three steps of emergency response and recovery



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II. BCM Management Achievements

The BCM management review meeting is held annually to review both internal and external risks and the accuracy and effectiveness of the system. For possible risks such as earthquake, fire, chemical leakage, utility outage, drought and raw material shortage etc., UMC conducts risk assessment and improvements in advance. Furthermore, exercises on procedure are held periodically to sharpen response and recovery after incidents.

Achievements of Business Continuity Management

KPI	2023 Achievements	Results
Risk Mitigation in Supply Chain: Identify risk material in supply chain and develop risk mitigation activities	Risk mitigation activities are all 100% developed according to identified risk materials	 Attained
Enhance the resilience of utility: ▶ Power dip improvement projects are 100% completed in Taiwan site and HJ in China. ▶ Not triggering water tankers when water supply restriction within 15% ▶ Conduct BCP exercise of natural gas outage	▶ Complete rate: 100% ▶ Water tankers are not activated in 2023. ▶ Successfully completed three rounds of BCP exercises	 Attained
Enhance information security protection: Zero major cyber attack or ransomware event	Zero in 2023	 Attained

Hazard Risk Control

UMC fully recognizes the impact and influence of natural and man-made disasters on production and operation. Hence, the Company has consistently adopted proactive attitude toward preventive disaster risk management, and seeks to achieve the highest standard of semiconductor industrial safety through rigorous risk engineering controls and implementation of safety regulations and standards.

Disaster Risk Management Topics



Fire Safety



Earthquake Protection



Equipment Safety

1. UMC incorporated the international standards of the US Factory Mutual Insurance Company (FM), Underwriters Laboratories Inc. (UL), the US National Fire Protection Association (NFPA), the Semiconductor Equipment and Materials International (SEMI), and other international standards into its building construction, equipment, engineering controls and risk assessment, and formulated relevant company regulations for supplementary requirements.
2. UMC is the only semiconductor company in the industry equipped with a professional fire brigade. In addition to being equipped with government-grade fire trucks and rescue equipment, UMC volunteer firemen regularly receive simulated firefighting training from professionals off-sites, which enhances their practical disaster relief capabilities.

UMC production sites in Taiwan and Japan are located in pacific seismic zone, where the impact caused by earthquake cannot be overlooked. At the beginning of the construction stage of UMC fabs, earthquake-resistant requirements are integrated into the design concept of buildings, facilities, pipelines and production equipment.

UMC continues to introduce new anti-seismic techniques such as seismic isolation platforms for production equipment and Earthquake Early Warning System (EEWS). In addition, for those fabs built before year 2000, structural experts are continuously hired to conduct seismic reinforcement improvements in accordance with laws and earthquake experience, in order to further enhance personnel safety and reduce the risk of damage to precious fab equipment in earthquakes.

The Environmental Health and Safety Standards (SEMI-S2) for semiconductor manufacturing equipment, NFPA318 and FM7-7, are the major international standards adopted by UMC. Besides, UMC also adopts the Equipment Purchasing ESH Specifications into its procurement procedures, which requires all equipment to be reviewed and need to comply with the requirements before being brought into the fab and will be checked again during ESO stage to achieve effective equipment safety control.

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1.2.4 Commitment to Information Security Risk Management

Information Security Policy Implementation

UMC's information security policy is based on four guiding principles. The major information security objectives are aimed at antivirus, anti-hack, and information leakage prevention by reinforcing multiple internal controls such as firewall, intrusion detection and antivirus systems to enhance the Company's ability to defend against external attacks and to protect internal confidential information

Four Guiding Principles

Principles 1

To establish information security management rules in accordance to customer requirements

Principles 2

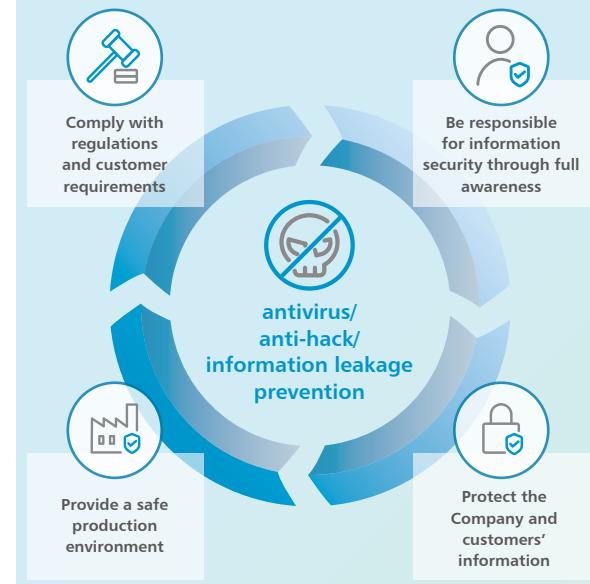
To reach a consensus that information security is everyone's responsibility through full awareness

Principles 3

To protect information confidentiality, integrity, and availability for the Company and customers

Principles 4

To provide a safe production environment to ensure sustainable operation of the Company's business



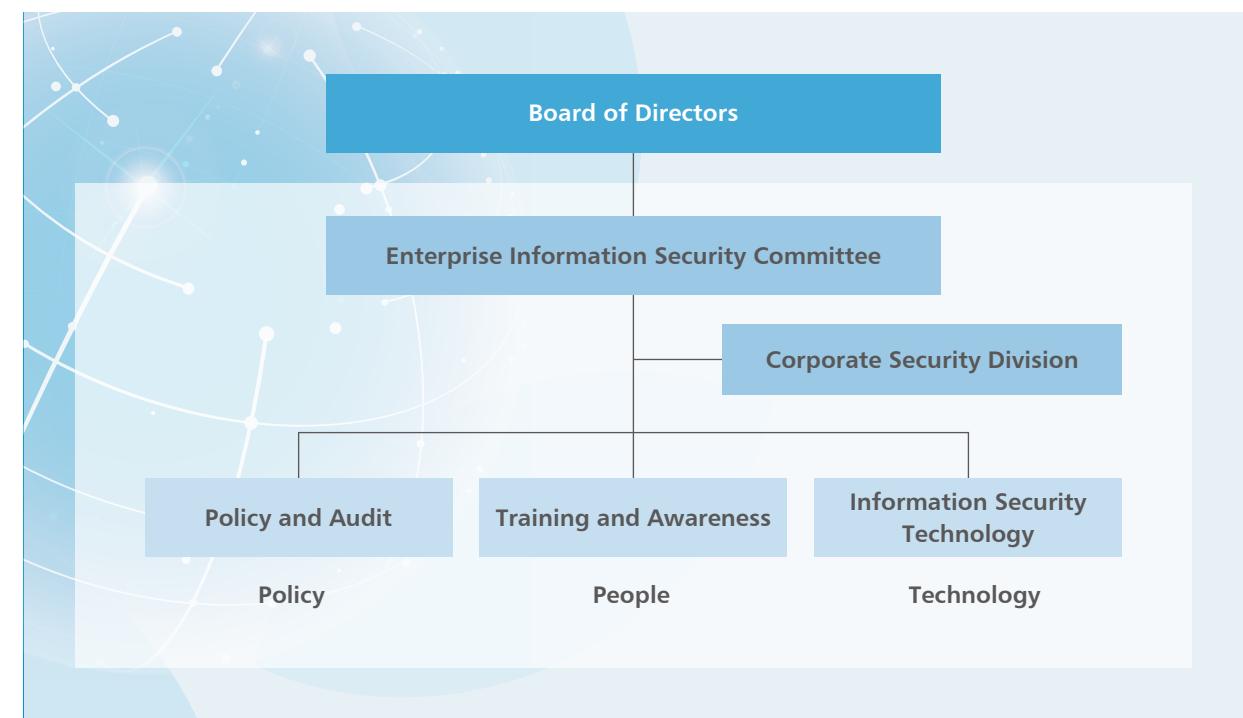
Information Security Committee Organization

The Enterprise Information Security Committee (EISC), established in 2003, is chaired by the Company's president, and the vice president of the Digital Function serves as the supervisor/Chief Information Security Officer (CISO), who is responsible for establishing and maintaining the information security strategy and processes that protect information assets. All division directors (including legal, human resources, research and development, engineering, and manufacturing) are members of the committee. In addition, the Corporate Security Division was formed to be responsible for information security, physical security planning, and related audit matters, and to lead EISC affairs.

EISC is responsible for information security management system planning, establishing and maintaining, information security policy formulation and implementation, risk management and compliance verification. The adequacy and effectiveness of the information security management system is reviewed in bi-annual meetings, during which the analysis results for information security risks and the corresponding protective measures are assessed.

The EISC reports on the effectiveness of the Company's information security strategy to the board of directors annually. Independent Board Director Jyuo-Min Shyu, who has a background in information security, oversees the information security and cybersecurity strategy, and reviews the strategy regularly.

For more on the background of Mr. Shyu,
please refer to the UMC website



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Information Security Risk and Management Plan

According to the Global Risks Report 2023 issued by the World Economic Forum, "widespread cybercrime and cyber insecurity" is among the top ten global risks in the future, which indicates that there are numerous threats to cyber security. Insufficient defense against cyber-attacks may not only expose the Company to the risks of data leakage and ransom threats, but may also interrupt the production system, causing serious operating losses or even damaging the reputation of the Company. UMC had no major information security incidents in 2023.



UMC had no major information security incidents in 2023.

	Strengthening Information Security Protection	<ul style="list-style-type: none"> ▶ Regularly conduct vulnerability assessments and penetration testing on the information security system, and strengthen and repair any identified weaknesses ▶ Establish a network security incident contingency plan and run drills regularly to assess the impact and loss according to the severity of the incident, and take corresponding actions to escalate the situation and recover from the incident.
	Improving Information Security Management Procedures	<ul style="list-style-type: none"> ▶ Adopt the National Institute of Standards and Technology standards to establish a corporate information security framework, and develop corresponding metrics to measure the effectiveness. ▶ Employees should abide by information security regulations (such as strict control of mobile storage devices), follow the standard operating procedures, and carry out the PDCA (Plan-Do-Check-Act) cycle for continuous improvement.
	Enhancing Network, Endpoint and Application Security	<ul style="list-style-type: none"> ▶ Improve the detection of irregularities and elevate protection capabilities including protocols such as Application Whitelisting and EDR (Endpoint Detection and Response) mechanisms. ▶ Improve the efficiency of escalation and processing of information security incidents by establishing SOAR (Security Orchestration, Automation and Response) mechanism. ▶ Optimize network security area of overall information systems and increase the multi-factor authentication protection for host privileged account login.
	Expanding the Application of Intelligent Technology	<ul style="list-style-type: none"> ▶ Utilize artificial intelligence (AI) to quickly identify malicious attacks, import threat intelligence into the information security defense system, and use robotic process automation (RPA) to continuously block attacks in real-time. ▶ At present, employees can use AI Chatbot to obtain instant responses at all times. In the future, it will be expanded to handle repetitive tasks and common issues automatically, further improving work efficiency. Corresponding information security management measures are also established, such as using enterprise-specific computing spaces, encrypting data, and tracing logs, to achieve effective information protection
	Introducing Legal Compliance and International Information Security Certification Standard	<ul style="list-style-type: none"> ▶ Comply with information security related certifications and regulations such as ISO 27001, ISO 15408, ISO 22301, and Sarbanes-Oxley Act (SOX 404). ▶ Corresponding enterprise risk management committee has also been established in the Company for promoting various standardization operations.
	Controlling Potential Risks	<ul style="list-style-type: none"> ▶ Leverage an international professional security company's resources to assess the robustness of overall security as a basis for further improvement. ▶ Purchase information security insurance to help reduce the losses and operational impact in the event of a security breach.
	Education and Training	<ul style="list-style-type: none"> ▶ Conduct information security training twice a year. ▶ Conduct periodical social engineering phishing tests for all employees.
	Supply Chain Information Security Risk Management	<ul style="list-style-type: none"> ▶ Participate in the Taiwan Chief Information Security Officer (CISO) Alliance to strengthen overall supply chain information security protection by developing industry standards through cross-enterprise alliances. ▶ Actively cooperate with the SEMI Taiwan Semiconductor Association's Cybersecurity Committee to promote semiconductor information security risk assessment services, which introduce third-party risk posture and assessment, and tailor common questionnaires for the semiconductor industry, to provide industry benchmarking and increase efficiency in information security assessments

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1.2.5 Managing Climate Risks and Opportunities

Under the global climate change and low-carbon market transformation, UMC actively pays attention to the potential risks and opportunities of climate change. In order to promote the transparency of information disclosure on climate-related risks and opportunities, the Company independently develops an assessment tool by referring to the Task Force on Climate-Related Financial Disclosures (TCFD) recommendations, and through relevant responsible divisions to conduct risk and opportunities analysis base on policies and regulations (including current and emerging regulation), market and technology changes, reputation, legal (including litigation), and physical risks to develop adaptation and mitigation strategies, and review the achievements periodically for the purpose of management by connecting to UMC's Sustainable Strategy and Blueprint.



Governance

- ▶ Board of Directors and Functional Committees: The Board oversees climate change risks, opportunities, coping strategies, and related promotion plans. The Board also oversees promotion results, including budget implementation, revision and addition; cost-effectiveness review; and following up on implementation results. It also oversees the Company's major fundraising, issuance, and private placement of equity securities that are related to climate change (Frequency: At least annually).
- ▶ ESG Steering Committee: Responsible for ESG governance, strategy, objective decision, systems or management guidelines and concrete promotional plans (including climate change), and report to the Board of Directors on a periodic basis.
- ▶ Corporate Sustainability Committee: In charge of setting sustainability direction and objective, enforcing systems or related management guidelines (including climate change). If the results of climate change risk assessment have a significant impact on corporate major decisions, they will be escalated to the ESG Steering Committee for approval.
- ▶ Enterprise Risk Management Committee: The Committee coordinates related divisions to jointly review the Company's internal and external risks (including climate change risks), regularly traces the changes for major company-wide risks, and reports the overall improvement actions to the ESG Steering Committee.

Strategy

- ▶ According to UMC Climate Change Risk and Opportunity Assessment Methodology, short-term is defined as 3 years; mid-term is defined as 10 years; and long-term is over 10 years. UMC has formulated a climate change policy as the Company's highest guiding principle in responding to climate change, and has established the "UMC Low-Carbon Commitment" as the guideline for promoting its overall plan.
- ▶ Analyze the impact of climate change risks and opportunities on UMC's operations according to the TCFD framework.
- ▶ Conduct climate risk analysis for different scenarios, including transition scenarios based on International Energy Agency NZE (Net Zero), Announced Pledges Scenario (IEA APS), Nationally Determined Contributions (NDCs), Stated Policies Scenario (IEA STEPS), and physical scenarios according to RCP8.5 in fifth assessment report (AR5), SSP1-2.6 and SSP5-8.5 in sixth assessment report (AR6) of the Intergovernmental Panel on Climate Change (IPCC).

Risk Management

- ▶ Identify possible policies, regulations, markets and technologies transitions, business reputation, and risks that may result in different scenarios for risk and opportunity analysis. Assessment scope includes UMC operation and upstream and downstream of value chain (such as suppliers and customers).
- ▶ With the participation of related divisions in the climate change risk and opportunity assessment task force, UMC developed adaptation and mitigation strategies for top three risks. The overall results and related countermeasures will be submitted to CS Committee for approval.
- ▶ Annual review on risks and opportunities of transitions in policies, regulations, technologies, markets and business reputation; every three to five years, when the IPCC and the Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP) updates climate scenarios, re-examinations and on-going corrections on the assessment results of physical risks, transition risks, and opportunities will be carried out.

Metrics and Targets

- ▶ UMC has established climate-related risk and opportunity assessment management indicators such as water consumption, energy use, greenhouse gas emissions, and the technology development of low energy consumption products.
- ▶ Relevant emission information has been checked in accordance with the Greenhouse Gas (GHG) Protocol and the ISO 14064 Standard, and data verification by a third party has been commissioned. In addition to complying with regulations, the current status also complies with IEEE's standards for fluorinated greenhouse gases.
- ▶ Established standards for new fabs and new equipment to respond to climate change and greenhouse gas reduction regulations.
- ▶ Set year 2025 and year 2030 KPI targets for indicators including greenhouse gas, water, electricity reduction, and product design. For emissions reduction, UMC has also set its net zero by 2050 goal and its 2030 science-based target.

Note: The target has been approved by Science Based Targets initiative (SBTi).

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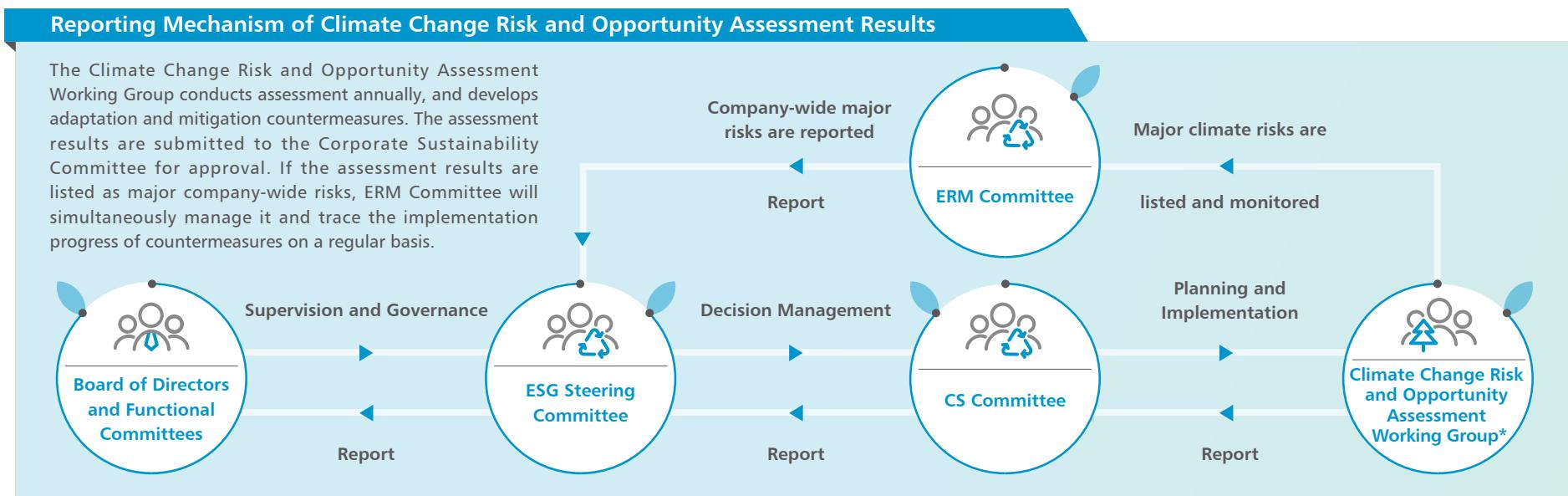
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Important Issues Related to Climate Risk and Opportunity Management

- ▶ UMC gained admission into RE100, an international renewable energy initiative in 2021. In 2023, the Company set progressive goals to achieve 25% and 50% renewable energy usage in 2025 and 2030, and achieve 100% usage in 2050 after confirming the availability.
- ▶ "Greenhouse gas inventories project" and "UMC low-carbon supply chain project" were announced in 2022. It is planned to complete carbon inventory of 500 suppliers and reduce carbon by 20% of high emission vendors to build up a low-carbon sustainable supply chain.
- ▶ The Board of Directors approved modification of "UMC Sustainability Development Best Practice Principles" in 2022, including enhancing energy usage efficiency and management of scope 3 greenhouse gas emission.
- ▶ The progress of greenhouse gas inventory and verification of UMC and subsidiaries in consolidated financial statements has been reported to the Board of Directors since 2022.
- ▶ The greenhouse gas inventory training was completed for subsidiaries in consolidated financial statements, and the inventory was started in 2023.
- ▶ The Board of Directors approved the implementation of the capital budget including green investment such as energy saving, improvements for pollution prevention facilities and the Circular Economy & Recycling Innovation Center in 2023.
- ▶ The Board of Directors approved domestic unsecured corporate bond issuance with an amount of NT\$10 billion in 2023 for green bonds of green building investment in Fab12i.
- ▶ UMC participated in the first carbon trading transaction in Taiwan Carbon Solution Exchange and purchased multi-benefit international carbon credit to deploy carbon assets in 2023.
- ▶ Renewable energy working group was established in 2023 to enhance the introduction and management of renewable energy.
- ▶ UMC committed to set long-term science-based target of carbon reduction by following the net zero standard of Science-Based Targets initiative (SBTi), and fulfill net zero in 2050.

Reporting Mechanism of Climate Change Risk and Opportunity Assessment Results

The Climate Change Risk and Opportunity Assessment Working Group conducts assessment annually, and develops adaptation and mitigation countermeasures. The assessment results are submitted to the Corporate Sustainability Committee for approval. If the assessment results are listed as major company-wide risks, ERM Committee will simultaneously manage it and trace the implementation progress of countermeasures on a regular basis.



* Climate Change Risk and Opportunity Assessment Working Group members include: Procurement, Material Planning & Warehouse Management, Finance, Marketing, Technology Development, Human Resource, Facility Operation, Group Risk Management & Environmental Safety and Health, etc.

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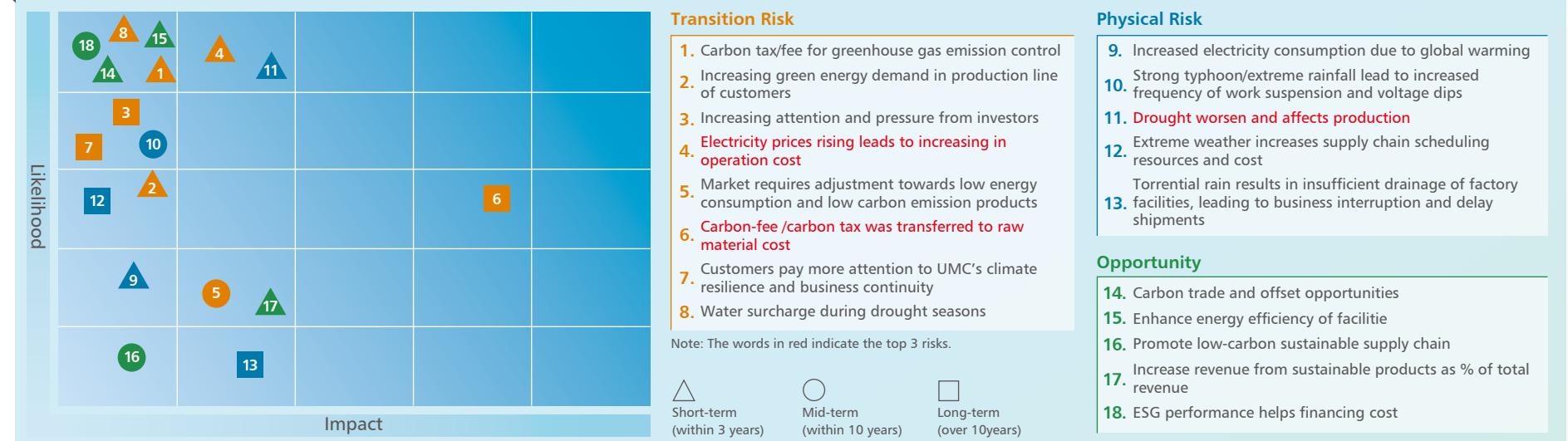
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Climate Change Risk and Opportunity Assessment Scenario

Risk Type	Scenario	Scenario Abstract Description
Physical Risk	IPCC-AR5 RCP8.5	<ul style="list-style-type: none"> ► Global average surface temperature increases by 0.9-1.7°C in 2040 (relative to 1986-2005). ► Taiwan daily highest temperature increases by 0.75°C; the annual number of days in which the accumulated rainfall in a single day is less than 1 mm in a row increases by 3%; and there is a 10% increase in highest rainfall of the day in the year during 2016-2035 (relative to 1986-2005).
	IPCC-AR6 SSP1-2.6	<ul style="list-style-type: none"> ► Global average surface temperature increases by 1.2-1.8°C during 2021-2040 (relative to 1850-1900). ► Taiwan average temperature may increase by over 1.3°C; the days with temperature over 36°C increase by 6.8 days; the average highest intensity of torrential rain in a day increases by 15% in the year; the annual number of the most accumulated days without rainfall in a row increases by 1.8% during 2036-2065 (relative to 1985-2014).
	IPCC-AR6 SSP5-8.5	<ul style="list-style-type: none"> ► Global average surface temperature increases 1.3-1.9°C during 2021-2040 (relative to 1850-1900). ► Taiwan average temperature may increase by over 1.8°C; the days with temperature over 36°C increase by 8.5 days; the average highest intensity of torrential rain in a day increases by 20% in the year; the annual number of the most accumulated days without rainfall in a row increases by 5.5% during 2036-2065 (relative to 1985-2014).
Transition Risk	International Energy Agency Net Zero (IEA NZE)	<ul style="list-style-type: none"> ► Reduce carbon emission gradually through the widespread deployment of clean energy technologies around the world, and achieve zero energy-related carbon dioxide emissions by 2050. ► UMC sets net zero emission target for 2050 and conducts reduction and adaptation assessments
	International Energy Agency Announced Pledges Scenario (IEA APS)	<ul style="list-style-type: none"> ► IEA APS scenario takes account of all climate commitments made by governments around the world including Nationally Determined Contributions (NDCs) as well as longer-term net-zero targets and assumes they will be met in full and on time. ► UMC conducts reduction and response assessment by referring to climate commitments in the operation region, including Taiwan, Singapore, China, and Japan.
	International Energy Agency Stated Policies Scenario (IEA STEPS)	<ul style="list-style-type: none"> ► Scenario is based on current and proposed policies and measures, and in the absence of additional policies in the future. ► UMC conducts assessment under business as usual (BAU) without dramatic reduction plan.

Climate Change Risk and Opportunity Matrix



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Climate Risks and Response Actions

Category	Risk	Risk Description	Region	Aspect	UMC's Response	Connection with Sustainable Strategy and Blueprint
Risk Type ▶ Transition						
	Policy and Regulation (including current and emerging regulation)	<p>Carbon tax/fee for greenhouse gas emission control</p> <p>Electricity prices rising leads to increasing in operation cost*</p> <p>Water surcharge during drought seasons</p> <p>Carbon-fee / carbon tax was transferred to raw material cost*</p>	<p>▶ Carbon tax/fee and rate increase lead to increase in operation cost</p> <p>▶ Electricity price rising</p> <p>▶ Taiwan imposes water surcharge</p> <p>▶ Increase in raw material and transportation prices due to carbon fees/taxes</p> <p>▶ Increasing the procurement of green energy upon customers' requests</p>	<p>▶ Taiwan, Singapore, China, and Japan</p> <p>▶ Taiwan</p> <p>▶ Taiwan, Singapore, China, and Japan</p> <p>▶ Taiwan, Singapore, China, and Japan</p>	<p>▶ Increase operating expense</p> <p>▶ Increase operating expense</p> <p>▶ Increase operating expense</p> <p>▶ Increase operating expense</p>	<p>▶ Promote GHG reduction plans, such as F-GHGs reduction and energy saving plan</p> <p>▶ Participate in government plans for voluntary GHG reduction</p> <p>▶ Apply for carbon offset projects for carbon credits</p> <p>▶ Build UMC's own solar power generation facilities</p> <p>▶ Purchase green energy/ green energy certificate</p> <p>▶ Evaluate carbon negative technology and promote net zero</p> <p>▶ Participate in carbon trade market and purchase carbon credits</p> <p>▶ Reduction of electricity consumption per unit product</p>
	Market	Increased green energy demand in production line of customers	▶ Increasing the procurement of green energy upon customers' requests	▶ Taiwan, Singapore, China, and Japan	▶ Increase operating expense	<p>▶ Magnify usage rate of diversified water resource such as reclaimed water and desalination to reduce the dependency of municipal water</p> <p>▶ Improve the production efficiency of manufacturing process, reduce water consumption, and increase water recovery rate</p> <p>▶ Evaluate the introduction of alternative material or order allocation</p> <p>▶ Sign contract to secure the supply and protect against price increases</p> <p>▶ Expand the use of green electricity and achieve the RE100 commitment of using 100% renewable energy in 2050. Actions include:</p> <ul style="list-style-type: none"> ● Increase the installation of self-built renewable energy and power generation facilities ● Obtain renewable energy through renewable energy power purchase agreements ● Purchase of renewable energy certificate
	Reputation	<p>Increased attention and pressure from investors</p> <p>Customers pay more attention to UMC's climate resilience and business continuity</p>	<p>▶ The Company fails to meet policy regulations or targets of international climate change initiatives, leading to negative news about the Company</p> <p>▶ The Company is unable to positively respond to ESG related questions raised by shareholders in shareholders' meetings</p> <p>▶ UMC is asked to have business continuity capability to withstand natural disaster (extreme weather) and increase the frequency of audit by customers.</p>	<p>▶ Taiwan, Singapore, China, and Japan</p> <p>▶ Taiwan, Singapore, China, and Japan</p>	<p>▶ Rising cost of capital</p> <p>▶ Increase operating expense</p>	<p>▶ Clarify and correct news reports if there is any error; take concrete actions to comply with policy regulations or international goals related to climate change</p> <p>▶ The coverage rate of "ISO 22301 Business Continuity Management System" in 12-inch fabs and 8-inch fabs reaches 100% and the certificate remains 100% effective</p>
	Technology	Market requires adjustment towards low energy consumption and low carbon emission products	▶ Customer requires product with low energy consumption and low carbon emissions characteristics, which may result in necessary adjustment of UMC's R&D priorities and goals	▶ Taiwan, Singapore, China, and Japan	▶ Increase operating expense	<p>▶ Develop process technology that is superior and has lower energy consumption</p> <p>▶ Monitor the amount of R&D wafer in production, and aim to use a method that requires fewer wafers to develop the process.</p> <p>▶ Look for a faster or streamlined process to manufacture IC</p>

Note: 1. The items marked with* indicate the top three risk

2. Note: For detailed index, achievements, please refer to Page 10
3. There's no legal (including litigation) risk after this assessment

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Category	Risk	Risk Description	Region	Aspect	UMC's Response	Connection with Sustainable Strategy and Blueprint
Risk Type ▶ Physical						
Acute	Strong typhoon/ extreme rainfall lead to increased frequency of work suspension and voltage dips	<ul style="list-style-type: none"> ▶ Increases in intensity and frequency of typhoons, storms, and natural disasters result in employee inability to work ▶ Voltage drop caused by typhoon affects production 	Taiwan	<ul style="list-style-type: none"> ▶ Increase operating expense ▶ Decrease in revenue 	<ul style="list-style-type: none"> ▶ Build Industry 4.0 to reduce the impact of manpower shortage ▶ Invest in voltage drop resistance equipment, equip important manufacturing machinery with uninterrupted power supplies (UPS) to reduce risk of voltage drops 	<input checked="" type="checkbox"/>
	Extreme weather increases supply chain scheduling cost.	<ul style="list-style-type: none"> ▶ Extreme weather affects transportation and increases the cost of raw material allocation and scheduling fee. 	Taiwan, Singapore, China, and Japan	▶ Increase operating expense	<ul style="list-style-type: none"> ▶ Establish risk detection mechanism, with a focus on prevention and post-event management ▶ Monitor supplier's production areas and the location of major transportation hubs ▶ Manage production information from suppliers to stay abreast of supply and demand information ▶ Conduct supplier risk assessment to avoid or reduce placing order in high-risk production areas ▶ Establish multiple transport routes and avoid risky routes ▶ Establish second sources to provide additional backup energy ▶ Increase the storage capacity of local manufacturers and internal storage capacity 	
	Torrential rain results in insufficient drainage of fab facilities, leading to business interruption and delayed shipments.	<ul style="list-style-type: none"> ▶ Continued torrential rainfall causes fab facilities that support production to be flooded due to insufficient drainage, resulting in business interruption and delayed shipments. 	Taiwan and China	▶ Decrease in revenue	<ul style="list-style-type: none"> ▶ Install floodgates and conduct annual BCP drill for heavy torrential rain before each rainy season ▶ Raised the fab foundation in Fab 12A in the Southern Taiwan Science Park by about 2 meters relative to surrounding roads to avoid flood risk under the scenario of a 1 in 500-year rainfall event 	
Chronic	Increased electricity consumption due to global warming	<ul style="list-style-type: none"> ▶ Rising temperatures increase the load of air conditioning, which increases operating costs 	Taiwan, Singapore, China, and Japan	▶ Increase operating expense	<ul style="list-style-type: none"> ▶ Reduction of electricity consumption per unit product ▶ Continuously replace old air conditioning equipment, and promote energy-saving measures for air conditioning ▶ Implement energy-saving measures for building shell and air-conditioning systems to reduce internal temperature of building ▶ Introduce green-building design ▶ Grow plants to increase the amount of greenery and reduce urban heat island effect 	<input checked="" type="checkbox"/>
	Drought worsens and affects production*	<ul style="list-style-type: none"> ▶ When the status of water rationing turns to orange light for 30 days, daily water supply from the water company is reduced by 17%~20% 	Taiwan	▶ Decrease in revenue	<ul style="list-style-type: none"> ▶ Expand usage rate of reclaimed water and desalinated seawater ▶ Enhance water recycle and reuse rate to reduce the pressure of water demands ▶ Establish a water contingency plan ▶ Storage tanks are installed to improve the flexibility of water storage capacity control ▶ Contract water tankers and private water sources to make up for water shortages ▶ Continue to monitor the government's ability to strengthen cross-regional dispatching of water resources 	<input checked="" type="checkbox"/>
		<ul style="list-style-type: none"> ▶ Delivery delays from suppliers due to water constraints 	Taiwan	▶ Increase operating expense	<ul style="list-style-type: none"> ▶ Conduct supplier water shortage risk assessment, and ask high-risk vendor (such as parts cleaning vendors) to develop business continuity plan (BCP) ▶ Investigate and understand the impact of water demand in fabs, supplier capacity, and government water restriction policy. ▶ Request suppliers to provide water storage plans and cooperation models with private water resource providers ▶ Adopt new products first to reduce the impact ▶ Monitor the status of suppliers, increase safety stock, and establish relationships with second sources ▶ Develop new water resources continuously to increase supplement flexibility and mitigate risks 	

Note: 1. The items marked with* indicate the top three risk

2. Note: For detailed index, achievements, please refer to Page 10

3. There's no legal (including litigation) risk after this assessment

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Climate Opportunities and Response Actions

Type	Climate-related Opportunities	Region	Aspect	UMC's Response	Connection with Sustainable Strategy and Blueprint
Product/Service	<ul style="list-style-type: none"> ▶ Promote low-carbon sustainable supply chain 	<ul style="list-style-type: none"> ▶ Taiwan 	<ul style="list-style-type: none"> ▶ Decrease operating expense 	<ul style="list-style-type: none"> ▶ Increase the carbon reduction rate of vendors with high electricity consumption ▶ Deepen carbon reduction cooperation with suppliers and create a low-carbon supply chain 	<input checked="" type="checkbox"/>
Market	<ul style="list-style-type: none"> ▶ Increase the percentage of sustainable product revenue ▶ ESG performance helps financing costs 	<ul style="list-style-type: none"> ▶ Taiwan, Singapore, China, and Japan ▶ Taiwan, Singapore, China, and Japan 	<ul style="list-style-type: none"> ▶ Increase revenue ▶ Promote green bond market ▶ Decrease interest rate 	<ul style="list-style-type: none"> ▶ Increase the percentage of sustainable product revenue ▶ Continue to prioritize the investment of resources to promote ESG, and through the "2030 Sustainable Strategy Blueprint," comprehensively explore the three major aspects of ESG 	<input checked="" type="checkbox"/>
Resource Efficiency	<ul style="list-style-type: none"> ▶ Carbon trade and offset opportunities ▶ Enhance energy efficiency of facilities 	<ul style="list-style-type: none"> ▶ Taiwan ▶ Taiwan, Singapore, China, and Japan 	<ul style="list-style-type: none"> ▶ Increase revenue ▶ Decrease operating expense ▶ Decrease operating expense 	<ul style="list-style-type: none"> ▶ Support government policies to reduce greenhouse gas emissions, improve overall equipment and fab operation efficiency in order to gain carbon credit in the future ▶ Reduction of electricity consumption per unit product 	<input checked="" type="checkbox"/>

Note: For detailed index, achievements, please refer to Page 10

In addition to assessing the impact of climate change on operations, UMC also takes the impact on the value chain (including upstream suppliers and downstream customer markets) into consideration. The climate risks and opportunities of the UMC value chain are listed as follows:

	Transition Risk	Physical Risk	Opportunity
 Upstream Purchase	<ul style="list-style-type: none"> ▶ Carbon-fee / carbon tax was transferred to raw material cost 	<ul style="list-style-type: none"> ▶ Extreme weather increases supply chain scheduling resources and cost 	<ul style="list-style-type: none"> ▶ Promote low-carbon sustainable supply chain
 UMC Operation	<ul style="list-style-type: none"> ▶ Carbon tax/fee for greenhouse gas emission control ▶ Electricity prices rising leads to increasing in operation cost ▶ Water surcharge during drought seasons 	<ul style="list-style-type: none"> ▶ Drought worsens and affects production ▶ Increased electricity consumption due to global warming ▶ Strong typhoon/ extreme rainfall lead to increased frequency of work suspension and voltage dips 	<ul style="list-style-type: none"> ▶ Enhance energy efficiency of facilities ▶ Carbon trade and offset opportunities ▶ ESG performance helps financing costs
 Customer Market	<ul style="list-style-type: none"> ▶ Market requires adjustment towards low energy consumption and low carbon emission products ▶ Increasing green energy demand in production line of customers ▶ Increasing attention and pressure from investors ▶ Customers pay more attention to UMC's climate resilience and business continuity 	<ul style="list-style-type: none"> ▶ Torrential rain results in insufficient drainage of factory facilities, leading to business interruption and delay shipments 	<ul style="list-style-type: none"> ▶ Increase revenue from sustainable products as % of total revenue

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The maps below outline the financial impact after considering the response to transition and physical risks in each region where UMC Group's production fabs are located

Transition Risk:

Carbon tax/fee for greenhouse gas emission control risk

Scenario:

IEA APS including NDCs

Assumptions:

- ▶ Singapore's carbon fee rate increases, assuming the rate is increased from SGD\$45/tonne CO₂e by 2026 to SGD\$80/tonne CO₂e by 2030
- ▶ Taiwan imposes carbon fee, assuming a rate of NT\$300/tonne CO₂e
- ▶ Carbon fee are levied in Japan and mainland China, assuming a rate of NT\$300/tonne CO₂e in the mid-term, while there are currently no regulations and requirements in the short-term.

● Low Risk ● ≤0.1 billion ● ≤0.5 billion ● ≤0.8 billion

Short-Term (in 3 years)

Japan: USJC
Financial impact: no regulations and requirements

China: HJ
Financial impact: no regulations and requirements

China: USCXM
Financial impact: no regulations and requirements

Taiwan: Fab12A, Fab8A, Fab8C, Fab8D, Fab8E, Fab8F, Fab8S, Wavetek
Financial impact: less than NT\$0.5 billion/year

Singapore: Fab12i
Financial impact: less than NT\$0.05 billion/year

Mid-Term (in 10 years)

Japan: USJC
Financial impact: less than NT\$0.05 billion/year

China: HJ
Financial impact: less than NT\$0.05 billion/year

China: USCXM
Financial impact: less than NT\$0.05 billion/year

Taiwan: Fab12A, Fab8A, Fab8C, Fab8D, Fab8E, Fab8F, Fab8S, Wavetek
Financial impact: less than NT\$0.8 billion/year

Singapore: Fab12i
Financial impact: less than NT\$0.1 billion/year

Physical Risk:

Drought worsens and affects production

Scenario:

IPCC-AR6 SSP 5-8.5

Assumptions:

- ▶ When the status of water rationing turns to orange light for 30 days, daily water supply from the water company is reduced by 17%~20%
- ▶ Delivery delays from suppliers due to water constraints

● Low Risk ● ≤0.15 billion ● ≤0.2 billion

Short-Term (in 3 years)

Japan: USJC
Low risk after assessment (Sufficient water resource in the region where Fab located in)

China: HJ
Low risk after assessment (Sufficient water resource in the region where Fab located in)

China: USCXM
Low risk after assessment (Sufficient water resource in the region where Fab located in)

Taiwan: Fab12A, Fab8A, Fab8C, Fab8D, Fab8E, Fab8F, Fab8S, Wavetek
Financial impact: less than NT\$0.15 billion/year

Singapore: Fab12i
Low risk after assessment (NEWater is the main water resource in Singapore)

Mid-Term (in 10 years)

Japan: USJC
Low risk after assessment (Sufficient water resource in the region where Fab located in)

China: HJ
Low risk after assessment (Sufficient water resource in the region where Fab located in)

China: USCXM
Low risk after assessment (Sufficient water resource in the region where Fab located in)

Taiwan: Fab12A, Fab8A, Fab8C, Fab8D, Fab8E, Fab8F, Fab8S, Wavetek
Financial impact: less than NT\$0.2 billion/year

Singapore: Fab12i
Low risk after assessment (NEWater is the main water resource in Singapore)

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Climate-related Response Measures of UMC

UMC attaches great importance to the risks and opportunities that climate change poses to the Company. The response measures taken by the Company are described as follows:

Item	Implementation Status	Location
Describe the supervision and governance of the Board and the management team regarding climate-related risks and opportunities.	UMC's Board of Directors and functional Committees oversees climate change risks, opportunities, coping strategies, and related promotion plans. ESG Steering Committee: Throws meeting quarterly, responsible for ESG governance, strategy, objective decision, systems or management guidelines and concrete promotional plans (including climate change), and report to the Board of Directors on a periodic basis. Corporate Sustainability Committee: Throws meeting quarterly, in charge of setting sustainability direction and objective, enforcing systems or related management guidelines (including climate change). If the results of climate change risk assessment have significant influence on corporate major decision they will be escalated to ESG Steering committee for approval. Enterprise Risk Management Committee coordinates related divisions within the Company to jointly review the Company's internal and external risks (including climate change risks), regularly traces the changes for listed as major company-wide risks, and reports the overall improvement actions to ESG Steering Committee.	1.1.1 Board of Directors Operation 1.2.5 Managing Climate Risks and Opportunities
Describe how the identified climate risks and opportunities affect the business, strategy, and finances of the company (in the short, medium, and long term).	According to UMC Climate Change Risk and Opportunity Assessment Methodology, short-term is defined as within the next 3 years, medium-term is defined as within the next 10 years, and long-term is defined as more than 10 years in the future. UMC formulates response plans for the identified major risks and opportunities. Taking carbon tax/fee as an example, it is expected that operating costs will gradually increase due to rising rates, resulting in a decline in profits. Therefore, the Company has set a net zero emission target in 2050, and actively promotes greenhouse gas reduction plans to reduce potential financial impacts	1.2.5 Managing Climate Risks and Opportunities
Describe the impact of extreme climate events and transitional actions on company finances	<p>The impact of extreme climate events on company finances Referring to different scenarios including RCP8.5 in fifth assessment report (AR5), SSP1-2.6 and SSP5-8.5 in sixth assessment report (AR6) of the Intergovernmental Panel on Climate Change (IPCC) to conduct physical risk caused by extreme weather assessment, such as strong typhoon/ extreme rainfall lead to increased frequency of work suspension and voltage dips, extreme weather increases supply chain scheduling resources and cost, increased electricity consumption due to global warming, drought worsens and affects production, which may lead to financial impact of increased operating expense and decreased revenue.</p> <p>The impact of transitional actions on company finances Referring to different scenarios including transition scenarios based on International Energy Agency NZE (Net Zero), Announced Pledges Scenario (IEA APS), Nationally Determined Contributions (NDCs), Stated Policies Scenario (IES STEPS) to identify transition risks including possible policies, regulations, markets and technologies transitions, business reputation such as carbon tax/fee for greenhouse gas emission control, electricity prices rising leads to increasing in operation cost, water surcharge during drought seasons, which may lead to financial impact of increased operating expense</p>	1.2.5 Managing Climate Risks and Opportunities
Describe how climate risk identification, assessment and management processes are integrated into the overall risk management system.	The Climate Change Risk and Opportunity Assessment Working Group conducts assessment annually, and develops adaptation and mitigation countermeasures. The assessment results are submitted to the Corporate Sustainability Committee for approval. If the assessment results are listed as major company-wide risks, ERM committee will simultaneously manage it and trace the implementation progress of countermeasures on a regular basis, and summarizes the overall risk improvements and reports to the ESG Steering Committee to ensure alignment with the Company's sustainability strategy.	1.2.1 Risk Management System 1.2.3 Improving Operational Risk Management 1.2.5 Managing Climate Risks and Opportunities
If a scenario analysis is adopted for the assessment of resilience to climate change risks, then the scenarios, parameters, assumptions, and analysis factors used, as well as the major financial impacts should be explained.	UMC conducts climate-related scenario analysis, including transitional scenarios based on National Determined Contributions (NDCs) and World Energy Outlook (WEO) published by International Energy Agency (IEA), and physical scenarios in Assessment Report published by Intergovernmental Panel on Climate Change (IPCC). UMC also conducts risk and opportunity analysis for policies, regulations, markets and technologies transitions, business reputation and physical risks. For relevant parameters, assumptions, analysis factors and major financial impact information, please refer to this chapter.	1.2.5 Managing Climate Risks and Opportunities

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Item	Implementation Status	Location
<p>If there is a transition plan for managing climate-related risks, please describe the content of the plan, as well as the indicators and goals used to identify and manage physical risks and transition risks.</p>	<p>In order to achieve net zero emissions by 2050, UMC has drawn up a low-carbon transition plan to cover direct emissions from fab operations (Scope 1), indirect emissions from energy consumption (Scope 2), and indirect emissions from value chain (Scope 3).</p> <p>The implementation includes:</p> <ul style="list-style-type: none"> (1) Persistent and proactive carbon emissions reduction: Through continually developing advanced foundry process technologies, enhancing productivity and improving energy efficiency, UMC is able to minimize carbon emissions in both manufacturing stage of wafers and using stage of IC end products; (2) 100% renewable energy: A 3-stage objective of 25% by 2025, 50% by 2030, and 100% by 2050 is set to substantially increase the proportion of consuming renewable energy, UMC will also invite its value chain to support the low-carbon energy transition; (3) Investment in net-zero technologies: UMC commits to invest in net zero emissions technologies and participate in Carbon Offset Projects to remove and offset carbon emissions that are inevitable or still subject to technical restrictions. 	<p>Sustainability Strategy and Blueprint Sustainable Governance 1.2.5 Managing Climate Risks and Opportunities 2.1 Innovation & Technology Development 2.1.1 Robust Wafer Manufacturing Services 3.1.3 GHG Reduction 3.2.1 Energy Mix 3.3 Water Resources Management 3.3.1 Water structure</p>
<p>If internal carbon pricing is used as a planning tool, the basis for setting the price should be stated.</p>	<p>UMC has considered the international carbon market prices, the carbon prices of GHG relevant regulations and the costs of reducing GHG emissions of the Company to set an internal carbon price, and used it as a reference for carbon reduction management and planning.</p>	<p>3.1.2 Carbon Emissions Management</p>
<p>If climate-related goals are set, information such as the activities involved, the scope of greenhouse gas emissions, planning schedule, and annual progress should be disclosed. If carbon offsets or renewable energy certificates (RECs) are used to achieve the relevant goals, the source and quantity of carbon reductions for carbon offsets or the quantity of renewable energy certificates (RECs) should be explained.</p>	<p>UMC has announced to achieve RE100 and net zero emissions by 2050, and established climate-related targets such as water consumption, energy use, GHG emissions, and the technology development of low energy consuming products.</p>	<p>2.1 Innovation & Technology Development 3.1 Climate Action 3.2 Energy Management 3.3 Water Resources Management</p>
<p>Greenhouse gas inventory and assurance results.</p>	<p>In 2021, UMC announced its pledge to reach net zero emissions by 2050 as the first semiconductor foundry globally. The 2030 GHG emissions reduction target set by UMC was approved by the Science-Based Targets Initiative (SBTi) in 2022, and the Company continues to drive further reductions by three resolutions. In 2023, in order to actively implement UMC's low-carbon commitments and take actions to speed up emission reduction, UMC has further signed the SBTi net-zero target commitment and raised the 2030 GHG emissions reduction target in accordance with the SBTi Net-Zero Standard to a 42% reduction of Scope 1 and Scope 2 emissions with 2020 as the base year. The GHG emissions of UMC and its foundry subsidiaries reduced by 26% in 2023 compared to the base year emissions of 2.895 million tonnes.</p>	<p>3.1.1 Net Zero Commitment and Target 3.1.2 Carbon Emissions Management</p>

Note: The information listed in this table contains the climate-related indicators that should be disclosed as required by Appendix 2 under Article 4 of TWSE's "Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies". Appendix 2 1-1 For greenhouse gas inventory and relevant data verification, please refer to this report's appendix

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Appendix

1.3 Building Sustainable Supply Chain

1.3.1 Localization of Supply Chain and Procurement

1.3.2 Supply Chain Management



Material Topic

Sustainable Supply Chain Management

Related Policy ▶ UMC's Supplier Code of Conduct



In accordance with GRI Standards (2021) in identifying impacts from sustainability issues. Management actions in response to these impacts, and processes used to track the effectiveness of the actions, are listed in the table below:

Positive Impact ▶ Building Sustainability supply chain	Negative Impact ▶ Insufficient supply chain management
Management Actions	
<ul style="list-style-type: none"> ▶ Promote "Low-Carbon Supply Chain" Project, inventorying greenhouse gas emissions of suppliers and strengthening supply chain resilience. ▶ Conduct third-party risk assessment to lower potential risks of supply chain. ▶ Formulate a "Code of Conduct" for suppliers to comply in accordance with the requirements of the Responsible Business Alliance (RBA). 	

Highlights of the year	<ul style="list-style-type: none"> ▶ 100% of new suppliers complied UMC's Supplier Code of Conduct. 	✓ Achieved
	<ul style="list-style-type: none"> ▶ 100% of products passing stringent third-party mineral source certification ▶ 100% of conflict-mineral suppliers passing third-party independent audit ▶ Maintaining a supply chain with zero conflict mineral procurement 	✓ Achieved
	<ul style="list-style-type: none"> ▶ 100% completion rate of ESG & RBA self-assessment questionnaire for Tier 1 suppliers 	✓ Achieved

Sustainability Strategy and Blueprint	2023	2024	2025	2030
project	Goals	Achievement	Goals	Goals
Percentage of carbon intensity reduction by suppliers within the project of "low-carbon supply chain" * Note2	6%	✓ Achieved	8.3%	10%
Ratio of Tier 1 suppliers who have included 'signing Employment Ethics Terms and Conditions Agreement' in their supply chain management requirements	45%	✓ 49.7%	60%	80%
Ratio of audit conducted to significant high-risk suppliers NEW	-	-	100%	100%
Completion rate of biodiversity survey for Tier 1 suppliers NEW	-	-	100%	100%

Note: 1. Scope: UMC (the parent company only); With * remark is UMC fabs in Taiwan.

2. Low Carbon Supply Chain Suppliers: those who are Tier 1 suppliers and willing to participate in the project; Carbon reduction ratio calculation: based on the carbon reduction amount in the year before the sustainability report.

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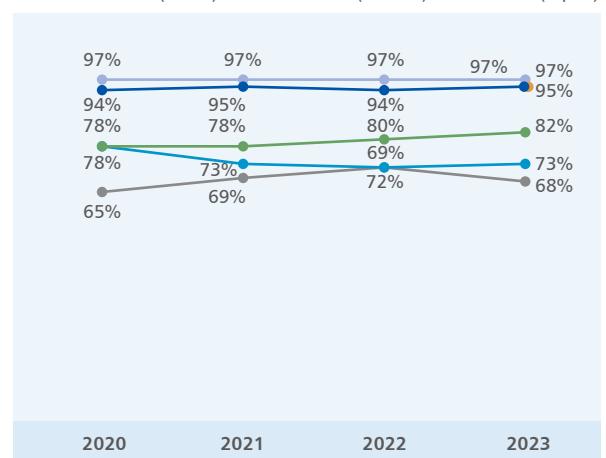
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1.3.1 Localization of Supply Chain and Procurement

In 2023, UMC, including subsidiaries HJ, USCXM, Wavetek and UJSC cooperated with more than 4,000 suppliers worldwide. Procurement localization became a key guideline adopted by UMC when looking for potential partners and suppliers. In addition to enhancing close partnerships with local suppliers, UMC expects suppliers to provide services and products with higher efficiency, shorter delivery time, and lower carbon footprint of raw material required in production. In doing so, UMC also indirectly provides job opportunities and promotes socio-economic development. The number of local suppliers including foundry subsidiaries is generally greater than 50%

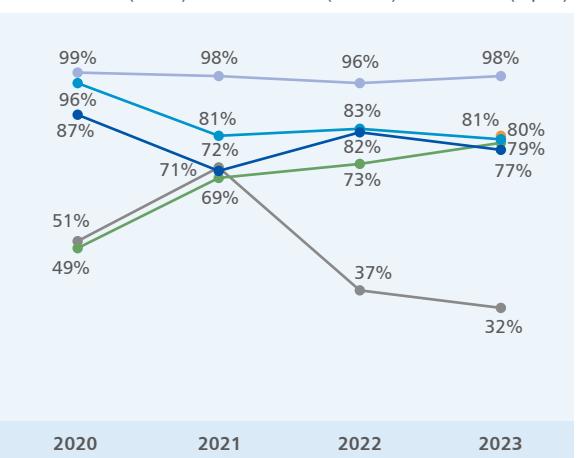
percentage of domestic suppliers

— UMC (Taiwan) — UMC (Singapore) — HJ (China)
 — USCXM (China) — Wavetek (Taiwan) — USJC(Japan)

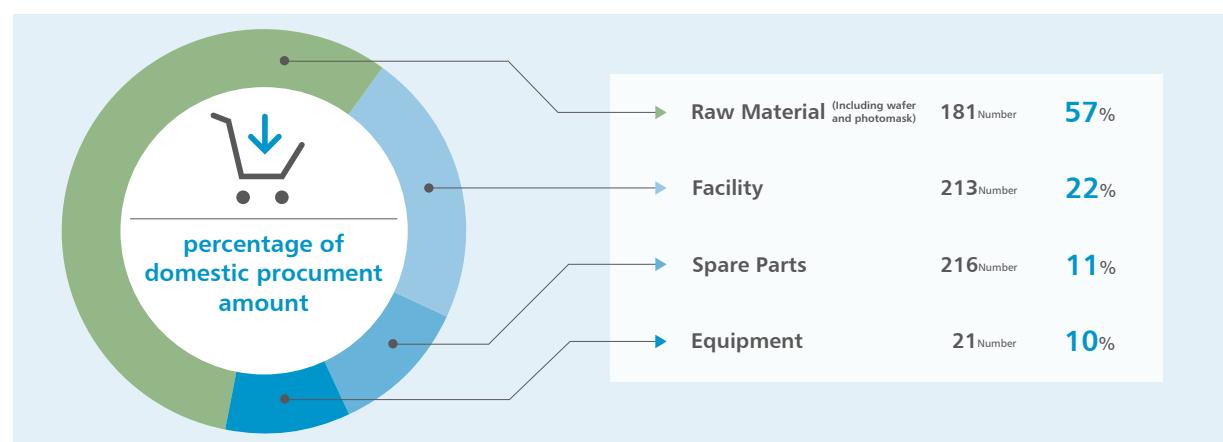


percentage of domestic procurement amount

— UMC (Taiwan) — UMC (Singapore) — HJ (China)
 — USCXM (China) — Wavetek (Taiwan) — USJC(Japan)



Note: Wavetek is included in the calculation scope starting from 2023.



Collaborating Providers

Due to the nature of our industry, and in response to operating plan requirements and to maintain the Company's normal operations, UMC requires a lot of labor. Such labor demands come in two major categories: Production related and administrative-related, totaling 2,360 people. UMC Group, including our Singapore branch and other subsidiaries, tend to engage third-party providers from nearby regions. This creates long-term, large-scale employment opportunities for nearby regions, while simultaneously building a responsible supply chain. Collaborating providers engaged in UMC fabs have all passed the Supplier Sustainability Assessment, and met the regulatory requirements stipulated in local laws/regulations and UMC's Supplier Code of Conduct. UMC also conducts sustainability assessments for collaborating providers every year, and grades the providers in accordance with assessment results. Those failing to meet required standards for two consecutive years will, in accordance with the Company's regulations, be subject to lower procurement/sourcing or termination of collaboration. The 2023 on-site audit results indicated that all suppliers were in human rights compliance with national laws and regulations, as well as the human rights norms required by the Responsible Business Alliance (the RBA). No suppliers had use of child labor, forced labor, or any violations of regulations regarding working conditions.



Note: 1. The production-related category includes collaborating providers in equipment maintenance, service, etc. in production and technical departments; the administrative related category includes collaborating providers in non-production departments' administrative operations, such as cleaning, staff canteen, security duties, etc.
 2. The number of collaborating providers will be surveyed once every two years, with the next survey scheduled for 2024.

1.3.2 Supply Chain Management

Supplier Management Policy

Integrate UMC group resources to achieve the most competitive supply chain value through strategic cooperation.

1. Drive suppliers to improve economic, social and environmental performance.
2. Continue to guide suppliers to achieve diversified and localized supply capabilities.
3. Promote suppliers' moving from energy savings and carbon reduction toward the circular economy.

Improve Cost Leadership

Establish Sustainable Supply Chain Capabilities

Commit to Green Procurement

Focus on Environmental Issues

No Compromise on Conflict Minerals

Implement Sustainable Risk Management

Strengthen recycling of waste resources and strive to reduce the impact of environmental pollution.

Proactively implement green procurement while pursuing economic benefits

Ensure that products and supply chain are free from conflict mineral

Focus on suppliers' energy resource use and water resources management to respond to the impact of extreme climate change on the supply chain.

Please visit UMC website to review our commitment to suppliers ►



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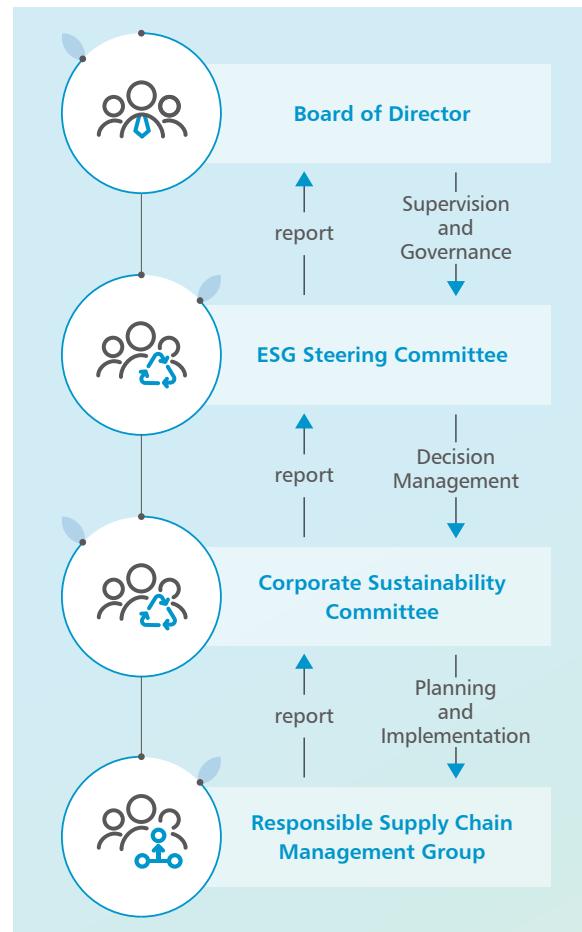
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The supplier policy of UMC is to view suppliers as partners and guide them towards long-term cooperation, planning a comprehensive management approach for suppliers. UMC places importance on sustainable supplier management and focuses on the requirements of suppliers in the areas of environment, society, and corporate governance. Therefore, the Responsible Supply Chain Management Group has launched the Supply Chain Sustainability Blueprint and supply chain self-set goals and projects, and the results will be reported to the Corporate Sustainability Committee. The ESG Steering Committee, Corporate Sustainability Committee and the Responsible Supply Chain Management Group are overseen by the Board of Directors.

Responsible Supply Chain Organization Chart



Suppliers ESG Risk Assessment Criteria

UMC formulated its Supplier Code of Conduct based on the Responsible Business Alliance (RBA)'s Code of Conduct and the UNGP. Both existing and new suppliers are required to sign this code in order to become a supplier of UMC. In addition, subsequent risk assessments and onsite audits are conducted on a regular basis to facilitate continuous improvement.

At the same time, UMC encourages Tier 1 suppliers to require their previous-tier suppliers to adopt the UMC Supplier Code of Conduct in their management practices. In addition, UMC's supplier selection considerations also include compliance with the "Employee Code of Conduct" for UMC Suppliers, compliance with related regulations, and sustainable evaluation in four dimensions. UMC's implementation of supplier risk assessment criteria follows the "Supplier Sustainable Evaluation and Management Measures," using indicators such as "Supplier ESG Risk Screening Process" and "four major criteria of supplier sustainability assessment" to control and guide new and old suppliers, in order to establish a mutually beneficial and sustainable supply chain management mechanism.

Four Major Criteria of Supplier Sustainability Assessment

1 Environment	<ul style="list-style-type: none"> ▶ Business continuity system ▶ Health and safety management ▶ Fire management ▶ Special Pest Management ▶ GHG Management ▶ Water resources and water risk management 	<ul style="list-style-type: none"> ▶ Energy management ▶ Waste management ▶ biodiversity
2 Society	<ul style="list-style-type: none"> ▶ Human Rights and Labor Ethics ▶ Human resources management ▶ Labor rights 	<ul style="list-style-type: none"> ▶ Management system and communication channel
3 Governance	<ul style="list-style-type: none"> ▶ Business ethics ▶ Conflict Mineral Management 	<ul style="list-style-type: none"> ▶ Information Security Management ▶ Business continuity plan
4 Business	<ul style="list-style-type: none"> ▶ Quality ▶ Cost 	<ul style="list-style-type: none"> ▶ Delivery ▶ Service

Supplier ESG Risk Screening Process

In order to regularly manage, assess, guide, and track supplier improvements, UMC has established and formulated the "Supplier Sustainable Evaluation and Management Measures," incorporating sustainable management requirements into the evaluation indicators. The Tier 1 suppliers supporting production are classified and scored according to risk levels, and regular management, assessment, guidance, and tracking of supplier improvements are carried out. By establishing the "Sustainable Supplier Rating and Response Measures," sustainable management requirements are included in the rating items according to their importance. Every year, UMC sends out an "ESG Risk Assessment Questionnaire" to Tier 1 suppliers supporting production for them to respond to in questionnaire form. The responses are then classified according to the supplier's characteristics and risk level to facilitate graded guidance and improvement during the improvement period. UMC has the "Supplier Sustainable Evaluation and Management Measures" according to the supplier's sustainable risk level. For significant high-risk suppliers, UMC identifies missing items and assists in guidance to achieve supplier improvement. If improvement cannot be achieved, UMC may continue to provide guidance or temporarily suspend or terminate the business relationship with the supplier. If a supplier cannot meet UMC's requirements even after guidance, UMC will provide continued guidance and notify the relevant department of the order, place the supplier on an observation list, and conduct a physical audit the following year. If the supplier still cannot meet the requirements for two consecutive years, their supplier qualification will be cancelled, and they will be removed from the supply chain. Suppliers who cannot comply with improvements within two years will be disqualified.

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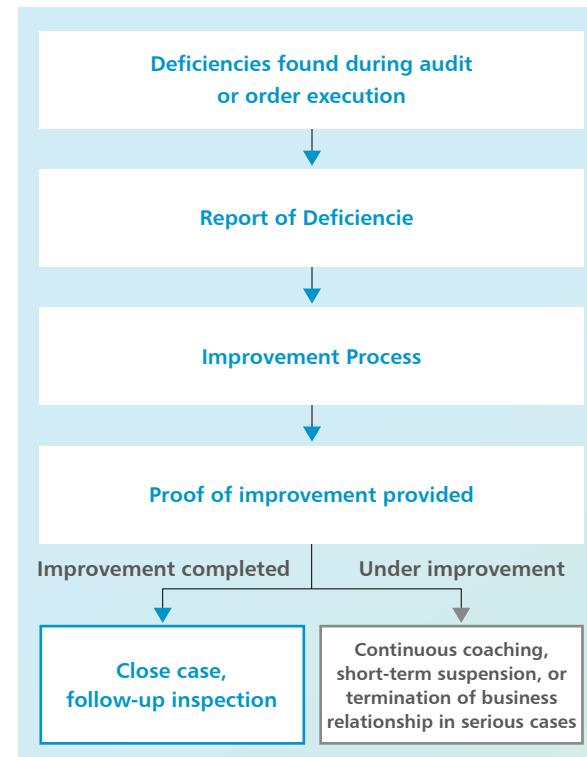
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Process of Suppliers Failure Improvement Management

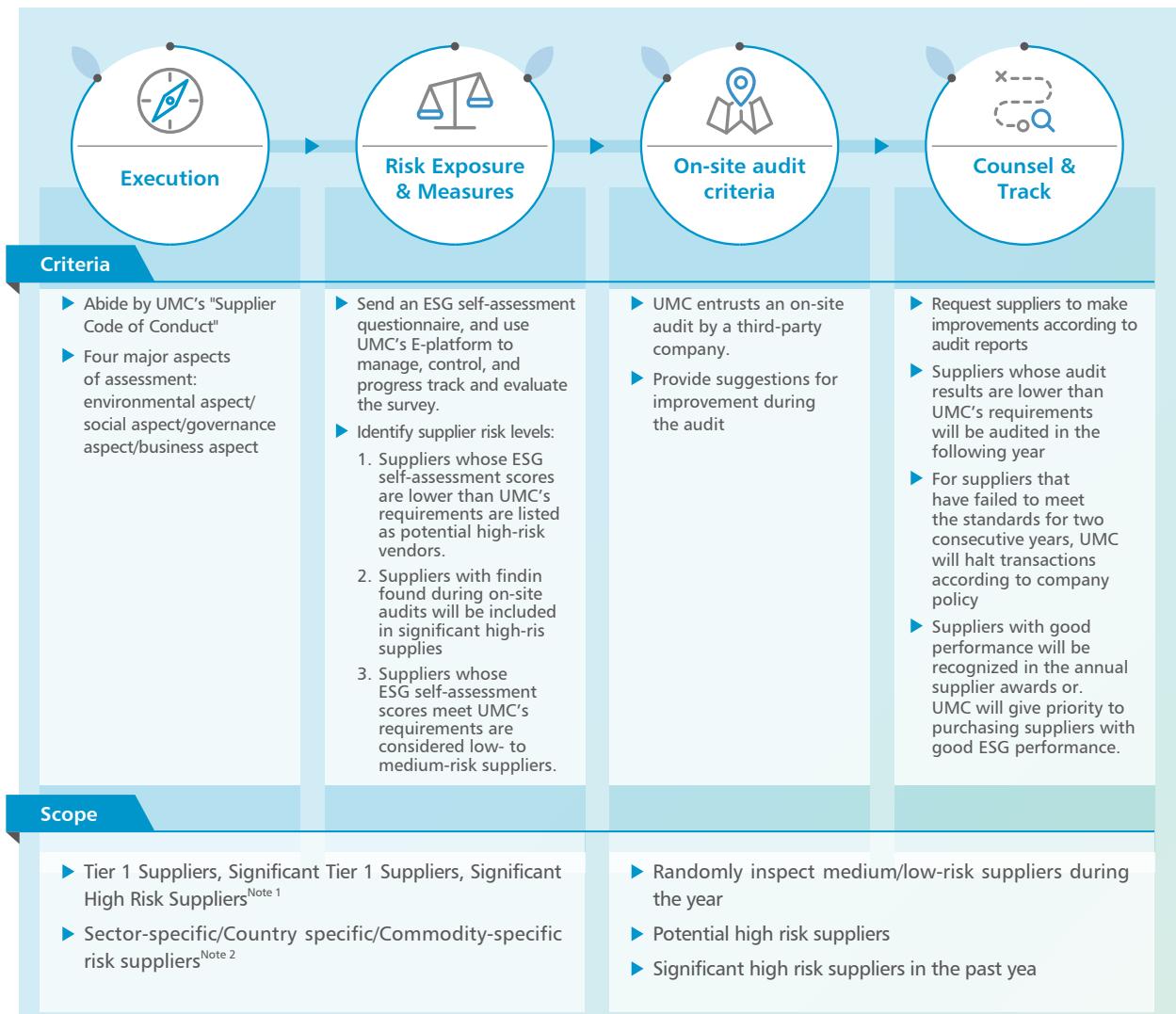


Identification of Key Raw Material

The key raw materials are single source/production area, non-substitutability. The Company completed its supply chain risk database and the management system of earthquake spare parts (quartz, fragile parts) for over 2,000 key raw materials supplied by approximately 100 vendors.

- ▶ Establish a production area risk warning automatic sending and return monitoring and risk identification syste
- ▶ 85% of UMC's 8-inch fabs and 99% of 12-inch fabs have completed earthquake spare parts preparation.

Supplier ESG risk assessment and Screening Process



Note: 1. Tier 1 suppliers: Direct transactions with more than 2 orders per year and transaction amount greater than NT\$2 million Tier 1 suppliers are also classified by importance such as procurement volume, critical material, and critical/non-substitutable suppliers. In 2023, 631 suppliers met the criteria. Significant Tier 1 Suppliers: The annual purchase amount of the suppliers for more than 80%. Significant High-Risk Suppliers: Suppliers who still do not meet UMC standards after providing corrective action plans in the previous year audit.

2. (1) Sector-specific risk suppliers screening: Enter the screening with the terms of the Responsible Business Alliance (Responsible Business Alliance, RBA).

(2) Country specific risk suppliers screening: Conduct an annual BCP risk survey on key raw material suppliers, and classify the country with a supply chain risk map (such as frequent natural disasters, geopolitics, war...)

(3) Commodity-specific risk suppliers screening: Conduct annual BCP risk surveys on key raw material suppliers, and classify key raw materials with supply chain risk maps (such as: high purchase volume, single source, non-substitutable...)

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Suppliers ESG Risk Evaluation and Screening Result

In 2023, UMC conducted a survey of all Taiwan-area suppliers that support the supply of materials for UMC's production, excluding suppliers engaged in only a single transaction. The survey covered key suppliers for raw materials, equipment/machines, facilities, parts/components, etc. There were 631 Tier 1 suppliers included in the UMC Sustainability Assessment Questionnaire; of these, 153 suppliers were further inspected through onsite audits. 20 of the audited suppliers were identified as high-risk; UMC requires improvements within a deadline, and these 20 companies will also be listed as key observation targets in the next year.

Note: Suppliers who are excluded from 1 order include key raw materials suppliers, equipment, facility, and key components.

KPI of Suppliers Screening in the Past 4 Years

	2020	2021	2022	2023
Number of Tier 1 Suppliers	628	673	579	631
Number of Significant Tier 1 Supplier	140	206	191	91
% of Purchasing Amount of Significant Tier 1 Supplier	80%	80%	82%	80%
Total number of suppliers assessed via desk assessments/on-site assessments	140	206	191	153
% of significant high risk suppliers assesse	100%	100%	100%	100%
Number of suppliers assessed with substantial actual negative impacts	1	17	18	20
Number of suppliers with substantial actual negative impacts that were terminated	0	0	0	0
Total number of suppliers supported in corrective action plan implementation	1	17	18	20
% of suppliers assessed with substantial actual negative impacts supported in corrective action plan implementation	100%	100%	100%	100%
Total number of suppliers in capacity building programs	140	206	191	153
% of significant suppliers in capacity building programs	100%	100%	100%	100%

Corrective Action Plan

Regarding the deficiencies found during the audit, a corrective and preventive action was issued by a third party on the day of the audit, requiring the supplier to submit an improvement plan and complete the improvement within one month after the audit. In 2023, 100% of the audited suppliers completed the improvement of deficiencies within the specified time limit, and no supplier terminated their cooperation due to non-compliance with company regulations."

Via the 2023 sustainability assessment mechanism, and by introducing third-party certification body audits, the degree of supply chain compliance with the UMC Supplier Code of Conduct can be summarized. In view of the continual growth in the global semiconductor industry, UMC regards supply chain management as an important sustainability goal. UMC is committed to improving supply chain management performance and promoting continuous improvement, and requires suppliers to follow the UMC Supplier Code of Conduct to improve performance in five areas: Labor rights and ethics; the environment and climate change; occupational safety and health; supplier management; business continuity planning, and information security control. Based on requirements in these five areas, UMC also continues to implement several action plans, in hopes of working with suppliers to drive the gears of the sustainable supply chain

Finding and Improvement Result of UMC suppliers in 2023

Category	Major Findings	Improvement Results
Labor rights and ethics	Lack of management for labor and ethical business practices	Establish relevant management procedures
	Lack of regular risk assessment, identification and control of labor and moral risks related to operations	Establish a supplier risk assessment mechanism
	Lack of documented standard requirements related to antitrust, fair trade, and business integrity	Requires supervision of upstream suppliers' compliance with the UMC Supplier Code of Conduct
	Lack of social performance indicators and implementation plans	Establish social performance indicators
Occupational safety and health	Lack of contractor safety management requirements	Establish construction safety controls
	Chemicals are not stored according to regulations	Effective control of flammable chemicals
	No mechanism for regular inspection of fire protection equipment has been established	Establish a regular inspection mechanism for factory/company fire protection
Business continuity planning and information security control	Failure to effectively implement a complete business continuity plan	Establish an operations continuity plan and update it regularly
	Missing information equipment management program	regular backups and ensure the security of storage locations

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Sustainable Supply Chain Projects

UMC believes that a responsible supply chain is an important part of implementing the Company's sustainable blueprint. We continue to leverage UMC's influence and promote various ESG projects to build a sustainable supply chain. This includes holding annual sustainability briefings to convey UMC's requirements for corporate sustainability and ESG performance, as well as various international standards, to suppliers and disseminate the concept of a sustainable supply chain. In addition, to raise awareness of sustainability among UMC's internal procurement personnel, we also provide employee education and training on international sustainability standards and issues.

Project ▶ UMC 2030 low-carbon supply chain

Purpose

In order to achieve the goal of net zero emissions by 2050, in order to build up a low-carbon sustainable supply chain, and in response to the RE100 international renewable energy initiative, the goal has been set as "20% carbon reduction by 2030"

Action

The kick-off meeting be held in 2022 to conduct carbon emissions investigations on participating low-carbon suppliers, and to engage consultant companies to provide education and training to guide them in conducting greenhouse gas inventories. In addition, all suppliers are required to establish carbon reduction plans.

2023 Outcome

- ▶ Participating suppliers' carbon emission intensity reaches annual targets



Project ▶ Supply chain water reduction plan

Purpose

Enhance green sustainability awareness and reduce water resource consumption of semiconductor raw materials in the manufacturing process

Action

Tier 1 Suppliers who use more than 5,000 cubic meters of water resources annually will be identified as key water resource suppliers. By 2023, 22 such suppliers will be identified, and they will be guided/required to reduce water. UMC also requires non key water resources suppliers to set water-saving goals. UMC investigate the establishment of water-saving goals among suppliers by annual sustainable ESG evaluations

A responsible supply chain is an important part of implementing the Company's sustainable blueprint.

Project ▶ Tier 2 significant supplier management

Purpose

To ensure that UMC's suppliers are diligent about their supply chain management, and are taking actions to manage their suppliers and ensure their suppliers are abiding by the Company's ethics agreement

Action

In SAQ and audit, UMC suppliers are required to sign the "Code of Ethics" for their significant suppliers

2023 Outcome

- ▶ Starting from 2023, in conjunction with the low-carbon supply chain project, a 1% reduction in water resources will be required for the supply chain. It is expected that by 2024, the water withdraw of key water resource suppliers will be reduced by 1%.

2023 Outcome

- ▶ 49.7% of UMC's Tier 2 supplier are signed the Code of Ethics. 80% of UMC's Tier 2 suppliers are required to sign the Code of Ethics by 2025



2023 UMC Taiwan sustainability sharing session

Project ▶ Sustainable supply chain sharing session

Purpose

Hold sharing sessions with the theme of "Sustainability & Co-prosperity" to promote the concept of sustainable development to suppliers

Action

Taiwan, China, Japan and other regions take turns to hold annual sharing sessions:

- ▶ Promote UMC's human-oriented sustainable conduct and co-prosperity in society
- ▶ Continue to require ESG alignment in supply chain
- ▶ New challenges for sustainable supply chains

2023 Outcome

- ▶ UMC held an awards ceremony in Hsinchu, Taiwan, in November, attended by nearly 200 supply chain partners. During the ceremony, awards were presented to 10 outstanding suppliers, and international sustainability trends and international norms were promoted.

2023

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Project ► Sustainable education and training for purchasing agent

Purpose

Improve procurement agent's sustainability expertise

Action

Every year, courses are offered in accordance with international standards such as RBA, and questionnaires are sent to trainees as a basis for evaluating the results of the training.

2023 Outcome

- Held 1 session, the purchasing agent training completion rate is 100%.

Project ► Green procurement

Purpose

UMC views the development of green products as its responsibility and promotes green procurement starting from upstream manufacturing to conserve resources and protect the environment

Action

Green procurement indicators:

- Domestic: Category no. 1 to no. 3 green-labeled products, including Energy Label, Water Label, Green Building Material, Carbon Footprint Label, Carbon Label
- Overseas: green-labeled products originated from countries that have agreements with Taiwan, Energy Star, FSC, PEFC

2023 Outcome

Green procurement amount in 2023 reached NT\$131 million

- Received the 2023 Green Procurement Award from the Environmental Protection Administration, Executive Yuan
- Received the 2023 Green Procurement Award from the Hsinchu City government
- Recognized by Tainan City government as an Excellent Green Procurement Enterprise in 2023.

Conflict Minerals Management

Conflict Minerals Management Policy

UMC Conflict Minerals Management Process

► Conflict Minerals Specification

- Comply with UMC's Responsible Sourcing Policy

► Reasonable Country of Origin Inquiry (RCOI) investigation of mineral sources

- Conflict Minerals Reporting Template (CMRT)
- Sign Conflict Minerals Representation Letter
- Review suppliers' Declaration of Minerals Conflict-Free
- On-site audit

► Due Diligence Investigation*

(Please refer to UMC Conflict Minerals Due Diligence Investigation Process)

- Comply with OECD Due Diligence Guidelines

► Independent Third-Party Audit (ISPA)

- Conducting an independent third-party audit

► Public Disclosure

- Disclosure of conflict minerals management results in sustainability reports and on UMC.COM.

In order to avoid inadvertently obtaining conflict minerals from the Democratic Republic of Congo and surrounding countries during the product manufacturing process, such as Tantalum, Tin, Tungsten, and Gold (referred to as 3T1G), UMC has developed the "UMC Responsible Sourcing Policy" and requires suppliers of products containing 3TG to adhere to the policy and sign the "Declaration of Minerals Conflict-Free." Every year, a supply chain investigation is conducted to review the signing of the "Declaration of Avoidance Use Conflict Minerals," and UMC has also proactively joined the Responsible Minerals Initiative (RMI) as a member.

UMC continues to actively participate in international initiatives and implement relevant management mechanisms to ensure that the products provided by suppliers are not manufactured using conflict minerals

Results of Recent Surveys

UMC follows the principles of the "Model Supply Chain Policy for a Responsible Global Supply Chain of Mineral from Conflict-Affected and High-Risk Areas," published by the Organization for Economic Co-operation and Development (OECD), to establish a "due diligence" process. Through this process, UMC can identify and evaluate the risks of its own suppliers and respond to and mitigate identified risks

UMC mainly obtains information on suppliers that meet the requirements for conflict minerals through the "Responsible Minerals Assurance Process (RMAP)" and uses it as a basis for source management in the supply chain. UMC also requires suppliers to provide information on conflict minerals using the "Conflict Minerals Reporting Template (CMRT)" every year and compares it with RBA-recognized qualified smelters to ensure the procurement of non-conflict raw materials. If non-compliant smelters are found, suppliers are required to improve within a specified period

In 2023, UMC had a total of 631 suppliers, of which 25 (4%) provided products containing 3T1G, Cobalt, and Mica. Therefore, this year's "RMI Conflict Minerals Due Diligence Investigation" was conducted on the 25 suppliers (4%) providing such products. All 25 suppliers (100%) provided complete CMRT and related supporting documents. A total of 88 smelters were identified, and after comparison by specialized personnel, all 88 (100%) were conformant to RBA. Therefore, the 25 suppliers are qualified conflict minerals suppliers (100% of all suppliers providing conflict minerals) and provide products without conflict minerals

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UMC Conflict Minerals Due Diligence Investigation Process

► Establishment of Management System

- A. Development of Responsible Sourcing Policy Referring to RMI requirements. (UMC RMI Due Diligence Investigation Procedure)
- B. Establish a team responsible for allocation of responsibilities - Responsible Supply Chain Group
- C. Risk Management System - If a supplier uses non-compliant smelters, they will be required to improve within a specified period, otherwise the transaction with the supplier will be suspended
- D. Supplier Engagement - Supplier fills out CMRT form.
- E. Supplier Grievance Mechanism -Responsible Supply Chain Group contact person

► Identification and Evaluation of Supply Chain Risks

- A. Issuance of Conflict Minerals Questionnaires to Suppliers and Subsidiaries
- B. Review Questionnaire Responses.

UMC RMI Due Diligence Investigation Procedure

- Notify suppliers to sign the Declaration of Non-Use of Conflict Metals and provide the latest version of the CMRT to identify whether the products they provide contain 3T1G, Cobalt, Mica, etc.,
- Define the supplier risk level and develop related strategies based on the results of the investigation of the use of conflict metals.
- Conduct supplier audits to check the source of conflict metals and have specialized personnel compare the smelter information provided by suppliers to see if it is from non-conflict areas rated by RBA.
- Public Disclosure - Submit a supply chain conflict metal usage investigation report and provide the SEC SD form annually.

Independent Private Sector Audit (IPSA) and Public Disclosure

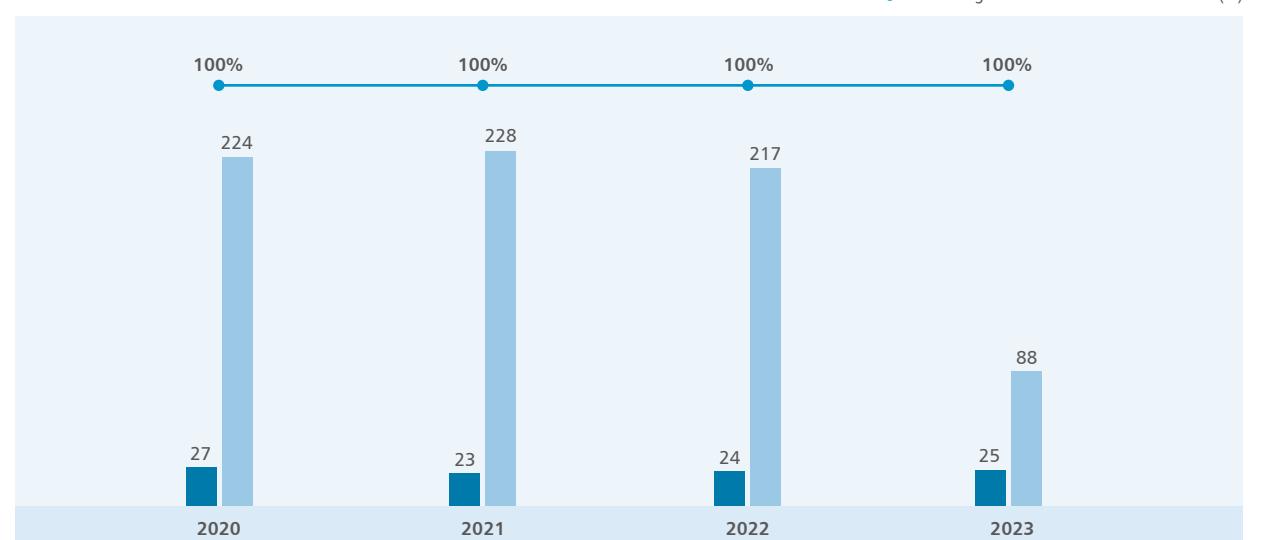
In addition, UMC designs a "Supplier Conflict Mineral Audit Form" based on the OECD "Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas", and through on-site audits, assists suppliers in establishing management mechanisms that comply with the OECD's due diligence guidance. UMC's conflict mineral audit coverage goal is more than 33% every year, and to achieve 100% on-site audit coverage of conflict mineral suppliers every three years. Since 2019, an independent third-party has been commissioned every year to conduct on-site audits of suppliers using 3T1G raw materials. In 2019, there were 27 Tier 1 suppliers providing 3T1G. UMC conducted third-party on-site audits on 9 of them (33%), and a total of 9 suppliers (100%) passed the audit. In 2021, the audit coverage rate reached 100%, and all suppliers passed the audit with a 100% pass rate, to ensure that suppliers comply with conflict mineral management policies and conduct due diligence investigations on their upstream suppliers. In 2023, a total of 8 suppliers are audited, and all smelters used by these suppliers are "non-conflict (DRC Conflict-Free)"

According to Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act, as announced by the U.S. Securities and Exchange Commission (SEC) on August 22, 2012, UMC has added the "conflict-free minerals" logo to its product packaging to declare that its products do not use conflict minerals. Since April 1, 2018, UMC's Taiwan factories have implemented this policy, and a formal statement has been issued on the official website. Additionally, UMC completes a Specialized Disclosure Report every May. For the latest disclosure documents, you can refer to UMC.com or the U.S. Securities and Exchange Commission (SEC) website.

For more information about UMC's conflict mineral procurement policy, please refer to [UMC.com](#)



Conflict Mineral



Note: Regulation-compliant minerals" means that smelters producing the 3T1G used in UMC's supply chain have been reviewed and certified in accordance with the Responsible Minerals Assurance Process (RMAP) standard and SORs are in conformant smelters list.

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Innovative Products and Services

2.1 Innovation & Technology Development

2.2 Customer Satisfaction

2.3 Product Responsibility

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2 Innovative Products and Services

The customer-oriented UMC will continue to provide professional wafer solutions that meet market trends and customer needs. Also, constant refinement and introduction of innovative technologies will be undergone to strengthen UMC's core competencies. UMC's long-term operations rely mainly on its own and its customers' competitiveness, and UMC will be able to achieve sustainable impact with its products and services.

Important Stakeholders ▶



Shareholders



Suppliers



Customers

SDGs ▶



3 GOOD HEALTH
AND WELL-BEING



9 INDUSTRY, INN.
AND INFRAST.



11 SUSTAINABLE CITIES
AND COMMUNITIES



13 CLIMATE ACTION

Performance Highlights 2023

Number of
patents granted of the year



425

Ratio of satisfied customer



92 %

Product recall



0

Green process development
completed



1

Achieving excellent results
for 20 consecutive years in
the TCIA Competition



Winning
Six Gold
Medals

Ratio of products produced
by Industry 4.0 Smart
Manufacturing Systems



43.3 %

Completed carbon footprint
inventory and verification of
8-inch and 12-inch wafers at
each site in accordance with
ISO 14067 Verificatio



100 %

2.1 Innovation & Technology Development

2.1.1 Robust Wafer Manufacturing Services 2.1.2 Key Technology Mastery 2.1.3 Smart Manufacturing Execution



Material Topic

Innovation Management and Intellectual Property Rights Protection

In accordance with GRI Standards (2021) for identifying impacts of sustainability issues, management actions in response to these impacts and processes used to track the effectiveness of the actions are listed in the table below:

Positive Impact ▶ Technology and product innovation

Management Actions

- ▶ Follow annual corporate governance guidelines to initiate key technology R&D projects based on company-wide KPIs, and designate personnel with a rank of vice president or above to be in charge of the projects.
- ▶ Develop sustainable technology/product R&D plans, and designate a Sustainable Innovation Taskforce to review implementation performance.
- ▶ Set R&D schedule KPIs and progressive targets on a yearly basis, measure points every quarter, and regularly review R&D issues and solutions.
- ▶ Customer Engineering Division regularly compiles customers' feedback and discusses solutions to meet customers' needs in PLM (product line management) meetings.

Processes Used to Track the Effectiveness of Actions

- ▶ Hold regular PLM meetings to discuss market demand trends, thereby developing response strategies and fixing outdated deficiencies in a timely manner to adhere to the goals of product innovation.
- ▶ Hold project working group meetings on a weekly basis to examine problems identified during task implementation, thereby adjusting resource allocation and dealing with difficulties in a timely manner.
- ▶ Review the achievement status of the goals set in company-wide KPIs on a quarterly basis, the result of which shall be signed and approved by the responsible vice president and submitted to the President.

Negative Impact ▶ Intellectual property infringement

Management Actions

- ▶ Orientate intellectual property development direction toward mutual protection of patents and trade secrets, and promote the steady growth of the number of patents granted and the number of key trade secrets registered.
- ▶ In accordance with the annual corporate governance policy, Technology Development division and Intellectual Property division conduct patent map analysis and brainstorming meetings on issues related to important technology research and development projects, and identify opportunities for obtaining intellectual property rights and analyze possible infringement risks during this meeting.
- ▶ In the case of intellectual property disputes (including cases where customers seek assistance and intellectual property risk assessments for suppliers), a dedicated person will be responsible for planning, evaluating and responding, and regularly reporting the progress of high-risk cases to the top management on a weekly basis, so as to reduce the impact of intellectual property dispute cases.
- ▶ Improve employees' awareness of intellectual property protection, and regularly conduct intellectual property education and training courses on topics such as patents and trade secrets.

Processes Used to Track the Effectiveness of Actions

- ▶ Regularly follow up on a monthly basis to confirm the achievement status of intellectual property rights KPI in each division.
- ▶ Introduced "Taiwan Intellectual Property Management System (TIPS)" from 2021, and in response to certification requirements, carried out internal and external audits every year to confirm the implementation of various management measures and education and training courses.

Policy for Intellectual Property Protection



Sustainability Strategy and Blueprint

2023

2024

2025

2030

Item	Goal	Achievement	Goal
Revenue from sustainable products as % of total revenue*	≥77%	82.2%	≥78%
Number of innovative energy-saving specialty process platforms	≥3	3	≥4
Patents granted for the year*	>250	425	>250
Cumulative patents granted worldwide*	>14,900	15,196	>15,650
			>16,650

Note: 1. Scope: UMC Group (UMC and its subsidiaries HJ, USCXM, Wavetek and USJC); With * remark is UMC (the parent company only).

2. Sustainable products include products that reduce energy consumption such as low power, low leakage, power management, and micro-controller units, products with high durability such as automotive chips, and products related to epidemic prevention and medical treatment to maintain life and health.

3. The cumulative number of energy-saving specialty process platforms developed is based on year 2020.

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Electronic end-products are evolving rapidly, as emerging technologies used in smart phones, wearables, virtual reality and augmented reality, autonomous driving, electric vehicles, artificial intelligence and deep learning, voice control, and Internet of Things are adopted and commercialized. The four types of traditional IC products include computers, communication devices, consumer devices, and automotive are becoming more multi-functional, capable of highend processing, lightweight, energy saving, and greater connectivity, which is driving the future trends of chip design. Developments in artificial intelligence, deep learning, and voice control are also impacting the direction of the industry's development. Therefore, wafer foundries must develop technology processes and obtain silicon intellectual property as soon as possible to stay competitive and be able to meet the wide range of customer demands.



[Video: Enabling the IoT Era](#) ▶



2.1.1 Robust Wafer Manufacturing Services

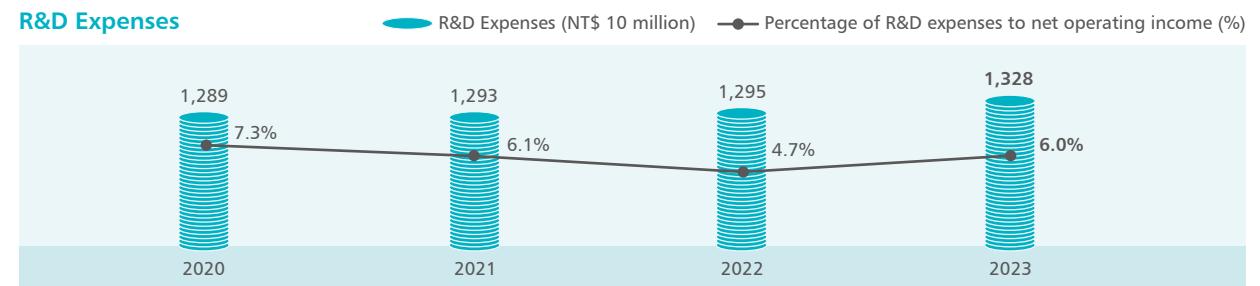
UMC's R&D team has always been dedicated to promoting the development of logic process technology. With the adherence to the belief of "Customer's Demand Comes First," the Company has been providing pure-play wafer foundry solutions to meet market trends and customer needs, which include world-class technology, customer support services, and state-of-the-art manufacturing. As a leading worldwide semiconductor foundry, UMC provides comprehensive technologies across logic, RF, eHV, BCD and eNVM to allow customers to have more options to choose the right foundry process solutions and related devices for their mobile and wireless communication ICs, thus meeting the needs of future communication products. UMC provides process technologies that strengthen the devices energy-saving characteristics, enabling products to reduce carbon emissions in end-use applications in the value chain of relevant customers.

UMC's investment policy is based on the principle of long-term strategic investments that align with the Company's operations and development. They aim to mitigate risks and improve operational efficiency through a global layout. UMC continues to invest a large amount of R&D resources, with R&D expenses reaching NT\$13.3 billion in 2023. With global wafer demand outstripping supply, UMC secured mutually beneficial agreements with a number of world-leading customers on a NT\$100 billion expansion at its 12-inch Fab 12A in the Southern Taiwan Science Park. Through the innovative win-win collaboration model, customers secure long-term chip supply at Fab 12A P6 by making a deposit at pre-determined pricing. For UMC, the expansion enables the Company's goal of achieving long-term profitability and increasing market share.

To expand its overseas footprint, UMC fully acquired Mie Fujitsu Semiconductor (MIFS) in 2019, and subsequently renamed it United Semiconductor Japan Co., Ltd. (USJC). The acquisition increased UMC's monthly production capacity by more than 30,000 12-inch wafers, expanded the Company's presence in the Japanese semiconductor market, and enhanced Taiwan's influence in the global semiconductor and foundry industry. Corresponding to China's vast IC market, UMC established its subsidiary United Semi in Xiamen China, as southern China's first 12-inch wafer fab, providing 22 to 90nm process technologies to meet the demand of local IC design companies.

In the face of intense technological competition, besides significantly increasing its key technology capabilities, UMC also focuses on patent distribution to protect its intellectual property rights, and has seen steady growth in its number of patents. In 2023, 425 domestic and foreign patents were granted. To date, UMC has a total of 15,196 granted patents, which offers comprehensive and robust protection of the Company's process technologies. To remain competitive, UMC has also significantly increased the patent quality of its key technologies, and continues to strengthen its customer service and competitive advantage.

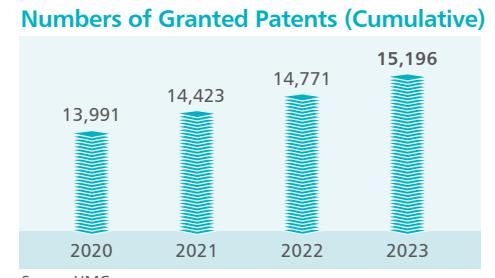
R&D Expenses



Note: 1. Scope: UMC consolidated financial report

2. R&D expenses are compiled in accordance with the International Financial Reporting Standards approved by the Financial Supervisory Commission, Executive Yuan

3. UMC's R&D expenses in 2023 totaled NT\$10.72 billion, accounting for about 6.2% of entity revenue



[Policy of Intellectual Property Management](#) ▶



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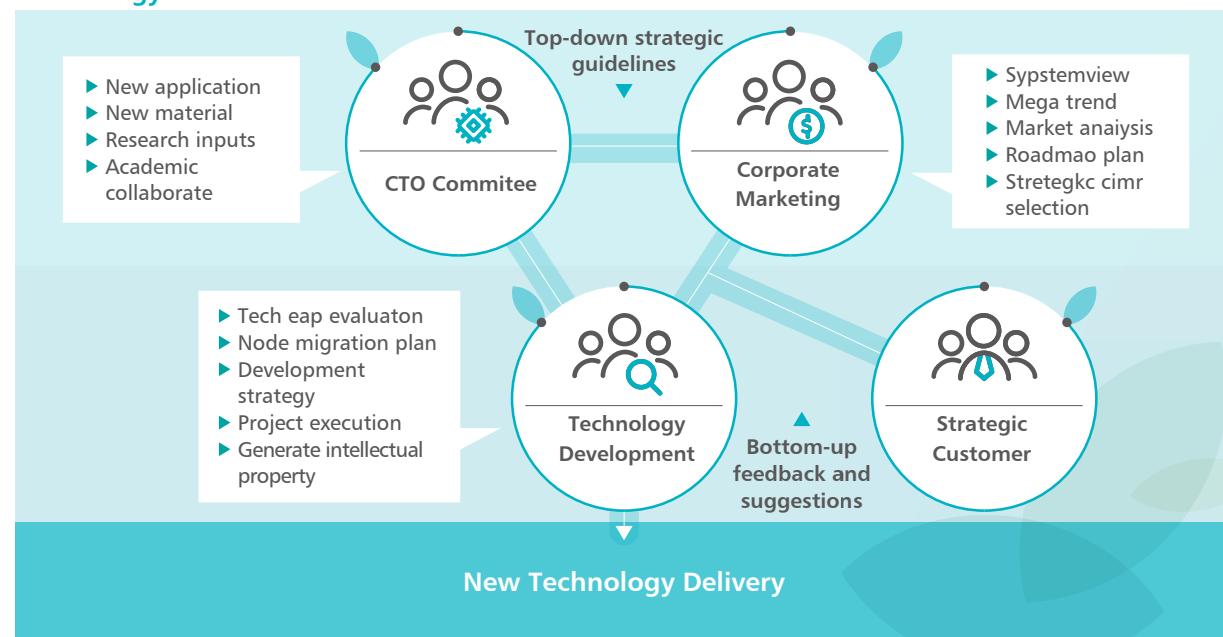
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R&D Strategy

UMC's technology R&D innovation is primarily driven by the Corporate Marketing (CM) division, the Technology Development (TD) team and the CTO committee. The CM division collects and analyzes product market trends and customer needs to develop product portfolio strategies. The TD team analyzes product technology requirements to formulate preliminary technology innovation strategies and R&D goals, which are then reviewed in regular PLM meetings with high level cross-functional heads of the CTO committee to discuss market demand and industry trends. Based on in-depth research on industry development trends, the CTO committee issues the guidance and decisions on product portfolio strategies and technology R&D strategies. Moreover, UMC closely collaborates with strategic customers to obtain their feedback and guidance, ensuring that R&D projects remain consistent with market trends and meet customer requirements. These three solid pillars integrate top-down strategy guidelines tightly with bottom-up customer feedback through seamless communication. In addition to full support for R&D capabilities and proper allocation of resources, UMC continuously stimulates technological innovation, expands and strengthens intellectual property generation. These measures enable UMC's technology R&D innovation procedure to operate smoothly and sustainably.

In line with the United Nations Sustainable Development Goals (SDGs) and the Company's sustainability strategy blueprint, UMC is committed to increasing investment in energy-efficient product technologies, and providing semiconductor manufacturing services covering clean technology fields such as power electric vehicles, smart energy management systems, industrial automation, and optimization technologies and systems, so as to reduce carbon emissions in the industrial value chain and the carbon footprint of end products. In order to align technology development with global carbon reduction goals, UMC has set incremental goals through 2030 to expand the proportion of overall revenue derived from sustainable products. The annual goal is included in the KPI items of the operation strategy, and the implementation status is reviewed by the ESG Steering Committee quarterly and linked to the annual performance review. UMC has steadily promoted the development of various green process technologies from the strategy to the execution side, continuously launched high-performance, low-latency, and low-power solutions, and also continuously promoted the improvement of green process technologies to reduce the generation of harmful substances, and firmly moved towards the goal of net-zero emissions by 2050, contributing to the mitigation of global climate change.

Technology Innovation Procedure



Intellectual Property

UMC's IP team works closely with the TD team to select key projects as special IP projects in response to the annual product portfolio strategies and technology R&D strategy decision-making, and establish a competitive advantage through a unique IP mining system, including project meetings, brainstorming sessions and promotion meetings, to creatively mine core technology information such as potential patents and key trade secrets.

In 2021, UMC introduced the "Taiwan Intellectual Property Management System (TIPS)", which includes a review of the links between corporate intellectual property and operations and R&D planning. In 2023, with superb intellectual property management performance, UMC became the only company to receive the highest honor of TIPS AAA certification this year. It presents UMC's unwavering commitment to IP and corporate governance best practices.

Green Process Development Plan

In response to the heightened global focus on corporate carbon reduction actions, UMC has gradually phased out old processes over the years, and instead focused on the development of low power (LP), ultra-low power (ULP), and ultra-low leakage (ULL) technologies, while also enhancing its power management (PMIC) technology for green and energy-saving products. In order to integrate the eco-friendlier technologies in new products and to increase the proportion of green manufacturing products, UMC has established the goal of developing new LL/LP, PMIC and microcontroller (MCU) platforms, continue to develop more green technology platforms, and provide more high-performance, low-latency, and low-power solutions, so as to produce more energy-saving and power-conservation products, and reduce carbon emissions from end product applications.

In the near future, UMC will continue to develop green and energy-saving process technologies with even lower power consumption to meet future demand driven by 5G, smart Internet of Things (AIoT), wearable devices, cloud applications, and automotive electronics applications. Through innovative green and energy-saving process platforms, the Company can bring substantial benefits to global greenhouse gas mitigation.

Please refer to UMC Web pages for more information



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2.1.2 Key Technologies

UMC not only engages in ongoing research and development to reduce chip power consumption, but also develops a range of power management chips, medical sensor chips, mobile communication chips, image sensing and display driver chips that decrease the environmental impact of end-products and advance communication, healthcare, and safety in society.

- ▶ The industry-leading 22nm embedded high-voltage (eHV) process has been successfully verified in cooperation with customers and has been introduced into mass production
- ▶ Completed the development of the industry-leading 28nm embedded high-voltage and low-power 28eHV-LP process platform, which can reduce energy consumption by up to 15%
- ▶ Launched the 40nm RFSOI process platform and its foundry design kit (FDK) to provide the millimeter wave (mmWave) RF front-end process solutions capable for mass production
- ▶ The 22nm Image Signal Processor (ISP) technology is under trial production following the completion of the component model, the design specifications, and the related IPs (intellectual properties) construction
- ▶ In the non-volatile memory process technology development, the 28nm eFlash memory (28ESF4) and the 22nm resistive memory (22RRAM) process platforms both have completed the verification procedures of Generic and IoT microprocessors
- ▶ The next-generation customized PMIC for mobile phones development has completed product verification and entered trial production
- ▶ The development of the new 0.11μm BCD 3.3V application platform has been completed, continuing in the FDK construction and the introduction of design finalization and verification
- ▶ The RF GaN products and the 650V GaN power components both have entered the trial production stage.
- ▶ UMC's hybrid-bonding stacking technology has completed Cadence Integrity 3DIC design process verification, and the W2W 3D IC project has been established with supply chain partners to provide a comprehensive solution for customers' diverse needs.

Key Technologies	Product Highlights	Applications
12nn FinFET (12FFC) process technology	<ul style="list-style-type: none"> ▶ Higher performance, smaller chip size, and lower power consumption ▶ Wider range of applications connecting with various specialty processes, and more competitive 	<ul style="list-style-type: none"> ▶ To drive the application of next-generation silicon chips in various fields such as networking, artificial intelligence and further high-end consumer electronic products
14nm FinFET (14FFC) Process Technology	<ul style="list-style-type: none"> ▶ High performance, low power loss, and low latency ▶ Excellent energy efficiency in end-user application 	<ul style="list-style-type: none"> ▶ The specialty process technologies expand the scope of product applications in electronic products including analog, mixed-signal, RF technology, Internet of Things, and mobile devices.
22nm Process Technology	<ul style="list-style-type: none"> ▶ The 22nm process technology, compared to the 28nm process, exhibits higher performance, lower power consumption, and reduced chip area, thus the cost competitiveness has been greatly improved. 	<ul style="list-style-type: none"> ▶ The specialty process technologies expand the scope of product applications in electronic products including analog, mixed-signal, RF technology, Internet of Things, and mobile devices.
28nm Process Technology	<ul style="list-style-type: none"> ▶ UMC's 28nm gate-last High-K/Metal Gate process technology features superior low leakage and dynamic power performance. ▶ 28HPC+ solution is ideal for high-speed mmWave devices for circuit applications up to 110GHz 	<ul style="list-style-type: none"> ▶ Can be applied to products, such as processors, mobile phone basebands, WLAN, tablet PCs, FPGAs, Netcom ICs, image signal processors, mmWave system-on-chip (SoC), mobile devices, automotive electronics, Internet of Things (IoT), etc.

Production of the 12 nm process is expected to begin in 2027

The design specification for the automotive Grade-1 platform has been successfully established, and the reliability and durability verification have been completed

28HPC+ mmWave design reference flow has been certified through silicon tape-out

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Key Technologies	Product Highlights	Applications
Non-volatile memory (NVM)	<ul style="list-style-type: none"> The embedded non-volatile memory (eNVM) process technology improves the computing and storage performance of the chip, and has the advantage of confidentiality. Providing a complete process and supporting IP solutions from 180nm to 22nm nodes. 	<ul style="list-style-type: none"> Can be widely applied in microprocessors and electronic products, covering the Internet of Things (IoT), industrial control, and various 3C products in the automotive field, and also extended to solutions for various bank cards and telecommunication cards.
22nm resistive RAM (RRAM)	<ul style="list-style-type: none"> Resistive RAM (RRAM) is a novel NVM with simple structure, low operation voltage, low read current, fast program/erase speed and very good reliability. It is fully logic compatible with less add-on masks and low extra cost. 	<ul style="list-style-type: none"> RRAM can be applied to wearable components such as hearing aids, watches, etc., as well as edge computing applications
22nm Magnetoresistive RAM (MRAM)	<ul style="list-style-type: none"> The new generation of Magnetoresistive Random Access Memory (MRAM) has the same size as the traditional charge-trapping memory, but has simpler process conditions It has faster operation speed, and exhibits excellent thermal stability, read/write endurance, and data retention. MRAM products can be embedded in logic processes and operate with very low standby electrical current, reducing the power consumption of products in end applications, so as to reduce carbon emission in the entire value chain of UMC and its customers 	<ul style="list-style-type: none"> Can be applied in artificial intelligence Internet of Things (AIoT), aerospace/LEO satellite communications <p>The 22nm high-density 1Gb HDMRAM chip product used in aerospace/LEO satellite communications has entered the trial production stage.</p>
High Voltage process technologies	<ul style="list-style-type: none"> UMC has led the industry successfully in the development of 22nm embedded high-voltage (eHV) process technology UMC's 28nm ultra-low power embedded high-voltage platform 28eHV-LP process technology, featuring the industry's smallest SRAM bit cell, offers up to 15% reduction in power consumption without compromising image quality or data rate, addressing the demand for longer battery life of devices 	<ul style="list-style-type: none"> Can be applied to mid- to high-end smartphones, VR/AR equipment mounted panels and automotive electronics <p>Start a plan to integrate FinFET and High-Voltage processes to develop a new competitive display driver IC</p>
Power management IC (PMIC)	<ul style="list-style-type: none"> Combined with the world's third-generation low-on-resistance high-voltage components in one of the process technologies, it also provides ultra-high voltage process to reduce energy loss during voltage conversion and achieve energy-saving effects for various power management needs BCD (Bipolar-CMOS-DMOS) products provide a wide range of high-voltage operating capabilities (up to hundreds of volts) required by power management chips, as well as standard logic compatibility and a complete IP platform 	<ul style="list-style-type: none"> The power management chip (PMIC) is in strong demand and is widely used in consumer electronics, communications, computing, industry, automobiles, such as 5G mobile phones, servers, electric vehicles, etc. <p>The PMIC integrated with 0.11µm BCD platform and the embedded non-volatile memory platform has completed the automotive component model and design specifications, as well as automotive IP.</p>
CMOS image sensor and image signal processor (ISP) process technologies	<ul style="list-style-type: none"> The high-performance CMOS image sensor (CIS) solutions that have been adopted by global leaders in mainstream applications such as portable devices, medical devices, ambient light sensors, surveillance systems, and more. The 55nm back-illuminated image sensor (BSI) CIS process technology has entered mass production The mass-produced 28HPC+ ISP technology provides the industry's highest-end 200-megapixel image sensor product with the smallest pixel size. The 22nm ISP process technology, which can provide lower core operating voltage and better energy performance, has entered trial production in 2023. 	<ul style="list-style-type: none"> Can be applied to high dynamic range (HDR) related products, such as surveillance, driving record (Dash CAM) and Internet of Things (AIoT), etc., to meet the market demand of customers with high sensing resolution and fast focus function (PDAF), as well as product diversity. Continue to develop ISP technologies to be applied on the products related to automatic white balance, automatic focus, anti-shake, and high dynamic range (HDR) related products, such as surveillance, driving record (Dash CAM) and Internet of Things (AIoT), etc., to meet the market demand of customers with high sensing resolution and fast focus function (PDAF), as well as product diversity.

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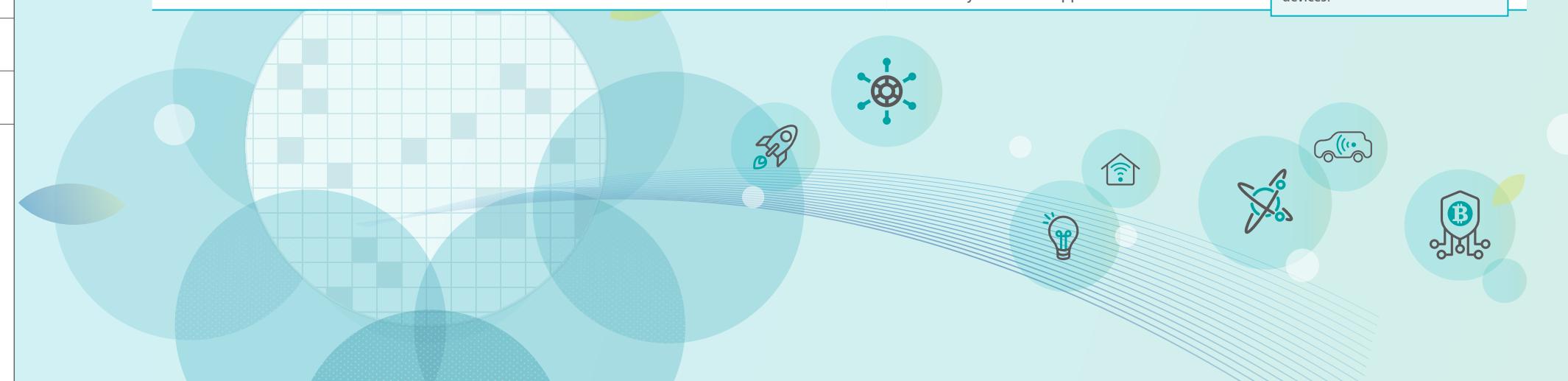
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Key Technologies	Product Highlights	Applications
Micro-electro mechanical device technology (MEMS)	<ul style="list-style-type: none"> UMC has established a series of fundamental MEMS process building blocks to help customers quickly construct MEMS structures in a CMOS foundry fab. UMC has developed advanced sensors with second-generation micro-electromechanical (CMOS-MEMS) technology 	<ul style="list-style-type: none"> Can be applied in medical-related sensor chips, flow sensor chips for medical respirators, vaccine temperature control chips produced by temperature and humidity sensors, and carbon dioxide sensing elements Flow sensor chips can be used in medical purpose, such as life-sustaining respirators; temperature and humidity sensors can be used in the storage and transportation of medicine, food and chemicals; the carbon dioxide sensing element can be used to monitor the concentration and trend of carbon dioxide for air quality control
Radio Frequency Silicon-on-Insulator process (RFSOI)	<ul style="list-style-type: none"> For the requirements of RF communications such as 4G, 5G, WiFi, provide highly competitive component characteristics (low high-frequency doubled harmonics and low power loss) for 4G/5G mobile phones with stringent requirements for RF switches and low noise amplifiers UMC continues to develop the 40nm RFSOI technology platform, offering the foundry design kit (FDK) and the solutions for production of millimeter wave (mmWave) radio frequency (RF) front-end products 	<ul style="list-style-type: none"> Can be widely used in RF frontend applications, such as antenna switch, antenna tuner and Low Noise Amplifier (LNA)
Compound Semiconductors	<ul style="list-style-type: none"> GaAs HBT power amplifier integrates SAW filter and RFCMOS switch provides mobile phone RF front module (RF-FEM) and WiFi 6/7 communication module integration solution. Developing GaAs pHEMT, RF GaN and power GaN products suitable for high power 5G communication, all are under trial production 	<ul style="list-style-type: none"> Can be applied to mobile phone RF front-end module, WiFi 6/7 communication module, 5G mobile communication mmWave band base station, and Ka/Ku-band low-orbit satellite receiver chips, and high-efficiency power supply component
2.5D & 3DIC Heterogeneous Integration Packaging Technologies	<ul style="list-style-type: none"> UMC newly launched wafer-level 3D W2W hybrid bonding solution offering advantages in both bandwidth and form factor reduction. The high-end RF communication product adopts 3D stacking to reduce the area by 40% and has completed customer product verification 	<ul style="list-style-type: none"> It can meet various applications demands from customers in high-performance computing (HPC), cloud computing (Cloud AI) and edge computing (Edge AI) for artificial intelligence, high-end communications (4G/5G/6G), artificial intelligence of things (AIoT), virtual reality and augmented reality (AR/VR), crypto currency and other applications.

UMC has established a one-stop vertical integration project with our supply chain partners, providing customized low-power logic chip and memory module combination to meet the needs of customers in IoT, secure smart infrastructure, and other terminal devices.



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2.1.3 Smart Manufacturing

Since 2016, the UMC Group has begun evaluating and taking stock of the key areas for enhancing Industry 4.0 and planning the future development direction of smart manufacturing. In 2017, the Company adjusted its internal organizational structure and established the "Smart Manufacturing Division" dedicated to promoting digital transformation. At the same time, the concept and technology of Industrial AI (IAI) created by Professor Li Jie of the University of Maryland in the United States was introduced to collaborate on the development of various applications for smart manufacturing and coordinate related OT (Operation Technology) and IT projects, integrating internal and external resources.

The Company's sustainable strategy blueprint also sets the strategy of "promoting the smartification of Industry 4.0," planning to continuously introduce various smart innovation solutions to improve delivery time and achieve energy-saving and environmentally friendly smart manufacturing factories. The related promotion content is regularly tracked by incorporating it into the company's overall goals to ensure implementation.

Sustainability Strategy and Blueprint	2023	2024	2025	2030
Item	Goal	Achievement	Goal	
Ratio of products produced by Industry 4.0 Smart Manufacturing Systems	40%	43.3%	50%	60% 80%

Scope: UMC Group (UMC and its subsidiaries HJ, USCXM, Wavetek, and USJC)

The Core Concept of Smart Manufacturing Project Team

UMC integrates the DNA of Industry 4.0 into its corporate culture, applies core technology to develop and implement various smart manufacturing projects. These projects aim to achieve process optimization, flexible production, shortened delivery time, manpower quality and efficiency improvement, and address the increasingly challenging and complex manufacturing environment. This includes IAI projects, IT infrastructure construction, physical security of the smart supply chain, enhanced information protection, and integration with upstream and downstream industries related to semiconductors to jointly establish a smart manufacturing ecosystem.

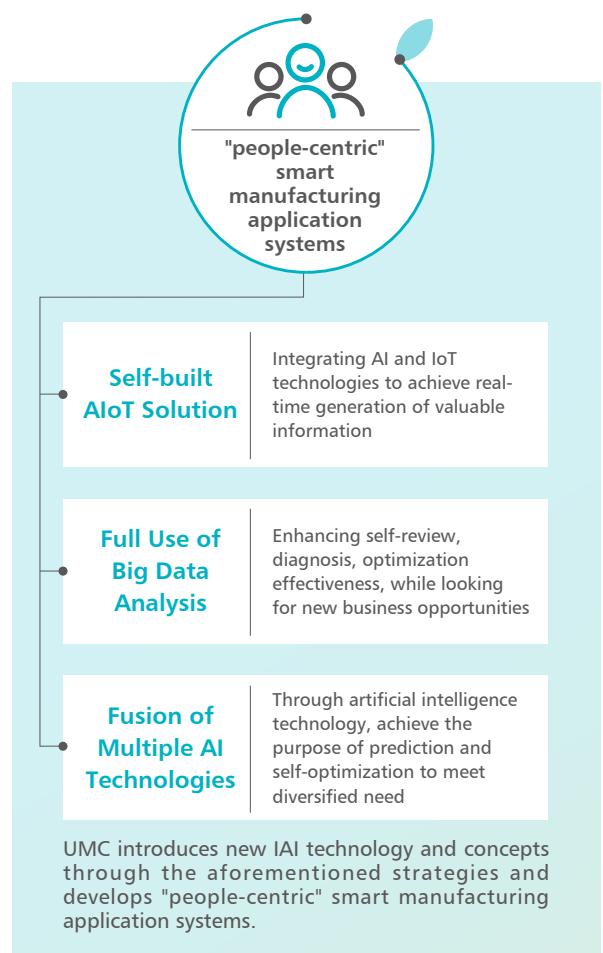
Smart Manufacturing Strategy



UMC references the methodology of Industry 4.0, draws on international and industry benchmarks, and formulates a development blueprint for smart manufacturing. Through the promotion and implementation of relevant strategies by project teams, UMC not only achieves the digital optimization goals of work efficiency, product quality, and green manufacturing but also expects to create innovative business models.

Use industrial AI (artificial intelligence technology to promote smart manufacturing applications)

UMC introduces IAI technology and concepts, and develops "people-centric" smart manufacturing application systems through strategies such as "Self-built AIoT solutions," "in-depth application of big data analysis," and "fusion of multiple AI technologies." These systems focus on improving of good quality, high efficiency, cost saving, energy saving, and waste reduction optimizing enterprise processes through digital technology, and enhancing operational efficiency and green manufacturing.



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Smart Manufacturing Innovation

From the perspective of business strategy, UMC has transformed into a specialty process solution provider. To meet the demands of long lifetime, low energy consumption, short cycle time, and small amount and high diversity, UMC actively promotes innovative approaches to digital transformation and digital optimization to achieve efficient workflows, rapid mass production, short production cycles, production flexibility, and green manufacturing requirements.

Transformational Thinking ▶ People-Centric

UMC's digital transformation focuses on "people-centric" mindset. Under the premise of making full use of the operation technology (OT) process transformation, UMC keep developing smart manufacturing applications to comprehensively improve the efficiency, process quality, and product yield, to effectively enhance the overall operating value.

Value Enhancement ▶ Environmental Sustainability

1. Introduce digital technology into energy-saving applications and facility management, and promote all-round energy-saving measures in fab equipment, processes, systems and management
2. Conduct big data analysis using intelligent energy management systems, review energy consumption data on a rolling basis and explore potential energy saving opportunities.
3. Optimize operation through control systems and process systems, effectively manage energy consumption, and promote smart energy conservation for the industry.

Partnerships ▶ Diversified Cooperation

Introduction of IAI Technology ▶ Join the National Science Foundation (NSF) Intelligent Maintenance System (IMS) Industry-Academia Collaboration Center to introduce related technologies required for industrial artificial intelligence and internalize the UMC Smart Manufacturing Systems.

Establish AI Research Center ▶ In response to the future of new AI technologies, UMC collaborate with academia to conduct early-stage research and development in order to sustain the R&D momentum in AI.

Alliance Leader ▶ Select the most forward-looking and competitive manufacturers and open source software organizations in order to carry out cooperative development or product introduction.

Project promotion

Location: Southern Taiwan Science Park Pilot Fab

To actively implement the smart manufacturing projects, UMC proposes the integration of three digital cores -- creativity, integration and execution. Since 2018, UMC Fab12A, located in the Southern Taiwan Science Park, has been appointed as the pilot fab. It has been gradually implementing various intelligent innovation solutions to shorten product delivery schedules and promote energy-saving as well as eco-friendly smart manufacturing fab.

Creativity - People-centric system design

Instead of sticking to the traditional approach of focusing solely on functionality, UMC has incorporated digital optimization elements (such as smart inspections, AI-CCTV, etc.) into the Company's sustainable vision for the environment. UMC has also established a digital ecosystem for smart manufacturing and is collaborating with industry-leading manufacturers to promote AI research and applications.



Integrated thinking of vertical and horizontal coordination

1. UMC integrates production and functional divisions in order to execute projects, and then shares the experiences and promotes to other fabs through the Best-Known Method (BKM). Senior executives closely monitor the progress and results on a regular basis.
2. Establish a computing resource orchestration platform, and build an agile DevOps (Development and Operation) platform to explore and solve problems during the development stage to reduce maintenance and operation costs

Execution - accurate execution of intelligent technology

1. Replace the costly physical wiring requirements with wireless transmission and simple energy harvesting mode through self-built IoT solutions.
2. Use big data technology to improve the fineness of data collection, and adopt the hybrid technology of "image, numerical value, NLP (Natural Language Processing), and human-computer collaboration".
3. Build efficient intelligent decision-making platforms by integrating industrial dual AI (analytical AI + generative AI), big data, and the cloud technologies.
4. Create RPA (Robotic Process Automation) software robots for remote equipment connection in wafer fabs to reduce human operational errors and improve product stability, such as using RPA to perform intelligent adjustment and automatic recipe creation.

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2.2 Customer Satisfaction

2.2.1 Customer Satisfaction Improvement

2.2.2 Continuous Quality Improvement and Innovation



Material Topic

Customer Relationship Management

In accordance with GRI Standards (2021) for identifying impacts of sustainability issues, management actions in response to these impacts and processes used to track the effectiveness of the actions are listed in the table below:

Positive Impact ▶ Enhance customer relationship management	Negative Impact ▶ Customer rights impacted	Management Actions	Processes Used to Track the Effectiveness of Actions
<ul style="list-style-type: none"> ▶ Product quality is managed continuously by designated divisions according to quality management system regulations ▶ Offer designated sales and customer service contact to communicate and serve customers in a timely manner ▶ Voice of Customer (VOC) instant online feedback system managed by designated personnel to collect customer feedback and to strengthen two-way communication with customers 	<ul style="list-style-type: none"> ▶ Product quality and delivery schedule are the key performance indexes to be reviewed regularly ▶ Understand customers' requirements and satisfaction through scorecards provided by customers in quarterly business reviews and other meetings ▶ Collect customer requirements and respond through meetings with customers, while also improving internal procedures accordingly ▶ Conduct annual customer satisfaction surveys with key customers through a third-party agency in order to obtain objective feedback and take action accordingly 		

Sustainability Strategy and Blueprint		2023	2024	2025	2030
Item	Goal	Achievement		Goal	
Ratio of satisfied customer	≥89%	✓ 92%		≥90%	

Scope: UMC Group (UMC and its subsidiaries HJ, USCXM, Wavetek and USJC).

2.2.1 Strengthen Customer Communication

Multiple Communication Channels

UMC is committed to achieving customer satisfaction as its mission and prioritizes customer-oriented products and services. The Company's MyUMC, MyHJTC (reserved for customers of HJ), and MyUSC (reserved for customers of USCXM) online service platforms provide customers with complete and real-time supply chain information, including production status of orders, shipping dates, and product quality data. These service platforms are accessed and utilized over 500,000 times every year.

The Voice of Customer (VOC) instant online feedback system allows customers to make requests, comments, or suggestions for UMC products or services. Designated personnel re-direct, process and respond to requests made through the VOC system, and customers can enquire the status of their products online 24/7.

UMC also holds quarterly business review meetings with key customers, and asks customers to provide scorecards to enable the Company to better understand customer requirements and satisfaction. In 2023, UMC held 43 quarterly business reviews with 17 customers.

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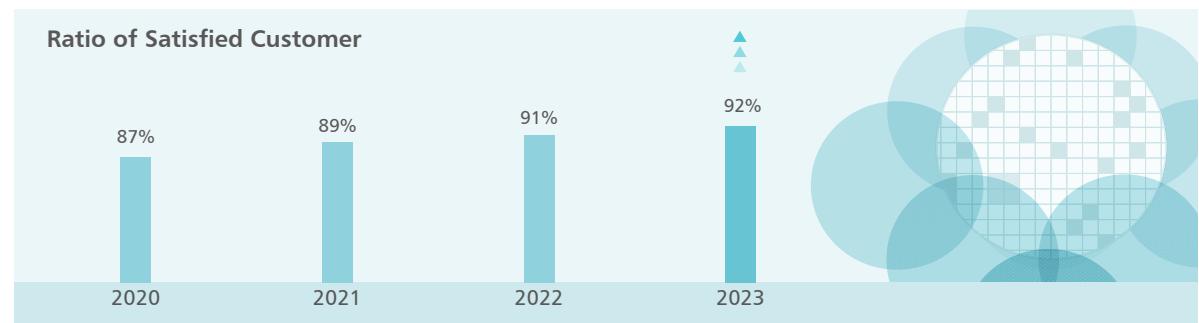
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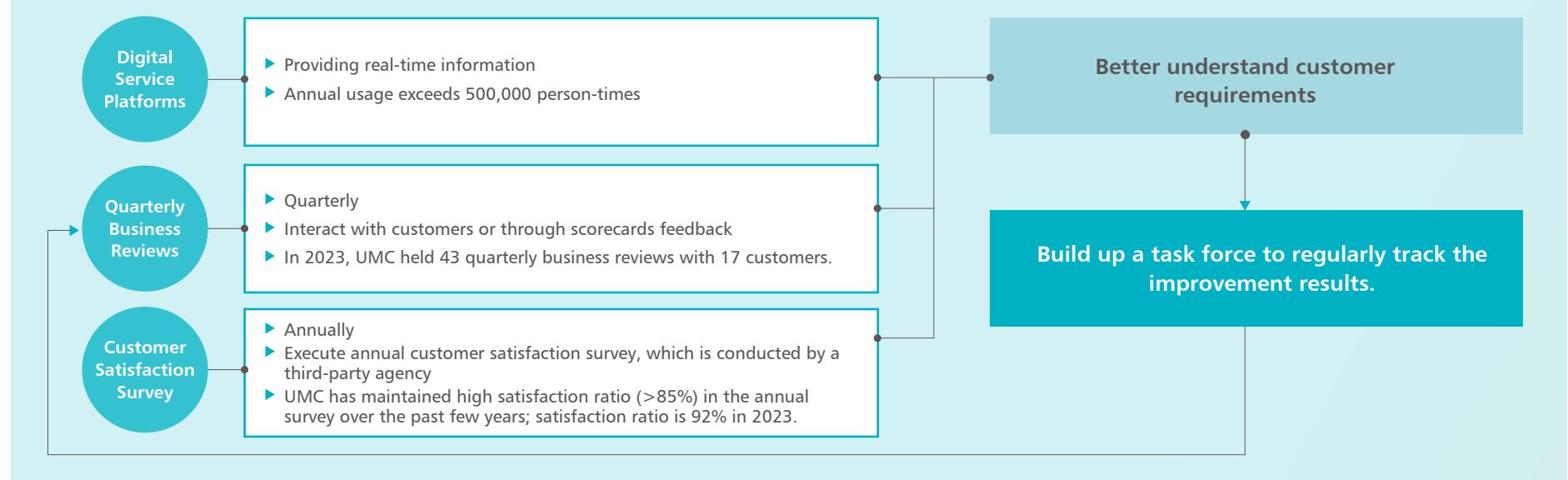
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Customer Satisfaction Improvement

UMC executes annual customer satisfaction survey, which is conducted by a third-party agency and administered to customers contributing more than 75% of UMC's overall revenue. The survey collects customer feedback on six key pillars, including strategy and partnership, technology, quality, manufacturing and yield, sales support and customer service, and design support. UMC has maintained high satisfaction ratio (>85%) in the annual survey over the past few years.



Digital Service Platforms Providing Real-Time Information



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2.2.2 Continuous Quality Improvement and Innovation

Working with customers to become a leader in specialty processes

Total Quality Management (TQM) is the quality management philosophy of UMC, and continuous improvement is the foundation of TQM. To provide customers with timely and high-quality products and services, employees are encouraged to strive for continuous improvement in quality, flow, process technology, and after-sales engineering services. In recent years, continuous improvement activities have focused on innovative development and rapid mass production of specialty processes as the Company focuses on becoming a specialty process technology leader.

Actively Promoting Digital Transformation and Green Production

UMC has been actively promoting digital transformation and green production in recent years. From policy formulation to implementation in various continuous improvement activities, from operational management to production manufacturing, all divisions have actively translated their thoughts into actions. This is particularly evident in the improvement of competitiveness in R&D, quality, capacity, efficiency, and cost of specialty process products. Especially in the aspect of green production combined with AI tools, significant breakthroughs have been achieved. Through AI algorithms, big data analysis, and Industry 4.0 techniques, UMC has achieved precise usage of production chemicals, reducing waste while maintaining purposeful use. This not only effectively reduces production costs, enhances production efficiency and capacity, but also significantly reduces carbon emissions, balancing environmental protection and quality stability. The achievements have been highly recognized by the Taiwan Continuous Improvement Awards (TCIA), winning the Golden Tower Award, and receiving media interviews. The company-wide improvement activities in 2023 are expected to jointly create financial benefits exceeding NT\$7.3 billion for UMC.

Customer Orientation and Creating a Win-win Situation

UMC's business philosophy is based on enterprise sustainability, providing customers with stable and innovative semiconductor manufacturing and services to contribute to global economic development. In addition to the development of specialty process technology, UMC leverages digital transformation and smart manufacturing to improve efficiency, as well as encourages a culture of continuous improvement. In the future, UMC will continue to instill the spirit of innovation and advancement in the quality culture and mindset of all employees, refine relevant quality management systems and techniques, comprehensively enhance organizational development and innovation capabilities, and to collaborate with customers to create win-win competitive advantages.

Winning Six Gold Medals in the TCIA Competition

The culture of continuous improvement not only trains employees in systematic thinking and the utilization of science-based techniques to resolve issues, but also expands to teamwork. All divisions have demonstrated active and continuous improvement in areas such as product development, quality enhancement, efficiency, and capacity expansions. In the 2023 Taiwan Continuous Improvement Awards (TCIA) competition organized by the Corporate Synergy Development Center entrusted by the Ministry of Economic Affairs, UMC won 6 gold medals and once again shone brightly, achieving excellent results for 20 consecutive years. A total of 188 teams from 107 companies participated in this competition, and all six teams from UMC won 6 gold medals, fully demonstrating UMC's commitment to promoting core business and integrating sustainable development. UMC's determinations and achievements were highly recognized by the judges and organizers.

Fab/Division	Circle	Topic	Award
Fab 12A	Cyclone Circle	Improving accuracy and efficiency in detecting weaknesses in graphic design - seizing the market share advantage of high-end products	Gold
	Top Speed Circle	Leading the Wi-Fi 6 market race - a powerful engine for the development and production of cutting-edge chips	Gold
	Protection Circle	Great breakthrough in production capacity of metal gate deposition process	Gold
Fab 12i	Carbonolysis Circle	Waste reduction campaign - reducing the use of chemicals	Gold
PED	Ice Breaker Circle	Creating a new platform for high-speed RF chips	Gold
	Collaboration Circle	Establishing 3rd-generation semiconductor gallium nitride fault analysis capabilities	Gold

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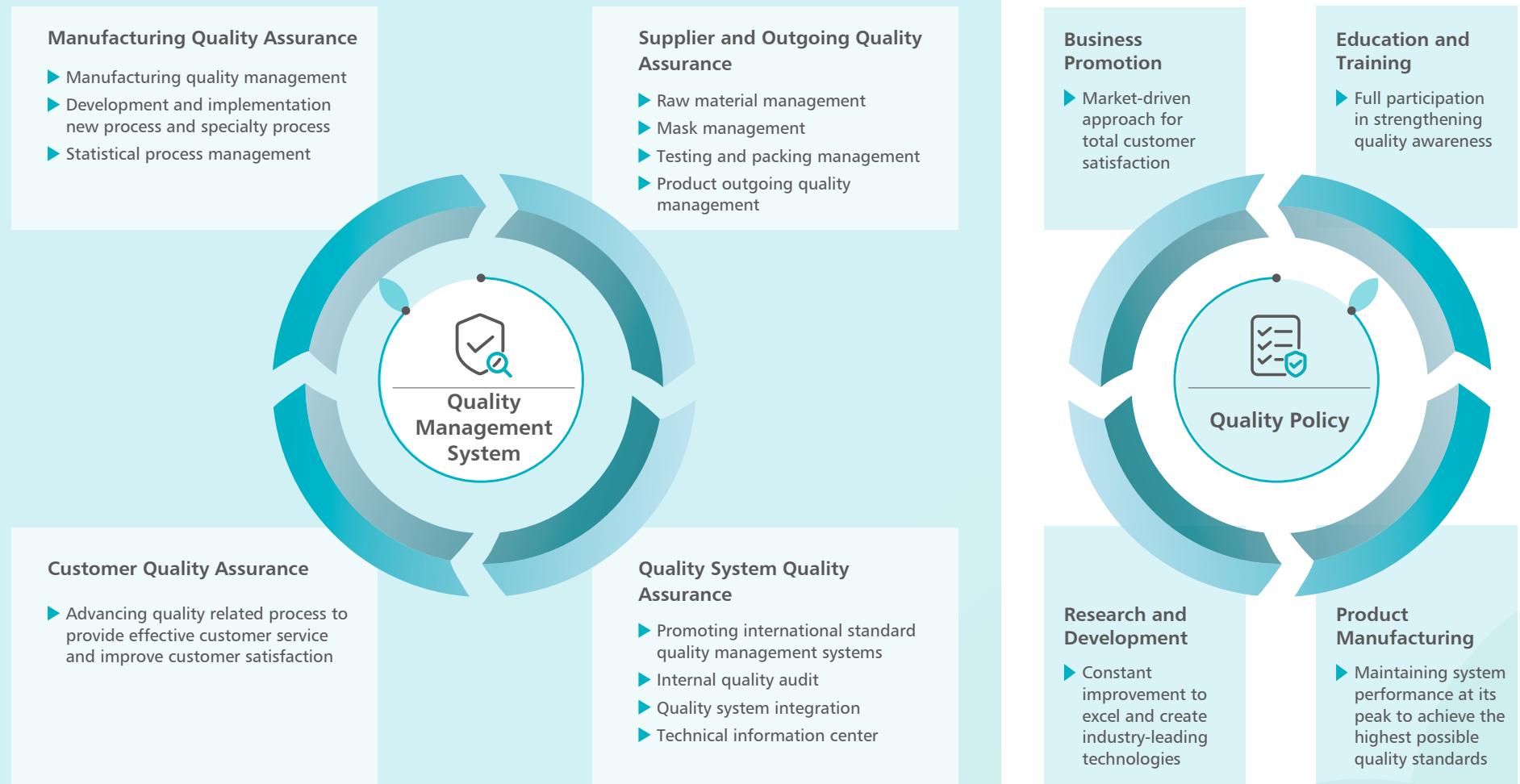
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Quality Management System

UMC Group is a leader in the global semiconductor wafer industry. The Company has established a rigorous quality management system based on quality management system (ISO 9001) and the global automotive industry quality management system (IATF 16949) to ensure quality for customers. In response to changes in the market environment and the advancement of various technologies, UMC Group follows the PDCA (Plan-Do-Check-Act) method for continuous improvement, enabling the Company to provide high-quality wafer manufacturing services, and to develop a customer-oriented quality management system. UMC has passed the third-party ISO 9001:2015 and IATF 16949:2016 verifications every year, and will continue to strive for improvement in product quality.



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2.3 Product Responsibility

2.3.1 Hazardous Substance Management

2.3.2 Product Environmental Impact Assessment



Material Topic

Product Responsibility and Lifecycle Assessment

Hazardous Substances Free Policy



Environmental Protection Policy



In accordance with GRI Standards (2021) for identifying impacts of sustainability issues, management actions in response to these impacts and processes used to track the effectiveness of the actions are listed in the table below:

Negative impact ▶ Product responsibility mismanagement

	Management Actions	Processes Used to Track the Effectiveness of Actions
	<ul style="list-style-type: none"> ▶ Establish an interdivisional Hazardous Substance Management Committee, and establish a hazardous substance management system, a hazardous substance-free management program, and implement a non-hazardous substance management from the source to the manufacturing process ▶ Simplify procedures and conserve materials as much as possible when designing processes, and develop green products with high performance and low power consumption ▶ Develop green chemicals and carry out hazardous substance substitution programs to proactively replace harmful chemicals at the source ▶ Establish raw material green procurement procedures and new-material assessment systems; incorporate hazardous substance control into Material Receiving Inspection Procedures; no substance shall be released if there is a concern about hazards ▶ In addition to following all applicable laws and standards, conduct self-evaluation according to even stricter standards and prioritize replacing hazardous substances ▶ Conduct regular assessments of "Product Carbon/Water Footprints" and "Product Lifecycle Assessment" to understand their environmental impact and effectively improve the production process 	<ul style="list-style-type: none"> ▶ Conduct third-party verification annually: QC 080000, IATF 16949 ▶ Regularly test the content of hazardous substances in products in independent laboratories to ensure that products meet international regulations and customer requirements for controlling hazardous substances ▶ Establish hazardous material replacement plans and set up corresponding objectives. Review progress of implementation on a quarterly basis ▶ Regularly conduct the inventory of "Product Carbon/Water Footprints" and "Product Lifecycle Assessment"

Future Goals	2023	2024	2025	2030
	Item	Performance	Goal	
No customer complaints, product scrap and recalls due to violations of hazardous substance management.	Achieved	On track	On track	On track

Scope: UMC Group (UMC and its subsidiaries HJ, USCXM, Wavetek, and USJC)

UMC is committed to providing products that meet customer demands and are competitive in the market. As a member of the global community, UMC values resources and strives to reduce the impact of its products on the environment and resource consumption. By obtaining green factory certification for clean production, developing replacements for hazardous substances, and reducing the environmental impact of products, UMC aims to lead responsible production efforts in the semiconductor industry.

Choice of raw materials or components	Product production and manufacturing	Distribution, storage and transportation	Use phase-operation and servicing/maintenance	End of life management
<ul style="list-style-type: none"> ▶ Promote the reuse of raw materials in the production process, and independently develop green chemicals to promote chemicals that are free of harmful substances and recyclable 	<ul style="list-style-type: none"> ▶ Promote clean production, reduce the use of hazardous substances. 	<ul style="list-style-type: none"> ▶ Reuse the package materials from raw materials and some products in order to reduce the demand for such materials and the generation of waste ▶ Considering the location of customers and the amount of products that can be transported by available carriers, UMC adopts common-route delivery rather than frequent, small and un-routine delivery modes 	<ul style="list-style-type: none"> ▶ Develop advanced process technologies that are eco-friendly and consume less power. 	<ul style="list-style-type: none"> ▶ To facilitate easy recycling and disposal, it is crucial to maintain uniformity in the composition of ICs and products, while avoiding the use of composite materials

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2.3.1 Hazardous Substance Management

UMC implements the hazardous substance management system QC 080000 to ensure that products comply with the European Union's requirements for restricted substances in electronic products (such as EU RoHS) and global chemical control regulations. UMC also provides customers with green products to meet their needs and further expand the market for green products. UMC has also established a cross-division Hazardous Substances Process Management Committee (HSPM committee) to improve the efficiency of green product management.

Topic	Best Response
Monitor and management of controversial material	Hazardous Substances Process Management Committee established in 2006
Plan for elimination of controversial material	Review the usage status in processes and develop plan for elimination or replacement of controversial material

Hazardous Substance Free Policy

UMC established the Hazardous Substances Free Policy to avoid product scrapping or customer complaints caused by the violation of hazardous substance-related laws and regulations, as well as the requirements of customers for controlling hazardous substances. On the other hand, by raising the awareness of all employees, UMC provides products that comply with regulations and customer demands through the control and improvement of design and production, fulfilling its corporate social responsibility of protecting the environment as well as public health and safety.



Management



Response to the International Hazardous Substance Management Requirements

Control Items	Implementation in UMC
EU Restriction of the Use of Certain Hazardous substances in Electrical and Electronic Equipment Directives (EU RoHS)	Able to comply with the requirements
Halogen-free Requirement	Able to comply with the requirements
EU Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals. (EU REACH)	Able to comply with the requirements
EU Waste of electrical and electronic equipment (WEEE)	<ul style="list-style-type: none"> ▶ These regulations do not directly apply to UMC as the Company manufactures semiconductor chips which are not end products. ▶ The end product dealer is the one responsible for recycling end products containing semiconductor components which are discarded as waste after use.
Persistent Organic Pollutants, POPs	<ul style="list-style-type: none"> ▶ UMC led the industry to achieve the overall replacement of PFOS, PFOA and PFOA-related chemicals. ▶ Since 2018, UMC began to pay attention to PFBS to keep up with international environmental protection regulations, and to collect data on PFBS-related raw materials and alternative chemicals.
IEC 62474 Declarable Substance List	Based on the calculation of the total sales amount of products, the percentage of non-compliance with IEC62474 is 0%. UMC fully complies with the requirements of the IEC 62474 Declarable Substance List.

Note: In response to domestic and foreign regulations, UMC regularly updates its hazardous substance management regulations, which cover the substances listed in IEC62474 that require reporting.

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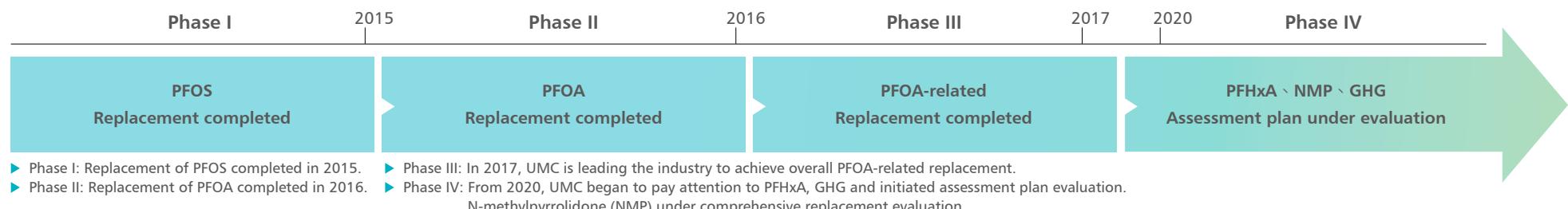
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Hazardous Substances Replacement Program

UMC Group has long been paying attention to the development trends of international environmental protection regulations. During the drafting stage of relevant regulations, UMC proactively made arrangements to launch the "assessment plan" for hazardous substances. After the relevant regulations are finalized and announced, the "replacement plan" will be implemented immediately in fabs.

 Assessment Plan	1. Set up a review/filter mechanism at the early stage of new material evaluation to prohibit the use of hazardous substances listed in the announcement. 2. Take inventory of usage in fabs. 3. Request suppliers to provide alternative products or work together to develop alternatives.	 Replacement Plan	1. Ask fabs to arrange experiments to collect engineering data. 2. Complete the certification process on products. 3. Modify the inventory preparation plan and complete the ban as early as possible.
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Perfluoroalkyl Substances (PFAS) Management

Per/Poly fluoroalkyl substances (PFAS) are a class of chemically stable synthetic substances that are waterproof, oil-proof, and have low friction. They are widely used in the manufacturing process of many products. However, because PFAS does not easily decompose in the environment and may cause harm to the human body, more and more countries and regions have begun to regulate it.

With the expansion of the scope of international control of PFAS substances, such as the recent PFAS restriction proposal proposed by the European Chemicals Agency (ECHA), UMC Group began to make advance arrangements during the proposal stage, and successively took stock of the materials used in the manufacturing process. Existing materials use supplier questionnaires to understand whether their raw materials contain PFAS, and discuss with suppliers the possibility of replacing related substances to respond in advance.

For materials that are difficult to replace (such as photoresist), suppliers are required to provide proof and seek exemptions through the ECHA platform. For substitutable materials, suppliers are required to provide substitutes and successive evaluations of substitutions.

Through the review mechanism of new material assessment, UMC Group has blocked the source of input materials and prohibited the new introduction of process raw materials containing PFAS above C5 (inclusive) to reduce the possibility of using PFAS banned substances.

Currently, only one photoresist designated for use in certain customer products of subsidiary USJC contains PFHxA. No chemicals containing PFOS, PFOA, PFOA-related substances, PFHxA, and PFHxS are used in other fab processes. The photoresist supplier will provide a PFHxA-free replacement plan, with the goal of completing the replacement by 2028 and achieving a complete ban on PFHxA.

In the future, UMC Group will continue to pay attention to the development trends of international regulations and participate in discussions at domestic and foreign organizations to respond to relevant regulatory impacts in advance, ensure the stability of operations and production, and implement the sustainable strategic direction of minimizing environmental footprints.

NMP Replacement Plan

In addition to extending the acid replacement cycle of N-methylpyrrolidone (NMP) and simplifying the process to reduce the usage of NMP, UMC Group will launch a complete replacement plan for NMP in 2020 and successfully develop a weakly acidic solvent at the end of 2022. Solvents can replace the cleaning function of NMP.

Each 8-inch fab of UMC Group has taken the lead in completing the electrical performance, yield and reliability verification of various products, and will gradually start replacement operations starting in 2023. In 2023, the use of NMP chemical solvents is reduced by 2 tonnes, and the target is to reduce the use of NMP chemical solvents by 10 tonnes in 2024. UMC Fab 12A is currently evaluating its feasibility, and aims to complete the electrical, yield and reliability verification of various products by the end of 2025, and begin import replacement operations.

GHG Replacement Action

In 2023, UMC is leading the industry in developing a back-end process that is expected to reduce the greenhouse gas, nitrous oxide (N₂O), usage by 459 tonnes of carbon dioxide equivalent per year, and is planned to be applied to various 22nm process platforms and expanded to mature processes to contribute to global climate action.

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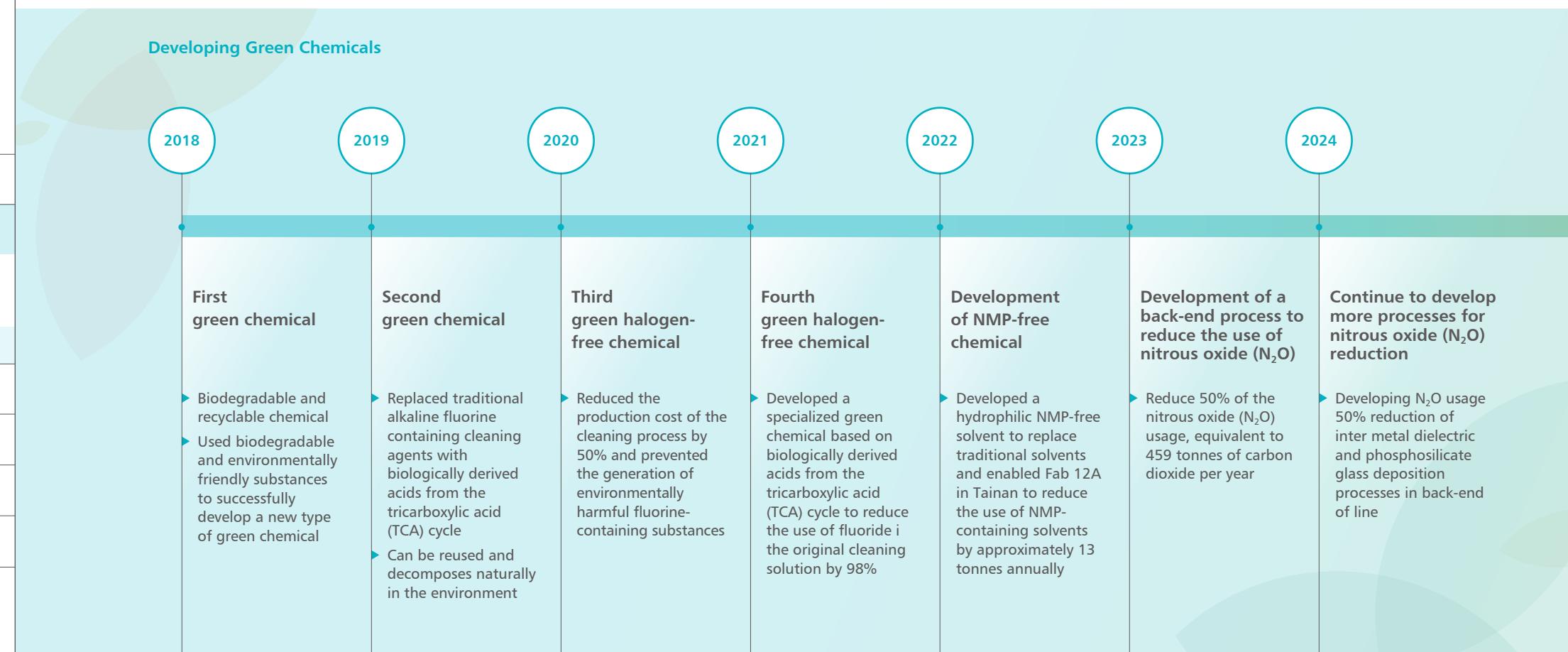
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Hazardous Substance Reduction

Adhering to the concept of environmental protection and caring for the earth, and in response to the implementation of various hazardous substance substitution plans, UMC Group is committed to developing and promoting eco-friendly reuse of chemicals in various semiconductor manufacturing processes, and has achieved considerable results. In the future, UMC will promote the application of newly developed green chemicals in mature processes to replace chemicals used in existing cleaning processes, and implement green and eco-friendly processes to reduce the environmental impact of semiconductor manufacturing. During 2018 and 2023, UMC completes the development of one green chemical or process annually.

Looking forward, UMC will continue to develop new generations of green process research and development plans, promote the advancement of green process technology, and achieve the goal of fulfilling product production responsibilities and minimizing environmental impact through source replacement and process simplification.



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2.3.2 Product Environmental Impact Assessment

UMC is committed to maximizing production efficiency while also minimizing environmental impact. To achieve this goal, the Company employs various environmental assessment tools to assist in strategy formulation and implementing measures.

2005	Implemented Life Cycle Assessment (LCA) in all fabs
2009	Delivered the world's first wafer with carbon footprint verification
2010	Led the industry to complete water footprint verification for 200mm (8-inch) and 300mm (12-inch) wafer fabs
2011	Commenced annual and comprehensive carbon footprint check throughout the Company and conducted verifications on selected fabs
2015	Led the industry in passing the ISO 14046:2014 Water Footprint Assessments verification of UMC's Taiwan fabs in cooperation with suppliers

Product Lifecycle Assessment

Since 2005, UMC has implemented lifecycle assessment in all its fabs, which covers from "cradle to gate" (UMC shipment) and assesses items including energy consumption, raw materials usage, and emissions. The Company systematically and constantly monitors the environmental impact of its products through the inventory results of supply chain and manufacture process. To assist with this effort, UMC utilizes the Simapro software to map out the environmental impact assessment.

The results of the 2023 assessment revealed that the impact of "Climate Change" and "Respiratory Organics" is greater in the production stage than that in the raw material stage.



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Results of 2023 Environmental Impact Assessment

Representative fab: Fab 8F

Assessment target product: 200mm (8-inch) wafer

Raw material stage

Production stage



Product Carbon Footprint

As an upstream manufacturer in the semiconductor industry, providing customers with high-quality and eco-friendly products that comply with environmental regulations has always been one of UMC's most regarded business values. Therefore, the Company not only conducts inventory and verification of greenhouse gas (GHG) emissions in its operations, but also implements a comprehensive GHG management plan. In addition, UMC proactively promotes the product carbon footprint inventory program, following ISO 14067:2018 to complete the carbon footprint inventory of wafer manufactured in all UMC fabs, and obtaining third-party verification to identify key stages in the product lifecycle with potential for GHG reduction.

For more information on UMC's GHG achievements, please refer to Chapter 3.1 Climate Action.

Product Water Footprint

Affected by climate change and extreme weather, global water resources have become one of the most discussed topics. Water resources are critical and essential in semiconductor manufacturing processes. Following the Business Water Footprint Accounting standards developed by international non-profit organization Water Footprint Network, UMC led the industry in completing the water footprint verification of its 8-inch and 12-inch fabs in 2010. In 2023, UMC carried out product water footprint inventory, targeting the 8-inch wafers produced by Fab 8F and Fab 8E in 2022 for verification, and obtain the ISO 14046:2014 certificate.

For more water-saving measures and results, please refer to Chapter 3.3 Water Resources Management.

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3 Implementing Green Operations

Actions are urgently needed to address climate change. UMC is committed to minimizing the environmental impact of its operations, and has set environmental goals/indicators for carbon emissions, water, and waste as part of the Company's climate change strategy. Over the years, UMC has optimized energy/resources utilization efficiency, as well as introduced eco-friendly designs to make the Company's operations more sustainable, prospering together with the environment.

Important Stakeholders ▶



Government



Suppliers



Community

SDGs ▶



6 CLEAN WA
ND SANIT



7 AFFORDABLE AND
CLEAN ENERGY



9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



12 RESPONSIBLE CONSUMPTION
AND PRODUCTION



13 CLIMATE ACTION

Performance Highlights 2023

Earned top rating in CDP's Climate Change and Water Security for Two Consecutive Years

The only semiconductor company in the world

Water recycling rate for manufacturing process



UMC Group's Scope 1 and Scope 2 GHG emissions presented an absolute reduction (the base year 2020)



Reclaimed water usage rate



Ratio of UMC Group's renewable energy usage



Energy saving achievement of the year



Overall waste recycling rate



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UMC follows the environmental policy signed by the chairman and is committed to environmental protection in the long term. UMC expects to create a green operating model of "maximizing production efficiency and minimizing environmental impact" in order to achieve a harmonious win-win situation between the economy and the environment. The ESG Steering Committee, composed of the management team, supervises and manages the Company's environmental protection work. It regularly reports to the highest governance unit of the Company's major environmental strategy, the board of directors, including management and implementation results of climate change, circular economy, biodiversity, and other aspects. The Corporate Sustainability Committee under its jurisdiction is responsible for integrating and promoting the Company's environmental protection work on energy conservation, carbon reduction, water conservation, waste reduction, and other aspects. It continuously improves environmental performance and reduces environmental impact. For more information on the detailed organization and operation of the sustainability-related committees, please refer to the "Sustainable Governance" section.

In 2010, the Company launched the three-phase Green Action Plan, which has improved energy saving, water conversation, waste reduction, and greenhouse gas reduction indicators through source reduction and enhanced utilization. At the end of 2020, the Company's president revealed the fourth phase of the Plan, Green 2025, which aims to achieve 15% energy saving, 15% water saving, 25% waste reduction, and 65% reduction in fluorinated greenhouse gas (F-GHG) emissions intensity. In 2021, based on the latest sustainability trends and in combination with the Company's development direction, aforementioned goals are upgraded to 25% energy saving, 25% water saving, and 35% waste reduction. Meanwhile, these goals are also involved in UMC's Sustainability Strategy and Blueprint to track the progress and are quarterly monitored by the highest unit of the Company's ESG decision-making – the ESG Steering Committee to ensure the achievement of environmental objectives.

[Environmental Protection Policy](#) 

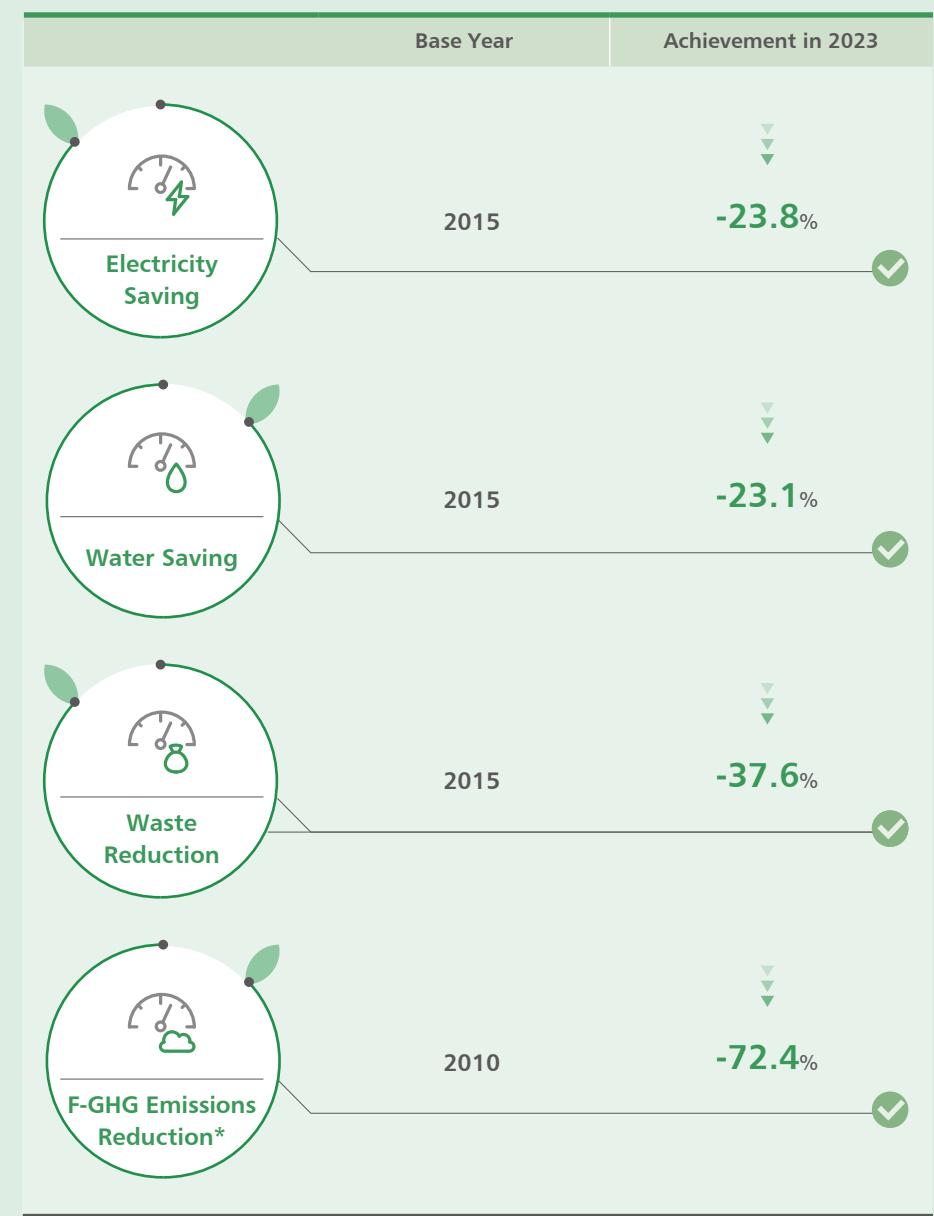


Improve the utilization efficiency of energy and resources, while minimize the impact of using energy and resources on the environment

Project of Each Phase

- ▶ **Phase 1: Project 333 Reduction (2010~2012)**  Goal Achieved
- ▶ **Phase 2: Project 369⁺ Reduction (2013~2015)**  Goal Achieved
- ▶ **Phase 3: Green 2020 (2016~2020)**  Goal Achieved
- ▶ **Phase 4: Green 2025 (2021~2025)**  Ongoing

Progress of Green 2025



Note: 1. Scope: UMC Group (UMC and its subsidiaries HJ, USCXM, Wavetek, and USJC); With * remark is UMC (the parent company only).

2. Calculation method: Please refer to the explanation in each chapter for details.

UMC Group Implementation and Performance in 2023

Item	 Electricity Saving	 Water Saving	 Waste Reduction	 F-GHG Emissions Reduction
Main Reduction Measure	<ul style="list-style-type: none"> ► Improvement on energy efficiency ► Improvement on air conditioning system ► Improvement on lighting system 	<ul style="list-style-type: none"> ► Water saving from production machine ► Increase in wastewater recovery ► Improvement in pure water production ► Reduce Municipal water replenishment 	<ul style="list-style-type: none"> ► Reduction of waste sulfuric acid and waste solvent ► Reducing the water content of waste IPA and extend the lifetime of solvent ► Waste recycle and reuse 	<ul style="list-style-type: none"> ► Installing high efficiency F-GHGs abatement systems
Environmental Benefit	<ul style="list-style-type: none"> ► 235,453 MWh of additional electricity savings ► Around 120,000 tonnes of CO₂e reduction 	<ul style="list-style-type: none"> ► 825,000 tonnes of new water savings 	<ul style="list-style-type: none"> ► 2,411 tonnes of additional waste reduction 	<ul style="list-style-type: none"> ► 620,000 tonnes CO₂e of F-GHG emissions reduction (UMC)
Reduction Performance	<p>Economic Benefit</p> <ul style="list-style-type: none"> ► Savings of NT\$740 million 		<ul style="list-style-type: none"> ► Savings of NT\$7.28 million 	<ul style="list-style-type: none"> ► Taking the example of Fab 12i located in Singapore where carbon tax is levied, the newly installed reduction equipment saved more than NT\$3 million in carbon tax costs.

Note: The statistics on water conservation are the savings achieved in the year of implementation of water-saving measures from 2015 to present. The calculation method adopts an estimated value.

UMC is committed to sustainability and demonstrates determination to minimize environmental impact through alliances with green financing partners

Green Bond

UMC issued green bonds for the first time in 2021. The funds raised are designated for expenditures related to environmental protection, such as the development of renewable energy systems, the improvement of equipment efficiency, and emissions control of manufacturing processes. These projects will effectively reduce carbon emissions and waste generation, and lessening the environmental burden of the Company's operations. The interests from the green bonds will go to the "Special Fund for Environmental Protection" established by the Company in 2013. The fund supports initiatives by UMC related to environmental protection and social welfare, enabling the Company to give back to the society and the planet through meaningful actions.

Sustainability Linked Loans

UMC signed sustainability linked loan agreements with CTBC. The loan structure has been reviewed by financial institutions and followed the "Sustainability-Linked Loan Principles" formulated by the International Capital Market Association (ICMA), which is in line with several indicative key performance targets of UMC for sustainability. Through collaboration with financial institutions, the Company strives to minimize its environmental impact and strives towards its sustainability vision

Item	2023 Goal	Performance
GHG Emissions Management	35% reduction for GHG emission per unit product compared to the base year 2010	50.3%

Note: 1. Includes direct emission (Scope 1) and indirect emission from purchased energy (Scope 2)

2. Scope: UMC Group (UMC and its subsidiaries HJ, USCXM, Wavetek, and USJC)

3.1 Climate Action

3.1.1 Net Zero Emissions Commitment and Targets 3.1.2 GHG Emissions Management 3.1.3 GHG Emissions Reduction



Material Topic

Climate Strategy and Action

UMC Climate Change Policy ▶



In accordance with GRI Standards (2021) for identifying impacts of sustainability issues, management actions in response to these impacts and processes used to track the effectiveness of the actions are listed in the table below:

Positive Impact ▶ Climate-change-related opportunities

Management Actions	Processes Used to Track the Effectiveness of Actions
<ul style="list-style-type: none"> ▶ Promote the “3 Resolutions to Achieve Net Zero”: Voluntary carbon emissions reductions in manufacturing processes; increase use of renewable energy; investment and participate in carbon offset projects. ▶ Join organizations such as the RE100 initiative, Association of Taiwan Net Zero Emissions, and Climate Partnership to stay on top of global climate issue development trends. ▶ Promote a sustainable supply chain, and reinforce supply chain resilience through joint carbon-reduction action. <ul style="list-style-type: none"> ○ For details on the sustainable supply chain, please refer to Chapter 1.3 Building Sustainable Supply Chain. 	<ul style="list-style-type: none"> ▶ Report the progress of performance by the “The Environmental Management and Planning Group” to the Corporate Sustainability Committee for review quarterly. ▶ Regularly participate in association meetings; engage in exchange with industrial/governmental/academia/research organizations.

Negative Impact ▶ Climate actions failure

Management Actions	Processes Used to Track the Effectiveness of Actions
<ul style="list-style-type: none"> ▶ Conduct annual ISO 14064-1 GHG inventories and promote ISO 14067 product carbon footprint inventories in all fabs in order to identify emissions hotspots and areas with reduction potential. ▶ Sign and support the Task Force on Climate-Related Financial Disclosures (TCFD) initiative; conduct annual TCFD project on risks and opportunities arising from climate change, and from this adopt further management and response measures. ▶ Set science-based targets, and practically plan and implement carbon reduction pathways via official approval. In addition, set GHG reduction and renewable energy utilization indicators, and conduct quarterly reviews. ▶ Through annual Sustainability Reports, externally disclose response measures and progress toward objectives to stakeholders. 	<ul style="list-style-type: none"> ▶ Annual third-party certifications: ISO 14064, ISO 14067, and TCFD. ▶ Response to stakeholders: Respond to customers'/investors' questionnaire surveys on climate issues. ▶ Participate in international CDP Climate Project for transparency.

Highlights of the year

▶ Recognized in CDP's "A List" for environmental transparency and action on Climate Change Project.

Sustainability Strategy and Blueprint	2023	2024	2025	2030
Item	Goal	Achievement	Goal	
Reduction of GHG emissions per unit product ^{Note2}	50%	50.3%	48%	55%
Absolute reduction of GHG emissions (base year 2020)				<ul style="list-style-type: none"> ▶ 42% (Scope 1+2) ▶ 25% (Scope 3)

Note: 1. Scope: UMC Group (UMC and its subsidiaries HJ, USCXM, Wavetek, and USJC)

2. With 2010 emissions scenario as the baseline

To better align with the path towards net zero emissions, UMC has raised its 2030 target based on its SBTi-approved science-based reduction targets (well below 2°C) and in accordance with SBTi Net-Zero Standard. UMC has submitted its net zero target commitment to SBTi in 2023 and plans to undergo official verification within two years. The original target was to reduce Scope 1 and 2 carbon emissions by 25% below 2020 levels and to reduce Scope 3 carbon emissions by 12.3% before 2030.

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3.1.1 Net Zero Emissions Commitment and Targets

UMC is a pioneer in carbon reduction among companies in Taiwan, initiating a program back in 1999 to decrease the use of fluorinated greenhouse gases (F-GHGs). In 2021, UMC took its climate commitment to the next level by pledging to achieve net zero emissions by 2050.

- ⦿ For details on the risks and opportunities of climate change, please refer to Chapter 1.2.5 Managing Climate Risks and Opportunities.
- ⦿ For details on the supply chain carbon reduction, please refer to Chapter 1.3 Building Sustainable Supply Chain.

Three Resolutions to Achieve Net Zero

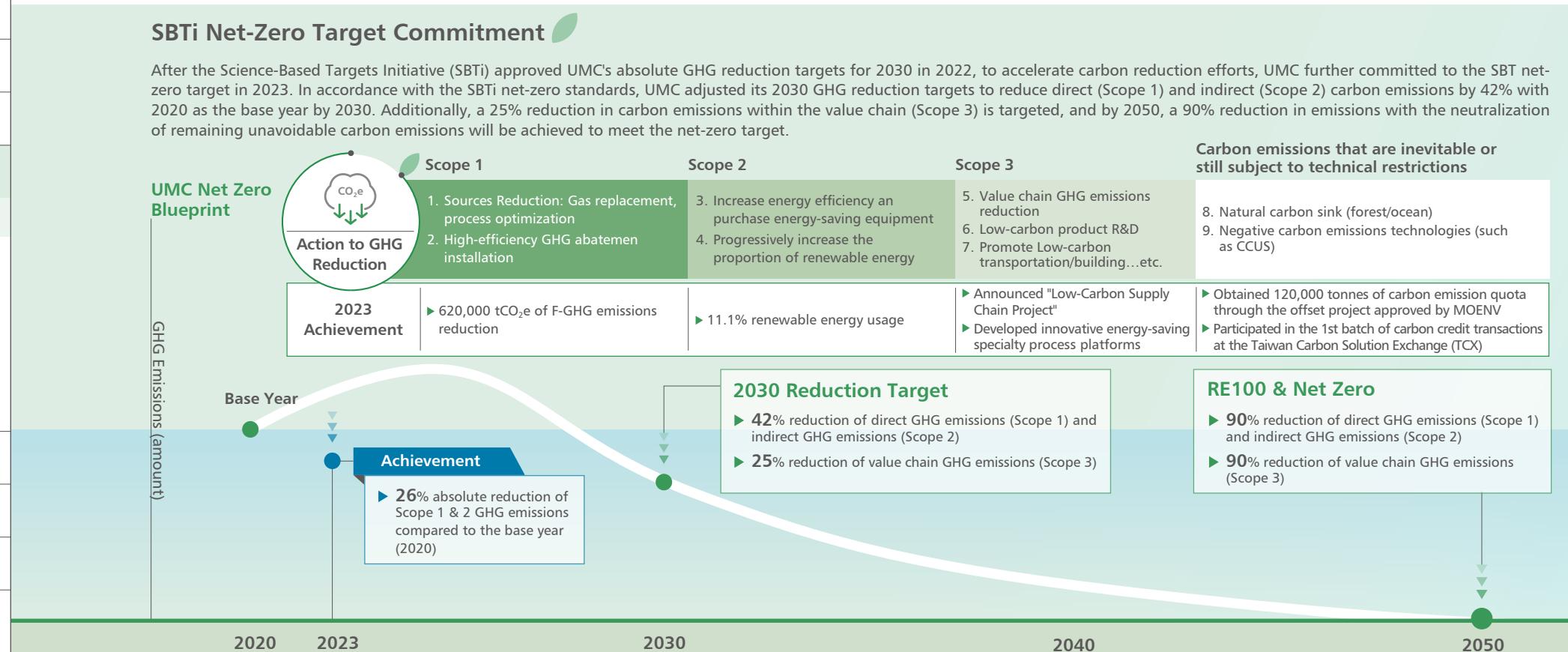
Over the past two decades, UMC has carried out several programs for carbon reduction. For the next 30 years, UMC will continue to strive for its Science-Based Targets (SBTs) by enhancing its process technologies, increasing the percentage of renewable energy usage, and investing in emerging carbon reduction measures.

- 1 Persistent and proactive carbon emissions reduction:** Through continually developing advanced foundry process technologies, enhancing productivity and improving energy efficiency, UMC can minimize carbon emissions in both the manufacturing stage of wafers and usage of IC end products.
- 2 100% renewable energy:** Support the low-carbon energy transition with actual actions through joining international renewable energy initiative RE100 as a member and setting mid-/long-term goals to boost the usage of renewable energy.
- 3 Investment in net-zero technologies:** To offset carbon emissions that cannot be avoided, UMC will invest in net zero emissions technologies and participate in carbon offset projects.

In addition, UMC also participates in organizations such as Taiwan Climate Partnership, Association of Taiwan Net Zero Emissions, Taiwan Carbon Capture Storage, and Utilization Association, in hope that through the collaboration and exchange with academia-industry-government agencies, solutions can be found to reinforce the resources and actions required to cope with climate change and facilitate the implementation of net zero transition.

SBTi Net-Zero Target Commitment

After the Science-Based Targets Initiative (SBTi) approved UMC's absolute GHG reduction targets for 2030 in 2022, to accelerate carbon reduction efforts, UMC further committed to the SBT net-zero target in 2023. In accordance with the SBTi net-zero standards, UMC adjusted its 2030 GHG reduction targets to reduce direct (Scope 1) and indirect (Scope 2) carbon emissions by 42% with 2020 as the base year by 2030. Additionally, a 25% reduction in carbon emissions within the value chain (Scope 3) is targeted, and by 2050, a 90% reduction in emissions with the neutralization of remaining unavoidable carbon emissions will be achieved to meet the net-zero target.



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3.1.2 GHG Emissions Management

All UMC Group fabs have carried out GHG inventories for many years. We will continue to expand the scope of GHG management by initiating carbon emissions inventories in UMC Group's non-wafer foundry subsidiaries. Through this, carbon emissions hotspots can be controlled, and analysis can be carried out to develop carbon reduction countermeasures. In addition, through the introduction of internal carbon pricing mechanisms and establishing a carbon management platform, links between daily operations and carbon reduction actions can be strengthened, and GHG emissions can be continuously reduced.

For details on the related information of energy efficiency improvement and renewable energy utilization, please refer to Chapter 3.2 Energy Management

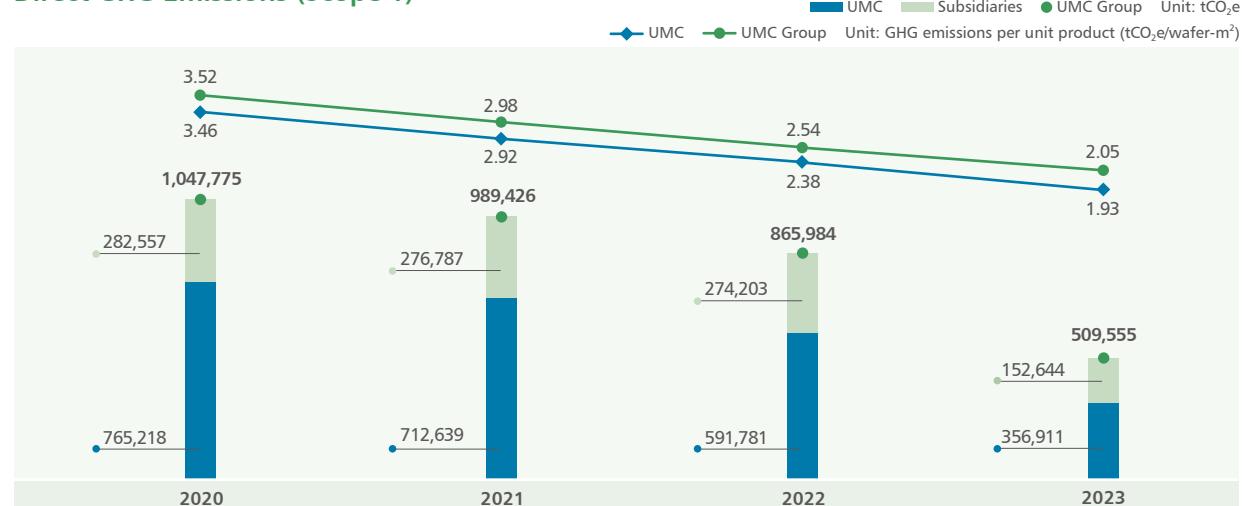
Greenhouse Gas Inventory

UMC established its GHG inventory standard mechanism in accordance with inventory guidelines defined by domestic and international organizations such as the ISO14064-1:2018, World Resources Institute's Greenhouse Gas Protocol and GHG Inventory Guidance in Taiwan. Since 2006, the Company has inventoried the GHG emissions of all fabs annually to verify the effectiveness of reduction measures. Furthermore, UMC's consolidated 27 subsidiaries all introduced the GHG inventory mechanism and conduct third-party verification to fully determine the status of GHG emissions.

In 2023, UMC Group's Scope 1 direct GHG emissions totaled 509,555 tCO₂e, and Scope 2 indirect GHG emissions amounted to 1,636,208 tCO₂e. The statistics above is calculated in accordance with ISO 14064-1: 2018 and the results had been verified by a third party. The emissions per unit product defined by the UMC Green 2025 indicator was 2.05 tCO₂e/wafer-m² and 6.58 tCO₂e/wafer-m², respectively for Scope 1 and Scope 2. The past four years have shown an ongoing reduction trend in UMC's per-unit product Scope 1 emissions. For per-unit product Scope 2 emissions, there was a slight increase in 2023 as compared with 2022, as a result of changes in production volume.

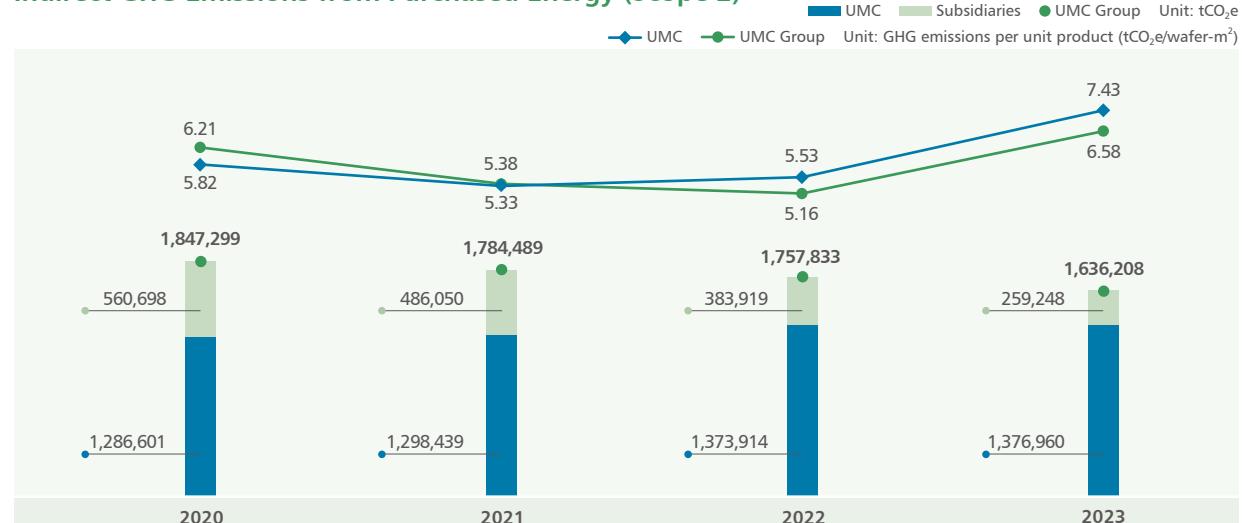
Note: After conducting an inventory, excluding the four foundry subsidiaries (HJ, USCXM, Wavetek, and USJC), other non-wafer foundry subsidiaries accounted for less than 5% of the total emissions reported in the consolidated financial statements, so based on materiality criteria, they are not included in the scope of disclosure.

Direct GHG Emissions (Scope 1)



Note: The approach for consolidating our GHG inventory is operational control. Global warming potentials (GWPs) used in the calculation is according to the definitions in the IPCC Fifth Assessment (IPCC AR5) (2014), and the GHG emissions is based on version 6.0.4 of the Ministry of Environment Greenhouse Gas Emissions Factor Management Table.

Indirect GHG Emissions from Purchased Energy (Scope 2)



Note: The approach for consolidating our GHG inventory is operational control. CO₂e emissions are estimated based on the latest local power factor available in the year.

(1) Taiwan: 0.495 kgCO₂e/KWh;

(2) Singapore: 0.406 kgCO₂e/KWh;

(3) China: 0.570 kgCO₂e/KWh;

(4) Japan: Mie 0.459 kgCO₂e/KWh, Yokohama 0.390 kgCO₂e/KWh, Nagoya 1.269 kgCO₂e/KWh

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To account for other indirect GHG emissions (Scope 3), UMC referred to carbon footprint calculation methods (ISO 14067: 2018 and PAS 2050) and technical documents provided by WRI and WBCSD to estimate the amount of Scope 3 GHG emissions from UMC's fabs in Taiwan and Singapore, which has passed third-party verification. In 2023, due to the decrease in emissions from items such as purchased goods and services and investments of subsidiaries, the Scope 3 GHG emissions in 2023 was 8.3% lower compared to emissions in 2022.

Other Indirect GHG Emissions (Scope 3)

Category	GHG Emissions (tCO ₂ e)
 Purchased goods and services	348,431
 Capital goods	529,617
 Fuel-and-energy-related activities	333,043
 Upstream transportation and distribution	236,245
 Waste generated in operations	9,915
 Business travel	2,140
 Employee commuting	10,298
 Upstream leased assets	0
 Downstream transportation and distribution	3,078
 Downstream leased assets	8,508
 Investments	411,892
Total Amount	1,893,167

Note: 1. Scope: UMC fabs in Taiwan and Singapore (the parent company only)

2. Global warming potentials (GWP_s) used in the calculation is according to the definitions in the IPCC Fifth Assessment (IPCC AR5) (2014), and the GHG emissions is based on version 6.0.4 of the Ministry of Environment Greenhouse Gas Emissions Factor Management Table, Taiwan Ministry of Environment Carbon Footprint Calculation Platform, Simapro 7.2.3 and ITRI DoITPro.

Carbon Management Mechanism

UMC has integrated carbon management into our operational strategies. This includes introducing internal carbon pricing mechanisms, a carbon management platform, mechanisms to link ESG performance with employee remuneration, and more. Through these measures, we seek breakthroughs in carbon reduction.

In response to global carbon pricing trends, UMC has determined our internal carbon prices by considering prices prevailing in global carbon markets, carbon prices stipulated in GHG regulations, and UMC's internal carbon reduction costs. These also serve as a reference for our carbon reduction management and planning. Through the carbon pricing mechanism, UMC takes advance response measures for internal/external carbon reduction pressures and risks arising from factors such as Singapore's carbon tax (UMC's Fab 12i is located in Singapore); Taiwan's future carbon fee levied on emission sources in accordance with the Climate Change Response Act; carbon emission supervision mechanisms being adopted by countries around the world; and requirements to increase the share of renewable energy utilization, as regulated by the Renewable Energy Development Act. UMC is also able, on a rolling basis, to assess the opportunities brought by the low-carbon transition, and adjust policies and programs through these mechanisms. By doing so, we develop forward-looking carbon reduction technologies and low-carbon investments such as substitutes for fluorinated gases in manufacturing processes, carbon capture/storage, etc.

In addition, information about the whole Group's emissions is systematically integrated through the carbon management platform, allowing us to keep tabs on carbon management information in real time. The platform also allows us to comprehensively supervise all the GHG reduction plans, including measures such as improving energy efficiency, purchasing energy-saving equipment, installing solar power generation systems, GHG reductions at raw material sources, installing high-efficiency GHG destruction devices, assessing low-carbon fuels/energy utilization, developing negative carbon emission technologies, etc. These actions ensure that reductions are in line with scheduled plans, and that we are reducing carbon emission impacts while enhancing operational competitiveness and advantages.

In order to encourage management, executive teams, and employees as a whole to achieve GHG reduction goals and improve energy and resource efficiency, major program objectives have been included within UMC's operating performance indicators. These serve as a basis for employee performance appraisals and bonuses, helping realize the spirit of accountability management. Since 2021, we have also established a new mechanism that links ESG performance with employee remuneration. Based on this, employees receive a certain proportion of additional bonuses if overall company target performance is achieved.

With stimuli from the aforementioned internal carbon pricing and other mechanisms, as well as planting sustainability deeply within UMC's culture, employees and subsidiaries are encouraged to work together to step by step realize UMC Group's net zero emission pathways and targets.

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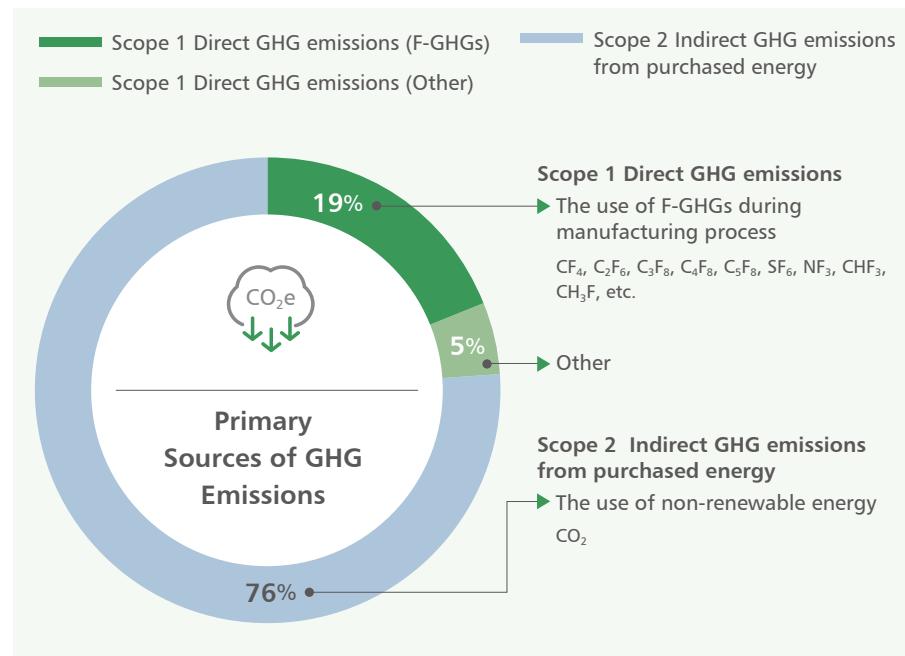
3.1.3 GHG Emissions Reduction

Through carbon footprint and GHG inventories, the Company learned that the main GHG sources are the fluorinated greenhouse gases (F-GHGs) used in the manufacturing process in Scope 1, and from purchased electricity in Scope 2. These emissions account for about 95% of UMC overall GHG emissions. Therefore, GHG reduction of both F-GHGs and purchased electricity have become the priority for UMC.

Through low-carbon production processes, UMC produces low carbon products with lower carbon footprints. All UMC facilities have implemented reduction plans, and all products use low-carbon processes. Additionally, UMC continues to develop low-power consumption products through the research and development of energy-saving innovative process platforms to provide customers with avoided emission products and services.

In 2023, based on actual production capacity, UMC Group's Scope 1 and Scope 2 greenhouse gas emissions presented an absolute reduction of 26% as compared to the base year (2020). Even under full capacity scenarios, a reduction of 12% is still achievable, demonstrating the Group's commitment to decarbonization regardless of capacity fluctuations, and making a tangible contribution to global greenhouse gas reduction.

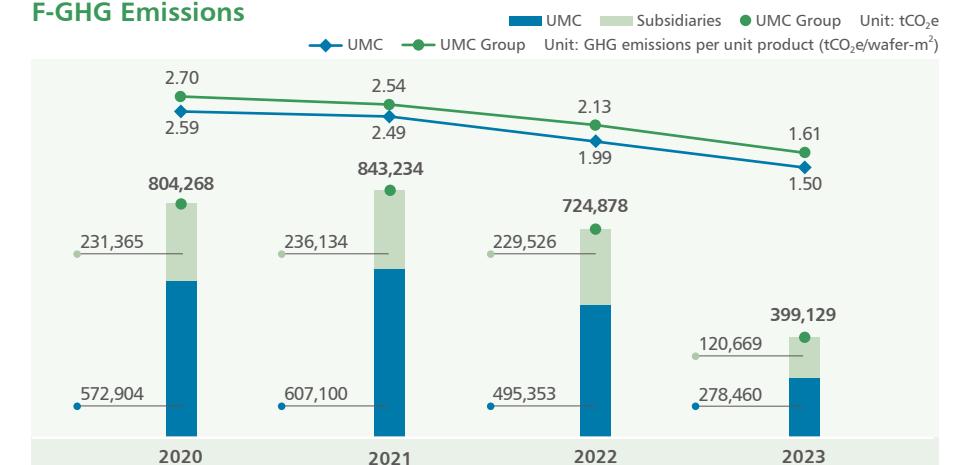
Note: For details on the related information of indirect GHG emissions from purchased electricity (Scope 2) or avoided emission products and services, please refer to related chapters: 3.2 Energy Management, 2.1 Innovation and Technology Development.



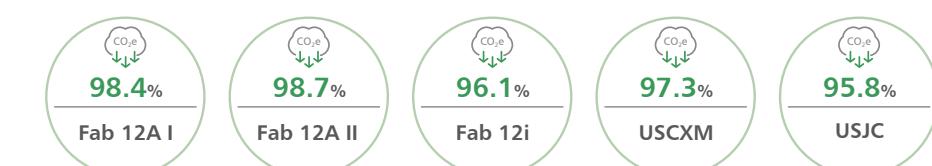
F-GHGs Reduction

In 2023, UMC Group's F-GHG emissions amounted to 399,129 tCO₂e, which was lower than the emissions in 2022. UMC Group has continually conducted reduction measures such as installing high performance local scrubbers for F-GHGs in all new equipment, and utilizing NF₃ gases in new CVD equipment to keep emission intensity in a downward trend. In addition, based on the Electronic Product Environmental Assessment Tool (EPEAT) 1680.1:2018 standards, jointly created by the US Environmental Protection Agency (EPA) and Institute of Electrical and Electronics Engineers (IEEE), the overall F-GHGs reduction rates achieved at all 12-inch wafer fabs of UMC and its subsidiaries were all higher than the standard threshold requirement of 75%.

F-GHG Emissions



F-GHGs Reduction Rates Achieved at 12-inch Waferfabs



Notes: 1. The reduction rates were calculated using the formulae in the Electronic Product Environmental Assessment Tool (EPEAT) 1680.1:2018 standards, jointly created by the US EPA and the Institute of Electrical and Electronics Engineers (IEEE). These calculations apply only to processes at 12-inch wafer fabs.
2. The F-GHG emissions were calculated based on the IPCC 2019 tier2c approach, and the GWP used in the calculation were obtained by adopting the definitions in the IPCC's Fifth Assessment Report (IPCC AR5) (2014). All data has been verified by third-party assurance agencies.
3. The plasma etching and chamber cleaning processes were included in this calculation. The approach used in reduction calculations was Default and Measured DREs, excluding calculation of fluorinated heat transfer fluid

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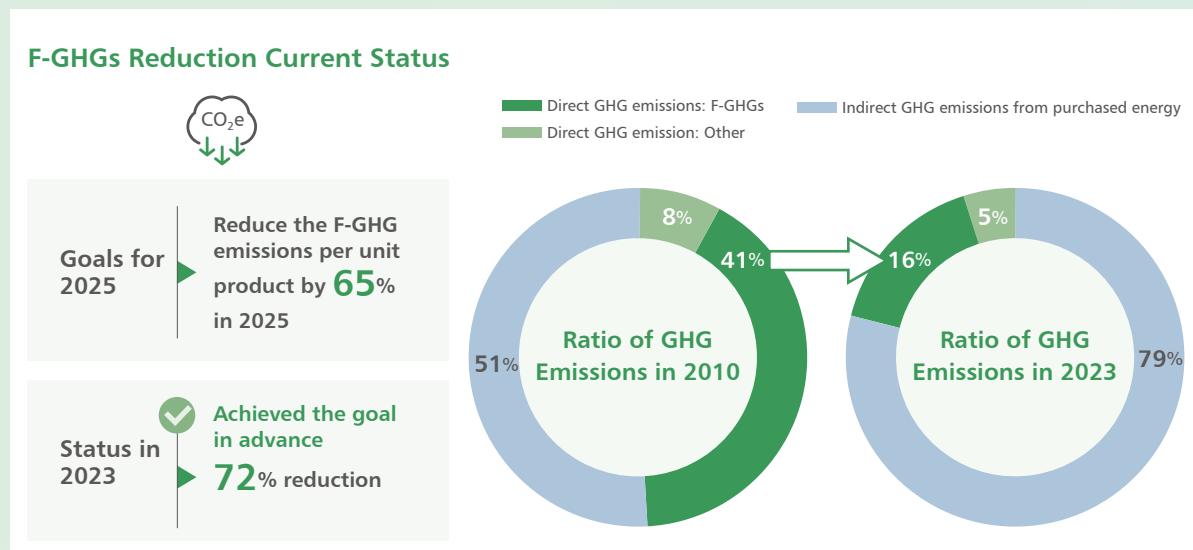
As a pioneer in carbon reduction among companies in Taiwan, UMC established the Fluorinated Greenhouse Gas Reduction Taskforce in 1999, and continued to implement several phased green initiatives – including the 333 Reduction Plan (2010–2012), the 369+ Reduction Plan (2013–2020), the Green 2025 Reduction Plan (2021–2025), etc. – to reduce fluorinated greenhouse gases (F-GHGs) generated in semiconductor manufacturing processes.

F-GHG Reduction Current Status

Phase 1	Goal Achieved	Phase 2	Goal Achieved	Phase 3	Goal Achieved	Phase 4	Ongoing
1998		2010~2012		2013~2020		2021~2025	
Comply with TSIA initiatives		333 Voluntary Reduction Plan		369+ Voluntary Reduction Plan		Green 2025 Action Plan	
► Decrease total annual F-GHG emissions in Taiwan fabs by 0.216 MMTCE		► Compared to 2009, reduce F-GHG emissions per unit product by 33% in 2012		► Compared to 2010, reduce F-GHG emissions per unit product by 36% in 2020		► Compared to 2010, reduce F-GHG emissions per unit product by 65% in 2025	

Note: The timeline for voluntary F-GHGs reductions in the 369+ Reduction Plan was 2013–2020, so the Phase 4 reduction actions and goals were specified in the Green 2025 Plan.

Through these measures, emission of F-GHGs has been de-linked from production capacity and changed the proportion of each greenhouse gas emission source. Moreover, UMC's F-GHGs substitution strategies are widely emulated by peer companies in the industry; together with the industry, we are making breakthroughs in carbon reductions. In 2023, due to the installation of high-performance local scrubbers and the promotion of optimal treatment efficiency, the local scrubbers achieved a reduction of 620,449 tCO₂e, and F-GHGs substitution reduced an additional 121,070 tCO₂e, totaling a reduction of 741,519 tCO₂e. UMC's F-GHG emissions per unit product have decreased by 72% since 2010.



Carbon Assets and Carbon Trading

UMC has actively diversified its carbon assets portfolio. Following the first carbon trading transaction recognized by the Ministry of Environment in 2014, UMC participated in the first batch of carbon credit transactions at the Taiwan Carbon Solution Exchange (TCX) in 2023. There, UMC purchased international carbon credits with multiple sustainability benefits, marking a significant milestone in the domestic carbon emission trading market in Taiwan.

UMC's purchase of international carbon credits by UMC will finance Clean Water programs, which focus on assisting local residents to obtain clean drinking water sources by restoring wells and related facilities in African countries. It contributes to carbon reduction by eliminating the need to burn wood for water boiling and sterilization. Additionally, it ameliorates the plight of women in rural areas, who must otherwise devote considerable time and energy searching for clean water sources. Meanwhile, this purchase achieves multiple United Nations sustainable development goals (SDGs), including Good Health and Well-being, Gender Equality, Clean Water and Sanitation, and Climate Action.

As the carbon emission trading market matures, UMC has established a decision-making mechanism and screening criteria for carbon credit purchasing, incorporating verification standards, issuance years, additionality, stability, and other benefit into the assessment criteria. This supports sustainable decarbonization projects, acquire high-quality carbon credits, and further promote low-carbon production technology, and innovative industry development, thus driving a green economic cycle.

UMC actively responds to the government's carbon reduction policies. As early as 2013, UMC participated in the Taiwan Ministry of Environment's "Early Reduction Project" and acquired a carbon reduction allowance of 3.02 million tonnes. In 2020, UMC participated in Ministry of Environment's greenhouse gas offset project based on the approach of "Emission Reduction Methodology for Semiconductor Industry Fluorinated Greenhouse Gases and N₂O Abatement Technology." Through this project, the GHG reduction in UMC's fabs in Taiwan can be used to establish a 10-year carbon asset, and in March 2024, UMC successfully obtained the first annual carbon emission quota of approximately 120,000 tonnes from the project, which can be widely used for various purposes. UMC will continue to apply for and assess the usage of the obtained carbon emission quotas.

Moreover, UMC is also paying constant attention to different countries' carbon credit markets and trading platforms, participate in carbon trading or develop carbon reduction projects to stay on top of market trends and make early deployments. By doing this, we proactively prepare for future carbon fees, tax offsets, and even carbon credit investments, to address the risks and opportunities arising from climate change.

3.2 Energy Management

3.2.1 Energy Mix

3.2.2 Energy Efficiency Improvement

Material Topic

Energy Management

In accordance with GRI Standards (2021) for identifying impacts of sustainability issues, management actions in response to these impacts and processes used to track the effectiveness of the actions are listed in the table below:

Positive Impact ▶ Renewable energy deployment

Management Actions

- ▶ Install solar energy systems
- ▶ Purchase renewable energy and attend to needs of customers

Processes Used to Track the Effectiveness of Actions

- ▶ Monthly update related KPIs and quarterly report the progress of performance by the "Environmental Management and Planning Group" to the Corporate Sustainability Committee for review.

Negative Impact ▶ Energy/resource consumption

Management Actions

- ▶ Replace old and inefficient equipment
- ▶ Implement energy saving measures through internal assessment
- ▶ Introduce ISO 50001 Energy Management System

Processes Used to Track the Effectiveness of Actions

- ▶ Monthly update related KPIs and quarterly report the progress of performance by the "Environmental Management and Planning Group" to the Corporate Sustainability Committee for review.
- ▶ Promote energy saving projects and experience sharing by Energy Saving Committee.
- ▶ ISO 50001 verified by a third party

Highlights of the Year

- ▶ Completed the installation of over 13,700 kWp of solar energy systems as of 2023, which is expected to generate up to 16,000 MWh of electricity each year.
- ▶ Total electricity and natural gas saved was 161,563 MWh, which is equivalent to a reduction of 78,277 tonnes of CO₂ emissions*

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Item	Goal	Achievement	Goal
Reduction of electricity consumption per unit product ^{Note2}	13%	✓ 23.8%	14%
Cumulative energy savings (base year 2015)	550 GWh	✓ 771 GWh	770 GWh
Ratio of renewable energy in total electricity used	10%	✓ 11.1%	13%
			25%
			50%

Note: 1. Scope: UMC Group (UMC and its subsidiaries HJ, USCXM, Wavetek, and USJC); With * remark is UMC (the parent company only).

2. The performance is a comparison of the performance under the BAU scenario with the baseline value; the baseline value is calculated from 2015 as the base year and includes the annual data of the foundry subsidiaries.

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In order to lessen environmental impact of greenhouse effect and minimize energy consumption, UMC set company-wide carbon reduction goals and development plans through the Corporate Sustainability Committee, which coordinates and integrates energy saving and carbon reduction strategies and initiatives of various divisions. Regular committee meetings are held to review progress. The Company continually introduces energy saving technologies and implements energy efficiency improvement programs in all facilities. In addition to its strategy of energy savings, increasing energy efficiency, and expanding installation of renewables, UMC also promotes the implementation of energy management in its offices and common areas through activities, education, and training to cultivate a mindset and habit of energy conservation and GHG emission reduction among employees.

3.2.1 Energy Mix

Bulk purchases of electricity dominate UMC Group's energy usage, accounting for 83.5% of the total consumption, followed by natural gas (including LPG) which account for 5.7% of the total. Therefore, energy saving is mainly aimed at reducing the use of bulk electricity and natural gas. UMC Group's total energy consumption in 2023 was 4,060,941 MWh. Of the total, electricity consumption was 3,390,610 MWh, while natural gas consumption was 233,137 MWh. The electricity consumption per unit product was 13.6 MWh/wafer-m², while the natural gas consumption per unit product was 0.9 MWh/wafer-m².

Total Energy Consumption in 2023

Unit: MWh

	UMC	UMC Group
Purchased Electricity	2,856,931	3,390,610
Non-renewable Energy		
Nature Gas	172,003	233,137
Diesel, LPG and Other Purchased Energy	15,237	15,752
Total Non-renewable Energy Consumption (a)	3,044,171	3,639,499
Total Renewable Energy (b)	6,310	421,442
Total Energy Consumption (a+b)	3,050,481	4,060,941

Note: 1. UMC Group includes UMC and its subsidiaries HJ, USCXM, Wavetek, and USJC.

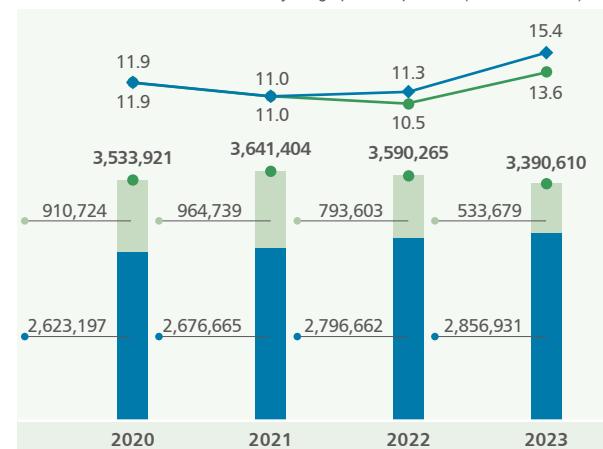
2. The source of renewable energy are self-generated solar energy and RECs.

3. Data for natural gas and diesel is calculated based on the heating value(s) provided by the Energy Administration, MOEA.

4. The total energy consumption in 2023 was about 1.4619388×10^9 GJ; the percentage of grid electricity is >90%; the percentage of renewable energy is 10.4%.

Purchased Electricity Consumption

UMC Subsidiaries UMC Group Unit: MWh
UMC UMC Group Unit: electricity usage per unit product (MWh/wafer-m²)



Note: 1. Starting from 2023, boundaries of information coverage have been adjusted to align with greenhouse gas inventory, and historical data has been updated.

2. UMC Group includes UMC and its subsidiaries HJ, USCXM, Wavetek, and USJC.

3. Renewable energy usage was excluded.

Natural Gas Consumption

UMC Subsidiaries UMC Group Unit: MWh
UMC UMC Group Unit: natural gas usage per unit product (MWh/wafer-m²)



Note: 1. Starting from 2023, boundaries of information coverage have been adjusted to align with greenhouse gas inventory, and historical data has been updated.

2. UMC Group includes UMC and its subsidiaries HJ, USCXM, Wavetek, and USJC.

3. Data for natural gas is calculated based on the heating value(s) provided by the Energy Administration, MOEA.

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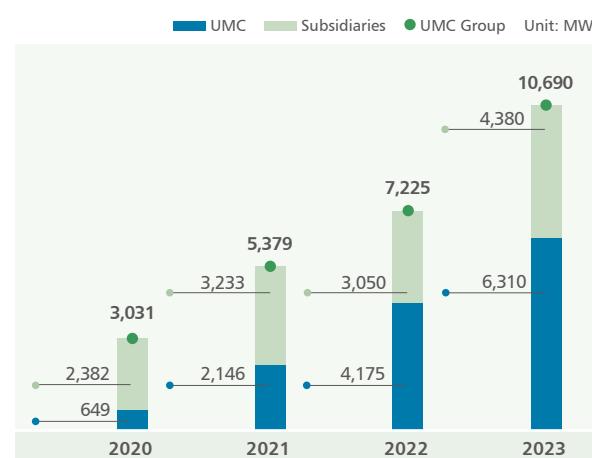
Promotion of Renewable Energy

To diversify energy sources, UMC Group is actively installing renewable energy facilities in fabs and the solar energy generation has increased continuously for the past four years. Solar energy system is a standard item that will be included in the design and construction of all new fabs. In 2023, a total of 3,965 kWp of solar PV system was installed as planned. As of the end of 2023, UMC and its subsidiaries have completed the installation of over 13,700 kWp of solar energy, which is expected to generate up to 16,000 MWh of electricity each year.

In addition, UMC plans to add a total of roughly 500 kWp of solar photovoltaic systems in 2024, demonstrating the Company's commitment to green energy. In 2023, UMC Group's solar power generation system produced a total of 10,690 MWh for self-use. All solar power generation will be for self-use by the end of 2024, and continue to increase self-use green energy to support clean energy with all efforts.



Self-use Solar Power Generation



RE100

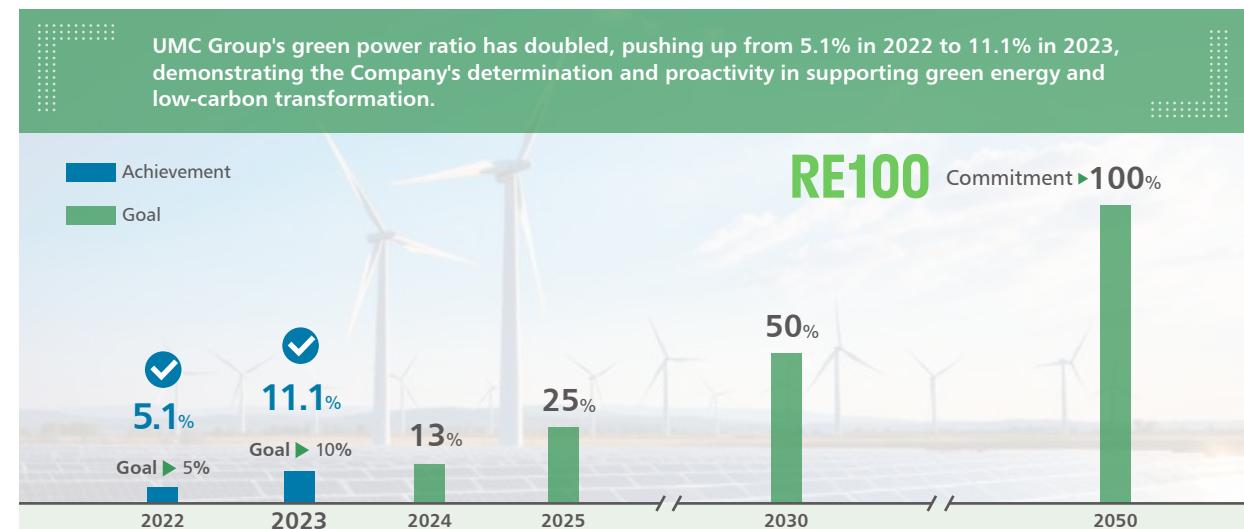
RE100 is a global initiative that unites the world's most influential businesses committed to using 100% renewable power. The members of RE100 come from various industries and have a combined revenue scale exceeding \$6.6 trillion. Collectively, they send a powerful message to policymakers and investors to accelerate the transition towards a clean economy.

UMC Group joined RE100 as a member in 2021, becoming the second semiconductor wafer foundry in this international renewable energy initiative. The Company is committed to using 100% renewable energy by 2050. In order to actively promote the increase in the proportion of renewable energy use, an interdepartmental renewable energy working group composed of Manufacturing Resource Integration, Corporate & Operation Planning, Corporate Development, Legal, IP & Compliance and other units is responsible for formulating renewable energy introduction strategies and collaborative management mechanisms, and regularly tracking implementation progress.

In addition to expanding the installation of solar photovoltaic systems in 2023, UMC also purchased more than 410,000 MWh of renewable energy, with a carbon reduction benefit of 230,000 tCO₂e. UMC also signed a renewable energy purchase contract with an installation capacity of 181 MWp, continuing to build a diversified energy portfolio. With the advancement of various action plans, UMC Group's green power ratio has doubled, pushing up from 5.1% in 2022 to 11.1% in 2023, demonstrating the Company's determination and proactivity in supporting green energy and low-carbon transformation.

Promoting the development of renewable energy is one of the important pathways to achieving net-zero emissions. Looking forward, UMC will continue to diversify the use of renewable energy, work with value chain partners to drive the vigorous development of the green energy industry, and gradually achieve the three-stage goals of renewable energy accounting for 25% in 2025, 50% in 2030, and 100% in 2050.

Renewable Energy Usage Target



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3.2.2 Energy Efficiency Improvement

UMC continues to improve the energy utilization efficiency of all fabs through various energy-saving measures. In 2023, the total electricity and natural gas saved was 161,563 MWh, which is equivalent to a reduction of 78,277 tonnes of CO₂e emissions.

Major Energy Conservation Measures in 2023

	Achievement
 <ul style="list-style-type: none"> Energy saving measures for production machine and water treatment systems Energy saving measures for cold water and AC systems Compressed gas reduction to conserve energy Replace online UPS with offline UP 	<ul style="list-style-type: none"> AC units clean-up for energy conservation Energy saving measures for production process cooling water Energy saving measures for illumination <ul style="list-style-type: none"> 6.7% reduction of electricity usage 159,796MWh of electricity savings 77,920 tonnes of CO₂e reduction
 <ul style="list-style-type: none"> NG Flow Adjustment VOC burning gas operation adjustment for optimal efficiency Boiler operation adjustment for optimal efficiency 	<ul style="list-style-type: none"> 0.7% reduction of NG usage 1,767 MWh of NG usage saving 357 tonnes of CO₂e reduction

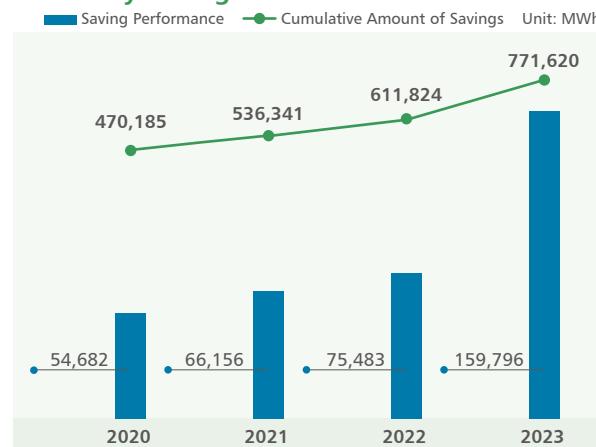
Total Energy Savings in 2023

Electricity ► Amount of Savings 159,796 MWh
Carbon Reduction 77,920 tCO₂e

Natural Gas ► Amount of Savings 1,767 MWh
Carbon Reduction 357 tCO₂e

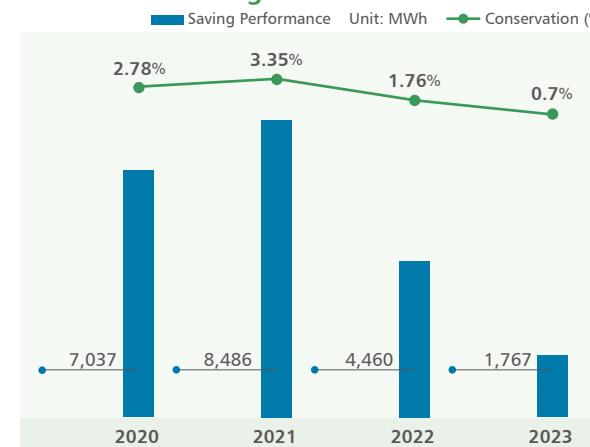
Note: 1. The statistics of calculation is based on electricity consumption per unit product by 2015 and the scope covers UMC.
 2. CO₂ emissions are calculated using the latest local electricity coefficient. Taiwan: 0.495 kg C₂e/KWh; Singapore: 0.406 kgCO₂e/KWh
 3. The gas-saving amount estimated is a theoretical amount. The CO₂, CH₄, N₂O emission coefficient of the 2006 IPCC fixed and mobile resource (gas) and gas calorific value from the various local fabs are also incorporated into the carbon emission calculation.
 4. The newly added improvement item was calculated based only on the 12-month performance. For the cross-year project, only the performance generated in 2023 was counted.

Electricity Savings



Note: The scope of calculation in 2023 covers UMC Group, whereas the scope for 2020-2022 only covers UMC.

Natural Gas Savings



Note: The scope covers UMC.

Energy Saving Plans

UMC's energy saving plan covers approximately 400 energy saving measures, including the complete introduction of equipment energy saving features, provision of inverters, replacing online uninterruptible power supplies (UPS) with offline UPS systems, and ice water systems. The Company's reduction goal for 2024 is 42,000 MWh, equivalent to CO₂ emissions reduction of about 20,790 tonnes. UMC will continue its program to replace VOC (volatile organic compound) rotors and reduce the HDI temperature which is expected to reduce natural gas consumption by 4,597 MWh, equivalent to CO₂ emissions reduction of about 928 tCO₂e.



ISO 50001 Certification

UMC plans to fully introduce ISO 50001 Energy Management System Certification to all fabs in Taiwan. Fab 12A P3/4 has obtained the certificate in September 2023. It is expected that all UMC's fabs in Taiwan will be verified by third-party for ISO 50001 by 2026.



3.3 Water Management

3.3.1 Water Structure 3.3.2 Water Saving 3.3.3 Water Pollution Control



Material Topic

Water and Wastewater Management

Water Management Policy and Commitment ▶



In accordance with GRI Standards (2021) for identifying impacts of sustainability issues, management actions in response to these impacts and processes used to track the effectiveness of the actions are listed in the table below:

Positive Impact ▶ Water resource management and reuse

Management Actions	Processes Used to Track the Effectiveness of Actions
<ul style="list-style-type: none"> ▶ Develop and adopt diverse sources, such as reclaimed water and desalinated water. ▶ Adopt multipronged approaches such as increasing the recycling of in-plant used water and investing in recycling technologies. ▶ Participate in public affairs, and cooperate with government and industry to facilitate water-resource-related communication, interaction and guiding assistance. 	<ul style="list-style-type: none"> ▶ A quarterly report on the performance progress of "The Environmental Management and Planning Group" is submitted to the Corporate Sustainability Committee for review. ▶ Compile monthly statistics on water consumption, water-saving achievements, and recovery rates. ▶ Regularly participate in meetings held by the industry's professional associations and the Water Resources Agency.

Negative Impact ▶ Water resource consumption and pollution

Management Actions	Processes Used to Track the Effectiveness of Actions
<p>Water Consumption</p> <ul style="list-style-type: none"> ▶ Continue the reinforcement of in-plant water saving measures, and increase appropriate water-saving measures. ▶ Install U water generation equipment in response to sudden droughts. <p>Wastewater Pollution</p> <ul style="list-style-type: none"> ▶ Invest in the R&D of wastewater-related treatment technologies. ▶ Monitor and optimize wastewater discharge. ▶ Monitor the environmental development trends in the world, and assess relevant opportunities and risks. 	<p>Water Resource Management</p> <ul style="list-style-type: none"> ▶ A quarterly report on the performance progress of "The Environmental Management and Planning Group" is submitted to the Corporate Sustainability Committee for review ▶ Check the establishment progress of U water equipment. ▶ Report water risk status monitoring results on a monthly basis. ▶ Participate in international CDP Water Security Project for transparency. <p>Wastewater Treatment</p> <ul style="list-style-type: none"> ▶ Conduct wastewater/discharge testing and acquire relevant data on a monthly basis. ▶ Participate in external regulations-related seminars, and environmental protection meetings held by the Allied Association for Science Park Industries. ▶ The Environmental Team reports and shares the results of regulatory compliance checks in monthly meetings. ▶ Implement ISO 14001:2015 Environmental Management System.

Highlights of the Year

▶ Recognized in CDP's "A List" for environmental transparency and action on Water Security Project.

Sustainability Strategy and Blueprint	2023	2024	2025	2030	
Item	Goal	Achievement	Goal		
Reduction of water withdrawal per unit product	13%	✓ 23.1%	14%	25%	30%
Cumulative water savings (base year 2015)	5.1 million tonnes	✓ 5.47 million tonnes	5.60 million tonnes	6.10 million tonnes	8.60 million tonnes
Reclaimed water and desalinated water usage rate	21.5% (Reclaimed water usage)*	✓ 23.7%	16%	18%	32%
Key water pollution indicators better than regulated standards **	53%	✓ 77.5%	56%	60%	70%

Note: 1. Scope: UMC Group (UMC and its subsidiaries HJ, USCXM, Wavetek and USJC); With * remark is UMC (the parent company only); **UMC fabs in Taiwan.

2. The actual performance of water consumption per unit product is the performance under BAU scenario compared with the base value; the base value is calculated from 2015 as the base year and is included in the annual data of the foundry subsidiaries.

3. The water-saving statistics refer to the current year's saving performance achieved through the water-saving measures implemented since 2015. The statistics were calculated based on estimated values.

4. Starting from 2024, the future target scope for the proportion of reclaimed water usage will be expanded from UMC to UMC Group and also included the promotion of desalinated water, thereby reducing the Group's dependency on natural freshwater resources.

5. The main indicators of water pollution are superior to the regulatory standards, which refers to the reduction rate of pollutants in UMC's wastewater discharge compared to the main indicators of local regulatory emission standards. The calculations are based on the data collected by the local government's testing agency in December of the current year.

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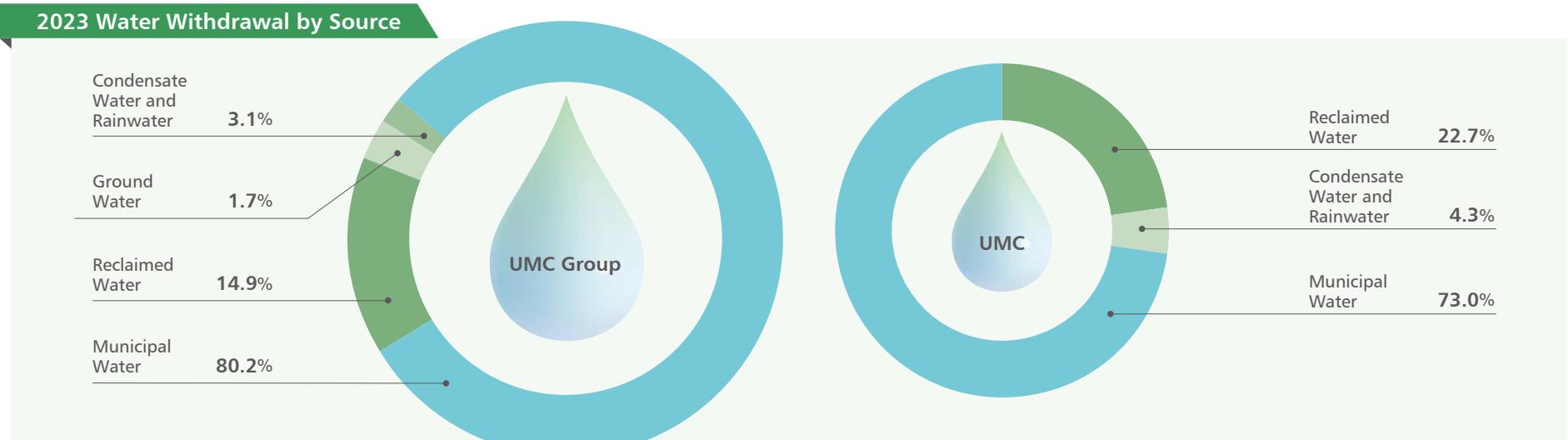
Due to the increasingly frequent occurrence of floods and droughts caused by climate change, stakeholders have become more concerned about water resource issues. Water resources are also an indispensable resource for semiconductor manufacturing processes. To proactively address complex water resource issues, UMC established the "Water Resources Management Policy and Commitment" and signed off by the CEO in 2015, which serves as the Company's highest guiding principle for water resource management. The Company's water resource management action plan aligns with this policy, aiming to maximize water efficiency, enhance the upstream and downstream value chain's ability to withstand water risks, and promote water resource saving.

The Environmental Planning and Management Group, which consist of Group Risk Management & Environment Safety Health Division and Facility Operation Division that spans across different divisions and fabs, is account for the day to day water management, including responsible for promoting and setting management goals, (such as reducing water consumption per unit of product, and increasing the proportion of reclaimed water use, etc.). They regularly report their progress to the Chairman of the Corporate Sustainability Committee, who also serve as the Company's President and is responsible for the relevant performance management. Over the years, Environmental Planning and Management Group has successfully implemented the "369⁺ Reduction" and "Green 2020" programs, achieved the water resource goals, while also launching the "Green 2025" program. In 2023, to develop and apply diversified water sources, it has been evaluated that desalinated water will be one of the water sources, and the goal is set to achieve a ratio of 32% for the use of reclaimed water and desalinated water by 2030. In response to the potential risk of drought and water shortage in Taiwan, UMC co-presidents approved additional investment in the "UMC U Water" wastewater recycling system in 2023. This system can recycle wastewater into reclaimed water for internal use, effectively reducing the risk of water supply restrictions during water shortages.

Organization	Responsibilities of UMC Group Water Resources Management
Corporate Sustainability Committee	► Responsible for water management strategy and performance
Environmental Planning and Management Group	► Set water resources management goals
Facility Operation Division of headquarters	► Consolidate the water resource management performance of the UMC Group and monitor the achievement of objectives. ► Expand the implementation of exemplary water-saving measures to all fabs and subsidiary companies. ► Assessment, adoption, and promotion of water resource-related technologies.
Facility Operation Divisions of all fabs and subsidiaries	► Implement monitoring of water resources in fabs: compile statistics on water usage, recycled water, and water saving to grasp the actual water consumption situation. ► Execute water resource enhancement projects in fabs: water-saving programs and water pollution prevention plans.

3.3.1 Water Structure

The UMC Group's water sources primarily come from municipal water and reclaimed water, accounting for 80.2% and 14.9% respectively; UMC's main water sources are the same as the Group's, with municipal water about 73% and reclaimed water about 22.7%. In 2023, the UMC Group's total water withdrawal was 26.28 million tonnes, while UMC's was 17.26 million tonnes. Due to production capacity adjustments, this was a decrease of 1.24 million tonnes from the previous year.



Note: 1. UMC Group includes UMC and its subsidiaries HJ, USCXM, Wavetek, and USJC.
2. Reclaimed water amount is used by UMC's fabs in Taiwan and Singapore. The groundwater withdrawal amount is used by subsidiary USJC.

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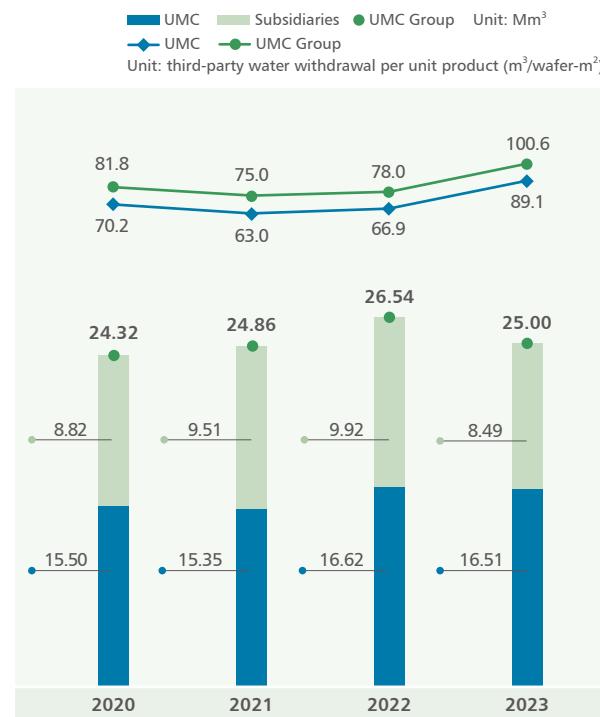
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Third-Party Water Sources

Municipal and reclaimed water are both sourced from third-party suppliers. In 2023, UMC Group's water withdrawal from third-party sources amounted to 25 million tonnes, with a water withdrawal per unit product is 100.6 m³/wafer-m². UMC's own water withdrawal was 16.51 million tonnes, with a water withdrawal per unit product is 89.1 m³/wafer-m², marking an increase from 2022. The primary reasons for this increase were adjustments in production capacity and the rise in water usage due to new equipment installations at Fab 12A P6.

Third-party Water Withdrawal



- Note: 1. Sources of third-party withdrawal include municipal water and reclaimed water.
 2. UMC Group includes UMC and its subsidiaries HJ, USCXM, Wavetek, and USJC.
 3. Water meter readings are recorded daily. Annual water amount is calculated based on average monthly water usage.

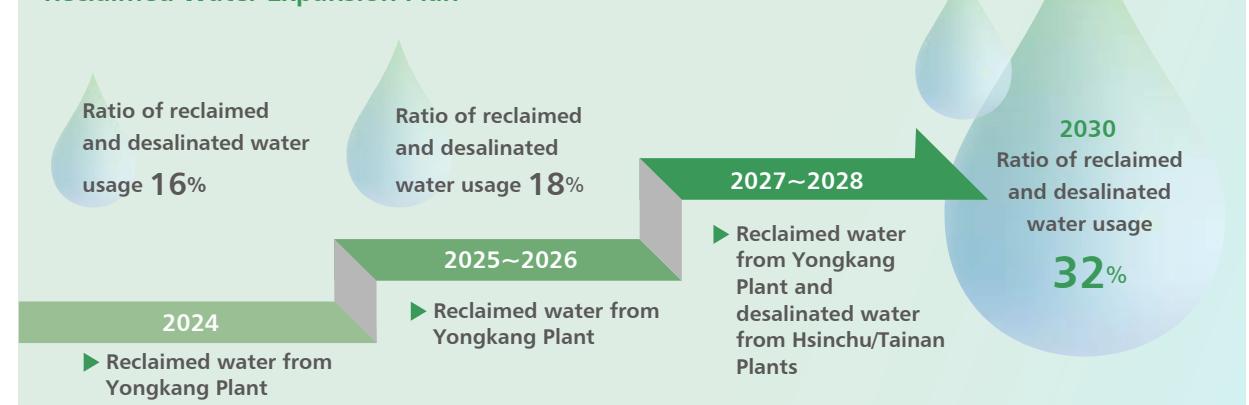
Reclaimed Water

To reduce dependency on municipal water, the Company has diversified its water sources, include reclaimed water as alternative water sources. UMC Group's reclaimed water consumption is mainly at Fab 12i in Singapore. When Fab 12i was built, reclaimed water (NEWater^{Note}) was introduced in the production of 300mm wafers. In 2023, Fab 12i's reclaimed water reached 3.33 million tonnes, accounting for 97.6% of the fab's total water withdrawal. UMC's fabs in Taiwan are also actively assessing reclaimed water utilization. Fab 12A in Taiwan introduced the use of reclaimed water in December 2022. Fab12A's reclaimed water usage reached 0.59 million tonnes. The reclaimed water used in Fab 12A and Fab 12i totaled 3.92 million tonnes, an increase of 9.9% compared to 2022.

In addition to reclaimed water, UMC's fabs in Taiwan are also collaborating with the government's desalination system to plan the introduction of desalinated water, aiming to expand the usage of reclaimed and desalinated water. This strategy is intended to reduce reliance on natural water resources and alleviate the impact on regional water resources.

Note: NEWater is reclaimed water supplied by the Singapore Utilities Board after the wastewater has been treated to a high level of quality.

Reclaimed Water Expansion Plan



Note: 1. Scope: UMC Group (UMC and its subsidiaries HJ, USCXM, Wavetek, and USJC)

2. Reclaimed water from Yongkang Plant has officially in operation. The Hsinchu desalination plant is expected to start supplying water in 2027, and the Tainan desalination plant is projected to begin water supply in 2028.

Water Quality Risk Control

Effective monitoring and control of water quality can decrease the amount of resources consumed during the manufacturing process, optimize product yield, and increase the efficiency of water usage. Before entering fabs, water is first tested with pH devices and continuously monitored with a conductivity meter to ensure stable quality. During the pure water production process, each unit of the water production facility is equipped with inspection instruments, which are connected to the statistical process control (SPC) system to ensure the water quality and reliability. In Singapore, Fab 12i increased its hydrofluoric acid (HF) treatment systems to improve the quality of the discharged water (fluoride ion < 15ppm), and strengthened source classification management to control sulfates to <1,000ppm in order to increase the stability of reclaimed water quality.

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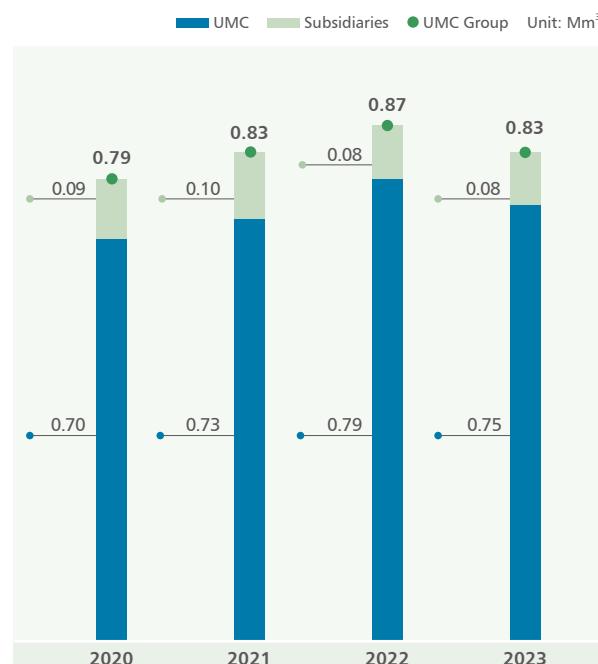
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Condensate Water and Rainwater

Condensate water and rainwater are precious natural water sources and are easily subjected to seasonal climate changes. While accounting for a small proportion of UMC's total water withdrawal, making good use of condensate water and rainwater can reduce the impact on water resources and the environment. Condensate water and rainwater are mainly used in secondary manufacturing processes and watering of green spaces at UMC Group, and the total usage in 2023 was 0.83 million tonnes.

Condensate Water and Rainwater



Note: 1. UMC Group includes UMC and its subsidiaries HJ, USCXM, Wavetek, and USJC.

2. Annual water amount is calculated using flow meters and estimates

Water Stress Area Assessment

To further understand the water stress and water use risks of each fab, UMC used the water risk assessment tool developed by the World Resource Institute (WRI) and combined it with indicators of local water resources, including water source stability and regional supply-demand ratio, to identify the percentage of UMC Group fabs that are located in water-deficient areas, serving as reference for formulating water risk management strategies.

According to the WRI Aqueduct Tool, only the subsidiary HJ's location in Suzhou, China is identified as an area with extremely high level of water deficiency. HJ accounts for about 7.9% and 3.6% respectively of the Group's water intake and water consumption. Further evaluation based on indicators including water source stability and regional supply-demand ratio showed that HJ's water risks are low. In addition to the ample water resources provided by the nearby Taihu Lake, which has a storage capacity of 4.5 billion tonnes, and a dual water source and dual water plant safety supply model, the dual water sources (Taihu Lake and Jiuyang Lake) have a combined supply capacity of 500,000 tonnes/day. HJ also implements water saving measures to improve water use efficiency and reduce the impact of water risks on operations.

In 2023, there were no incidents affecting the operation of the UMC Group due to water-related issues.

In addition, UMC and its subsidiaries have no significant impact on the use of water sources in the region, and the percentage of water consumption in the region (the impact of regional water use) is less than 5%.

UMC Indicators of Water Related Risks Assessment

► The WRI (Water Resource Institute) Aqueduct Tool is used to assess water risk.



► Water Source Stability: Considering the stability of water supply, cross-regional dispatching flexibility, rainfall variability, etc.; high level means relatively stable water resources.

► Regional Supply-demand Ratio: Calculated based on the water supply of the region and the water demand of the fab. The bigger the ratio the lower competence between region's peers.

◎ For the identification of water risk factors, please refer to Chapter 1.2.5 Managing Climate Risks and Opportunities.

Impact of Regional Water Withdrawal

Site	Location	Region Water Withdrawal Note 1 (10,000 tonnes/day)	UMC Water Withdrawal Note 2 (10,000 tonnes/day)	Impact Note 3
UMC	Hsinchu Science Park	59	1.49	2.52%
	Tainan Science Park	104	2.10	2.02%
	Singapore	23	0.93	4.06%
Subsidiary	HJ	China Suzhou	65	0.56
	USCXM	China Xiamen	27	0.61
	Wavetek	Hsinchu Science Park	59	0.15
USJC	Japan Mie-Ken	89	1.13	1.28%

Note: 1. Source of regional data: official data announced by the local government

2. Source of UMC's data: measured by each fab's on-site flowmeter

3. Impact (%) = UMC water withdrawal ÷ regional water withdrawal × 100%

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3.3.2 Water Saving

The Company's principle of water utilization is first to incorporate water-saving design in manufacturing processes, then focus on boosting water recycling and reuse. Combined with efficient water management, consumption can be effectively reduced. UMC continues to implement improvement measures for water recycling and reuse, and actively sets progressive water saving goals to guide policies and performance.

Water Recycling and Reuse

With the water-saving, consumption-reduction and recovery measures continuously promoted over the years, UMC Group achieved an additional water saving of approximately 825,000 tonnes in 2023, with a cumulative water saving reaching 5.47 million tonnes. Moreover, the recycling rates of manufacturing processes in all fabs exceed local regulatory standards, with UMC's process water recycling rate reaching 84.3%. Through strategies such as water saving, recycling and reuse, and reduction of ultra-pure water in processes, UMC Group successfully met the environmental phased targets for reducing water usage per unit product.

In addition, in response to global climate change and the impact of extreme weather, UMC has been actively promoting measures for coping with water-related disasters such as floods and droughts, to minimize potential operational impacts.

Note: For climate change related water risks, please refer to Chapter 1.2.5 Managing Climate Risks and Opportunities.

Manufacturing-process Water Recycling Rate in 2023

	Site	Standard	Actual
Taiwan	Fab 8A	≥ 70%	83.4%
	Fab 8D	≥ 70%	89.6%
	Fab 8E	≥ 85%	88.8%
	Fab 8F	≥ 85%	86.9%
	Fab 8S	≥ 85%	86.3%
	Fab 12A	≥ 85%	90.8%
Singapore	Fab 12A II	≥ 85%	88.0%
	Fab 12i	NA	67.9%

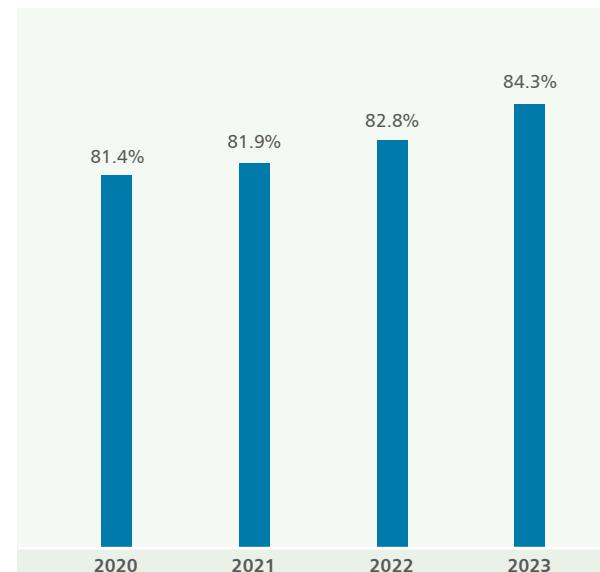
Note: Basic recycling equipment will be installed during the construction. The performance of each fabs in Taiwan can be better than the regulatory standards of local authorities. If there are no local standards, it will be labeled as "NA".

Water Saving

Annual Incremental Water Savings
Cumulative Additional Water Savings
Unit: 10,000 tonnes



Water Recycling Rate for UMC Manufacturing Process



Note: 1. Scope: UMC Group (UMC and its subsidiaries HJ, USCXM, Wavetek, and USJC)

2. The water-saving statistics refer to the current year's saving performance achieved through the water-saving measures implemented since 2015. The statistics were calculated based on estimated values.

Note: Manufacturing-process water recycling rate for UMC (company-wide) = (All fabs' manufacturing-process water withdrawal ÷ UMC's total manufacturing process water withdrawal) × Sum of all fabs' manufacturing-process water recycling rate.

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Decrease Intake

Additional measures were adopted in 2023, such as water saving from production equipment, increase in wastewater recovery, improvement in pure water production, and reduction of supplementary tap water usage. As a result, overall reduction of UMC Group's water withdrawal reached 825,000 tonnes in 2023. It is expected that through relevant measures, the withdrawal from natural water resources will continue to decline in 2024.

UMC Group New Water Saving Performance in 2023

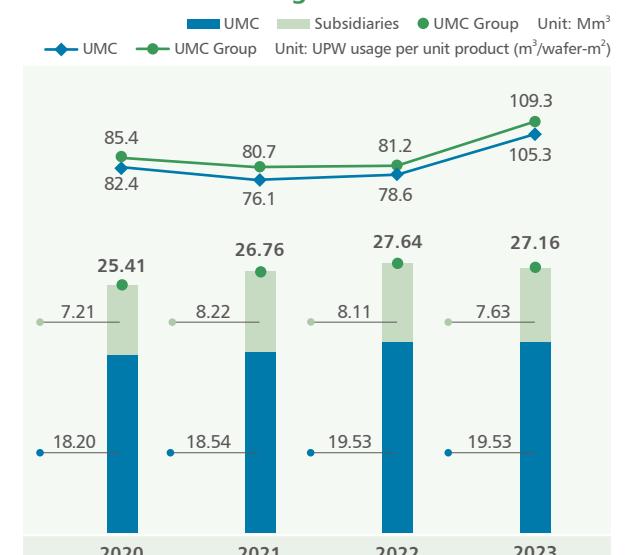
Category	Water Saving Measure	Site				Water Savings (10,000 tonnes)
		UMC	Subsidiaries			
		HJ	USCXM	Wavetek	USJC	
Water saving from production machines	Reduce water consumption and wastewater recovery	●	●	●		2.1
Wastewater recovery increasing	(New) Recover acidic/ Alkaline wastewater	●	●	●	●	13.9
Pure water production improving	Water recovery from analytical instruments	●	●	●		3.1
	Recover recycled water from pure water systems	●		●	●	12.5
Reduce supplement from municipal water	Purify and recover cooling tower drain water	●			●	3.0
	Water recovery upgrade	●				48.0
Total Amount						82.5

Note: The newly added improvement items were calculated based only on 12-month performance. For multiyear projects, only the performance generated in 2023 was counted.

Ultra-Pure Water Reduction

UMC Group has gradually decreased its per unit product's ultra-pure water (UPW) consumption over the years by pursuing continuous improvement, increasing internal awareness, as well as enhancing production controls and technology. Water usage for the manufacturing process is mainly used by Wet Bench equipment, including Single-Wafer and Batch-Type Wet Bench. The commonly used reduction methods are to optimize the manufacturing process water flow and standby water flow, or to increase the time interval between each flush during standby. The Green Operation Group under the Corporate Sustainability Committee has consolidated the reduction plans of fabs, and applied them to other sites where UPW reduction measures have not yet been implemented. UMC Group's UPW usage in 2023 was 27.16 million tonnes and the UPW usage per unit product in 2023 was 109.3 m³/wafer-m².

Ultra-Pure Water Usage



Note: UMC Group includes UMC and its subsidiaries HJ, USCXM, Wavetek, and USJC.

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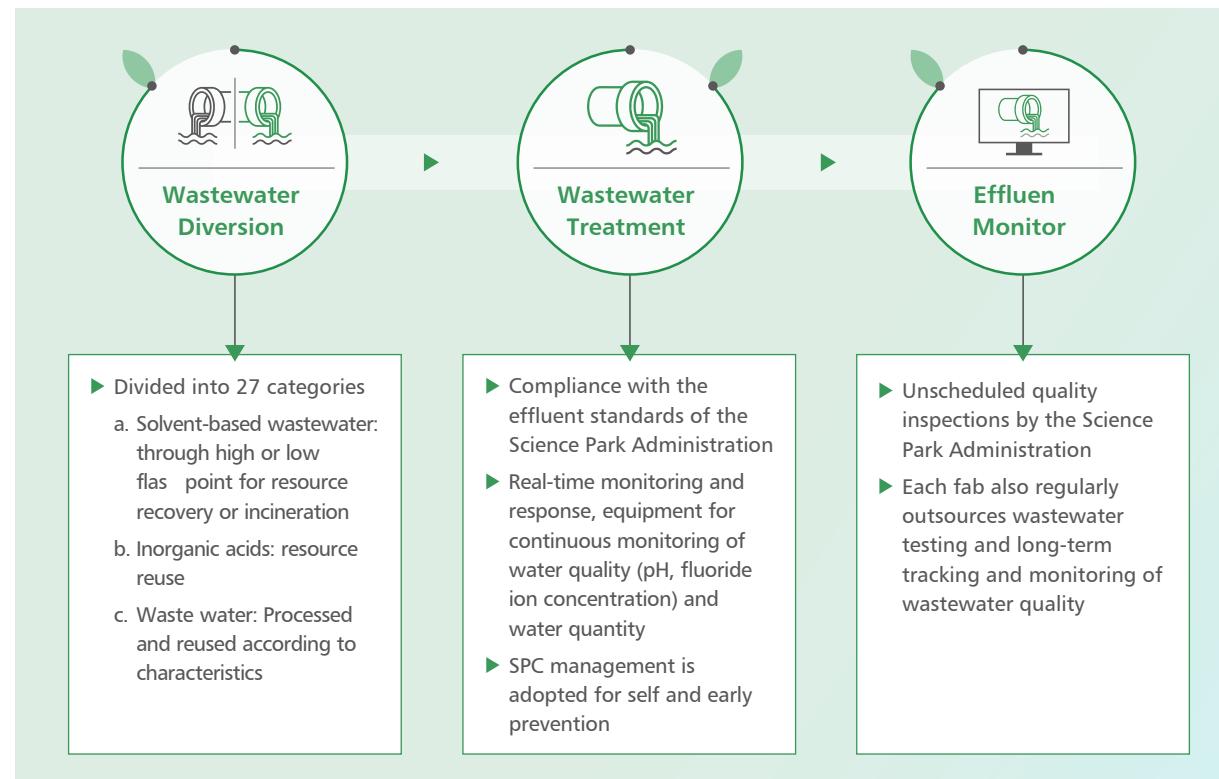
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3.3.3 Water Pollution Control

UMC's water pollution control include process source reduction and waste liquid diversion, followed treatment by classification. New fab areas have up to 27 categories of wastewater diversion, which are divided into solvent-based (reused or incinerated depending on flash points), inorganic acids (reused), and wastewater (multiple reuse according to classification). The process simplifies the composition of wastewater before it is treated in the fab's wastewater treatment facilities to the control standards of the Science Park Administration and discharged into the science park sewage systems. For real-time monitoring and response, equipment for continuous monitoring of water quality (pH, fluoride ion concentration) and water quantity are installed, and SPC management is adopted for self and early prevention to ensure that the quality of water discharged into the sewage complies with control regulations. In addition, the Science Park Administration conducts monthly unscheduled and random quality inspection of water discharged by different companies to reaffirm the quality of discharged water.

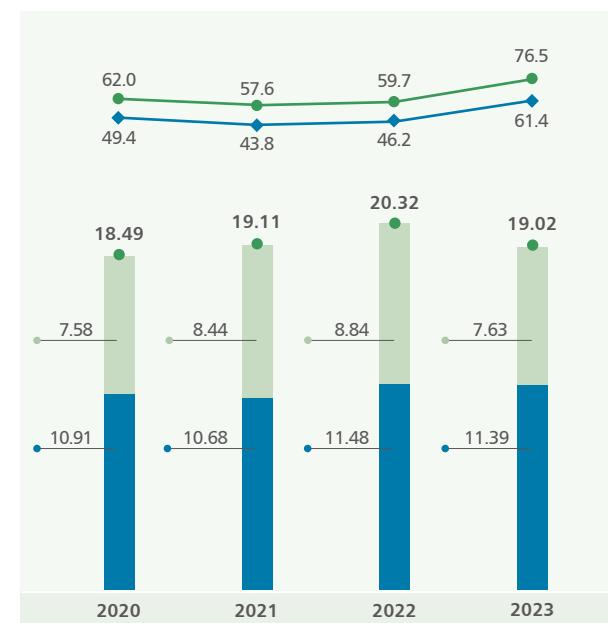


Wastewater Treatment

To reduce environmental impact, UMC Group continually invests in the R&D of wastewater treatment technologies. In recent years, the Company introduced advanced ammonia nitrogen wastewater treatment techniques to reduce water pollution from operations. In 2023, the wastewater discharge of UMC Group was 19.02 million tonnes, which was lower than the previous year. Wastewater discharge per unit product in 2023 was 76.5 m³/wafer-m².

Wastewater Discharge

UMC Subsidiaries UMC Group Unit: Mm³
 UMC UMC Group Unit: wastewater discharge per unit product (m³/wafer-m²)



Note: UMC Group includes UMC and its subsidiaries HJ, USCXM, Wavetek, and USJC.

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UMC Group Wastewater Discharge

Site				Combined Waste Water Treatment				
	Site	Location	Discharge Amount (10,000 tonnes/day) <small>Note 1</small>	Impact (%)	Treatment Department	Current Treatment Amount (10,000 tonnes/day) <small>Note 2</small>	Re-use	Discharged into Drainage Area
UMC	Hsinchu Science Park	Fab8A, Fab8D, Fab8E, Fab8F, Fab8S	1.07	9.4%	Hsinchu Science Park Administration sewage treatment plant	11.4	-	Ke-Ya River
	Tainan Science Park	Fab 12A	1.32	7.5%	Tainan Science Park Administration sewage treatment plant	17.7	-	Yanshuei River
	Singapore	Fab 12i	0.73	0.9%	Public Utilities Board (PUB)	80	Industrial reuse	South China Sea
Subsidiary	China Suzhou	HJ	0.49	1.0%	Suzhou Industrial Park, Hua Yan Water Ltd.	50	-	Wusong River-
	China Xiamen	USCXM	0.47	4.7%	Xiamen City, Xiang-an (Ma Xin) sewage treatment plant	10	-	Dongkeng Bay
	Hsinchu Science Park	Wavetek	0.11	1.0%	Hsinchu Science Park Administration sewage treatment plant	11.4	-	Ke-Ya River
	Japan Mie-ken	USJC	1.02	-	USJC's wastewater treatment facilities can convert wastewater to a quality in compliance with local regulations and standards (Water Pollution Prevention Act). A real-time monitoring system is installed in the facilities, through which the discharge shall be immediately stopped if any anomalies are detected.			

Note: 1. Sources of data:

- (1) Fabs in Hsinchu and Tainan, subsidiaries Wavetek, HJ, and USCXM: Water meter readings are recorded daily, and annual water consumption is calculated based on monthly amount.
- (2) Fab in Singapore: Based on daily record and accumulation.

2. Sources of data:

- (1) Fabs in Hsinchu and Tainan Science Park, subsidiary Wavetek: Ministry of Science and Technology Statistics and Data Bank.
- (2) Fab in Singapore: Based on PUB website information.
- (3) HJ: Suzhou Industrial Park, Hua Yan Water Ltd. sewage treatment plant; USCXM: Xiamen City, Xiang-an (Ma Xin) sewage treatment plant.

Wastewater from UMC's fabs in Taiwan and Singapore are treated to meet regulated standards prior to sending to third-party facilities for further treatment. The wastewater in the third-party treatment facility is then treated by a secondary treatment method before discharge. Among the fabs, the discharged water from Singapore's Fab 12i is treated and used again by other organizations as industrial water to increase the water utilization rate. UMC will continue to monitor wastewater discharge related data and develop wastewater treatment technologies to reduce the possible impact of wastewater discharge on regional watersheds.

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Volume of UMC Water Discharge by Source in 2023

Unit: megaliters

Level of Treatment	Site	Volume of Discharge
No treatment	NA	0
Secondary treatment in accordance with Hsinchu Science Park administration standards	Fab 8A, Fab 8D, Fab 8E, Fab 8S	3,922
Secondary treatment in accordance with Tainan Science Park administration standards	Fab 12A, Fab 12A II	4,820
Secondary treatment in accordance with Singapore government administration standards	Fab 12i	2,647

Note 1. 1 Mm³ = 1,000 megaliters

2. The scope of calculation is UMC's fabs in Taiwan and Singapore.

3. Wastewater from each UMC fab is pre-treated before being discharged into local wastewater treatment plants. No wastewater is directly discharged into receiving water bodies.

4. Singapore's NEWater uses wastewater from UMC Fab 12i as source water and then provides the treated water to other organization for industrial water usage.

UMC Group's Water Withdrawal, Discharge, and Consumption in 2023

Unit: megaliters

	UMC	Subsidiary			
		HJ	USCXM	Wavetek	USJC
Total Water Withdrawal (a)	17,258	2,065	2,250	562	4,142
Source	Municipal Water	12,591	2,047	2,211	538
	Reclaimed Water	3,921	0	0	0
	Condensate Water and Rainwater	746	18	39	24
	Others (Groundwater, Surface Water, etc.)	0	0	0	449
Total Water Discharge (b)	11,389	1,802	1,713	400	3,714
Destination	Surface water, Groundwater, Seawater	0	0	0	3,714
	Third-party Water	8,742	1,802	1,713	400
	Third-party water sent for use to other organizations	2,647	0	0	0
Water Consumption (a-b)	5,869	263	537	162	428

Note: 1. 1 Mm³ = 1,000 megaliters

2. The wastewater discharged is not fresh water ($\leq 1,000 \text{ mg/L}$ total dissolved solids).

3. With the exception of our subsidiary in Japan, USJC, all fabs pre-treat their wastewater before discharging it to local treatment facilities, with no direct discharge into receiving water bodies. The effluent from USJC is discharged in compliance with local regulatory standards after undergoing our proprietary treatment processes, such as the removal of heavy metals, nitrogen, and phosphorus.

4. Singapore's NEWater uses wastewater from UMC Fab 12i as source water and then provides the treated water to other organization for industrial water usage.

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Communication and Public Participation

In addition to internal water resource management and active promotion of water saving, UMC also serves as a representative in the industry's professional associations. The Company works closely with the government and industry peers in communicating and advising on water management. UMC also contribute to initiatives by the Taiwan Water Corporation, including emergency responses to water shortage and improvement in reservoir water quality, to jointly stabilize the supply and quality of regional water bodies and ensure the continuity of municipal water supply.

► Participation with Public Policy

1. Attended water resources communication meetings convened by the Water Resources Agency and manufacturers' associations.
2. Supported coordination of water resources by the Water Resources Agency (WRA) during dry season.
3. Assessed the utilization of reclaimed water to align with the Water Resources Agency's reclaimed water facilities.
4. Established a communication platform with the WRA to meet future water supply and demand.

Results:

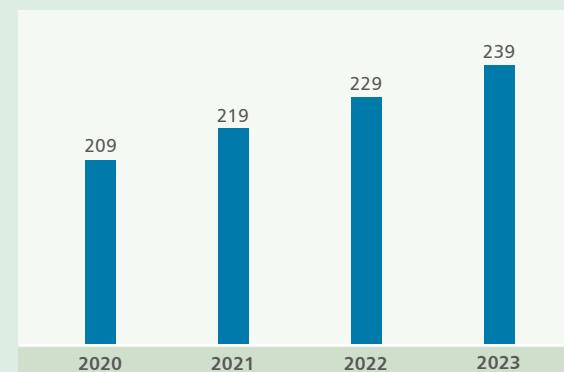
- ✓ Tracking the progress of the interconnection pipeline project between Zengwen Reservoir and Nanhua Reservoir, with a capacity of 800,000 tonnes, which will enhance inter-regional water scheduling. The project is expected to be completed by 2024.
- ✓ The Taoyuan-Hsinchu pipeline will be extended to the Hsinchu Science Park. It is expected to supply 90,000 tonnes of water per day from 2024.
- ✓ The Water Resources Agency of the Ministry of Economic Affairs (MOEA) is planning an inter-basin pipeline project from the Shimen Reservoir to Hsinchu, aimed at strengthening water supply resilience and increasing the emergency backup capacity by 300,000 tonnes per day. The project is slated for completion by the year 2028.

► Exchange and Counseling with Industry Peers

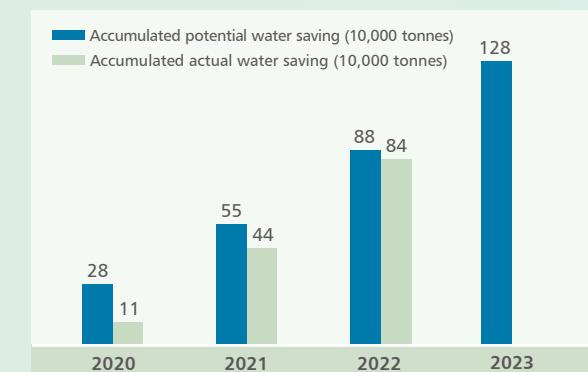
UMC has participated annually in water saving coaching sessions in the Science Park since 2002. As of 2023, the program has conducted a total of 239 sessions and coached more than 100 companies. water saving by companies coached by UMC has reached an accumulated amount of 1.28 million tonnes over 4 years (2020~2023). Companies counseled by UMC in 2023 are estimated to have potential water saving of 407,000 tonnes per year. Tracking the 10 companies which were coached by UMC in 2022, the actual water-saving volume during year 2022 was 397,000 tonnes of water.

By sharing the Company's valuable experience with peers, it can not only reduce the overall industry's dependence on natural water resources, but also promote exchanges and cooperation among the regional networks.

Accumulated Water-saving Counseling Cases



Accumulated Water-saving from Counseling Cases



Note: The water saving achieved in 2023 will be tracked in 2024.



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3.4 Waste Management

3.4.1 Waste Output Structure 3.4.2 Source Reduction 3.4.3 Circular Economy Promotion 3.4.4 Contractor Management



Material Topic

Waste Management and Circular Economy

Environmental Protection Policy ▶



In accordance with GRI Standards (2021) for identifying impacts of sustainability issues, management actions in response to these impacts and processes used to track the effectiveness of the actions are listed in the table below:

Positive Impact ▶ Circular economy

Management Actions

- ▶ Collaborate with global operation partners to achieve waste recycling and reuse.
- ▶ Pay attention to the development of international trends, evaluate opportunities and risks, handle waste properly, and make good use of energy resources to promote a circular economy.
- ▶ Establish a low-carbon circular business model.

Processes Used to Track the Effectiveness of Actions

- ▶ A quarterly report on the performance progress of "The Environmental Management and Planning Group" is submitted to the Corporate Sustainability Committee for review.
- ▶ Plan the establishment of the "Circular Economy & Recycling Innovation Center" to increase the percentage of recycled products and convert waste into usable resources.
- ▶ Participate in external regulatory seminars and conferences.

Negative Impact ▶ Waste not being used properly

Management Actions

- ▶ Promote process technology improvement and source management measures to reduce raw material consumption and waste generation.
- ▶ Reduce raw material consumption through process design and technology improvement.
- ▶ Review environmental protection and international environmental trends/government regulations.
- ▶ Select priority targets for waste reduction based on the raw materials that contribute the most to major waste generation, adopt cost-reduction policies, learn from benchmarking cases in the industry to evaluate technically feasible plan, and conduct small-scale experiment to confirm its feasibility. If the plan is deemed feasible, it will be implemented in fabs.

Processes Used to Track the Effectiveness of Actions

- ▶ A quarterly report on the performance progress of "The Environmental Management and Planning Group" is submitted to the Corporate Sustainability Committee for review.
- ▶ Regularly audit waste handling vendors.
- ▶ Perform monthly regulatory compliance checks.
- ▶ To prevent any violation of regulations, environmental protection cases are reviewed every quarter and employees are informed at the Safety Committee meeting.

Highlights of the Year

- ▶ Successfully promoted circular economy projects such as "waste sulfuric acid recycling and reuse," "waste photomasks utilization," and "waste copper sulfate liquid reuse through electrolysis."

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2025

2030

Item	Goal	Achievement	Goal
Reduction of waste generated per unit product ^{Note 2}	23%	✓ 37.6%	24%
Cumulative waste reduction (base year 2015)	15,500 tonnes	✓ 16,111 tonnes	16,400 tonnes
Ratio of in-fab resource conversion ^{Note 3}	13%*	✓ 15.1%	13.5%
Develop circular economy solutions/products (in total)*	2 items	✓ Achieved	2 items
			4 items
			6 items

Note: 1. Scope: UMC Group (UMC and its subsidiaries HJ, USCXM, Wavetek and USJC); with * remark is UMC (the parent company only).

2. Considering the proportion of 12-inch production capacity in the current year and the base year of 2015, regression correction is conducted.

3. Ratio of in-fab resources conversion = volume of in-fab resource conversion ÷ volume of total waste generated

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Through process design and technology improvement, UMC Group reduces the consumption of raw materials, which not only decreases the emission of pollutants from the source, but also lowers operating costs and minimize resource consumption and the corresponding environmental impact. Considering chemicals that are concerns for environmental protection and government regulations, the Company prioritizes the reduction of raw materials that are significant waste generators. Referencing benchmark players in the industry, the Company then designs technically feasible plans and conducts small-scale tests. The plans will be extended to fabs for implementation after their feasibility is verified.

3.4.1 Waste Output Structure

UMC's total waste output in 2023 was 47,021 tonnes^{Note}. Of which, 42,320 tonnes of waste was recycled or reused, accounting for 90.0%. A total of 4,701 tonnes of waste were treated during the year.

Note: excluding routine office wast

Waste Generation Status in 2023

Unit: tonne

Category	Composition	Total Amount	Recycling	Treatment
Hazardous Waste	Waste acid	21,191	21,191	0
	Waste solvent	4,584	2,754	1,830
	Waste copper sulfate	1,885	1,441	444
	Container	616	596	20
	Others	204	16	188
	Subtotal	28,480	25,998	2,482
General Waste	Waste solvent	1,134	214	920
	Waste ammonium sulfate	6,246	6,246	0
	Sludge	5,687	5,126	561
	Container	528	528	0
	Waste mixed hardware	399	399	0
	Subtotal	18,541	16,322	2,219
Total Amount		47,021	42,320	4,701

Note: 1. Scope: UMC fabs in Taiwan and Singapore (the parent company)

2. The categories are in accordance with Taiwan "Waste Disposal Act," which also used by Fab 12i in Singapore.

3. Waste acid includes waste sulfuric acid, waste phosphoric acid, and BOE waste liquid

4. Direct disposal methods include incineration, landfill, solidification and chemical treatment

5. Scrap metal is classified as general industrial waste during stages of storage and disposal according to "Standards for Defining Hazardous Industrial Waste", Ministry of Environment

► Waste Recycling Status

Unit: tonne

Category	Method of Recovery	Onsite	Offsite	Total Amount
Hazardous Waste	Reuse for original purpose	0	0	0
	Regeneration	7,232	18,766	25,998

Category	Method of Recovery	Onsite	Offsite	Total Amount
Hazardous Waste	Others	0	0	0
	Subtotal	7,232	18,766	25,998
	Reuse for original purpose	0	0	0
General Waste	Regeneration	4	16,318	16,322
	Others	0	0	0
	Subtotal	4	16,318	16,322
Total Amount		7,236	35,084	42,320

Note: the scope covers UMC fabs in Taiwan and Singapore (the parent company)

► Waste Treatment Status

Unit: tonne

Category	Method of Treatment	Onsite	Offsite	Total Amount
Hazardous Waste	Incineration, serving as fuel	0	1,775	1,775
	Incineration only	0	231	231
	Landfill	0	0	0
	Others	0	476	476
	Subtotal	0	2,482	2,482
	Incineration, serving as fuel	0	578	578
General Waste	Incineration only	0	971	971
	Landfill	0	670	670
	Others	0	0	0
	Subtotal	0	2,219	2,219
	Total Amount	0	4,701	4,701

Note: 1. Scope: UMC fabs in Taiwan and Singapore (the parent company)

2. For treatment performed outside the fabs by outsourced operators, the calculation was based on the actual weight measured. For treatment performed inside the fabs, the calculation was based on the weight estimated by flow meter.

3. Part of the waste that has been incinerated can be used as auxiliary fuel or regenerated as derived fuel, which is regarded as recovered energy.

4. Other methods of disposal include solidification, chemical, and overseas treatment. UMC only delivered 1.181 tonnes of nickel-cadmium batteries to South Korea for recycling in 2023, which is regarded as overseas treatment and was disposed of in accordance with the governing regulations of the Basel Convention.

UMC Group Waste Generation Structure in 2023

Unit: tonne

Category	Total Amount	Recycling		Treatment	
		Onsite	Offsite	Onsite	Offsite
Hazardous Waste	39,496	10,000	26,635	0	2,861
General Waste	24,811	4	22,146	0	2,661
Total Amount	64,307	10,004	48,781	0	5,522

Note: 1. Scope: UMC Group (UMC and its subsidiaries HJ, USCXM, Wavetek and USJC)

2. Categories are in accordance with Taiwan "Waste Disposal Act," which also used by all site.

3. The percentage of hazardous waste recycled or reuse is 92.8%.

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3.4.2 Source Reduction

"Zero waste" is UMC's ultimate waste management goal. By improving process technologies, raw material source reduction, and other source management measures, the Company can effectively reduce waste generation from its operations.

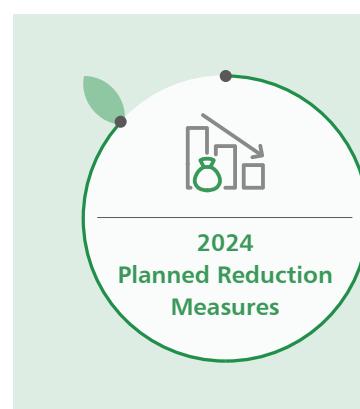
In 2023, UMC's total waste outsourced for treatment was 39,785 tonnes^{note}, and waste output per unit product was 214.6 kg/wafer-m², which represents an increase of 16.3% compared to 2022. In 2023, hazardous waste outsourced for treatment amounted to 21,248 tonnes, and the per unit product of hazardous waste output was 114.6 kg/wafer-m², which represents an increase of 13.2% compared to 2022. Through various reduction plans and measures, the total waste reduction in 2023 reached 2,411 tonnes.

Note: Excluding routine office wast

2023 Waste Reduction Measures and Performances

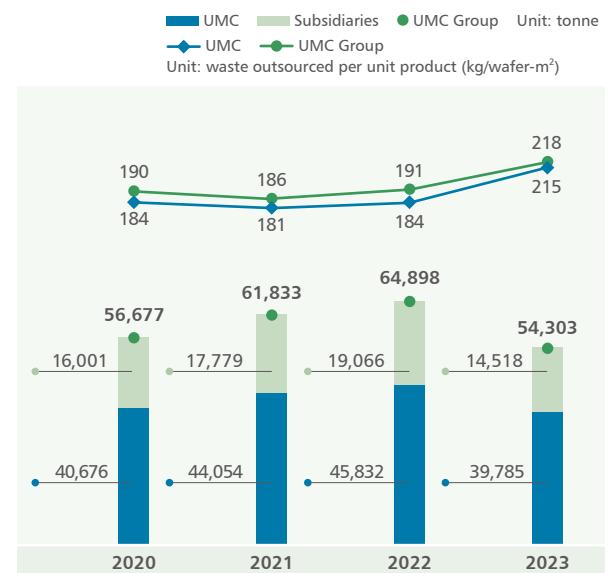
Plan	Measures	Reduction (tonne)
Reduction of waste cupric sulfate	Recycle waste copper sulfate to produce copper pipes	1,054
Reduction of waste sulfuric acid	Optimize usage for manufacturing process	767
Reduction of waste solvent	Lower backside rinse flow, extending the lifetime of chemical	205
Reduction of waste solvent	Lower backside rinse flow, extending the lifetime of chemical	126
Reduction of waste phosphoric acid	Optimize usage for manufacturing process	79
Others	Extending the lifetime of chemicals, empty barrels, spare parts, filter, etc	180
Total Amount		2,411

Note: The scope covers UMC Group (UMC and its subsidiaries HJ, USCXM, Wavetek and USJC)

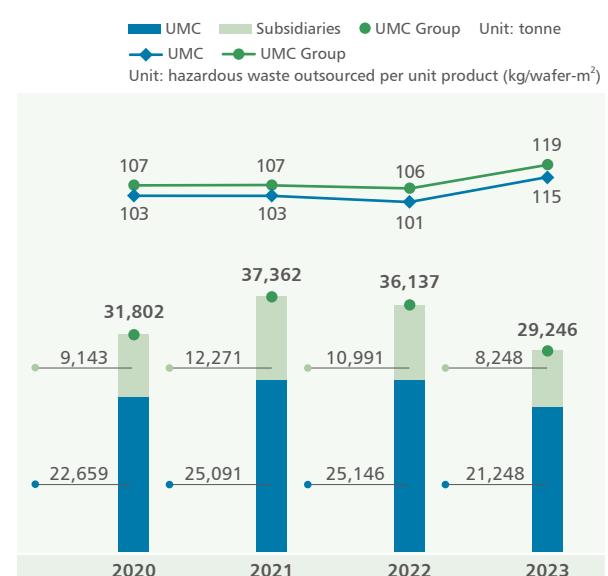


- Continue to extend the lifetime of solvents to reduce the output of waste solvents
- Replace the acid-base neutralizing agent in wastewater treatment plants with waste sulfuric acid to reduce the amount of waste sulfuric acid generated
- Extend the usage of waste sulfuric acid to reduce the amount of waste sulfuric acid generated
- Extending the service life of equipment parts to reduce waste from scrapped items
- Improving the wastewater pressure filtration system to reduce the sludge moisture content and the amount of outsourced sludge treatment.

Outsourced Waste



Outsourced Hazardous Waste



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3.4.3 Circular Economy Promotion

In addition to reducing waste at the source, UMC Group integrates various recycling and reuse programs, investments in innovation or R&D to minimize high-impact landfill treatments. In 2023, UMC's waste diversion rate reached 94%. Through the development of a circular economy model, UMC transforms waste into useful resources and can achieve three major benefits: waste reduction, reducing energy and cost consumption in waste treatment, and recycling waste into regenerated resources. Besides promoting source reduction in the production process, UMC also requires suppliers to set "waste reduction and recycling" goals in the sustainability supplier management aspect and environmental aspect to minimize waste production in the entire value chain.

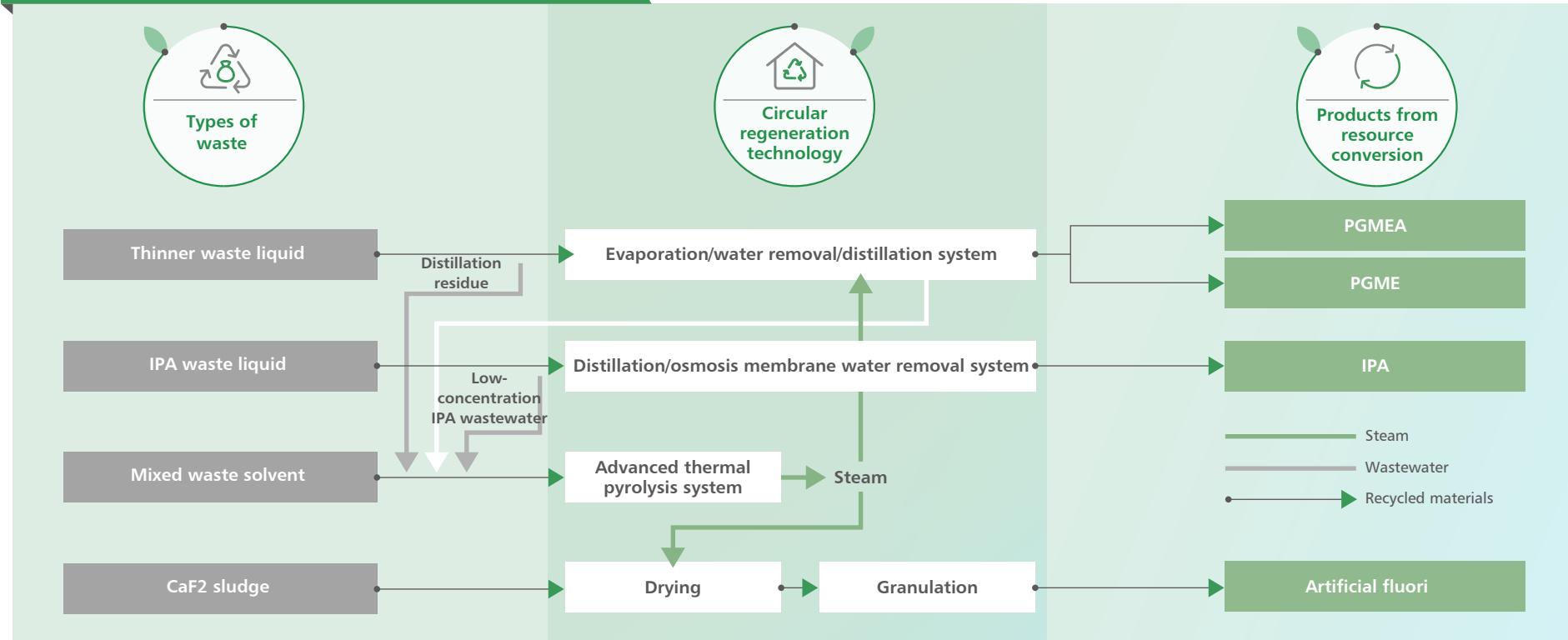
Circular Economy & Recycling Innovation Center

On March 17, 2023, UMC announced an investment of NT\$1.8 billion to establish the Circular Economy & Recycling Innovation Center at its Fab 12A. The Center will not only be the first R&D center for waste recycling in the Southern Taiwan Science Park, it will also serve as an important benchmark for circular economy and sustainable operations for Taiwan's industries. It is expected to reduce 15,000 tonnes of semiconductor manufacturing waste annually after its official launch in 2025. This investment demonstrates UMC's determination to move towards a circular economy and a zero-waste future.



By the end of 2023, the construction of the Resource Recycling Center's main building is nearing completion, and the processing facilities are expected to be installed by March 2024, with the goal of officially launching operation in 2025.

Schematic Diagram of Circular-economy Technology



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Conversion of In-fab Resources

UMC Group also promotes waste recycling to its subsidiaries. In 2023, UMC Group removed hydrogen peroxide from waste dilute sulfuric acid in fabs, which is then used for ammonia nitrogen wastewater treatment or as a chemical for air pollution control equipment. Together, waste sulfuric acid was reduced by 8,814 tonnes, and the purchase of industrial grade sulfuric acid was reduced by 9,197 tonnes, resulting in total economic benefit of NT\$58.14 million for the Company.

In 2023, UMC launched a waste photomask recycling project. By removing patterns from used photomasks with cleaning equipment, they are converted into quartz substrates that can be resold. This project has reduced waste photomask generation by 3.7 tonnes, and the economic benefit from selling the recycled products reached about NT\$7.64 million. In the same year, UMC also launched a circular economy project for converting waste copper sulfate liquid through electrolysis into copper rods with resale value. This has reduced the copper sulfate generation by 1,032 tonnes, and has generated about 62 tonnes of recycled copper pipes and NT\$6.49 million in revenue for the Company.

Conversion of Off-site Resources

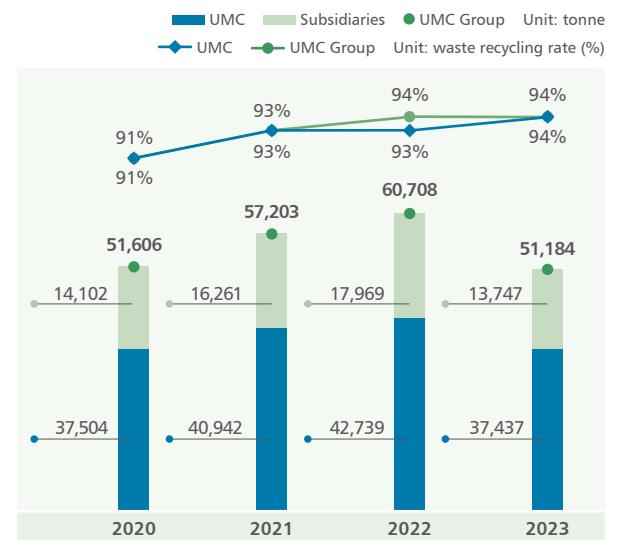
In 2023, UMC's amount of waste recycled outside the fabs was 37,437 tonnes, achieving a waste recycling rate of 94.1%, which includes not only material reuse but also reuse through incineration as a fuel source. The amount of hazardous waste reused outside the fabs was 20,541 tonnes, achieving a hazardous waste recycling rate of 96.7%, which also includes reuse through incineration as a resource. In the same year, approximately NT\$29 million of financial benefit was earned by fabs in Taiwan with the outsourced recycling treatment.

Waste Recycling Outsourcing Trend

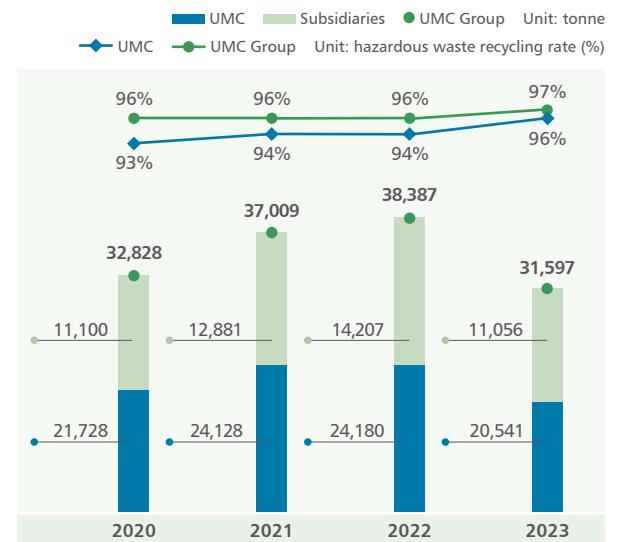


Note: 1. Scope: UMC
2. Other waste recycling methods include solidification, overseas treatment and chemical treatment
3. Energy Recovery means that waste solvent or waste wood were recycled as an auxiliary fuel.
4. Waste diversion rate=Waste Recycling÷all waste; the waste diversion rate is 94% in 2023.

Waste Recycling Outsourcing Status



Hazardous Waste Recycling Outsourcing Status



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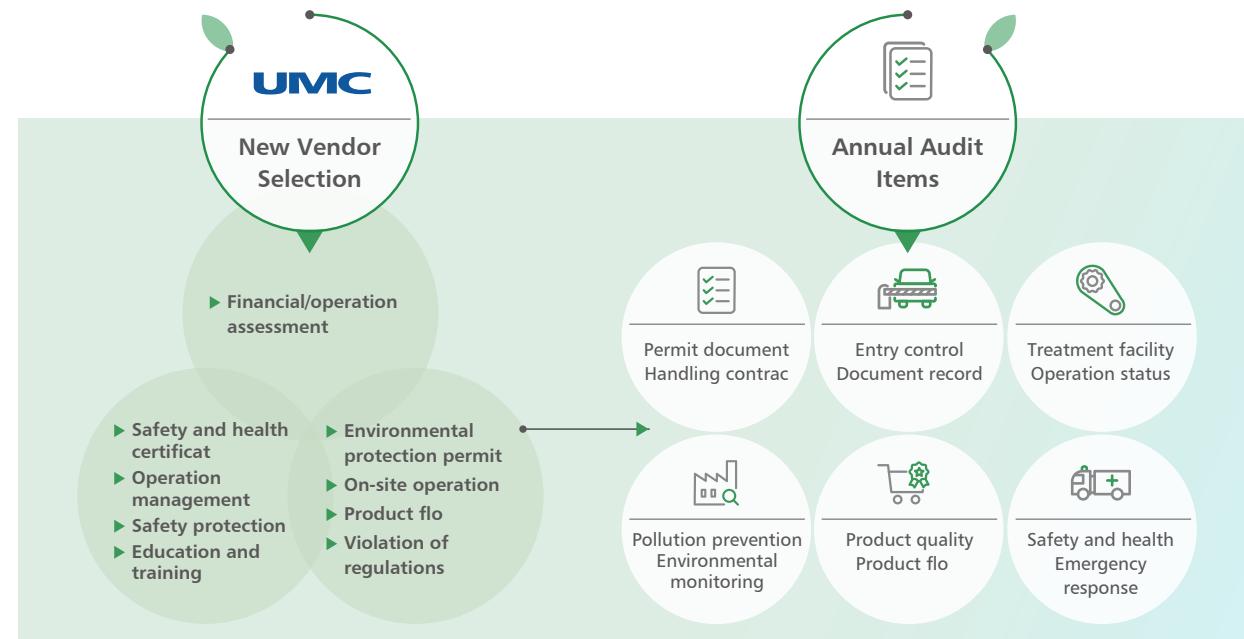
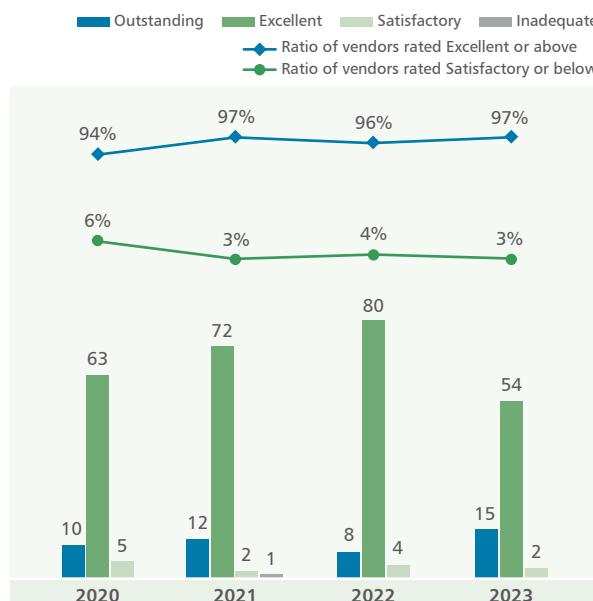
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3.4.4 Contractor Management

UMC conducts on-site audits of its waste clearance/disposal/reuse vendors to inspect their management, storage areas, treatment facilities management and pollution control, site safety management, and operating conditions (including sales flow of recycled products). Based on the audit results, the Company determines whether to maintain cooperation or increase the frequency of audits.

For the selection of new waste treatment vendors, the assessment must include the vendor's financial stability, environmental protection permits, safety and health certificates, and previous records of regulation violations. In addition, operation management, safety protection, education and training of the new vendors must be included in the assessment criteria.

In 2023, UMC completed audits of 71 waste treatment vendors. Audit results show that 97% vendors were rated excellent or higher, and only two vendors received satisfactory rating and zero vendor received inadequate rating. The Company will continue to conduct related audits to ensure all vendors follow UMC's requirements and regulations.

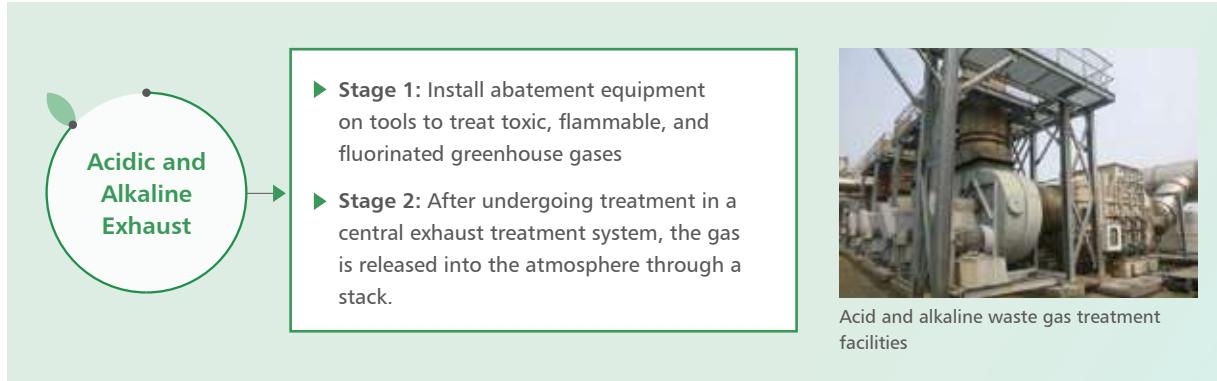
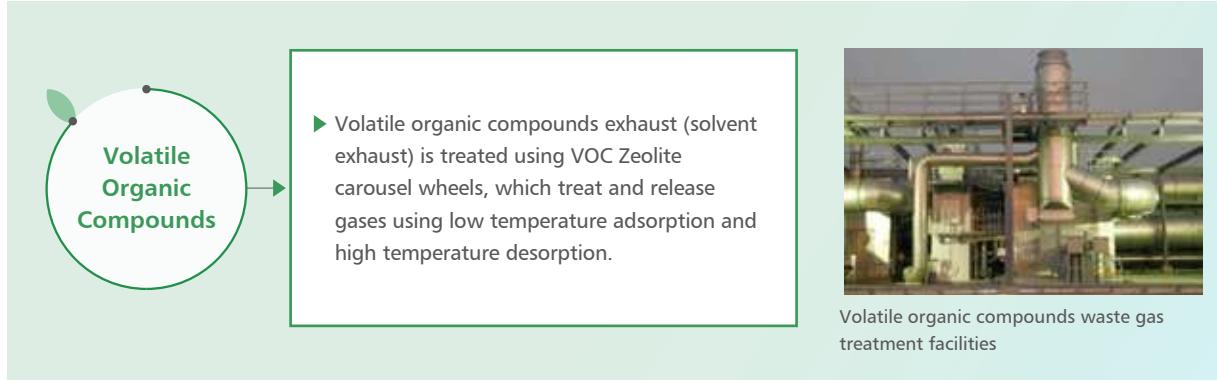


Rating and Follow-up of Waste Treatment Vendors Audit

Level	Score	Follow-up
Outstanding	≥ 90	Maintain cooperation ➤ Audit once every 2 years
Excellent	80-89	Maintain cooperation ➤ Audit once every year
Satisfactory	70-79	Maintain cooperation (list as a substitute vendor) ➤ Audit once every year
Inadequate	60-69	Put on a watch list. Increase audit frequency. Require improvement before the deadline. If no improvement made before the deadline, contract will be terminated. ➤ Audit once every 6 months
Unsatisfactory	≤ 60	Replace immediately

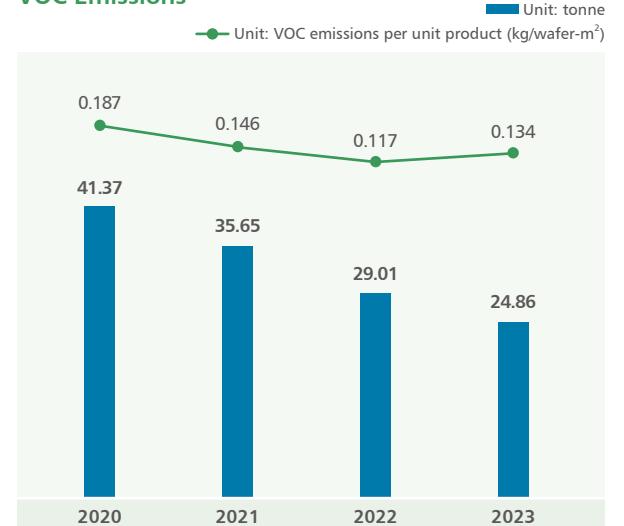
The disposal of UMC's waste by contractors is carried out in accordance with the regulations of the Ministry of Environment. Before disposal, the Company is required to visit the "Industrial Waste Report and Management System (IWR&MS)" on the Ministry of Environment website to make declaration in advance, confirm and revise the content on the declaration form within two days of waste transportation, and track the progress of the disposal operation within 30 days after the waste leaves the factory. UMC has reinforced the management and control of commissioned waste disposal procedures to ensure that waste is properly delivered to the designated disposal or reuse organizations. UMC cooperated with a GPS system manufacturer to develop the "UMC GPS Virtual Vehicle Fleet System." Since 2017, transportation vehicles for waste solvents, waste sulfuric acid, waste effluent sludge, waste phosphoric acid, copper sulfate, ammonium sulfate, waste containers, and other hazardous waste are monitored through the system. No major abnormal incidents were observed in 2023. Subsidiaries HJ, USCXM, Wavetek and USJC also track the flow of waste disposal companies to ensure proper waste management.

3.5 Air Pollution Control

Sustainability Strategy and Blueprint	2023	2024	2025	2030
Item	Goal	Achievement	Goal	Goal
VOC reduction	>93%	✓ 97.4%	≥ 94%	>95% >97% (new fabs) >95% (existing fabs)
<p>Note: The scope covers UMC</p> <p>UMC's air pollution control strategies involve using high-performance equipment to treat air pollutants that have already been reasonably reduced to a level that complies with, or is less than, the government's environmental stipulations. Test results over the years showed that UMC air pollutant emissions is less than the emission standard set by the Ministry of Environmental.</p> <p>UMC categorizes waste gas from manufacturing processes into acidic exhaust, alkaline exhaust, volatile organic compound (VOC), and general exhaust. The primary management policy is to adopt and develop environment-friendly technologies, and to strengthen source reduction and pollutant prevention.</p>				
 <p>Acidic and Alkaline Exhaust</p> <ul style="list-style-type: none"> ▶ Stage 1: Install abatement equipment on tools to treat toxic, flammable, and fluorinated greenhouse gases ▶ Stage 2: After undergoing treatment in a central exhaust treatment system, the gas is released into the atmosphere through a stack. <p>Acid and alkaline waste gas treatment facilities</p>				
 <p>Volatile Organic Compounds</p> <ul style="list-style-type: none"> ▶ Volatile organic compounds exhaust (solvent exhaust) is treated using VOC Zeolite carousel wheels, which treat and release gases using low temperature adsorption and high temperature desorption. <p>Volatile organic compounds waste gas treatment facilities</p>				

In 2023, the VOC control equipment of Fab8S had new rotors installed to improve removal efficiency. As a result, UMC's VOC emissions amount in 2023 decreased from the previous year. The efficiency of the Company's VOC treatment was maintained at an average of 97.4% in 2023, which exceeded not only the legal standard of 90%, but also the internal target of 93%. The total VOC emission of UMC was 24.86 tonnes in 2023, bringing total VOC reduction to 931.2 tonnes in the year. It is lower than that in 2022, showing a decreasing trend year by year. The VOC emissions per unit product in 2023 is 0.134 kg/wafer-m².

VOC Emissions



Note: 1. Scope: UMC

2. Measurement of VOC emission: For fabs in Taiwan, emissions is the daily volume monitored by continuous emission monitoring system multiplied by the number of days. For 12i in Singapore, is the emissions monitored in December 2021 multiplied with the number of days in year 2021.

3.6 Supporting Biodiversity

All UMC Group fabs are located in industrial zones, and none of its operating bases are located in globally or nationally agreed "Key Biodiversity Areas (KBA)". With the aim of contributing to the United Nations's Sustainable Development Goals (SDG) "Life below water" (conserving marine ecosystems) and "Life on Land" (protecting terrestrial ecosystems), UMC's Chairman approved the "Biodiversity and No Deforestation Commitment" to demonstrate the Company's commitment to ecosystem conservation under the supervision of its sustainability governance body. In addition, biodiversity and zero deforestation requirements have also been incorporated into UMC's Supplier Code of Conduct, based on which suppliers are required to comply with relevant rules and standards, thereby promoting the value chain's joint effort to support biodiversity.

Supporting Biodiversity ►



UMC Biodiversity and No Deforestation Commitment

Human economic activities lead to the deterioration of natural environment, loss of biological resources, and endanger the balance of ecosystems. UMC is committed to start from its own operations and call upon supply chain partners to jointly support the biodiversity maintenance and forest conservation, as well as to promote the well-being of human beings and the earth, to respond to the challenges posed by climate change to our environment and ecology.

Our Commitments

- ① Avoid constructing manufacturing facilities or engaging operations adjacent to globally or nationally protected biodiversity areas.
- ② Regularly conduct biodiversity risk assessments, set goals according to priorities, and take mitigation measures such as avoidance, minimization, restoration, and offset to reduce ecological impacts and achieve no net loss (NNL).
- ③ Strive for net positive impact (NPI) and no gross deforestation by 2050, and comply with international and local forestry laws or policies.
- ④ Actively cooperate with suppliers and external stakeholders to support biodiversity conservation programs.
- ⑤ Promote the concept and values of biodiversity, enhance public awareness of ecological conservation, and encourage ecological conservation actions.
- ⑥ Actively respond to the United Nations Convention on Biological Diversity (CBD) and other initiatives to preserve biodiversity.

Our Actions

► Biodiversity Risk Assessment

To fulfill our commitments and respond to the Task Force on Nature-related Financial Disclosures (TNFD) initiative, UMC began using the WWF Biodiversity Risk Filter tool in Q4 2022 to assess natural dependency and impact risks at its Taiwan facilities and other operational sites. The Company prioritizes avoidance and minimization measures for areas with medium to high risk, reducing ecological impact. The assessment showed that UMC's Taiwan facilities are not located within 2 km of any globally or nationally designated areas of biodiversity importance. UMC's environmental policy aims for zero pollution, complying with or exceeding environmental laws and international conventions. The Company continuously introduces high-performance pollution prevention technology and equipment and maintains a zero-penalty record for environmental violations, minimizing the impact of pollution on biodiversity. UMC issued the "UMC Water Resource Management Policy and Commitment" in 2015, aiming to maximize water efficiency and achieve a process water recycling rate of over 80%, exceeding regulatory standards. To reduce reliance on tap water sources, UMC has set water conservation targets in its sustainability strategy blueprint and expanded multiple sources of water supply. By 2030, the Company aims to reduce unit product water usage by 30% and achieve a 32% usage ratio of recycled water and desalinated seawater, reducing its operational reliance on natural water resources.

► Introducing Green Fab

UMC Group introduced the green fab concept in 2007. The planning and construction of green buildings are carried out by following standards specified in U.S. LEED system and Taiwan's EEEWH system through approaches such as appointing external green building experts and ecologists, implementing Technology Development Program (TDP) for Academia, etc. The design features of UMC green buildings that aim to promote biodiversity are as follows:

Ecological (Green) Network: Retain continuous green belts around fabs to increase opportunities for creatures to migrate, forage, or live.

Habitat for little creatures: Create green floodwater detention ponds, design highly porous revetments, maintain a mixed forest, and preserve a meadow/shrub area to meet the needs of different creatures.

Plant diversity: In principle, choose native and diverse plants which can attract butterflies or birds to create diversified habitat conditions for creatures.

Not only UMC Group's new fabs are designed based on the principles of green buildings, green factories and smart buildings, existing fabs are also assessed based on the principles of green buildings and green factories, for which relevant green design and construction are gradually introduced.

Status of Each Fab in 2023	U.S. LEED	Gold Level: Fab12A P3&4; Fab12A P5&6; Subsidiary-USCXM
	Industrial Development Bureau, MOEA - Intelligent Building	Diamond Level: Fab12A P5&6; Fab12A P5&P6 office
	Industrial Development Bureau, MOEA - EEEWH Green Building	Certified Level: Fab8A; Fab8F; Fab8
		Gold Level: Fab12A P3&4
		Diamond Level: Fab12A P5&6
	Industrial Development Bureau, MOEA - Green Factory	Fab8A; Fab8F; Fab8S; Fab12A; Fab12A P2
	Industrial Development Bureau, MOEA - Cleaner Production Assessment System Certification	All 8-inch fabs in Taiwan, Fab12A and Fab12A P2

Note: * the predecessor of the current Industrial Development Administration

► Engagement with stakeholders on biodiversity

UMC has long supported Taiwan's environment and ecosystem conservation through efforts to promote ecological biodiversity and raise awareness of environmental protection among the general public. Since 1999, UMC has implemented voluntary greenhouse gas (GHG) emissions reduction plans and measures. The reduction achievements had passed the review of the Ministry of Environmental, and enabled UMC to obtain carbon credits. In 2014, UMC signed Taiwan's first competent authority approved carbon credits transaction with Dragon Steel Corporation, and used all the proceeds from the carbon credits transaction to launch the Eco-Echo Ecological Conservation Hope Project. Under the project, the Sauter's Frog Habitat Conservation Project and the Eco Echo Award were established, demonstrating that UMC can contribute positively to our society and ecological environment.

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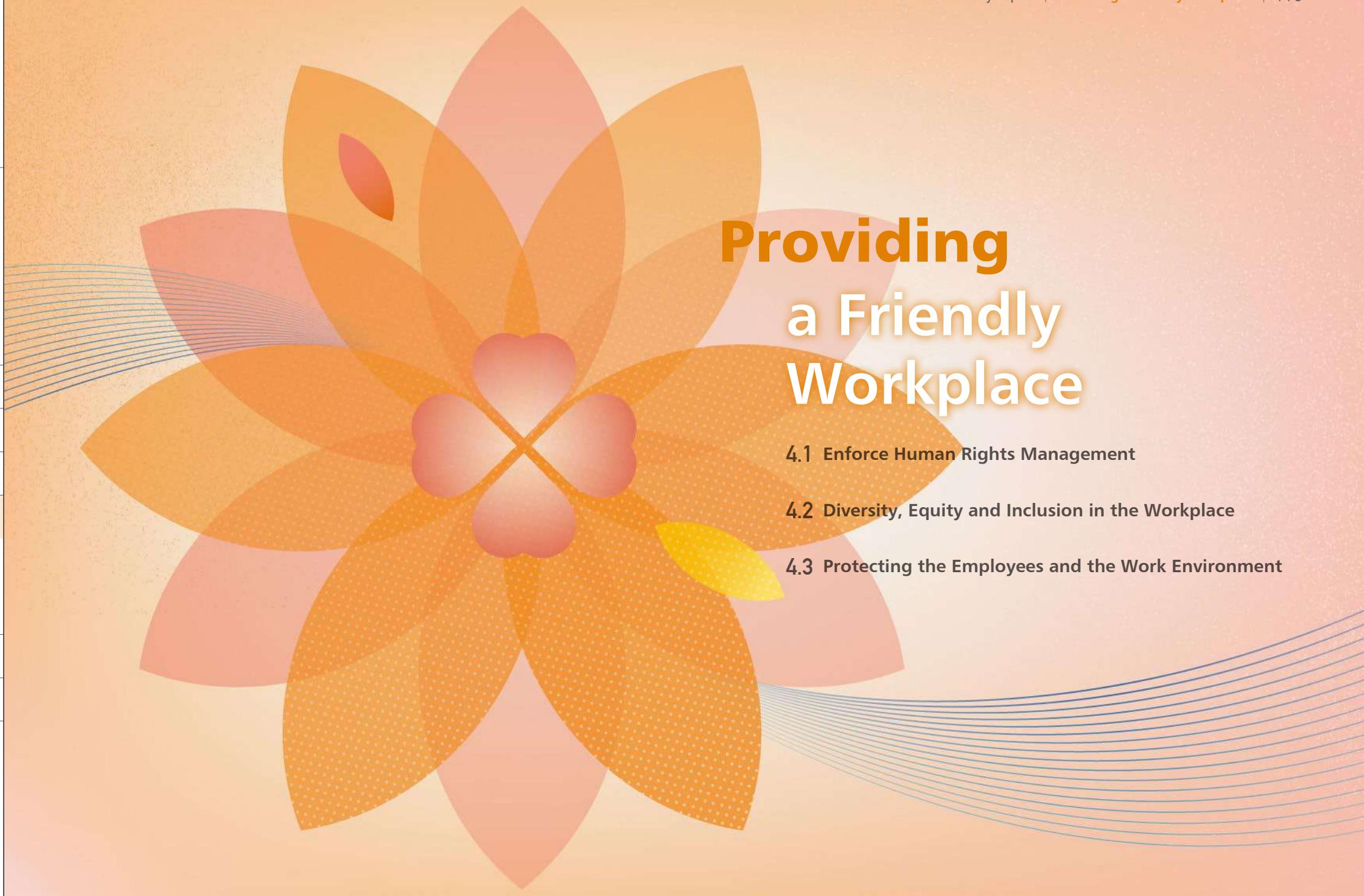
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Providing a Friendly Workplace

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4 Providing a Friendly Workplace

Talent is the most important asset at UMC, thus UMC is committed to creating a workplace environment where employees can work in roles that suit their abilities and feel secure. UMC offers a competitive compensation and benefits system, cares about the physical and mental health of each employee, and creates a comprehensive talent development system, thereby enabling employees to give full play to their potentials in the workplace. Other than that, maintaining industrial safety is also considered a basic requirement at UMC. The UMC's corporate culture that takes industrial safety as the first priority is built with the aim to identify potential workplace safety risks in advance and create a safe workplace environment, along with a transparent and smooth worker management communication mechanism to protect employees' rights and workplace safety.

Important Stakeholders ▶



Employees



Suppliers



Government

SDGs ▶



Performance Highlights 2023

All fabs' scores of RBA SAQ were above 90, indicating a low risk level

>90

All employees completed "Human Rights" training courses

100%

"Employee Work Engagement Survey" results are higher than the semiconductor industry's norm

81.7

Proportion of females in all management positions

22.4%

The turnover rate for UMC Group is the lowest in the past four years



6.8%

ESG targets achieved
The allocation of employee profit sharing percentage is increased according to ESG KPI



By integrating the Company's "centered on people" commitment in occupational health management, we aim to achieve the goal of zero occupational diseases

Promoting the UMC Occupational Disease Prevention Program

4.1 Enforce Human Rights Management

4.1.1 Enforce Human Rights Management 4.1.2 Employer-employee Communication



Material Topic Human Rights

Related Policy ► Human Rights Policy Declaration



Anti-Discrimination and Anti-Harassment Policy



In accordance with GRI Standards (2021) for identifying impacts of sustainability issues, management actions in response to these impacts and processes used to track the effectiveness of the actions are listed in the table below:

Negative impact ► Human rights violation

Management Actions	Processes Used to Track the Effectiveness of Actions
<ul style="list-style-type: none"> ► Formulate anti-discrimination and anti-harassment policies. ► Establish channels for submitting wrongful harm appeals. ► Conduct regular human rights risk assessments, and complete the RBA Self-Assessment Questionnaire (SAQ) on a regular basis. ► Participate in the RBA "Validated Assessment Program" (VAP) implemented by a third-party agency 	<ul style="list-style-type: none"> ► Designate June of each year as the month for wrongful harm prevention; track and confirm whether employees understand relevant rights and interests. ► Conduct educational training sessions on human rights. ► Complete the RBA SAQ on a yearly basis, and assess the risk levels. ► Participate in the RBA VAP implemented by a third-party agency

Achievements in 2023

Goals	Achievements
Complete the RBA SAQ on a regular basis	All fabs' scores were above 90, indicating a low risk level
Pass the RBA VAP certificatio	Fab 12i, Fab 8A, Fab 8C and Fab 8D have all completed the VAP evaluation; the audit reports have been provided to customers through the RBA-Online platform.
All employees complete the training session of human rights*	100% of completion rate for training session
All employees complete the training session of illegal violation/workplace violence**	100% of completion rate for training session ^{Note2}

Sustainability Strategy and Blueprint	2023	2024	2025	2030	
Items	Goals	Achievements	Goal		
Promoting human rights equity and employer-employee communication: Continue the Promotion of Work Engagement Questionnaire Survey***					
<ul style="list-style-type: none"> ► Coverage rate ► Score 	<ul style="list-style-type: none"> ► Coverage rate: 82.5% ► Score: 79.6 	<ul style="list-style-type: none"> ✓ Coverage rate: 98.6% ✓ Score: 81.7 	<ul style="list-style-type: none"> ► Coverage rate: 98.7% ► Score: 80 	<ul style="list-style-type: none"> ► Coverage rate: 98.9% ► Score: 80.2 	<ul style="list-style-type: none"> ► Coverage rate: 99% ► Score: >80.5

Note: 1. Scope: UMC (the parent company only); With * remark is UMC Group (UMC, its subsidiaries, HJ, USCXM, Wavetek, and USJC); **UMC fabs in Taiwan; ***UMC, its subsidiaries, HJ, and USCXM

2. Excluding those who are unable to complete the test during the testing period due to reasons such as long holidays, returning home, or resignation, etc.

4.1.1 Enforce Human Rights Management

Human Rights Policy

UMC supports and values governing international labor and human rights stipulations, and formulated the "UMC Code of Conduct" as well as the "UMC Human Rights Policy Declaration" in accordance with the spirit of the "UN Guiding Principles on Business and Human Rights" and the "Responsible Business Alliance Code of Conduct", hoping that all employees can comply with applicable regulations while engaging in their daily work and performing the required businesses, so as to ensure the sustainable growth and development of the Company.

To ensure that the human rights policy is well implemented, UMC complies with four major principles:

- ① Abide by the local laws and regulations of the operating base, UMC promises to safeguard and protect the human rights of workers, and provide a safe and healthy workplace environment.
- ② UMC prohibits forced labor and child labor, provides equal working opportunities, allows freedom of association, respects privacy, and opposes all kinds of discrimination, bullying, and harassment.
- ③ UMC provides clear grievance procedure, formulates and continuously improves mitigation and remedial measures to reduce the impact of human rights risk.
- ④ UMC conducts regular human rights risk assessments, reviews potential risks in business activities, and discloses the governance of human rights issues to ensure information transparency.

[More details for UMC Human Rights Policy ▶](#)



Human Rights Promotion Practices

UMC's human rights policy applies to UMC and its reinvested businesses, subsidiaries, joint ventures, suppliers, customers, and other business partners to ensure that daily operations and all business activities meet the requirements. UMC incorporates human rights considerations in all aspects of operations, including employees, customers, suppliers, business partners, and the social environment where UMC's operating bases are located.

UMC and its subsidiaries, HJ and USCXM, and Wavetek, attach great importance to the promotion of labor and business ethics policies in the "Responsible Business Alliance Code of Conduct" (hereinafter referred to as the RBA Code of Conduct), and regularly review the disciplinary code of employees, highlighting the importance of labor, ethics, child labor avoidance, labor relation, freely chosen employment, working hours and anti-discrimination.

In 2023, UMC and its subsidiaries, HJ and USCXM, and Wavetek provided a total of 17,099.5 hours of human-rights-related training sessions to all employees, with a training completion rate reaching 100%. In addition, to protect the basic rights and interests of workers, when major changes in operations occur, UMC will follow the relevant provisions of the Labor Standards Act in Taiwan, the Employment Act in Singapore, and the Labor Contract Law in China.

Human Rights Risk Identification Process

Every year, risk identification is conducted in accordance with the "Human Rights Risk Identification Process", and surveys on corporate social responsibility related issues are sent to stakeholders including employees, communities, and government agencies through online and paper questionnaires. By collecting and analyzing the results of the surveys, issues that are concerned by the stakeholders can be better understood, which will benefit the identification of key indicators, serving as the reference for subsequent risk management.

Due diligence objects include their own operations, value chain, suppliers, subsidiaries, business partners and new business relationships (such as mergers, joint ventures, and acquisitions). According to the risk identification process, a comprehensive due diligence assessment is conducted before the establishment of new business relationships to ensure that there are no potential risks. In addition, the human rights risk assessment disclosure scope includes new business relationships established in the following year.



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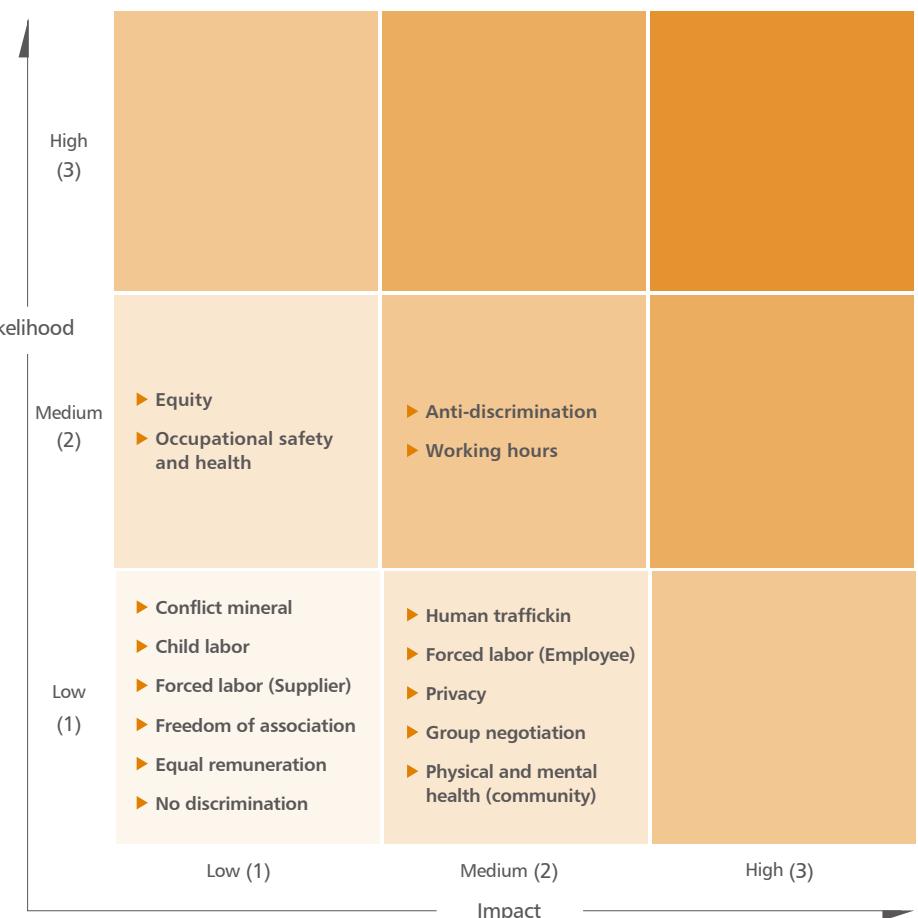
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Human Rights Risk Matrix

Human rights risk assessments are conducted by the execution members and officer of the Corporate Sustainability Committee according to the probability and severity of the risks. The results of the assessments are then used to prepare the "Human Rights Risk Matrix," and the "Major Human Rights Risk Issues" are identified according to the ranking.



Note: Risk = Degree of Impact (Impact) × Probability of Risk (Likelihood). 3 points or less is low risk; between 3 points (including) to 5 points is moderate risk; and 6 points (including) or higher is high risk.

Human Rights Issue Management

UMC established the "EICC Committee (renamed RBA Committee in 2018)" in 2013 to manage human rights related issues, including labor, health and safety, environment, ethics, etc., and formulate relevant policies as well as performance targets, and regularly track and review the results of the implementation plan.

The RBA Committee annually reviews whether the internal system of UMC complies with the latest RBA standards in order to fully implement the RBA Code of Conduct. The risks of each fab are assessed through the RBA-Online platform to prevent potential risks from occurring. In 2023, the RBA SAQ scores of all fabs are higher than 90 points, indicating that the risk is low.

In addition to the internal self-inspection mechanism, UMC also invites third-party agencies entrusted by customers to perform the "Validated Audit Process" (VAP) of RBA. Through the checking of external audit, the overall management system can be further strengthened. In 2022, the Fab 12A, Fab 8E in Taiwan and the Fab 12i in Singapore completed the VAP assessment and the corresponding audit reports were provided to the customers through the RBA-Online platform.

RBA Risk Assessment Performance

Fab	2023	
	SAQ	VAP
12-inch wafer fab	Fab12A	92.0
	Fab12i	91.5
	Fab8A	91.5
	Fab8C	91.8
8-inch wafer fab	Fab8D	91.8
	Fab8E	92.1
	Fab8F	92.3
	Fab8S	92.1
Subsidiaries	HJ	93.7
	USCXM	91.6
	Wavetek	—
USJC		

Note: 1. SAQ assessment: full score is 100 points, ≥85 points is low risk, ≥65 points and <85 points is moderate risk, and <65 points is high risk.

2. VAP assessment: The perfect score is 200 points and all of UMC's 8-inch wafer fabs received a full score. The fab evaluated for current year is according to customer requirements. In 2022, no customer required Fab 12A, Fab 8E, Fab 8F, and Fab 8S to conduct VAP assessment, so some factories have not implemented VAP or SAQ.

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Management of Human Rights Issues

According to the results of human rights risk assessment, UMC establishes mitigation and remedial measures, identifies the human rights issues related to each department, notes management and improvement measures, and tracks the results of implementation. Human rights mitigation measures and remediation measures are implemented in 12 fabs in Taiwan, China, Japan and Singapore. There were no high-risk risks nor human rights violations identified in 2022; thus, no remedial measures were implemented. The results of such assessments enable UMC to maintain frequent and regular dialogues with stakeholders, and their feedback can serve as the basis for review and adjustment of the Human Rights commitments and policies to ensure that they meet the stakeholders' expectations and requirements.

There were no high-risk risks nor human rights violations identified in 2023; thus, no remedial measures were implemented.

2023 Human Right Risk Assessment Result

Human rights mitigation measures and remediation measures are implemented in 12 fabs in Taiwan, China, Japan and Singapore.

Party of Concern	Core Issues	Risk Identification	Impact Assessment and Mitigation Measures	Remediation Action	2023 Management Goals	Achievements in 2023	Targets for 2024
 Migrant employees and female employees	Equity	Low	<ul style="list-style-type: none"> ▶ The RBA Committee was established in the Human Rights Committee to regularly review human rights-related issues. ▶ The inspection and evaluation of the "Prohibition of Forced Labor" management procedures and various grievance procedures are carried out through internal audits. 	<ul style="list-style-type: none"> ▶ Issue handled in accordance with wrongful harm handling procedures. Corresponding punitive measures taken for perpetrators; compensatory measures organized after negotiation based on complaint filers' preference. ▶ Overtime compensation given in accordance with internal regulations; involuntary overtime ceased immediately to restore employees' rights. 	<ul style="list-style-type: none"> ▶ The annual online completion rate of new recruits for the "Labor/Ethics" education and training in the RBA Code of Conduct to reach 100% ▶ All fabs to complete the RBA SAQ assessment and score higher than 90 points. 	 Achieved	<ul style="list-style-type: none"> ▶ The annual online completion rate of new recruits for the "Labor/Ethics" education and training in the RBA Code of Conduct to reach 100% ▶ All fabs to complete the RBA SAQ assessment and score higher than 80 points.
	Anti-discrimination	Medium					
	Human Trafficking	Low					
	Forced labor	Low					
 Suppliers	Conflict minerals	Low	<ul style="list-style-type: none"> ▶ Conduct questionnaire surveys and on-site audits on suppliers' compliance with the RBA Code of Conduct. 	<ul style="list-style-type: none"> ▶ Ensure that the suppliers have a medium-to-high risk compensation policy in place and promise to provide immediate and reciprocal compensation in the event of such a situation. ▶ Ensure all new suppliers to sign the UMC Supplier Code of Ethics and Supplier Code of Conduct ▶ Third-party agencies conduct questionnaire surveys and on-site audits on key suppliers' compliance with sustainability (ESG) and RBA requirements 	<ul style="list-style-type: none"> ▶ Ensure all new suppliers to sign the UMC Supplier Code of Ethics and Supplier Code of Conduct ▶ Third-party agencies conduct questionnaire surveys and on-site audits on key suppliers' compliance with sustainability (ESG) and RBA requirements (may be conducted through video conferencing due to pandemic). Audit coverage rate reached 100%. 	 Achieved	<ul style="list-style-type: none"> ▶ Ensure all new suppliers to sign the UMC Supplier Code of Ethics and Supplier Code of Conduct ▶ Third-party agencies conduct questionnaire surveys and on-site audits on key suppliers' compliance with sustainability (ESG) and RBA requirements (may be conducted through video conferencing due to pandemic). Audit coverage rate reached 100%.
	Child labor	Low					
	Forced labor	Low					
	Working hours	Medium					
 Customers	Safety and health	Low	<ul style="list-style-type: none"> ▶ Regularly receive satisfaction ratings from customers ▶ In case of leakage of private information, UMC will make improvement and compensation according to the terms of the confidentiality agreement. 	<ul style="list-style-type: none"> ▶ All employees, business partners, and customers must sign confidentiality contracts, requiring mutual protection of confidential information. ▶ Internally formulate the "Confidential Information/Data Management Regulations", and all customer information is handled by dedicated units. 	<ul style="list-style-type: none"> ▶ All employees, business partners, and customers must sign confidentiality contracts, requiring mutual protection of confidential information. ▶ Internally formulate the "Confidential Information/Data Management Regulations", and all customer information is handled by dedicated units. 	 Achieved	<ul style="list-style-type: none"> ▶ All employees, business partners, and customers must sign confidentiality contracts, requiring mutual protection of confidential information. ▶ Internally formulate the "Confidential Information/Data Management Regulations", and all customer information is handled by dedicated units.
	Privacy	Low					

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Party of Concern	Core Issues	Risk Identification	Impact Assessment and Mitigation Measures	Remediation Action	2023 Management Goals	Achievements in 2023	Targets for 2024
	Labor relation	Low	<ul style="list-style-type: none"> The inspection and evaluation of labor relation are carried out through the labor-management meetings, quarterly company wide town hall meetings, and various grievance procedures. 	<ul style="list-style-type: none"> Review meetings will be held to compensate employees for their losses in accordance with the resolution of labor disputes or grievance records. If there is violation, it will be corrected immediately. 	<ul style="list-style-type: none"> "Labor-management meetings" and "company-wide town hall meetings" are held on a quarterly basis. 100% of appeal cases are handled and settled. Continue to implement the "company-wide engagement survey" and strengthen organizational identification 	<ul style="list-style-type: none"> A total of 36 labor-management meetings and 4 company-wide town hall meetings were held. Achieved Implementing as planned 	<ul style="list-style-type: none"> Hold regular "Labor-management meetings" and quarterly "company-wide town hall meetings" Settlement of appeal cases: 100% Continue to implement the "company-wide engagement survey" and strengthen organizational identification
	Freedom of association	Low				<ul style="list-style-type: none"> No employees proposed to organize a labor union in 2023. Formed a total of 30 employee social clubs with a total participation of 2,389 people. 	<ul style="list-style-type: none"> Continue to encourage employees to balance work and life, participate in leisure and welfare activities, and continue to handle evaluations in accordance with the management measures of the social clubs to help them operate smoothly
 All employees	Equal Remuneration /Equal Pay for Equal Work	Low	<ul style="list-style-type: none"> The establishment and implementation of various salary systems shall not differ based on gender, race, religion, political stance, marital status, etc. This ensures that employees receive fair and reasonable compensation. Regular reviews of salary and welfare systems are conducted in accordance with legal regulations and basic salary provisions to protect the rights and interests of employees. 	<ul style="list-style-type: none"> Adjustments to compensation are made based on the principle of equal pay for equal work, and the rationality of the system is reviewed and preventive measures are formulated to prevent future issues. 	<ul style="list-style-type: none"> We regularly monitor market salary information and provide competitive compensation packages that include differentiated pay and long-term incentive rewards. We also implement diverse tools to ensure that our compensation remains competitive. If necessary, we will adjust our salary strategy to remain competitive in the market. 	<ul style="list-style-type: none"> The salary level aligns with the organization's compensation strategy and regulatory requirements. 	<ul style="list-style-type: none"> The salary level aligns with the organization's compensation strategy and regulatory requirements.
	Working hours	Medium	<ul style="list-style-type: none"> Take the initiative to construct a sound working hour management mechanism and system. 	<ul style="list-style-type: none"> If the extended working hours of an employee exceeds the legal limit, the system will alert the supervisor to pay attention. If the overtime is due to an unforeseen circumstance, the supervisor must specify the reason and propose countermeasures to prevent recurrence. 	<ul style="list-style-type: none"> Continue to strengthen the working hour management system to bring the benefit of managing the working hours and caring for employees. 	<ul style="list-style-type: none"> Overtime management was promoted in corporate secretary forum and labor-management meetings. The overtime management system is strengthened to promote the communication and planning of overtime needs. Send monthly reminders to supervisors to show care for employees in vacation planning. 	<ul style="list-style-type: none"> Continue to strengthen the working hour management system to bring the benefit of managing the working hours and caring for employees.
 Community residents	Physical and mental health	Low	<ul style="list-style-type: none"> Carry out regular surrounding noise measurement and air pollution monitoring to properly manage these intrusions and reduce local residents' health risks. 	<ul style="list-style-type: none"> If any equipment is found to be abnormal, it will be instantly repaired and replaced with spare equipment. 	<ul style="list-style-type: none"> Noise: Contract special agency to perform surrounding noise measurement every year, and the results shall meet the governing standards. Air pollution: Monitor the operating parameters of the air pollution control equipment, and the operating range meets the requirements of the licensing regulations. 	 Achieved <ul style="list-style-type: none"> Air pollution: All operating parameters of the air pollution control equipment have met the requirements; the VOC removal efficiency is higher than the governing standard (90%). 	<ul style="list-style-type: none"> Noise: Contract special agency to perform surrounding noise measurement every year, and the results shall meet the governing standards. Air pollution: Monitor the operating parameters of the air pollution control equipment, and the operating range shall meet the requirements of the licensing regulations.

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Party of Concern	Core Issues	Risk Identification	Impact Assessment and Mitigation Measures	Remediation Action	2023 Management Goals	Achievements in 2023	Targets for 2024
 Indigenous people and the physically challenged	No discrimination	Low	<ul style="list-style-type: none"> ► Pay attention to equal employment rights during recruitment and provide fair employment opportunities. 	<ul style="list-style-type: none"> ► Hold open recruitment activities, and review monthly on the People with Disabilities Rights Protection Act to ensure the adequate quota of employment. 	<ul style="list-style-type: none"> ► We ensure compliance with regulations regarding the employment of individuals with disabilities. ► Our job vacancies are publicly advertised with a complete explanation of salary and benefit information. 	<ul style="list-style-type: none"> ► Achieved ► In 2023, a total of 153 employees with disabilities were recruited, complying with and exceeding the governing regulations. ► Providing 8 hours of ritual leave to indigenous people each year to show respects to the unique culture of different ethnic groups. In 2023, 111 indigenous people were recruited. 	<ul style="list-style-type: none"> ► Meet the recruitment requirements specific in the People with Disabilities Rights Protection Act. ► Job are offered through open recruitment. Recruitment channels fully explain the compensation and benefits. ► Providing 8 hours of ritual leave to indigenous people each year to show respects to the unique culture of different ethnic groups.
Subsidiary company-USCXM	Working hours	Low	<ul style="list-style-type: none"> ► We conduct an annual review of working hours through RBA regulations and self-assessment questionnaires (SAQs). ► We continuously build and improve our working hour management mechanisms and systems. 	<ul style="list-style-type: none"> ► Pay corresponding overtime pay in accordance with mainland laws and regulations. ► If the working hours exceed the legal limit, the system will provide a warning to remind the supervisor to pay attention. 	<ul style="list-style-type: none"> ► Continue to strengthen the working hour management system to bring the benefit of managing the working hours and caring for employees. 	<ul style="list-style-type: none"> ► Overtime management was promoted in meetings every month. ► Strengthen system management: If work hours exceed statutory limits, department supervisors are reminded to review anomalous situations. ► Proactively remind supervisors on a monthly/quarterly basis to remind and encourage employees to plan holidays. 	<ul style="list-style-type: none"> ► Continue to strengthen the working hour management system to bring the benefit of managing the working hours and caring for employees.
Subsidiary company-HJ	Working hours	Medium	<ul style="list-style-type: none"> ► Each month, the number of employees exceeding the overtime limit is calculated and reported by department. Managers are reminded to reasonably schedule and manage overtime. ► According to labor regulations, employees should have at least one day of rest every seven days. The attendance system will remind employees based on their card swipe records, and HR will review this information on a monthly basis. 	<ul style="list-style-type: none"> ► We provide overtime pay in accordance with legal regulations and review any abnormal overtime situations on a monthly basis. Managers are reminded to manage these situations and must explain the reasons for the overtime and propose measures to prevent it from happening again. 	<ul style="list-style-type: none"> ► Continue to strengthen the working hour management system to bring the benefit of managing the working hours and caring for employees. 	<ul style="list-style-type: none"> ► Overtime management was promoted in meetings every month. ► Strengthen system management: If work hours exceed statutory limits, department supervisors are reminded to review anomalous situations. ► Proactively remind supervisors on a monthly/quarterly basis to remind and encourage employees to plan holidays. 	<ul style="list-style-type: none"> ► Continue to strengthen the working hour management system to bring the benefit of managing the working hours and caring for employees.
Subsidiary company-Wavetek	No discrimination	Low	<ul style="list-style-type: none"> ► Take notice of equal employment rights in recruitment, and provide equal employment opportunities 	<ul style="list-style-type: none"> ► Maintain the practice of open recruitment, and check recruitment requirements stipulated in disability-related regulations. 	<ul style="list-style-type: none"> ► Conduct open recruitment for job vacancies; hiring decisions shall not consider ethnicity, nor shall employees be discriminated against in terms of salary, benefits promotion, salary adjustment or other working conditions and employment rights 	<ul style="list-style-type: none"> ► Open recruitment is conducted; salary and benefit information is clearly disclosed through recruitment channels 	<ul style="list-style-type: none"> ► Conduct open recruitment for job vacancies; hiring decisions shall not consider ethnicity, nor shall employees be discriminated against in terms of salary, benefits promotion, salary adjustment or other working conditions and employment rights
All employee	Labor relation	Low	<ul style="list-style-type: none"> ► Review and evaluate through quarterly labor-management meetings and different complaint channels 	<ul style="list-style-type: none"> ► Hold discussion meetings based on labor-management disputes or complaint resolution records; provide compensation for employees' losses. 	<ul style="list-style-type: none"> ► Hold labor-management meetings on a quarterly basis ► 100% of complaint cases have been resolved and closed 	 Achieved <ul style="list-style-type: none"> ► No complaint file in 2023 	<ul style="list-style-type: none"> ► Hold labor-management meetings on a quarterly basis ► 100% of complaint cases have been resolved and closed
All employee	No discrimination	Low	<ul style="list-style-type: none"> ► We evaluate the harassment prevention training program and consultation content. 	<ul style="list-style-type: none"> ► We provide corresponding punishment for perpetrators of harassment and coordinate compensation measures based on the wishes of colleagues who make complaints. 	<ul style="list-style-type: none"> ► Implementing online harassment prevention training content ► Providing harassment prevention training for supervisors 	<ul style="list-style-type: none"> ► Completion rate 100% ► Completion rate 100% 	<ul style="list-style-type: none"> ► "Harassment prevention online training completion rate 100%" ► "Target group: Supervisor harassment prevention completion rate 100%"

Note: 1. UMC human rights risk identification covers its own operations, value chain, and all new business relationships (such as mergers, acquisitions, or joint ventures).

2. When conducting risk assessments, vulnerable groups such as employees, women, children, indigenous people, immigrant workers, third-party employees, and local communities are included. If there are no significant risks identified after assessment, it does not need to be disclosed.

4.1.2 Employer-employee Communication

Channels of Communication

Employee compensation and welfare have always been a top priority of UMC. UMC takes an active role in the training of skilled professionals, fulfilling labor laws, protecting the rights and interests of UMC employees, and building a transparent and enjoyable work environment. Communication channels such as employer-employee meetings, divisional meetings, conferences (management conferences and town hall meetings) as well as mail boxes were employed to achieve the goals of providing extensive communication channels to effectively solve any problem that may arise.

Important UMC Communication and Complaint Channels:



"UMCWe United Microelectronics Website" is an external website that provides a platform that colleagues can use anytime, anywhere. It integrates benefits, societies, and special stores to strengthen the interaction between the organization and colleagues.

To optimize and expand the advantages of real-time communication, UMC integrated and established the Communication Area - a platform dedicated to employee communication. The site content includes the Human Resource Director Mailbox, fraud and sexual harassment complaints, e-Suggestions for feedback, company-wide information forum, and UMC's website so that the various communication channels in all operation sites can be integrated into one single platform for effective communication and promoting harmonious employer-employee relations.

Based on the standpoint of safeguarding the human rights of employees, the Company also has a confidentiality mechanism for employees in complaints or incidents to ensure that employees can file complaints freely and confidentially. Among UMC's communication channels, the "e-Suggestion" platform has the highest utilization rate. In 2023, it received 242 opinions and suggestions from colleagues, and the settle and closing rate was 100%.

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Freedom of Association

According to the rights granted to workers by the law, the employees of UMC shall have the right to form associations freely, and UMC shall not interfere or intervene with the employees' freedom of association. UMC provides a diverse and sound communication mechanism to effectively understand the employees' needs and deal with the problems they are facing. In the employer-employee meeting, each division can nominate their representatives to participate in the "Online Voting of Employee Representatives for the Employer-Employee Meeting." Based on the percentage of male and female representatives required by law, the voting is opened to the employees through UMC's voting system, allowing the elected employee representatives to express employees' concerns and opinions for discussion in the quarterly employer-employee meeting. The employer-employee meeting is the formal channel for communication and the coverage of UMC employee is 100%. In addition, the China subsidiary HJ also established a labor union to communicate with employees through conferences, divisional meetings and suggestion boxes.

Area	Item	2020	2021	2022	2023	Details	Frequency
UMC (Taiwan)	UMC Group	Town Hall Meeting	4	4	4	Interactive video conference for 7 sites spanning multiple countries and regions hosted by the president himself, allowing UMC colleagues and external parties to review the latest company policies, directives, and performance.	Held quarterly after the investor conference.
	Fab and Departmental Communication Meetings	84	96	88	87	Share overall operational performance as well as developmental highlights of the fabs and divisions with all employees.	Held semi-annually by each fab and division.
	Secretary Conference	8	8	8	8	The Human Resource (HR) division shall collect key topics and discuss them with all secretaries. And secretaries shall convey key issues of the meeting to colleagues to achieve two-way communication.	Held quarterly at fabs in Hsinchu Science Park / Southern Taiwan Science Park
	Employer-employee Meeting	36	36	36	36	The HR division shall delegate colleagues and employees familiar with relevant regulations to organize and assemble cross-unit and cross-functional consulting team. The team shall follow up on specific meeting topics and facilitate subsequent improvement plans to effectively promote harmonious employer-employee relationships.	Held quarterly at 9 fabs.
	Employee Benefit Committee Meeting	4	4	4	4	The employee well-being activities as well as the usage of employee benefit funds shall be reported to the employee benefit committee member delegated by each fab in the quarterly meeting.	Quarterly
HJ		12	12	19	4	Any questions that employees have, such as difficulties and problems at work, can be raised at the meeting, and the supervisor and the person in charge will answer them.	Aperiodic
USCXM	Employer-employee Meeting	3	4	4	3	Manufacturing division direct labor conferences: Two conference sessions attended by HR and manufacturing division direct labor to discuss issues mainly related to compensation and benefits food/housing/transportation, appraisal/attendance, promotion, etc. Two meeting sessions related to benefit matters	Aperiodic
		4	4	4	5	The HR division appoints employees and supervisors who are familiar with relevant laws and regulations to form a cross-unit and cross-functional consulting team to be responsible for the follow-up and improvement of meeting topics, effectively promoting harmonious labor relations.	Aperiodic
	USJC	2	2	4	3	Hold aperiodic meetings and communicate with the trade union	Aperiodic

Note: UMC Group includes UMC and its subsidiaries HJ, USCXM, Wavetek, and USJC.

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Employee Work Engagement Survey

UMC has always adhered to a people-oriented spirit by regarding UMC employees as the Company's most important asset. Therefore, caring about employees, listening to their feedback and making corresponding improvements are important to the Company. In the past, UMC used the "employee satisfaction survey" for analysis. At the end of 2018, the "employee engagement survey" was introduced in line with international trends. The Company extended the survey subjects from UMC Taiwan and Singapore fabs to all employees include those in Mainland China in 2022. The overall survey result in 2023 was 81.7 points, which is higher than the semiconductor industry norm of 75.7 points. It is hoped that the organization's key issues can be identified through the survey report, based on which improvement countermeasures can be taken to retain key talents.

Achievements of the Year

In 2023, nine improvement countermeasures were taken for key units to strengthen the less-than-satisfactory aspects. The results indicated that considerable improvement had been achieved. In addition, based on the feedback on corporate culture from the engagement questionnaire, we completed the in-depth promotion of corporate culture and conducted 3 global cultural communication activities, with a total of 260,000 person-times participants, to create feedback on employee experience.

Post-survey Improvement Plans and Practices

As for the collected survey results, in addition to confirming the effectiveness through cross-comparison of annual variations, corresponding communication was also carried out based on various division functions for the implementation of quarterly progress tracking. In regards to the less-than-satisfactory items indicated in specific units' 2023 survey results, the extent of corresponding improvements was greater than the Company's average improvement extent, demonstrating the effectiveness of the countermeasures. Moreover, in terms of the projects proposed to improve work efficiency and labor balance for the Company's overall operating environment, work patterns have been adjusted through further review of work hours and diagnosis of reasons for employee turnover in the hope of enhancing retention rates at fabs using advanced process technologies.



The key points we inquire through the questions of the Work Engagement Questionnaire encompass the following concepts:

Satisfaction at work	Clarity in the workplace	Sense of happiness at work	Stress at work
As far as my job responsibilities are concerned, my salary and benefit are fairly good	The authority and responsibility of each role in our division are clearly defined where situations of "having responsibility but no authority" or "having authority but no responsibility" do not exist.	I like this job, and am always happy at work.	Moderate work stress is acceptable to me.

Survey Target and Outcome

Year	Coverage Rate	Work Engagement Index			
		Target	Overall	Male	Female
2020	97.7%	76	77.1	77.9	75.9
2021	97.6%	77.1	79.5	80.6	77.9
2022	97.6%	79	79.4	80.2	78.0
2023	98.6%	79.6	81.7	82.3	80.8

Note: 1. In response to the rating standards stated in the official definition of Dow Jones Sustainability Index (DJSI), the calculation method of survey coverage rate has been adjusted to: Total number of collected questionnaires / Supposed number of respondents.
 2. Statistics from 2020-2021 included all UMC employees in Taiwan and Singapore. Employees of the Company's subsidiaries HJ and USCXM have been included in the survey since 2022.
 3. In 2023, the employee coverage rate of UMC's Taiwan and Singapore fabs is 98.6%; the engagement score is 81.6 points

2023 Employee Work Engagement Survey Outcome - by age

Age	Scope	Average	<30	30-39	40-49	50-59	>=60
Engagement Survey	UMC	81.6	79.8	80.6	81.8	84.6	86.9
	UMC, Subsidiary HJ and USCXM	81.7	80.7	80.8	82.0	84.8	87.3

Note: The distribution population is the number of full-time employees within the scope of the survey conducted in 2023.

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Comprehensive Appeal and Employee Support Systems and Channels

Based on whistleblower program and the "zero tolerance" principle for all kinds of illegal infringements in the workplace in accordance with relevant reporting measures, UMC encourages open communication between employees and stakeholders. When experiencing injustice or doubts, a whistleblower can report in a named or anonymous way. The Company provides access to file complaints 24/7 in both Chinese and English, allowing stakeholders to report issues without any language or time barriers.

The whole investigation process for grievances is carried out with full confidentiality. Each complaint channel has a dedicated window to ensure that the information is properly preserved and only relevant personnel are informed. After receiving the complaint, an investigation team will be set up to handle it within thirty days after receiving the relevant complaint or notification. During the process, the privacy protection of the complainant will be paid attention to, and the preliminary investigation results will be notified to the parties in writing. With the aim of preventing inappropriate retaliation and treatment, the Company has formulated relevant internal regulations such as "Workplace Sexual Harassment Prevention Measures, Complaints and Disciplinary Regulations," "Prevention for Workplace Wrongful Harm When Performing Job Duties," "Regulations on Whistleblowing," etc. to expressly protect complainants' rights. Moreover, the Company absolutely prohibits any acts of retaliation against the complainants, or personnel who assist in the investigations. Punitive measures shall be taken for any retaliation acts in accordance with the Company's relevant regulations.

The grievance process is investigated in a confidential manner

-  ▶ Choose an interview setting where the complainant feels safe
-  ▶ Conduct interviews with the complainant, respondent and related parties
-  ▶ Complete paper records and signatures
-  ▶ Establish a review and investigation team
-  ▶ Convene a review meeting
-  ▶ Explain the investigation results and judgment to those involved in the case
-  ▶ Confirm that the person involved in the case accepts or appeals again

All case records shall be properly kept in accordance with laws and the Company's regulations, which can only be accessed by personnel related to the handling of the cases to ensure that complainants' privacy is protected. With the aim of comprehensively communicating with employees and effectively solving problems, in addition to the aforementioned communication platforms, UMC has also set up the following grievance mechanisms and channels:



Employee Relationship (ER Service) Hotline
extension 12885
Human Resources Division
Employee Relations Dept. Manager



Report of sexual harassment and unfair treatment
extension 31995; mailbox: 31995@umc.com
Human Resources Division
Senior Director



Fraud and Ethics Violation Report Box
whistleblower@umc.com
External reporting hotline: 0800-024-399
Whistleblower Hot Lines: 03-5782258, extension 31425
Director, Legal Affairs and Compliance Division
Director of ADT Division



CHO's e-mail Box
UMC_CHO_Mailbox@umc.com
Human Resources Division
Vice President



CSR mailbox
csr@umc.com
Corporate Sustainability Committee



Information Security and Confidentiality Protection Complaint
Infosec@umc.com
Corporate Security Dept. manager

In addition to establishing a comprehensive set of communication channels and platforms, UMC shall continue to improve upon the effectiveness of communication channels and carry out projects to enhance communication of key topics and information throughout the Company, ensure the comprehensiveness and depth of communications, and strengthen global communication capacities for every employee. A total of 146 formal and large-scale conferences were held in 2023 to effectively communicate key topics on UMC businesses.

UMC will investigate and implement follow-up improvements based on the issues related to the complaint cases, and cooperate with education and training (such as e-mail promotion and online testing) to require employees to comply with the code of conducts. In 2023, UMC received no labor affairs related complaint.

In order to clearly declare a position of "zero tolerance" against various illegal violations in the workplace, establish a workplace culture of safety, dignity, non-discrimination, mutual respect and inclusion, and provide equal opportunities to ensure the physical and mental health of employees, UMC designates June of each year as "Illegal Violation Prevention Month." Related education and trainings were conducted during this period, and the supervisors are required to complete a self-check list for illegal violations in the workplace.

Follow-up training sessions were conducted in 2023, and a total of 8,825 indirect labors and 4,646 direct labors participated, with a completion rate of 100%. The total number of participating supervisors (Level-4 and above) was 1,489. Supervisors performed online self-checks to see if they had any inappropriate behavior toward employees. The completion rate was 100%.

Numbers of Grievances

Category / Year	Human Rights Issues				Labor Affairs			
	2020	2021	2022	2023	2020	2021	2022	2023
Filed through the mechanism	10	9	6	8	17	11	10	20
Addressed	10	9	6	8	17	11	10	20
Reviewed	10	8	4	8	17	11	8	11
Officially undergoing judiciary proceedings	0	1	0	0	0	0	0	0
Resolved	10	9	6	8	17	11	10	20

Note: 1. The human rights category includes complaints such as sexual harassment, illegal infringement, and forced labor. There was 1 sexual harassment case file in 2023.
 2. The labor affairs category includes work hours and salary, occupational safety, education and training, and promotion/benefits. Human Rights Issues include: workplace violence, sexual harassment and discrimination.
 3. Please refer to the UMC Code of Conduct https://www.umc.com/en/Html/UMC_code_of_conduct.

4.2 Diversity, Equity and Inclusion in the Workplace

4.2.1 Human Resource Development 4.2.2 Compensation and Benefit 4.2.3 Strengthening Talent Cultivation



Material Topic

Diversity and Inclusion

Related Policy ► [Diversity and Inclusion Statement](#)



In accordance with GRI Standards (2021) for identifying impacts of sustainability issues, management actions in response to these impacts and processes used to track the effectiveness of the actions are listed in the table below:

Positive Impact ► Workplace diversity and equity

Management Actions

Processes Used to Track the Effectiveness of Action

- Formulate the Diversity and Inclusion Statement, and regularly review the effectiveness of acts for achieving diversity and inclusion.
- Set a target for the proportion of females in management positions and organize lectures to promote gender equity.
- Develop "Workplace Happiness Program" Formulate maternity leave/paternity leave standards that are better than mandatory requirements.

- Management KPIs are established and progress towards achieving them is summarized by the "The Human Rights and Employee Development/Welfare Group" each quarter and reported to the Corporate Sustainability Committee.
- Participate in international ESG ratings such as DJSI, MSCI, etc.

Highlights of the Years

- **Focus on female employees' career development:** Set a target of 10% for the proportion of females in top management positions which was achieved in 2023 with 11% ✓
- **Actively cultivate in female talent:** Four seminars on women's empowerment have been held since 2022 to strengthen women's career development *

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Item	Target	Actual	Goal
Proportion of females in all management positions	22%	✓ 22.4%	22% 23% 24%

Scope: UMC (the parent company only); With * remark is UMC fabs in Taiwan

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Material Topic

Talent Attraction and Retention

In accordance with GRI Standards (2021) for identifying impacts of sustainability issues, management actions in response to these impacts and processes used to track the effectiveness of the actions are listed in the table below:

Positive Impact ▶ Enhancing corporate competitiveness and providing high-quality job opportunities

Negative impact ▶ Losing talented personnel

Management Actions

- ▶ Regularly participate in campus recruiting activities and interact with target groups for recruitment.
- ▶ Carry out strategic manpower planning and develop a complete recruitment blueprint based on the Company's business focuses.
- ▶ Keep track of market salary information, provide differentiated compensation and introduce diversifie and long-term incentive/rewarding tools to ensure that an overall remuneration system with market competitiveness is being offered, and adjust compensation strategies when necessary.
- ▶ Work with divisions with high turnover rates, and establish employee care mechanisms, through which the division can be alerted in advance about employees' intention to resign.
- ▶ Offer diversifie career development paths, e.g. internal transfer.
- ▶ Promote key talent development plans.

Processes Used to Track the Effectiveness of Action

- ▶ Regularly examine the progress and results of talent development programs.
- ▶ Conduct at least one market competitiveness analysis per year.
- ▶ Participate in monthly meetings held by divisions with high turnover rates, and conduct turnover rate analysis reports.
- ▶ Continue the promotion of Work Engagement Questionnaire survey - Explore key weaknesses in the organizational climate and take countermeasures. Keep focusing on efforts to improve the issues to enhance employee retention.
- ▶ Management KPIs are established and progress towards achieving them is summarized by the "The Human Rights and Employee Development/Welfare Group" each quarter and reported to the Corporate Sustainability Committee.

Highlights of the Years

- ▶ The total number of new employees in the Group is **1,220**.
- ▶ Internal transfer rate is **65.1%**, exceeding the set target of 52%.

- ▶ The turnover rate is the lowest in the past four years, and the target turnover rate of **7.0%** set for 2025 has been achieved ahead of schedule.
- ▶ Promote "**flexible work hours**", allowing employees to have flexible start and end times, and freedom to arrange their own work schedules.

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Items	Goals	Achievements	Goal
Mid-high-performance employee retention rate	92.1%	✓ 96.3%	≥ 92.8%

Scope: UMC (the parent company only); With * remark is UMC fabs in Taiwan

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Connect Accept Respect Embrace all

Diversity, Equity and Inclusion Commitment and Practices

Fostering an inclusive workplace that nurtures a sense of belonging and personal achievement, together we build a brighter future.

We attract diverse talents through multiple channels, foster innovative thinking, and respect individual differences.

We offer equal opportunities and resources for all employees, ensuring fair treatment and the realization of their full potential.

We prioritize workplace inclusion, value employee opinions, and provide respect and support, to ensure that employees experience a sense of self-worth and belonging.



UMC encourages a diverse and open workplace culture and respects the uniqueness of each employee. When recruiting employees, prioritize selection based on the professional skills required for each position, regardless of race, color, nationality, ethnic or ethnic origin, gender, marital status, age, disability, family status, sexual orientation, political beliefs and other factors. In 2023, the Company hired a total of 1,220 new employees, including young generation, aborigines and people with disabilities. UMC believes that diverse employee composition will bring different perspectives and opportunities for progress. By establishing a diverse and inclusive workplace culture, it will help employees exert their strengths at work and put forward different thinking, which will become the key to corporate growth.

Starting from 2022, efforts to enhance a diverse, equal, and inclusive workplace have been launched, including setting goals for increasing the proportion of female executives and continuously promoting various strategies. In 2023, under the banner of "**U Care, We Care,**" UMC pledges to actively create an inclusive workplace environment that fosters a sense of belonging and self-fulfillment and collaborates with employees to build a better future together.

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The Diversity and Inclusion Declaration

The Diversity and Inclusion Declaration was signed by the co-president and chairman of the Corporate Sustainability Committee in 2022, and announced on the Company's official website. UMC respects the uniqueness of every employee, and emphasizes equal treatment and the provision of a friendly work environment. Work rights equity is valued when recruiting employees. Recruitment prioritizes the required professional skills for the position, and does not discriminate based on race, color, nationality, ethnicity or ethnic origin, gender, marital status, age, disability status, family status, sexual orientation, political beliefs, or other factors.

In order to create a work environment of diversity and inclusion, the Company has focused on four dimensions: establishing management systems, setting up strategic objectives, promoting educational training, and reinforcing acts to enhance friendly workplace welfare. All groups in the Corporate Sustainability Committee work together to enhance all employees' consensus to achieve diversity, equity and inclusion in the workplace.

01 Senior Management Oversight

► The Human Rights and Employee Development/Welfare Team promoted the implementation of tasks for diversity and inclusion, and the Chief HR Office supervised the promotion progress. Presentations on progress and objective achievement status were given at the quarterly meetings of the Corporate Sustainability Committee and ESG Steering Committee.

04 Reinforcing Acts to Enhance Friendly Workplace Welfare

► In 2023, a survey was conducted to assess the needs of women in the workplace, and 2,022 employees participated. On March 8, 2024, International Women's Day, a women's employee resource group (ERG) called "United for Women" was established, with 476 employees in attendance to show their support.
 ► Promoting "Workplace Happiness Program": The Company planned and promoted self-determined working hours in 2023, allowing employees to arrange their working hours in a flexible way. The Company formulated new maternity leave and paternity leave standards that exceed the mandatory requirements (maternity leave: increased from the mandatory 448 hours to 480 hours; paternity leave: increased from the mandatory 56 hours to 80 hours).
 ► To take care of newly recruited female employees, UMC provides better-than-required benefit by law, offering full salary maternity leave to those who have worked for less than 6 months.
 ► Encouraging employees to have children: Measures ranging from wedding subsidy, care and nursing consultation during pregnancy, maternity leave, maternity inspection leave, exclusive parking space, priority meal pickup, maternity subsidy, unpaid parental leave, certified breastfeeding room, night shift transfer and other measures have been adopted.
 ► In order to meet employees' needs for children's education, the Company has signed collaborative agreements with neighboring kindergartens and provided employees with assistance in registering at experimental elementary and high schools in HSP and STSP. In 2022, the Company collaborated with the STSP Administration to set up a non-profit kindergarten at Lian-Yuan Dormitory Complex to provide more comprehensive assistance for employees in taking care of their families.



02 Setting up Strategic Objectives

► Making efforts to achieve gender equity: Focused on issues related to female employees' career development and set a target for the percentage of women in senior managerial positions.
 ► Ongoing planning for long-term goals: Set an objective that the proportion of females in all management positions.
 ► The employment of people with disabilities meets the regulatory requirements.
 ► Setting a goal to achieve a 20% ratio of female engineers in new hires by 2030. Planned various proactive measures, including additional referral bonuses, internship and pre-employment mechanisms, internal promotion target setting, and encouragement, to strengthen the recruitment of female talent in technology.

03 Promoting Educational Training

► In 2023, UMC planned diversity, equity and inclusion training starting from understanding to eliminate all unconscious biases and establish correct knowledge. In 2024, UMC will launch themed courses corresponding to different levels, such as a DEI learning camp for senior executives, unconscious bias elimination training for all employees, and inclusive leadership training for managers.
 ► Emphasizing female employees' career development: Two experience-sharing lectures related to exemplary female leadership and management were held.
 ► Valuing workplace equity: Designate June of each year as the month for wrongful harm prevention, and provide all employees with relevant educational training. The training completion rate in 2023 was 100%.
 ► Compliance with the RBA (Responsible Business Alliance) Code of Conduct: Provide tests for employees on a yearly basis to ensure employees' awareness of core content such as laborers, ethics and integrity, child labor, labor-management relations, forced labor, working hours, and anti-discrimination. In 2023, UMC provided a total of 17,099.5 hours of human-rights-related training sessions to all employees, attaining a training completion rate of 100%.

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4.2.1 Human Resource Development

Human Resource Distribution

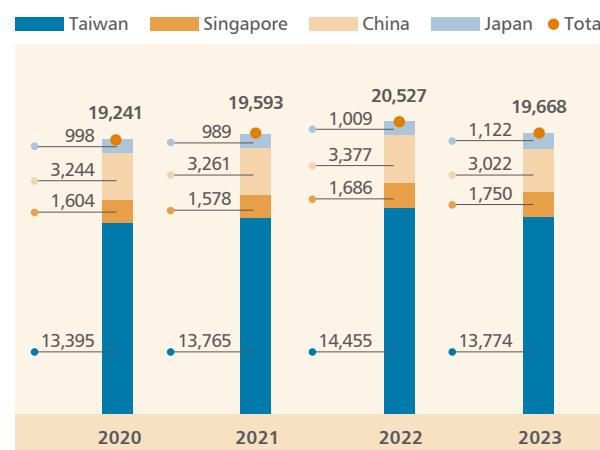
By the end of 2023, the total number of formal employees at UMC Group was 19,668. This figure included 2,148 managers, 10,225 engineers, 634 administrators, 6,660 technicians, and 1 clerk.

The working population within the company can be divided into 2 categories by type of employment, namely formal employees (98.7%) and non-formal employees (1.3%). Formal employees can be further subdivided according to the type of their contracts, namely non-regular contracts (96.6%) and periodic contracts (3.4%)^{Note}. Non-formal employees include temporary staff (45.6%) and dispatched staff delegated by external vendors to provide services in UMC (54.4%). Temporary staff positions were offered to temporary replacement for employees taking maternity / paternity leaves. These positions will be kept open for the said employees when they return to UMC.

For work area distribution, almost 70.0% of employees work in the primary business locations in Taiwan. For age distribution, 65.8% of the total employee population was between 30 and 50 years of age. The overall average age was 39.2 years old.

Note: Periodic contracts refer to labor contracts for migrant technicians.

UMC Group Manpower Trend



Category	Type	Male		Female		Total	
		No. of Persons	Percentage	No. of Persons	Percentage	No. of Persons	Percentage
Total Employees	Formal employees	11,526	58.6%	8,142	41.4%	19,668	98.7%
	Temporary staff	82	68.9%	37	31.1%	119	0.6%
	Dispatched staff	103	72.5%	39	27.5%	142	0.7%
Formal Employees Job Category	Managers	1,872	87.2%	276	12.8%	2,148	10.9%
	Engineers	8,134	79.6%	2,091	20.4%	10,225	52.0%
	Administrators	121	19.1%	513	80.9%	634	3.2%
	Technicians	1,398	21.0%	5,262	79.0%	6,660	33.9%
	Clerks	1	100.0%	0	0.0%	1	0.0%
Formal Employees Job Site	Taiwan	7,708	56.0%	6,066	44.0%	13,774	70.0%
	Singapore	1,132	64.7%	618	35.3%	1,750	8.9%
	China	1,690	55.9%	1,332	44.1%	3,022	15.4%
	Japan	996	88.8%	126	11.2%	1,122	5.7%
Formal Employees Age	Under 30	2,387	65.4%	1,261	34.6%	3,648	18.6%
	30-50	7,053	54.5%	5,896	45.5%	12,949	65.8%
	Above 50	2,086	67.9%	985	32.1%	3,071	15.6%

- Note:
1. UMC Group includes subsidiaries HJ, USCXM, Wavetek and USJC.
 2. The gender ratio of employees is calculated on the same work category, while the total ratio is calculated based on work type.
 3. As for the temporary staff, based on the regional distribution, there are 94 people in Taiwan, 2 people in Singapore, 19 people in China, and 4 people in Japan.
 4. As for the dispatched staff, based on the regional distribution, there are 14 people in Taiwan, 1 person in Singapore, and 127 people in Japan. Their main job function is production line support.
 5. There is no part-time or non-guaranteed-hours employees in UMC Group.
 6. In 2023, 16.1% of UMC's formal employees were under 30 years old, 69.6% were between 30 and 50 years old, and 14.3% were above 50 years old.

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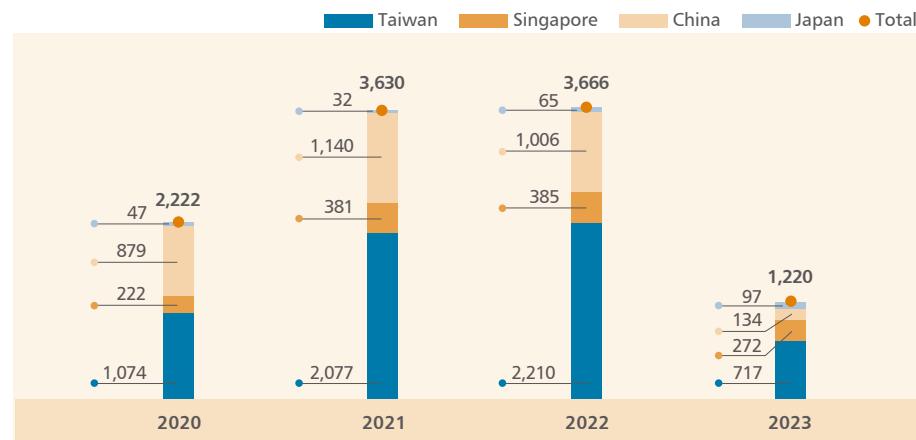
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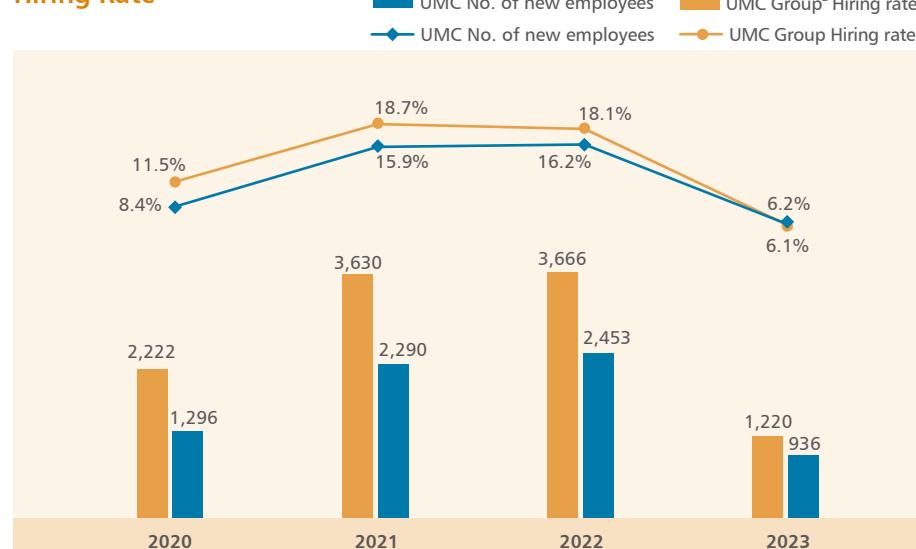
New Employees

In 2023, UMC Group hired a total of 1,220 new employees, with an average cost of around NT\$74,476 per hire. Out of the total number of new employees, 936 were hired by UMC, with an average recruitment cost of around NT\$54,901 per hire.

Number of New Employees



Hiring Rate¹



Note: 1. Annual employee hiring rate refers to the total number of newly hired employees/average number of existing employees. Annual average number of employees = (number of employees at the end of December of the previous year + total number of employees at the end of each month of the current year) ÷ 13

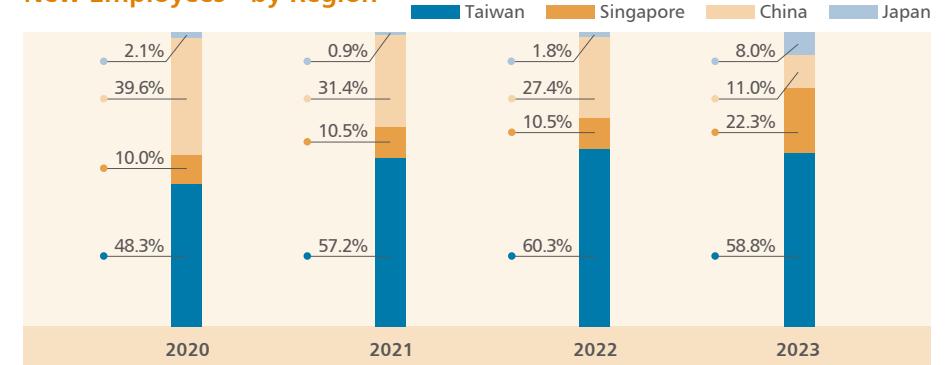
2. Including UMC and its subsidiaries HJ, USCXM, Wavetek and USJC.

New Employees - by Gender

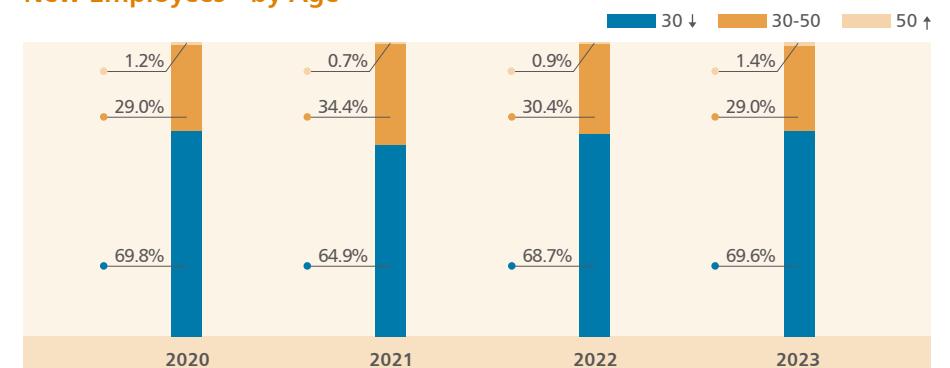


Note: In 2022, 58.5% of UMC's new employees were males and 41.5% were females. In 2023, 68.2% of UMC's new employees were male and 31.8% were female.

New Employees - by Region



New Employees - by Age



Note: In 2022, 67.2% of UMC new employees were under 30 years old; 32.5% were between 30 and 50 years old; and 0.3% were above 50 years old. In 2023, 68.7% of UMC new employees were under 30 years old; 30.2% were between 30 and 50 years old; and 1.1% were above 50 years old.

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Female Workers

UMC Group guarantees gender equality in work rights and attaches importance to the promotion and development of female employees. In view of the characteristics of semiconductor industry, most of the UMC managers and engineers are male. Meanwhile, administrators and technicians are mostly females. UMC keeps holding sharing sessions on exemplary female leadership and management to enhance the willingness of female employees to assume management positions.

Proportion of Female Workers by Position

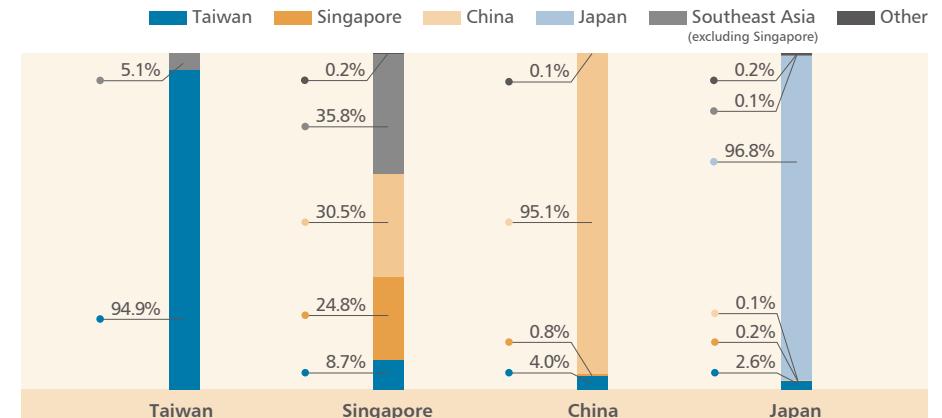


1. The female proportion statistics includes UMC and its subsidiaries HJ, USCXM, Wavetek and USJC.
2. The management positions include junior, middle and top management positions. Junior management positions include first line manager and those managers with job title as supervisor or leader. Top management positions include two levels away from the President. (Senior FAB/Division Director and above).
3. Management positions in revenue-generating functions: fab and sales & marketing managers. (In 2023, the scope has been adjusted to include first line manager and those managers with job title as supervisor or leader. The reported information of 2020~2022 has also been adjusted.)
4. STEM-related positions: Engineering related jobs.
5. In 2023, UMC's female made up 42.7% of the total workforce, with 22.3% in management positions, 27.0% in junior management positions, 11.3% in top management positions, 26.7% in revenue-generating functions, and 19.0% in STEM-related positions.

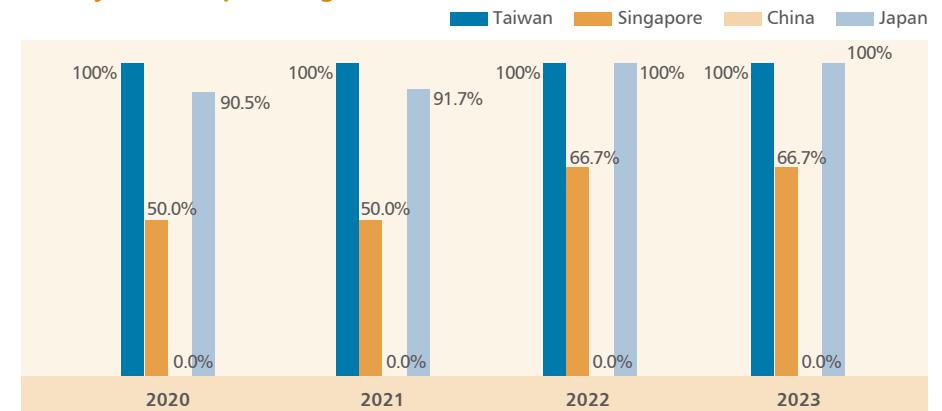
Local Employment

To fulfill social responsibility and create sufficient employment opportunities to local residents, the staff at the UMC headquarters and Wavetek in Taiwan comprised of 94.9% local employees as of 2023. Since Singapore is ethnically diversified 24.8% of the employees are locally hired. In UMC China fabs, namely HJ and USCXM, 95.1% of the staff are locally hired. The staff at USJC in Japan, 96.8% of the staff are locally hired. Among the employees employed by UMC, Asians accounted for 92.2% of the total labor force, migrants accounted for 7.4%, and indigenous people accounted for 0.4%.

Formal Employees – by Nationality



Locally Hired Top Management Positions



1. Local hire refers to employees who are nationals of the main operating location/region.
2. Top management positions include two levels below the President. (Senior Fab/Division Director and above).

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Foreign Talent Recruitment

To internationalize the talent pool in the semiconductor industry, UMC has established a comprehensive international talent mechanism, from recruiting and hiring overseas talent to assisting international hires in acclimating to the local environment, while proactively following the latest policies and regulations to avoid risks associated with hiring foreign workers. This effort demonstrates UMC's commitment to creating a diverse and friendly work environment.

International Talent Recruitment

To expand the recruitment of talents with global perspectives, UMC has dedicated personnel to overseas recruitment, and actively participated in international talent acquisition and campus job fairs in 2023 to broaden the talent pool. Through the "Talent Recruitment in New Southbound Countries Program" organized by the Industrial Development Administration Ministry of Economic Affairs, UMC has engaged in communication with engineering and technical talent from Southeast Asian countries such as Malaysia, Singapore, and Indonesia, promoting Taiwan's semiconductor employment environment. The program aims to increase the chances of attracting talent to Taiwan by offering incentives through increased visibility of UMC. Additionally, UMC established an overseas recruitment booth at campus job fairs, inviting managers and HR representatives from overseas sites to provide multilingual (English and Japanese) consultation services to students. This effort not only strengthens campus relationships, but also connects foreign students with overseas job opportunities, expanding the Company's diverse workforce.

Compliant Employment Application

Under the policy of globalization and cross-border operations, UMC considers the risks that may arise from the protection of trade secrets, export control restrictions and sanctioned lists, in the process of hiring foreign personnel. To ensure that hiring practices comply with international regulations, UMC has implemented three measures. Firstly, UMC has established rules for the employment of foreign technical professionals. Secondly, UMC prioritizes the regulations for hiring foreign personnel and ensures that all procedures, such as visas and work permit applications, are managed and controlled by dedicated personnel to comply with government regulations. Lastly, UMC provides education and training for local and foreign employees on various norms such as the protection of trade secrets, intellectual property rights, information security, and export control once in a while to ensure compliance with these regulations.

Create a Suitable Environment

To help foreign employees adapt to the environment quickly, UMC provides comprehensive dormitory and new employee education and training. The company also has translation teachers in the dormitory to assist foreign employees in their work and environment, avoiding poor adaptation caused by language barriers. Every year, UMC holds festival activities exclusively for foreign employees, allowing supervisors and foreign employees to celebrate festivals such as Dragon Boat Festival, Mid-Autumn Festival, and Christmas together, promoting cultural exchange.

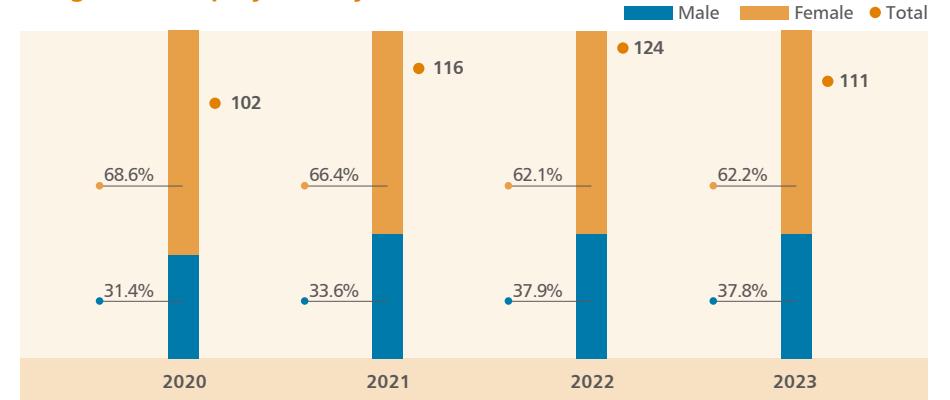
Indigenous Employment And Ethnic Minority

UMC Group respects the unique cultures of ethnic minorities. By the end of 2023, UMC Group has employed a total of 111 indigenous employees, except for those in Singapore and Japan where there are no indigenous people. Indigenous employees in Taiwan (including subsidiary Wavetek) are given 8 hours of ritual leave every year, which can be freely and flexibly used as a holiday.

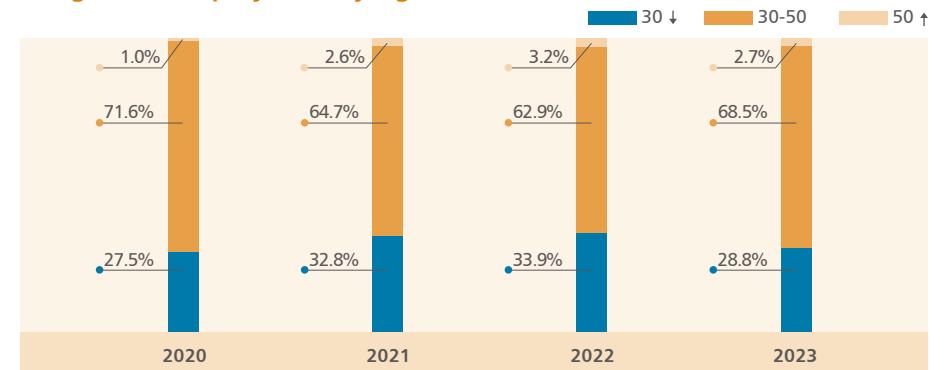
Note: 1. The indigenous population statistics includes UMC and its subsidiaries HJ, USCXM and Wavetek.

2. UMC has a total of 58 formal employees with indigenous identity, and including the one person who is on parental leave, the total number is 59.

Indigenous Employees – by Gender



Indigenous Employees – by Age



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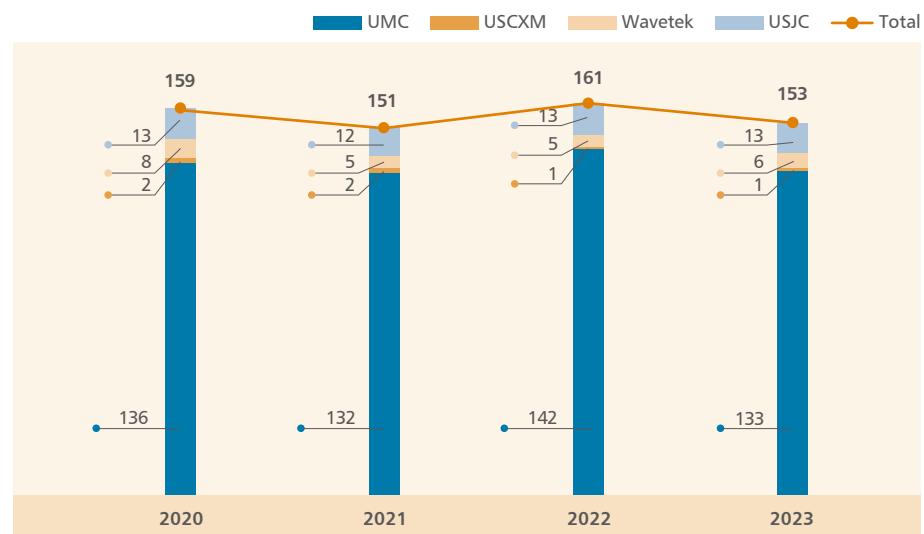
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Employment of People with Disabilities

UMC Group supports the employment of people with disabilities, and has established channels for hiring people with disabilities. Through the Student Ambassador Project, people with disabilities such as physical handicap, visual impairment, hearing impairment, functional loss in vital organs and chromosomal abnormalities are hired. By the end of 2023, UMC Group hired a total of 153 employees with disabilities. The headquarters in Taiwan has already hired 133 employees with disabilities with the ratio 1.01%, which exceeds the target ratio 1.0% specified by laws and regulations. This demonstrates UMC's commitment to caring for the disadvantaged groups. In the future, UMC will continue to actively carry out job evaluations internally to create more job opportunities for people with disabilities.

Note: The calculation method for the number of hires with disabilities follows the Taiwan regulation. If a person with severe or above disabilities is hired, s/he is counted as two hires.

Disability Employment



Employee Turnover Rate and Internal Transfer Rate

From 2020 to 2023, the annual average turnover rate is 8.2%. (Note: As for 2023 turnover rate by gender, 5.5% was female and 5.4% was male. And for age group, 13.1% was under 30 years old, 4.4% was 30-50 years old, and 1.4% was above 50 years old in 2023.) The average turnover rate of the UMC Group is 10.6%. In recent years, UMC Group has actively promoted transformation plan. Through the revision of technology and market strategies, as well as a reshaping of UMC culture, UMC has achieved outstanding operational profitability and gained recognition of employees. In 2023, the UMC Group had a turnover rate of 6.8%, while UMC had a rate of 5.5%, both of which were the lowest rates in the past four years. In particular, UMC's turnover rate in 2023 decreased by more than 41.5% compared to the previous year, and it achieved the target turnover rate of 7.0% set for 2025 ahead of schedule.

By closely observing and comprehending the organizational atmosphere, Human Resource division can promptly detect when employees are displaying indications of wanting to resign. Subsequently, HR collaborates with supervisors to promptly initiate employee care and provide necessary aid at early stages to improve employee retention.

When employees apply for resignation, they are interviewed separately by their direct supervisor and the Human Resources division to understand the reason(s) for resignation. After understanding the reasons for employee's resignation, HR not only offers the flexibility of adjustment on work content and workplace location based on the personal situation, but also provides internal position transfer opportunities based on the employee's job experience and expertise to achieve the goal of retaining employees.

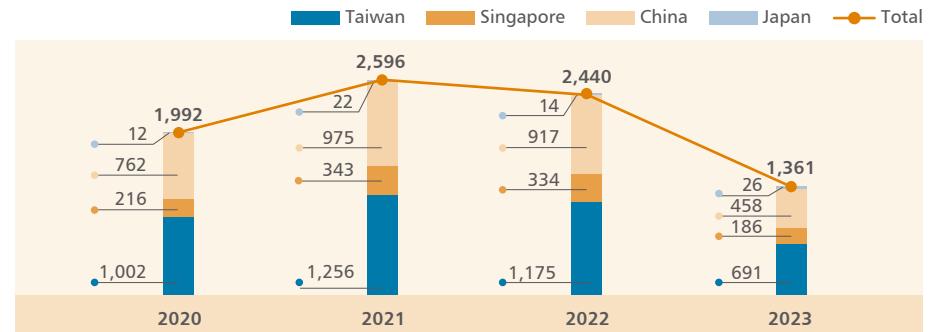
The Human Resources division also regularly follows up and cares for employees who have resigned to keep long-term relationships and provide an open mechanism for them to return to the Company.

In addition, UMC Group has strengthened the retention of talent by promoting activities such as UMC employee well-being supporting programs, UMC culture reshaping program and internal transfer system to provide employee job skill enhancement, career development, and opportunities to take on challenging tasks to value up themselves, thus enhancing the retention of mid- and high-performance talents.

In 2023, the internal transfer rate in UMC was 65.1%, which is the percentage of open positions filled by internal candidates, exceeding the target value of 52.0%, and in UMC Group, it was 63.4%. The retention rate of mid- and high-performance employees of UMC in 2023 was 96.3%, surpassing the set target value of 92.1%.

UMC will continue to provide multiple channels and incentives of internal transfer, as well as implementing a comprehensive interview process for employees who have resigned to maintain a healthy turnover rate.

Resignations in UMC Group



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Turnover Rate¹

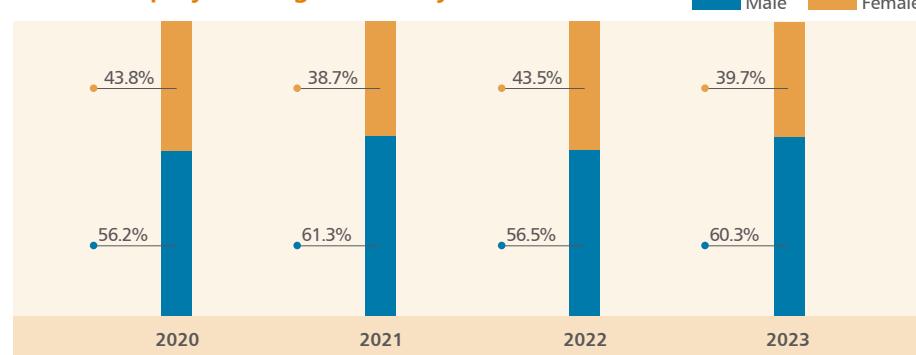
		Years	2020	2021	2022	2023
UMC Group ²	Turnover rate	10.3%	13.4%	12.1%	6.8%	
	Internal transfer rate ³	28.9%	23.8%	32.4%	63.4%	
UMC	Turnover rate	7.8%	10.5%	9.4%	5.5%	
	Voluntary turnover rate	7.6%	10.4%	9.3%	5.4%	
		Internal transfer rate	57.4%	57.1%	58.6%	65.1%

Note: 1. Annual employee turnover rate refers to the total number of employees who resigned/ average number of existing employees. Annual average number of employees = (number of employees at the end of December of the previous year + total number of employees at the end of each month of the current year) ÷ 13

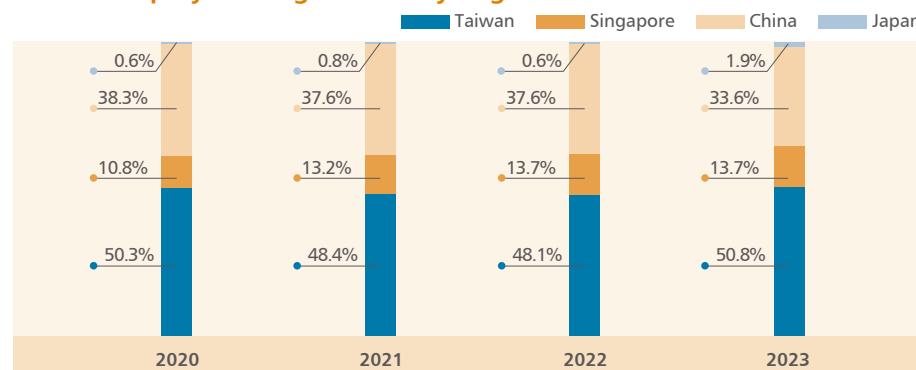
2. Including UMC and its subsidiaries HJ, USCXM, Wavetek and USJC.

3. Internal transfer rate= number of internal transfers÷ number of job vacancies. Including direct employees, the reported information of 2020~2022 has also been adjusted.

Formal Employee Resignation—by Gender



Formal Employee Resignation—by Region



Formal Employee Resignation—by Age



Parental Leave

According to the Act of Gender Equality in Employment in Taiwan for UMC headquarters and Wavetek and Japanese law in USJC, employees may apply for parenting leave without pay. In 2023, a total of 58 female employees returned to their positions when their parental leave contract expired, indicating a return rate of 79.5%, and 19 male employees returned to their positions, indicating a return rate of 79.2% after parental leave. The work situation of those who returned after parental leave was observed. In 2022, 94.9% of female employees and 82.4% of male employees who took parental leave returned to work and continued to work over 1 year. The employees who have not returned after parental leave all voluntarily resigned because their parental leave have expired but the needs of the family remained.

2023 Parental Leave	Female	Male	Total
Total eligible number for parental leave (A)	344	800	1,144
Actual number of parental leave (B)	135	39	174
Application rate for parental leave (B÷A)	39.2%	4.9%	15.2%
Total number of end of contract for parental leave (C)	73	24	97
Total number of returning from parental leave (D)	58	19	77
Return rate after parental leave (D÷C)	79.5%	79.2%	79.4%
2022 Total number of returning from parental leave (E)	78	17	95
2022 One year retention rate after return from parental leave (F)	74	14	88
2022 Number of returning from parental leave and retention rate. (F÷E)	94.9%	82.4%	92.6%

Note: According to Taiwan and Japan laws, parental leave is provided to UMC Taiwan and Japan employees. Employees in UMC fabs in Singapore and China are not included in this table.

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4.2.2 Compensation and Benefit

UMC has always regarded its employees the most important asset, and provides a competitive overall compensation and benefit package to attract excellent talent to join the UMC team. UMC's employee compensation is based on educational level, performance, and market value, regardless of gender, race, religion, political position and marital status to ensure reasonable and equal pay. UMC employees worldwide enjoy the compensation and benefits which are in line with or superior to all applicable local laws and regulations in terms of minimum wage, work hours (including overtime), social insurances, retirement pension, and other mandatory benefits. UMC annually reviews and makes sure that entry-level employees' wage is higher than legal minimum wage. In 2023, based on the same positions, job duties, and performances, the average fixed pay of female entry-level employees in Taiwan is 1.7 times of minimum wage and male's is 1.6 times. The salary gap is due to employees' seniority, and not correlated with gender. In Singapore, as a matter of national policy, there is no prescribed minimum wage. UMC fab in Singapore follows local policy and pays employees based on their skills, capabilities and competencies.

Performance-Oriented Compensation System

In order to achieve personal, divisional and company performance goals as well as understand the job performance of employees for management by objectives, UMC conducts annual performance appraisals for all employees regardless of gender and job category twice a year. The annual performance appraisal focuses on past work achievement and the future goal setting. The types of appraisals include management by objectives, multidimensional performance appraisal, agile conversations and feedback. In 2023, the completion rate of multidimensional performance appraisal is 46%, and 40% including subsidiaries.^{Note}

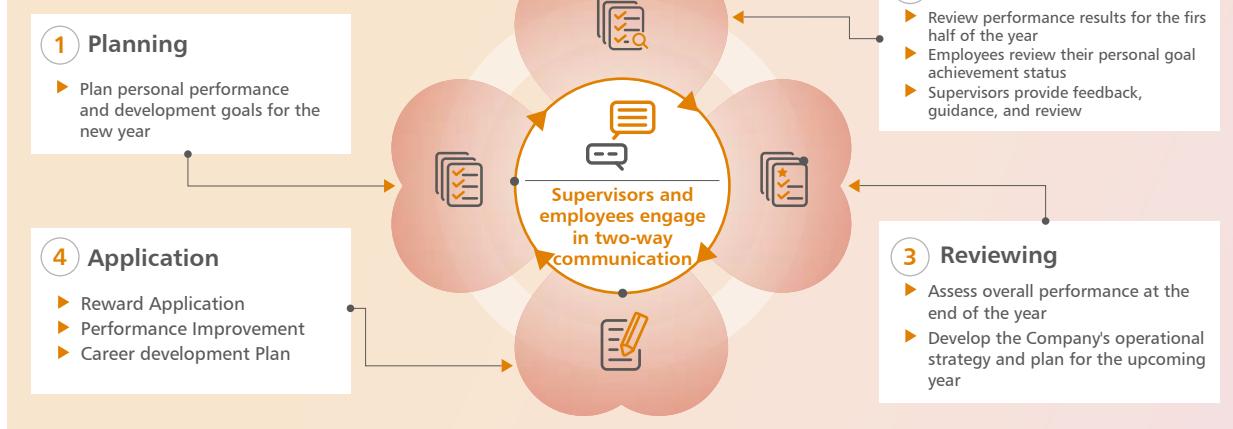
In performance appraisals, supervisors and employees work together to agree on the priority of focuses, and devise developmental plans based on current working style, capability, career goals and project evaluation. Employees with poor performance will be supplemented with key improvement plans to improve work efficiency

Note: Including HJ, USCXM and Wavetek

Performance Appraisals System

Type of Appraisals	Applicable Target	Frequency	Execution Method
Management by objectives	All employees	Once a year	<ul style="list-style-type: none"> At the beginning of the period, employees propose work plans and quantifiable performance indicators, and set annual goals after discussing with their supervisors. At the end of the period, employees and supervisors jointly review the status of goal achievement and receive feedback from the supervisor For team-based performance appraisal, employees who participate in projects have to include personal objectives and team objectives in the goal setting
Multidimensional performance appraisal	IDL (indirect labor)	Once a year	<ul style="list-style-type: none"> Employees will receive multi-dimensional feedback from cross-divisional supervisors or employees who have shared work experience If employees encounter organizational changes during the performance appraisals period, feedback will be provided by their original unit supervisor
Agile conversations and feedback	All Employees	Once every quarter/immediately	<ul style="list-style-type: none"> A quarterly Town hall Meeting is held by the co-president to keep employees informed about the Company's goals and work priorities. Supervisors can initiate performance communication with employees at any time, providing necessary support and guidance immediately through a one-on-one communication system

Performance Appraisals Process



UMC offers salary adjustment, differentiated bonus, profit distribution as employee's compensation and stock remuneration (employee stock option certificates, treasury shares and restricted stock award) based on individual performance, job responsibilities and future development potential to attract, retain and motivate outstanding employees. UMC also actively joins the remuneration surveys of well-known domestic and international enterprises, annually reviews and analyzes our compensation policy based on compensation survey results and adjusts the policy if necessary to ensure that the overall remuneration offered by UMC is competitive in the market.

Moreover, in order to internalize the concept of ESG into the core of operation and enhance employees' sense of responsibilities for corporate sustainability and risk management, ESG targets are set and linked to employees' variable compensation. By aligning the interests of employees and the Company, corporate sustainability can become a common goal. In 2023, UMC has achieved the ESG targets and the allocation of employee profit sharing percentage would be increased accordingly, so that all employees can enjoy the benefit of ESG achievement.

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The number of full-time, non-executive employees in Taiwan, their average and median salary, and the difference over the years

No. of Employee	Average Salary (ten thousand NT\$)	Median Salary (ten thousand NT\$)
270 people	22.9	7.9
2023 ▶ 12,508	2023 ▶ 185.1	2023 ▶ 157.7
2022 ▶ 12,238	2022 ▶ 208.0	2022 ▶ 165.6

Note: The above information is based on the regulations of Taiwan Stock Exchange, deducting managers (executives) and employees eligible for exemption. Those who have been employed for 6 months but less than 1 year, their compensation is calculated based on their weighted days of employment. Employee compensation is accrued based on an accrual basis, and the unpaid employee compensation is an estimated amount. These numbers have been audited by CPAs and will be disclosed on Taiwan's market observation post system.

2023 Basic Salary and Annual Total Compensation by Gender in 2023

	Male	Female	Base Salary	Total compensation
Taiwan				
Executive level	100.0%	98.4%	100.0%	98.4%
Management level	100.0%	102.4%	100.0%	104.2%
Non-management level	100.0%	100.5%	100.0%	99.7%
Technicians	100.0%	100.9%	100.0%	97.4%
Singapore				
Management level	100.0%	101.1%	100.0%	101.1%
Non-management level	100.0%	99.2%	100.0%	100.2%
Technicians	100.0%	98.6%	100.0%	97.6%

- Note: 1. Management level: From first-line/junior managers up to top/senior managers (Executives excluded); Non-management level: Professional engineers; Technicians: Local technicians.
 2. The calculation is based on the actual cash rewards received in the current year. Female and male salaries are compared based on equivalent positions, job duties and performance rating.
 3. The reason of difference in executive level is due to seniority. The executives' compensation is determined by job duties and relative importance of the position, individual performance, and market value, regardless of gender.
 4. No female executive in Singapore.

Comprehensive Benefits Superior to Statutory Regulation

UMC is committed to creating a work-life balance workplace and offers all employees various welfare benefits that are superior to statutory regulation including holidays, insurance, financial assistance for emergencies, discounts in designated shops and employee assistance service. Temporary staff and dispatched staff enjoy the same benefits. To show the care for employees, the Company actively reminds employees to take vacations and holds diverse activities to relieve stress. Moreover, UMC provides parenting measures and collaborating with neighboring kindergartens to provide day-care for taking comprehensive care of the needs of employees.

Paid Leave that is Superior to Local Regulations

- ▶ Taking into account the reduction of national holidays after the revision of the Labor Standards Law, 7 days of supplemental holidays are given and can be used for personal and family care needs. UMC Singapore fab and other overseas subsidiaries also provide paid annual leave that is superior to local regulations of paid annual leave of employees.
- ▶ Provide extended maternity leave of 480 hours, which is an increase from the statutory requirement of 448 hours, and extend paternity leave of 80 hours, which is an increase from the statutory requirement of 56 hours.
- ▶ UMC provides fully-paid maternity leave to newly hired female employees, regardless of their length of service, as part of our commitment to better care for our employees. As a way of providing support, if the grandparents of an employee's spouse pass away, the employee is entitled to a funeral leave of 48 hours (up from the statutory requirement of 24 hours). If the great-grandparents of an employee's spouse pass away, the employee is entitled to a funeral leave of 24 hours at full pay, which exceeds the requirements of the Labor Standards Act.

Parenting Measures and Breastfeeding-Friendly Environment

- ▶ To encourage employees to have more children, UMC provides measures ranging from care and nursing consultation during pregnancy, maternity leave, maternity inspection leave, exclusive parking space, priority meal pickup, maternity subsidy, unpaid parental leave, certified breastfeeding room, night shift transfer and other measures.
- ▶ To support employees with young children under the age of 3, UMC offers the option to apply for parental leave based on their needs. During this period, working hours may be reduced by 1 hour per day. To provide comprehensive assistance, UMC signed contracts with neighboring kindergartens to take care of the day-care needs of employees' children, and assists in the registration work of the experimental primary and secondary schools in the Science Parks. In 2022, in cooperation with the Southern Taiwan Science Park Bureau, a non-profit kindergarten is set up to offer employees more comprehensive support for family care.

Health Care and Emergency Assistance

- ▶ Regularly conduct employee health checks, plan health promotion activities, set up a health care system, and actively track and care for employee health.
- ▶ Equipped with employee assistance programs (EAP), injury and illness treatment and care, taking care of employees' health comprehensively.
- ▶ Provide company group insurance, cancer insurance, medical insurance, accident insurance, hospitalization condolences, emergency relief funds to assist employees in emergency situations.

Diverse Activities and Discounts in Designated Shops

- ▶ Welfare committee holds diverse activities such as year-end party, Secretary's Day, the Company's anniversary day, Engineers' Day, one-day trip, family day, and art festival, etc.
- ▶ Employee social club evaluations and subsidies for club activities.
- ▶ Corporate agreements with stores all over Taiwan, provide APP for employees so they can enjoy discounts for food, clothing, housing and travel.

Friendly Working Environment

- ▶ Employee cafeteria, free shuttle bus, activity center, telecommunications/banking/insurance on-site services, convenience stores/coffee shops/bakeries, and other stores are available in office and fabs.
- ▶ Provide flexible working shifts and hours.

- Note: 1. Employees also have the paid leave hours for public welfare activities.
 2. Working from home (WFH) is adopted under applicable condition according to the Company's regulation.

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Comprehensive Insurance and Retirement Policy

UMC provides insurance coverage that is consistent with local laws and regulations to ensure the basic rights and interests of employees. In accordance with the law, the Company's headquarters in Taiwan also provides labor insurance (including Employment Insurance) and national health insurance. In addition, UMC provides employees with additional group insurance, including life insurance, major illness insurance, health insurance, accident insurance, cancer insurance, and travel insurance for overseas business trips to ensure work and life security for its employees. The Company also provides a selection of group insurance for employee families so that employees can work with peace of mind.



Over 50% of UMC employees choose to include their spouse and family members into UMC's group insurance program to provide their family an additional layer of protection. UMC also provides an insurance company service office inside the Company buildings, making it very convenient for employees to make inquiries on insurance services and apply for claims. Furthermore, the Company regularly posts e-newsletters on insurance benefits and introduces information on insurance and compensation rights so that employees are clearly aware of their actual insurance content and benefits.

UMC cooperates with Southern Taiwan Science Park Bureau to run a kindergarten

To address the declining birth rate and create a parent-friendly environment while alleviating the burden of childcare, UMC has collaborated with the Southern Taiwan Science Park Bureau to support the government's policy of establishing non-profit childcare centers for Science Park employees' children. UMC has proactively designated the first floor of the diverse and greenery-filled employee dormitories, covering an area of approximately 2,000 square meters, as a non-profit kindergarten. This facility can accommodate up to 212 children aged two to pre-elementary school, aiming to provide affordable, high-quality, accessible, and developmentally appropriate childcare services for employees in the Park. By utilizing existing resources, the initiative aims to reduce the financial burden on parents and meet their need for peace of mind while working.

Retirement Benefits Plan

UMC complies with local statutory regulations and systems related to retirement to safeguard the retirement rights of our employees. In Taiwan, the Labor Standards Act was used as the basis to stipulate regulations for the calculations and payment rules of retirement pensions. 100% of the full-time employees in Taiwan participate in the relevant pension plans. Since July 1, 2005, the Labor Pension Act became effective as a defined contribution plan. According to the regulations, the Company has to contribute a certain percentage of salary to an individual labor pension account. Employees may select to keep applying to pension regulations prescribed by the Labor Standards Act or switching to the new pension systems applicable to the Labor Pension Act. They also can retain their seniority on the previous pension system. The pension benefits mandated by the Labor Standards Act are disbursed based on the units of service years and average monthly salary prior to retirement. The Company contributes an amount equivalent to 2% of the employees' total salaries and wages on a monthly basis to the pension fund deposited with the Bank of Taiwan under the name of a pension fund supervisory committee. In 2023, total pension expenses of NT\$45.473 million were recognized by the Company. In addition, for the pension benefit under the Labor Pension Act, the Company makes monthly contributions of 6% based on each individual employee's salary or wage to employees' pension accounts. Pension benefit for employees of the Singapore fab are provided in accordance with the local regulations. Total pension expenses of NT\$1,070.793 million were contributed by the Company in 2023.

When employees apply for retirement, the Company not only provides pension application service, but also awards "UMC Recreation Center Lifetime Membership," which offers a selection of healthful and interesting activities for retirement life to show appreciation for their long-term effort and contribution. In order to ensure those who retire from or terminate employment with UMC to obtain necessary assistance, UMC also provides severance pay for terminated employees in accordance with relevant local laws and regulations, as well as information on related employment service channel.

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4.2.3 Strengthening Talent Cultivation

UMC Talent Development Path

Based on the training and development model, UMC defines the competency base of each level in accordance with the Company's business strategy to plan the training and development plan, provides a comprehensive and diversified learning environment according to the type of work, cultivates multiple talents, continuously improves the Company's growth, achieves the goal of retaining and nurturing talents, and implements the energy of career sustainable development.

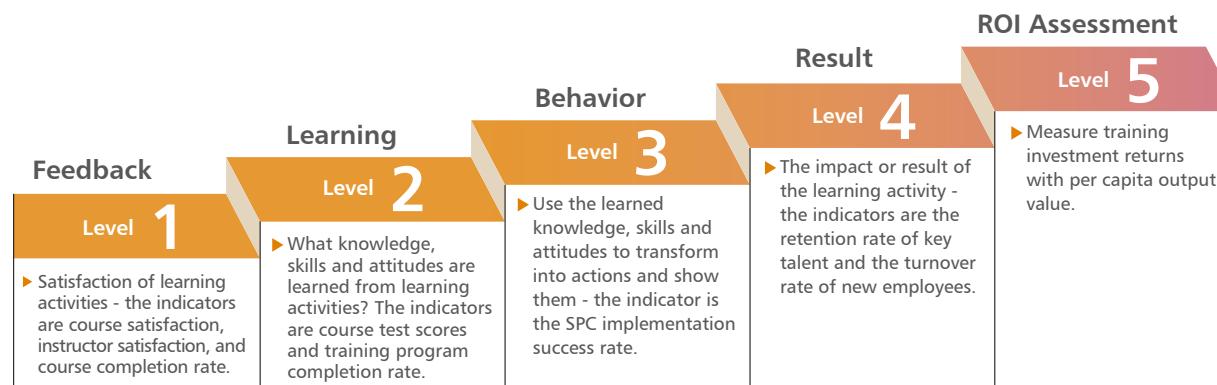
In the design of internal training curriculum, UMC conducts a company-wide training needs survey in the fourth quarter of each year, and plans corresponding development courses based on the professional needs of supervisors and employees. In addition to required training to help employees achieve job performance, employees can also prepare for their career planning and development by participating in other training courses based on their personal needs and future development plans.

UMC Talent Development Path



Training Effectiveness

In order to confirm the effectiveness of training, UMC refers to the Kirkpatrick model of learning effectiveness evaluation proposed by Donald L. Kirkpatrick, a professor at the University of Wisconsin, and added the per capita output value as an indicator of the highest level of training effectiveness. It is used as a measure of the effectiveness of all training activities, so that training keeps improving and achieves talent development and retention.



In 2023, UMC Group offered a total of 8,861 classes with a total of 677,298 person-times participant. The overall satisfaction rate is over 93%.

Course Satisfaction

Type/Year	2020	2021	2022	2023
Number of Courses	7,363	8,248	8,570	8,861
Total number of Participants	168,006	161,231	189,617	677,298
Overall Satisfaction	94.5	95.2	94.9	94.3
Satisfaction with Instructor	94.5	95.2	94.9	94.4
Satisfaction with Teaching Materials	94.5	95.1	94.8	94.2
Beneficial to Work	94.8	95.1	94.9	93.8

Note: The scope of statistics includes UMC's fabs in Taiwan and Singapore, UMC mainland China subsidiaries HJ and USCXM, and UMC Japan subsidiary USJC and the Taiwan subsidiary Wavetek. And it covers all regular, temporary and dispatched staff.

UMC Group provides complete education and training for employees of different job categories and levels. In 2023, the total number of training (persons) hours reached 710,884 hours. The average training expense was NT\$4,074 per person and the average training hours was 35.7 hours. The average training hours for all employees of UMC in 2023 has reached 44.7 hours, mainly due to the expansion of training hours collection for various lecture activities, external training, and certification programs and so on.

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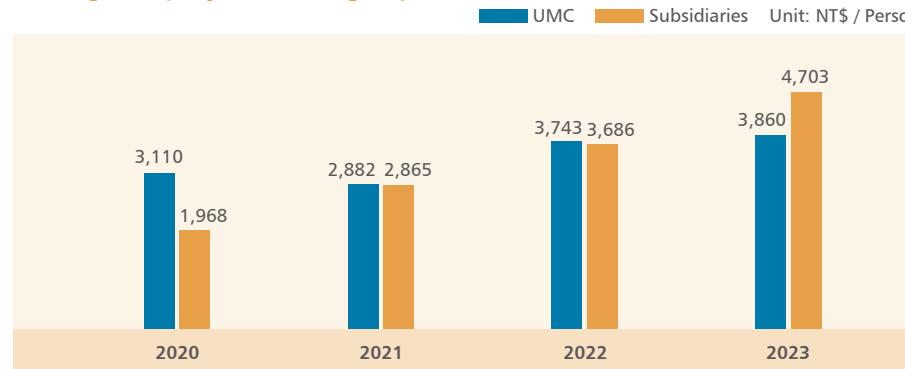
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UMC Group Average Employee Training Cost

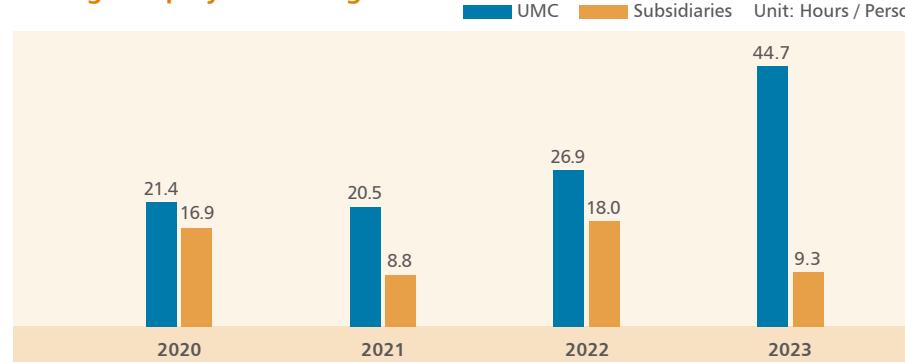
Type/Year	2020	2021	2022	2023
Total Training Cost (NT\$)	44,492,278	42,120,553	57,450,399	81,200,340
Number of Employees (Persons)	14,308	14,613	15,347	19,929
Training Cost per Employee (NT\$)	3,110	2,882	3,743	4,074

Note: The scope of statistic included UMC fabs in Taiwan and Singapore from 2020-2022. From 2023, the scope of statistics for UMC's subsidiaries includes mainland China subsidiaries HJ and USCXM, and UMC Japan subsidiary USJC and the Taiwan subsidiary Wavetek. And it covers all regular, temporary and dispatched staff.

Average Employee Training Expense



Average Employee Training Hour



Average Training Hours for Various Job Levels in 2023

Type	Training Time (Hours)	Number of Participants (Persons)	Average Training (Hours)
Director Level	71,172	2,148	33.1
Indirect Labor (non-director level)	481,032	11,122	43.3
Direct Labor	158,680	6,659	23.8

Note: The scope of statistics includes UMC's fabs in Taiwan and Singapore, UMC mainland China subsidiaries HJ and USCXM, and UMC Japan subsidiary USJC and the Taiwan subsidiary Wavetek. And it covers all regular, temporary and dispatched staff.

Average Training Hours for Various Type of Employment in 2023

Type	Training Time (Hours)	Number of Participants (Persons)	Average Training (Hours)
Formal Employees	703,819	19,668	35.8
Temporary Staff	4,812	119	40.4
Dispatched Staff	2,253	142	15.9

Note: The scope of statistics includes UMC's fabs in Taiwan and Singapore, UMC mainland China subsidiaries HJ and USCXM, and UMC Japan subsidiary USJC and the Taiwan subsidiary Wavetek. And it covers all regular, temporary and dispatched staff.

Average Training Hours for Gender in 2023

Type	Training Time (Hours)	Number of Participants (Persons)	Average Training (Hours)
Male	470,180	11,711	40.1
Female	240,704	8,218	29.3

Note: The scope of statistics includes UMC's fabs in Taiwan and Singapore, UMC mainland China subsidiaries HJ and USCXM, and UMC Japan subsidiary USJC and the Taiwan subsidiary Wavetek. And it covers all regular, temporary and dispatched staff.

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Employee Development Programs

Program Name	Leadership Development Program: Middle and Senior level Succession project	Continuous Improvement Activities
Program Goals Description & Business Benefit	<ul style="list-style-type: none"> ▶ Established an internal talent pool and leadership pipeline and ensure the continuity of key positions. ▶ Meet employees' career development needs and strengthen talent retention. <p>In response to organizational development needs and strategic directions, UMC has formulated a talent cultivation and succession development plan including,</p> <ol style="list-style-type: none"> 1. Select high-potential talents, and use talent assessment tools to identify and analyzed the potential and opportunities of talents and teams. 2. According to the analysis of environmental trends, formulated exclusive development plans, including management knowledge training, team development, mentorship, job rotation, overseas assignment and job experience opportunities and other aspects of development 	<ul style="list-style-type: none"> ▶ Encourage all employees to participate in continuous improvement activities, including individual improvement and team improvement. ▶ Enhance the efficiency of the Company's total quality system and make the Company more competitive. <p>These teams included Quality Improvement Team (QIT) and Project Management (PM). By training employees to think systematically and use scientific methods to solve problems, employees can actively participate in teamwork. Project benefit include:</p> <ol style="list-style-type: none"> 1. Develop new products and improve product quality 2. Increase production capacity and reduce operating costs
Quantitative Impact of Business Benefit	<ol style="list-style-type: none"> 1. There were a total of 98 managers participating in the succession project. 2. Accelerate the development of leadership in management with a complete training course, such as group development courses, online management knowledge courses, and personal development plans. A total of 306 participants attended the training courses with a total of 1,357 training hours 3. Among all participants in the project, there have been 19 managers have been promoted to key management positions of the Company, with internal employee promotion rate of 19%, increased by 8% compared with 11% in 2022. 	It is expected to generate more than NT\$7.3 billion in financial benefit for UMC.
% of FTEs Participating in the Program	<p>Target : High-potential talents in all units Percentage: 0.66%</p>	<p>Target: Employees who participate in continuous improvement activities Percentage: 41.6%</p>

Multiple Talent Training Program

UMC's talent development policy plans the training courses required by each employee (including temporary and dispatched staff) in their career development according to job category and job level, systematically provides employees with a comprehensive education and training, and implements talent development programs with a 70-20-10 Learning Framework to implement talent cultivation and provide a working environment for all employees to continuously learn and grow.

Training Committee

Promote experience inheritance, helping the organization grow the key momentum

- ▶ "Education and Training Committee" composed of education and training officer from various divisions to improve the quality of training for all employees. In line with corporate policy, the Company conducts a company-wide training needs survey every year and creates an annual training plan for the competency analysis of supervisors and associates. The Education and Training Committee holds quarterly meetings to review training operations.
- ▶ Sharing and exchange activities between fabs and function divisions were organized to promote the sharing of learning experiences between organizations, exchange training promotion methods, and help improve training effectiveness.
- ▶ The Committee conducts selection activities of outstanding company-wide instructors to encourage employees to serve as lecturers.
- ▶ In terms of divisional and inter-divisional On-the-Job Training (OJT), the Education and Training Committee's downward education and training orientation allows division directors and their staff to fully participate in the planning, implementation and learning assessment.
- ▶ The diversity of self-learning and development channels, such as e-Learning, creates an atmosphere of mutual peer learning, development and team cooperation, thereby forming a comprehensive environment for learning, sharing and innovation.



70%
Experiential Learning

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Internal Promotion and Rotation

Multi-faceted job development and accumulation of practical work experience

- ▶ UMC plans corresponding training blueprints for different job categories and ranks, encourages employees to continue to learn and develop personal careers in line with industry development trends, continues to provide location transfer incentives, and implements internal transfer systems and promotion channels, support the work skills of in-service employees to improve their work skills, career development and challenge opportunities, and increase their work engagement.
- For more information on the internal transfer mechanism, please refer to Section 4.2.1 Human Resources Development

70%
Experiential Learning

Training for Newcomers

[UMCer U Ready]

To help new employees adapt quickly to the workplace and establish a common language and basic understanding of semiconductor processes, a complete learning plan is provided through UMC's new employee training program, supplemented by a mentoring system.

▶ New-employee Experience Camp

[We are the Batchmate, Friends!]

By creating a good onboarding learning experience, we can enhance the sense of belonging of new UMC employees.

In addition to the new-employee orientation that are required for all new employees, the new-employee experience camp is also organized. The program includes the Company's vision, strategy, and advantages that combine with the organizational characteristics, taught by senior executives.

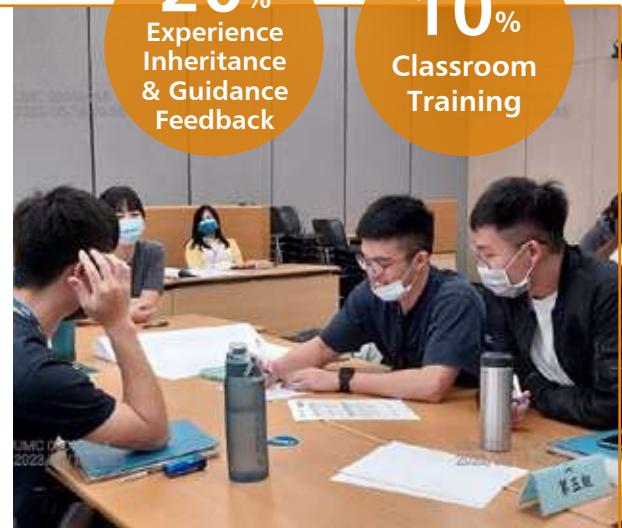
In addition, UMC's unique workplace anti-tress and positive attitude courses are available to accelerate the newcomers in blending into the corporate culture.

A total of 10 new-employee orientation camps were held in 2023, and a total of 430 new employees completed the camps.

▶ Mentor System

[A step-by-step study guide for newcomers]

In order to help new employee adapt to the work and environment, appropriate mentors are selected to receive guidance training to assist newcomers to quickly integrate into the UMC team. Mentors assist new employees to complete the drafting and implementation of training plans after they are on board. During the period, direct supervisors and mentors conduct regular interviews and assessments for newcomers, and use questionnaires to understand the learning and adaptation status of newcomers. Supervisors and mentors give appropriate feedback and comments to help solve any problems. Reduce the uneasiness of newcomers entering the new environment and feel the warm working atmosphere of the UMC team.



20%
Experience Inheritance & Guidance Feedback

10%
Classroom Training

Professional Courses

Special Engineer Skill Development Training Program

According to the needs of professional talents of each engineering unit and the inventory of professional functions, professional engineer training courses are planned to improve the overall professional level of engineers and the quality of engineering manufacturing, and hence get the manpower prepared for organizational development.

2023 "Digital Transformation of Professional Courses, Using Animation for Simplification" Project

To keep up with modern new technologies, professional courses are presented in a more lively and vivid form using 2D/3D animations to simplify the previously rigid foundational knowledge. This fully enhances the understanding of the learners and greatly improves the learning experience and effectiveness.



From "Semiconductor Manufacturing Management" course



也可以使用觸控平板控制 LED 亮度

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Quality Management Training

Improve quality training and implement the organization spirit of continuous optimization

To implement the quality policy of UMC and carry out relevant training courses for quality requirements, such as: knowledge management, proposal improvement, project management, problem analysis methods, statistical process control, experiment design, etc.

► Assessment System

UMC uses the internal and external evaluation channels including TOEIC English verification, professional skill evaluation system, and statistical process control (SPC) to effectively evaluate the core competencies each employee should possess in order to improve production quality and meet the needs of customers all over the world. Taking the SPC test as an example, the rule of Three-Six-Nine is established. In case of failure in the test, the individual will be forbidden from operating the equipment and will receive a negative evaluation in his/her employee performance review.

For the SPC course in 2023, the actual completion rate in Taiwan was **99.6%**, and the actual passing rate in Singapore was **94.8%**.

► Continued Improvement Activities

UMC encourages all employees to participate in continued improvement activities.

For related information, please refer to "Employee Development Programs" in this chapter and Section 2.2.2 Continuous Quality Improvement and Innovation.

► Knowledge Management, KM

To promote knowledge management, UMC has established a knowledge sharing platform. To take into account the protection of knowledge confidentiality, accessing of the knowledge is controlled according to the level of confidentiality, and knowledge documents are divided into 4 levels according to their completeness and contribution. The program further promotes the re-application of knowledge documents to enhance the flexibility of document application, thereby improving work efficiency and performance.

Performance	2020	2021	2022	2023
Read Rate (%)	92.3%	93.4%	93.1%	93.2%
Writing Penetration Rate (%)	73.9%	74.9%	72.1%	74.1%
Expected Re-application Benefit (NT\$10,000)	69,924	80,479	25,447	87,390

Note: 1. Read rate (%) is the rate of employees reading KM files
 2. Writing Penetration Rate (%) is the rate of employees writing KM files
 3. Expected Re-application Benefit (NT\$10,000) is to encourage employees to apply the KM knowledge they read to their work to show benefits



Skills Assessment

1	Category	Categorize according to facility, manufacturing and product
2	Content	<ul style="list-style-type: none"> • Basic/Operations, • Advanced/Learning from case examples, • Connection with various tasks/Crisis management ability
3	Standard	<ul style="list-style-type: none"> Quarterly skills assessment 7-10 instructors 5-6 weeks completion of task through telephone instruction 3-4 independent operation 0-2 continuing learning required
4	Method	Oral and written tests

SPC: 3-6-9 SPC Principle

New employees must complete SPC training courses within 3 months
 New employees must complete the SPC written test within 6 months
 New employees must complete SPC practice within 9 months



Leadership Development

Developing leadership talents to ensure their sustainable development ability, in order to establish a management echelon

The leadership development framework defines the required managerial competencies in four categories, including "Results," "Interaction," "Leadership" and "Potential" according to different levels of positions and roles. Corresponding development activities are planned and related learning resources are provided to encourage self-learning. To accelerate talent development, UMC employs diversified training and cultivating methods (70-20-10 learning rules) to strengthen leaders' management skills and competencies, lead teams to demonstrate effectiveness, and enhance UMC's competitiveness.

The development of management skills is an important task for managers at all levels. Every year, according to the senior executives' expectations (top down), the results of the previous year's executive function demand survey (bottom up), and external trends, the annual management function training is planned, and a variety of learning resources are provided through expert lectures and forums, internal supervisor experience inheritance and sharing, customized management courses, succession projects at all levels and multiple online learning channels, etc., so as to assist managers in maximizing their effectiveness in their job and management roles.

Leadership Development Framework



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Leadership Development

► Executives

1. Talent Cultivation and Succession Planning for Senior Management : In line with the Company's future development strategy and operational needs, UMC has formulated a talent cultivation and succession planning for senior management that includes complete talent development policies and directions for executives and senior management trained under a succession plan framework, blueprint and development roadmap. This plan has also been clearly defined and included in the Nomination Committee Organizational Rules.

In addition to reviewing implementation results within the Company, relevant plans are reviewed in management mechanisms such as policies and KPIs (Key Performance Index), and also included in implementation results. Progress and plans are reported to the responsible unit, senior executives, and the Nomination Committee/board of directors.

2. Executive Development Program: In response to the rapid changes in the global economy and industry, UMC has gathered talents from the government, industry and academia to help executives grasp the front-line information, enhance their business operation and management thinking, and enhance their sensitivity to the development of industry dynamics, such as the Science and Technology News Forum and the Strategy Forum. A total of 201 executives participated in 2023.

► Middle Manager / First-line Manager

1. Succession projects at all levels: In response to organizational development needs and strategic directions, UMC has formulated a talent cultivation and succession development plan, used talent assessment tools to identify and select high-potential talents, and analyzed the potential and opportunities of talents and teams, and according to the analysis of environmental trends, formulated exclusive development plans, including management knowledge training, team development, mentorship, job rotation, overseas assignment and job experience opportunities and other aspects of development, and established an internal talent pool and leadership pipeline to meet employees' career development needs and strengthen talent retention.

2. Management Competency training at all levels: Through professional internal and external lecturers, from new first-line manager to middle-level manager, the learning map of management functions is planned according to the needs of management functions at all levels. The Company provides relevant learning resources for the management behaviors, skills, knowledge, and company culture integration that managers should possess, so as to assist managers in maximizing their effectiveness in their job and management roles.

► Leadership Development Resources

1. Supervisor experience inheritance and sharing: Through the sharing and exchange of professional technology, management experience and career growth, UMC helps managers understand the management thinking at all levels and the practice of daily work, and promotes the inheritance of experience and the cultivation of management thinking.

2. Excellent Leadership e-Newsletter: UMC launches the Excellent Leadership e-newsletter every quarter. Through a themed, easy-to-read and regularly updated information platform, management related knowledge and tools are provided to managers. The e-newsletters, consisting of columns presenting the ideas of senior executives, aim to strengthen internal connections and build consensus. A total of 4 issues of e-newsletters were issued in 2023, reaching a total of 27,819 views.

The audio version of the Excellent Leadership e-Newsletter was launched in 2023, and can be listened to in 5 minutes!

► Presentation

To enhance reading interest and comprehension, audio podcast versions of e-newsletters have been created. These versions feature two-person dialogue and Q&A, allowing listeners to quickly grasp the key points of each article.

► Content

In 2023, following the principles and expectations of senior executives and focusing on international trends, the Excellent Leadership e-Newsletter covered topics such as digital transformation, strategic thinking, and resilience building. Through practical case studies, this e-newsletter aimed to help executives at all levels understand the impact of these trends and promote continuous learning and application.

3. "The UMC Business Management Thesis Award" Thematic lectures: Awardees are regularly invited to share their latest research and ideas in management, improve their management skills, and bring new perspectives to business management. In 2023, the winner of the Excellence Award of this Thesis Award, Professor Yang Junming of Mingchuan University, was invited to give a lecture on "The Enlightenment of the Lying Flat Phenomenon to Personal Career, Management Work, and the Society as a Whole," in which he explained how enterprises should respond to challenges and helped supervisors establish a growth mindset, aiming to provide guidance for understanding and enable a common approach to growth.



Leadership Development model



Excellent Leadership e-Newsletter



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The 7 Habits of Highly Effective People

Establish core competency and strengthen a common language across the Company

To implement the core values of the organization and practice the spirit of "accountability," UMC has continued to promote and deepen its implementation after introducing the "7 Habits of Highly Effective People" course in 2011. The program has since expanded to include the "7 Habits of Highly Effective Employees" course, which aims to cultivate the essential skills needed to lead a successful team, starting from personal success. This program helps create a common language across the Company. From 2020-2023, the overall training completion rate continued to increase and meet the required standards.

The 7 Habits of Highly Effective Managers



The 7 Habits of Highly Effective Employees



20%
Experience Inheritance & Guidance Feedback

10%
Classroom Training

Diversified Learning Paths and Environment

In addition to the training courses required for career development, UMC also integrates the Company's resources to provide a wealth of internal and external courses, On-the-job degree programs and other learning channels. By providing a complete training structure, UMC aims to create a comprehensive and diversified learning environment for its employees.

E-learning Platform

The new digital learning platform is now available and serves as a great learning companion

U-Learn Digital Learning Platform: A new version of the digital learning platform has been created to enable the entire group companies to share learning resources and synchronize learning information with UMC employees around the world. In addition to working in the Company, UMC employees can learn anytime and anywhere according to their personal learning habits using mobile apps or home computers, breaking the limitations and boundaries of time and space.

Strengthening learning and establishing a self-learning atmosphere through the integration of internal and external resources

Diversified self-learning resources: Incorporate a variety of self-learning resources, such as Commonwealth Magazine Leader Campus and English learning e-newsletters, to establish diversified learning avenues.

Language Learning

Language cultivation is the best assist for enterprise internationalization

UMC offers TOEIC test, TOEIC test preparation class and other courses, such as English letter writing, business conversation and other courses. Employees can sign up these courses according to their needs to continue to improve their English proficiency. In addition, online self-learning resources, such as TOEIC mock tests, speaking courses, and English e-weekly reports are provided for employees to study freely during their commute and improve their English language abilities and test-taking skills!

Moreover, tailored learning programs, such as one-on-one sessions and small-sized oral practice classes, are designed for functional divisions with specific language needs to accurately identify organizational needs and empower talent. Beginner and advanced Japanese courses are also available to those looking to enhance their Japanese language skills to foster multilingual abilities among internal talents.

External Training and Support for Degree Programs and Certificate

To broaden professional horizons and increase awareness of industry trends, employees are provided with subsidies for utilizing external training resources.

- ▶ External Training: UMC provides external training opportunities, including domestic and international programs, to all employees (including dispatch and temporary staff). Relevant course information is also provided based on their job needs to improve their skills, so employees can enhance their self-abilities while staying informed about the latest industry trends.¹⁰ For example, in 2023, 132 people registered to participate in the SEMICON Taiwan International Semiconductor Exhibition to stay up-to-date with the latest trends in semiconductor technology and improve their technological competitiveness. After the training, the training results and new knowledge is to be brought back to the Company for exchange and sharing, and applied to their work, so that employees can further expand and broaden their knowledge in the professional field through this training mode. In 2023, UMC participated in 695 external training sessions and received a total of 9,237 training hours, an increase of 25.4% than the previous year.

Number of Participants in External Training Courses



Note: The statistical scope for year 2023 has been adjusted to fully cover the relevant external training courses, so the reported figure for 2020-2022 have been concurrently adjusted.

- ▶ Support for Degree Programs and Certificates: UMC also provides information on continuing education courses in tertiary institutions, promotes educational resources and learning channels, and also offers a "Measures of Subsidy for Degree Programs and Certificates," which all employees (including dispatched and temporary staff) are eligible for. This program encourages and supports employees to continuously learning and develop their professional abilities or management skills required for their careers. In 2023, employees participated in various training programs, including engineering courses, industrial safety and disaster prevention courses, etc., and a total of NT\$277,000 of degree training subsidies was provided, and a total of 44 people have received subsidies since 2020.

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4.3 Protecting the Employees and the Work Environment

4.3.1 Maintain Workplace Safety 4.3.2 Creating a Reassuring Workplace



Material Topic

Employee Safety and Health

Related Policy ▶ Occupational Safety and Health Policy



In accordance with GRI Standards (2021) for identifying impacts of sustainability issues, management actions in response to these impacts and processes used to track the effectiveness of the actions are listed in the table below:

Negative Impacts ▶ work-related incidents

Management Actions	Processes Used to Track the Effectiveness of Actions
<ul style="list-style-type: none"> ▶ Implement occupational safety and health management system, and obtain ISO 450001 certificate ▶ Comply with the health and safety requirements of the Responsible Business Alliance Code of Conduct (RBA) ▶ Review occupational safety and health management performance and legal compliance 	<ul style="list-style-type: none"> ▶ Conduct ISO 45001 third-party verification every year ▶ Comply with external audit requirements, such as RBA audits ▶ At the Occupational Safety and Health Committee, review the effectiveness of occupational safety and health management implementation

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2024

2025

2030

Item	Goal	Achievement	Goal
Disabling Injury Frequency Rate (FR) and Disabling Injury Severity Rate (SR)	<ul style="list-style-type: none"> ▶ Better than the 2021 3-year average value for the semiconductor manufacturing industry 	✓ FR: 0.25 and SR: 11, which is better than the 3-year average for the semiconductor manufacturing industry (FR: 0.61, SR: 38)	<ul style="list-style-type: none"> ▶ Better than the 2022 3-year average value for the semiconductor manufacturing industry ▶ Reduce to less than 2/3 of the 2023 three-year semiconductor manufacturing industry average ▶ Reduce to less than 1/3 of the 2028 three-year semiconductor manufacturing industry average

Note: 1. Scope: UMC Group (UMC, its subsidiaries, HJ, USCXM, Wavetek, and USJC)

2. Based on the statistical model calculated by Occupational Safety and Health Administration, Ministry by Ministry of Labor (MOL).

4.3.1 Maintain Workplace Safety

With the goal of zero accidents, UMC is committed to maintaining a stable growth of the Company under the priority of safety, preventing safety and health risks, avoiding major losses due to safety and health related issues, so the Company's competitiveness can be ensured.

The Safety-First Corporate Culture

UMC Group continues to implement a "Safety First" culture, requiring employees not to overlook safety in their work for the sake of speed. In addition, UMC has established the UMC "Safety Climate Initiative Index" to identify and improve unsafe behaviors and environments. Furthermore, each fab's performance index is compiled quarterly and the overall safety climate performance is presented in the form of light signals to prevent the occurrence of accidents, as well as to continuously reduce the Disabling Injury Frequency Rate (FR) and the Disabling Injury Severity Rate (SR).

Safety and Health Organization

All foundries of UMC Group have set up occupational safety and health committees in accordance with local regulations, and hold regular meetings to review the performance of occupational safety and health management.

Safety and Health Management System

The safety and health management framework of UMC Group follows the management principles of ISO 45001 and is built on the "Plan-Do-Check-Action" framework, applicable to all workers in UMC Group. All foundries have obtained ISO 45001 certifications.

Hazard Identification and Risk Assessment

UMC Group conducts hazard identification and risk assessment for routine and non-routine operations. In addition to following the risk assessment methods of ISO 45001, it also introduces other risk assessment mechanisms or tools based on local regulatory requirements or fab engineering control needs. Currently commonly used hazard identification and risk assessment mechanisms and tools include:

1 Process and activity safety and health risk assessment

The safety and health risks of processes and tool transfer in fabs are evaluated by personnel who are trained and qualified in safety and health identification. The personnel assess the severity and frequency of risks, calculate safety and health risk indicators, and compile a list of major safety and health risks for improvement.

2 Hazardous workplace assessment

Taiwan fabs are inspected according to Hazardous Workplace Review and Inspection Rules as category A workplaces. The hazardous workplaces are evaluated by process safety assessment personnel who are trained and qualified in safety and health.

3 Identifying engineering risk using FMEA

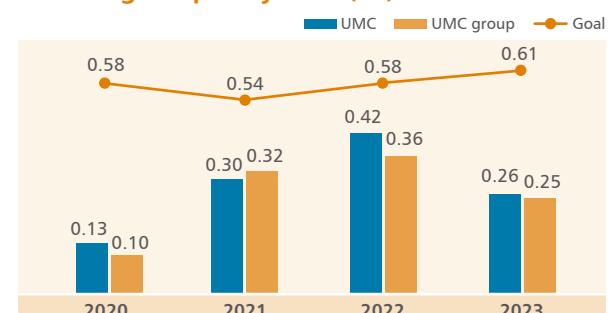
According to the engineering control requirements of fabs, failure mode & effect analysis (FMEA) is used to identify engineering risks, understand the engineering hazards before construction, and communicate with relevant personnel.

Occupational Disaster Management

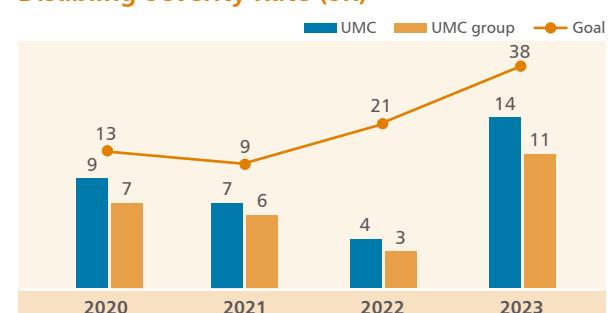
In 2023, UMC Group Disabling Injury Frequency Rate (FR) was 0.25 and Disabling Injury Severity Rate (SR) was 11, which are far below the average of the semiconductor industry^{Note}. UMC will continue to promote disaster reduction programs and move towards the goal of zero disasters.

Note: Based on the statistical model calculated by Occupational Safety and Health Administration, Ministry of Labor (MOL). According to the 3-year disabling injury frequency (FR) and 3-year disabling injury severity rate (SR) average announced by the Occupational Safety and Health Administration of the Ministry of Labor in 2022; when the 2023 goals are set at the end of 2022, the latest announced industry data from the Occupational Safety and Health Administration is for 2021.

Disabling Frequency Rate (FR)



Disabling Severity Rate (SR)



Note: 1. FR = Number of person-times with disabling injuries x 1,000,000 / Total number of working hours [per million working hours].

2. SR = Number of lost day due to disability x 1,000,000 / Total number of working hours [per million working hours].

3. Goal: The three-year average of the national semiconductor manufacturing industry announced two years ago in the same year; for example, in 2023, the three-year average of the national semiconductor manufacturing industry (2019-2021) in 2021 is used as the goal.

Safety and Health Education and Training

In accordance with the organizational structure, UMC Group has designed company-wide general education courses, fab self-organized courses, and department-specific courses to provide employees with safety and health education and training necessary for work and accident prevention. In doing so, it allows employees to develop a safety culture, as well as occupational safety awareness and ability, to reduce the occurrence of accidents caused by unsafe behaviors. In 2023, UMC Group organized 2,785 classes and trained 188,538 person-times altogether, which included the U-learning online courses that allowed employees to flexibly arrange their ways to participate in the safety and health education training sessions without being constrained by the scheduled time of physical courses.

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Consultation and Communication with Workers

UMC Group values the consultation and participation of employees. In 2023, there was no dispute related to occupational safety and health reported. UMC Group also conducted consultation and communication with workers in accordance with local regulations. In accordance with the election guidelines of safety and health labor representative regulated in the "Occupational Safety and Health Act," Taiwan fabs authorize employees to jointly elect labor representatives to participate in the quarterly Safety Committee with the consent of labor representatives through the labor management meeting. Additionally, they revise the Safety and Health Work Rules, investigate accidents, implement workplace environmental monitoring, and participate in decision-making on various safety and health related issues. The labor-management meetings also discuss the penalties for employee violations of labor safety discipline and reach consensus on safety and health related issues.

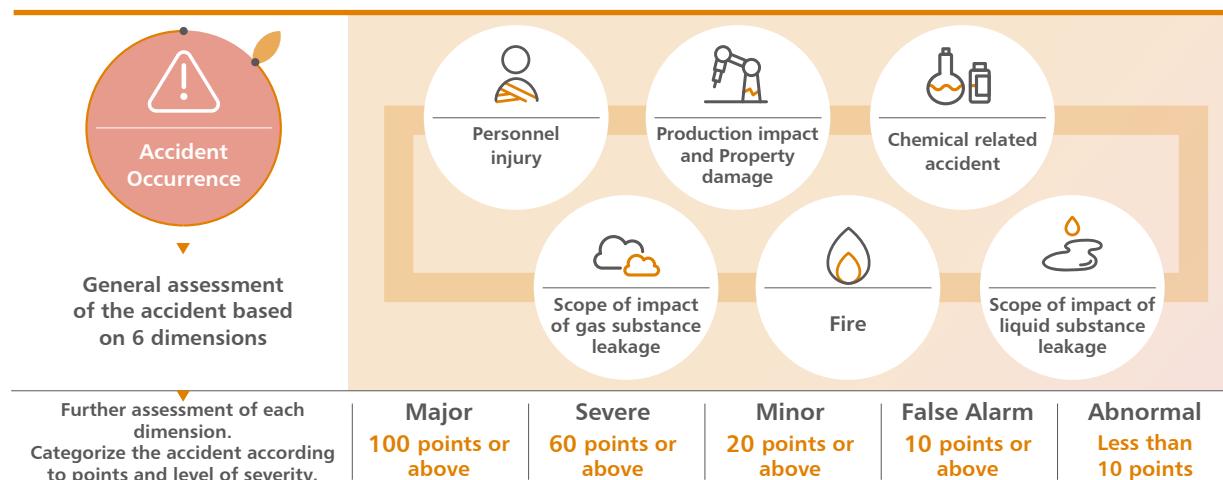
Apart from that, UMC Group also actively communicates with other non-employee workers. In addition to requiring all construction workers entering the factory to be informed of workplace hazards, UMC Group has also established a robust construction application system to effectively control construction applications and manage pre-, during- and post- construction stages.

Accident Analysis and Management

Accident Investigation and Analysis

UMC Group underscores the importance of immediate notification, rigorous investigation and recurrence prevention of each accident. Therefore, the Company has formulated the Accident Notification and Investigation Regulations to govern the procedures for accident notification, investigation and improvement. In addition, for systematic records and efficient control of accident notification, investigation, and improvement, an online system for accident notification and investigation has been installed to achieve instant transmission and storage of accident information.

The Company also conducts a comprehensive assessment of the accident according to six dimensions, and quantifies the accident into major, severe, minor, false alarm or abnormal categories for more objective evaluation of the accident management performance.



Accident Management

UMC Group is committed to reducing the number of industrial safety accidents. In 2023, based on the six dimensions mentioned above, there were five minor or above accidents reported. As a result, the target was successfully achieved, and no

regulatory violation related to safety and health incidents occurred. There have also been no fine for workers' health and safety, or financial losses due to judicial proceedings. In 2023, there were 22 fewer minor or above accidents than in 2011. The average financial loss caused by each minor accident from 2011 to 2023 is about NT\$2.5 million. Compared to 2011, UMC in 2023 has reduced its accident-related expenses by NT\$55 million. The five accidents in 2023 can be categorized: walking injury: 1, heavy object crush injury: 2, fire alarm: 2. In addition, we also promote accident prevention plans with "Advancing FR & SR" as the main axis.

Number of Minor or Above Accidents



Note: UMC scores and classifies accidents according to injuries caused by people, impact on production, financial loss, involvement of chemical substances, range of impact, fire or problematic employee behavior. Not all accidents result in human injury.

Key projects for accident prevention in 2023

- 1 Fabs included unsafe walking behaviors, unsafe walking environments, and temporary storage area/warehouse management as key items for internal operation observations and inspections by supervisors of various levels.
- 2 A comprehensive review was conducted on the suitability of the location and attributes of items kept in fabs' temporary storage areas/warehouses, with a focus on enhancing the management of items stored in these areas.
- 3 Three-step enhancement for walking safety

Step 1	Step 2	Step 3
List the fab's occupational safety competition evaluation items	Case study and promotion	Audit deficiency result in point deduction for "repeated deficiencies in the safety climate index"

- 4 Implemented the Inter-fab Safety Performance Incentives and raised the FR & SR rewarding criteria, striving toward the goal of "zero accidents/zero injuries".

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Occupational Disease and Illness Prevention and Management

The prevention management of high-risk jobs and occupational diseases and illnesses at UMC Group is in accordance with local regulations. In order to monitor the actual state of the labor working environment and assess the workers' hazard exposure, Taiwan fabs have established a complete sampling strategy to monitor the operating environment, of which physical and chemical substances are monitored. The monitoring results of all areas (including clean rooms) were far below the concentration values allowed by law, and the results were announced to colleagues through the fab's Safety Committee and posters on public bulletin boards.

In Taiwan fabs, exposure groups are identified according to the hazard exposure status of their operating environment, of which some equipment, and fab operations and workers are identified as high risk groups, thus they are subject to special health examinations for those involved in tasks with special health hazards in accordance with the law. The special health examination items include noise, ionizing radiation, dust, organic solvents, specific chemical substances and so on, and the individual health management is implemented according to the health examination grading system. In 2023, there were no work-related cases of level 4 management reported based on the special health examination results. The health examination target definitions were superior to the governing regulations, demonstrating UMC's care for employees' wellbeing. Through a complete environmental monitoring of workplace along with the health risk grading management system, UMC is able to identify the high-risk groups in advance, and by continuing to improve the conditions at the source and providing comprehensive health care, a healthier and more comfortable working environment for employees can be created.

Taiwan fabs hold a Special Health Hazards Meeting every year to examine high-risk groups. In order to address the issues related to chronic injuries, diseases, illnesses or discomforts caused by long-term exposure to work hazards, UMC has established a notification and care mechanism for potential occupational chronic injuries, diseases and illnesses reporting, and set up an occupational disease and illness investigation team composed of labor health service physicians, the Health Development Division of the Human Resources Department, and the Risk Management and Safety and Environmental Protection Department. Furthermore, all personnel mentioned

above will conduct job observation together and make recommendations and improvements if necessary. Hence engineering control and ventilation were improved, which prioritize the elimination of hazardous exposure factors from the source and make personal protective equipment as the last line of defense. From 2014 to 2023, there were 5 care cases reported. (No new cases in 2023).

Hazard Notification

UMC Group implements daily inspections to detect potential hazards in the workplace early and strengthen safety and health to prevent accidents. Identified during inspections are classified by severity and managed accordingly to correct them.

In case of any immediate workplace danger, workers can call the emergency contact person to notify the occupational safety personnel. Workers can stop work and retreat to a safe place on their own without endangering the safety of other workers, and will not be punished.

Prevention Measures for Impact of Occupational Safety and Health

Through undertaking management, procurement management and change management, UMC Group further eliminates hazards and reduces health and safety risks, thereby preventing any safety and health impact on operations, products or services.

Contractor Safety Management

Policy Commitment	The Company is committed to extending the scope of its Safety and Health Policy to contracted personnel. This includes the implementation of preventive management and audit systems, ensuring workplace and operational safety, safeguarding the physical and mental health of workers, and other provisions aimed at protecting contractor safety.
Performance and Risk Pre-screening	UMC established the Sustainable Supply Chain Management and Assessment Procedure to evaluate the safety performance and potential risks of suppliers (including contractors) based on occupational safety and health-related indicators. ○ Please refer to section 1.3.2 Supply Chain Management for the sustainability assessment of suppliers.
Operation Guideline	UMC formulated the Contractor EHS (Environmental, Health and Safety) Management Regulations to serve as safety guidelines for contractor management.
Safety Training	The Company regularly conducts UMC Contractor EHS (Environmental, Health and Safety) Education and Training to provide general safety information to contracted personnel operating on fab premises.
Contractual Agreement	Every new contractor must complete the signing of relevant agreements regarding the Contractor EHS (Environmental, Health and Safety) Guidelines and commit to comply with safety standards before engaging in transactions.
Management Objectives	The Company has established the goal of achieving ZERO accidents (including among contractors) with severity above minor levels and requires all fabs to strive toward this goal through Inter-fab Safety Performance Incentives. Those who achieve the goal each year are rewarded.
Performance Monitoring	UMC regularly convenes company-wide safety and health committee meetings to review the status of all fabs (including contractors) in achieving the goal of ZERO accidents.
Management Report	The Company regularly issues safety audit management reports to contractors.

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Procurement Management

There are procurement management procedures in place that require the procurement of raw materials, machinery, projects, etc. to comply with laws and the specific safety and health regulations of the foundry, and compliance with regulations must be confirmed before acceptance and use.

Management of Change

To avoid safety and health risks and environmental impact from changes in personnel, machinery, materials, methods and environment, measures for management of changes have been established. Measures such as formal application procedure, approval procedure, implementation of necessary safety assessments, relevant personnel notification/training and necessary technology information are in place to reduce potential risks.

Employee Absenteeism Rate

UMC has established a safe workplace through health promotion programs and actively prevents accidents to maintain workplace safety. The Company is committed to reducing absences caused by injuries and illnesses among employees and has set a target of reducing the employee absence rate by 1.5% in 2023 and 2024. In 2023, the actual absence rate was 1.06%, meeting the annual goal. In the future, UMC will continue to enhance health awareness and injury prevention management, create a friendly work environment, promote employees' physical and mental well-being, and remain attentive to employee absences due to injuries and illnesses.

Year	2020	2021	2022	2023
Absenteeism Rate	0.72%	0.74%	0.86%	1.06%
Employee Data Coverage Rate	100%	100%	100%	100%

Note: 1. Scope: UMC(fabs in Taiwan and Singapore)

2. Absence rate (%) = (Total absence hours during the fiscal year ÷ Total working hours during the fiscal year) x 100%

3. Total working hours during the fiscal year are calculated based on local standard daily working hours: 8 hours per day in Taiwan; 8.5 hours per day in Singapore.

4. Absences include occupational injury leave, sick leave, maternity leave, and menstrual leave.

5. Due to the COVID-19 pandemic, work from home was implemented from 2020–2022, resulting in a lower absence rate.

Promoting the UMC Occupational Disease Prevention Program

Background

UMC Group has adopted an active approach to occupational disease prevention by establishing proactive indicators. The Company executed a 3-year program on Chemical Factor-derived Occupational Disease Prevention to achieve source management and early detection of potential exposure risks, reduce occupational disease disputes, improve evidential efficiency, ensure the health of employees and suppliers in the workplace, and demonstrate corporate accountability.

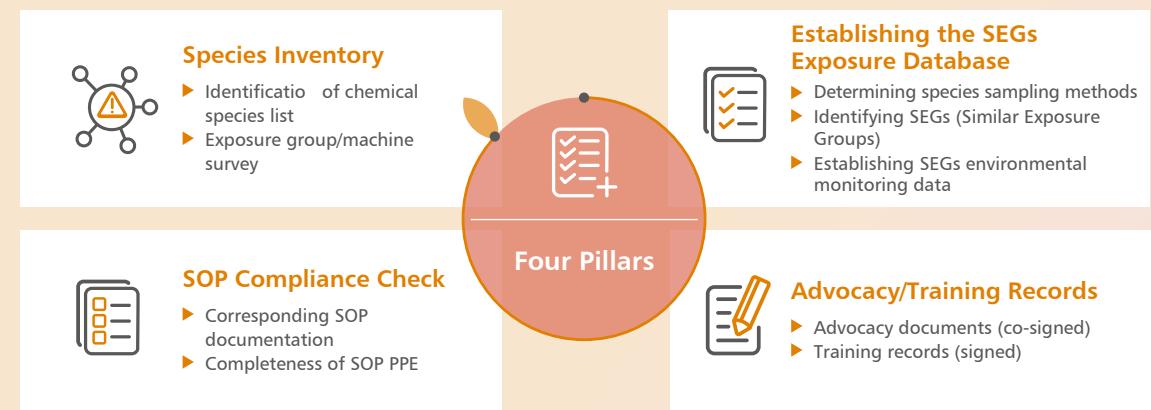
Challenges

The Company implements strategies for preventing occupational cancer and steadily promotes proactive actions for early occupational disease prevention with the goal of achieving zero occupational diseases.

Measures

The Company initiated the CMR Occupational Cancer Spread and Exposure Management Plan from 2022–2023. From 2023–2024, UMC continued to promote the List of Occupational Diseases issued by the Occupational Safety and Health Administration and introduced the 4 Pillars of inspection strategies for occupational disease prevention, thereby upgrading workplace safety and health management and establishing leading indicators.

Focusing on the four pillars: Upgrading workplace safety and health management, establishing leading indicators



Benefit

- The Company established a chemical substance usage footprint to ensure the health and safety of employees and suppliers in the workplace, reduce occupational disease disputes, and improve evidential efficiency
- The Company demonstrates accountability by integrating its "people-oriented" occupational health management commitment to achieve the goal of zero occupational diseases.

Note: CMR stands for Carcinogenic, Mutagenic, and Reprotoxic

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Occupational Safety and Health Statistics

UMC	Taiwan			Singapore	
	Employees	Non-employee	Employees	Non-employee	Non-employee
2023 Relevant Index					
No. of People	13,300	2,207	1,703	423	
Total No. of Working Hours	27,757,715	6,445,472	3,618,042	1,235,880	
No. of People with Disabling Injuries	7	1	1	0	
No. of Lost Days due to Disability	427	90	2	0	
No. of Reportable Injuries	19	2	1	0	
No. of Work-related Deaths	0	0	0	0	
Occupational Disease Rate (ODR)	0	0	0	0	
Injury Rate (IR)	0.14	0.06	0.06	0	
Lost Day Rate (LDR)	3.07	2.79	0.11	0	

Note: There were no third-party illnesses, injuries, disabilities or deaths caused by UMC operations.

Subsidiaries	China - HJ		China - USCXM		Taiwan - Wavetek		Japan - USJC	
2023 Relevant Index	Employees	Non-employee	Employees	Non-employee	Employees	Non-employee	Employees	Non-employee
No. of People	1,980	118	1,200	708	789	77	1,265	316
Total No. of Working Hours	3,859,160	344,560	2,363,062	2,069,360	1,517,006	223,104	2,401,086	720,344
No. of People with Disabling Injuries	1	0	1	0	0	0	0	2
No. of Lost Days due to Disability	11	0	2	0	0	0	0	137
No. of Reportable Injuries	1	0	1	1	0	0	0	2
No. of Work-related Deaths	0	0	0	0	0	0	0	0
Occupational Disease Rate (ODR)	0	0	0	0	0	0	0	0
Injury Rate (IR)	0.05	0	0.08	0.10	0	0	0	0.56
Lost Day Rate (LDR)	0.57	0	0.17	0	0	0	0	38.04

Note: There were no third-party illnesses, injuries, disabilities or deaths caused by HJ, USCXM, Wavetek and USJC operations.

Definition of Terms

- Non-employee workers: Refers to non-employees whose work and/or workplace is defined by the Company. The daily average number of such workers in the fabs is calculated by dividing the total number of workers in the year by 365.
- Third party: Refers to non-employees or contracted personnel.
- Working hours:
 1. Employees: Based on actual working hours experienced by workers.
 2. Other non-employee workers: Calculated based on 8 hours per person per day.
- Number of people with disabling injuries: Refers to the number of deaths, permanent disability, permanently total or partial disability or temporarily total disability due to occupational injuries.
- Number of lost days due to disability: Refers to the total number of days lost as the result of injury from a single accident. Calculated as the number of days when the injured person is temporarily (or

permanently) unable to resume work, but excludes the days of injury or the days when work is resumed. The number of days elapsed (including Sundays, holidays or company rest days) and the number of inability to work days following return to work as a result of the injury are included.

- Number of reportable injuries: Refers to the number of work-related injuries that resulted in death, job loss, impairment or transfer, emergency treatment or more, loss of consciousness, or diagnosed by a doctor as serious injuries.
- ODR = Total number of occupational diseases x 200,000 / Total number of working hours [per 200,000 working hours].
- IR = Number of reportable injuries x 200,000 / Total number of working hours [per 200,000 working hours].
- LDR = Number of lost days due to disabling injuries x 200,000 / Total number of working hours [per 200,000 working hours].

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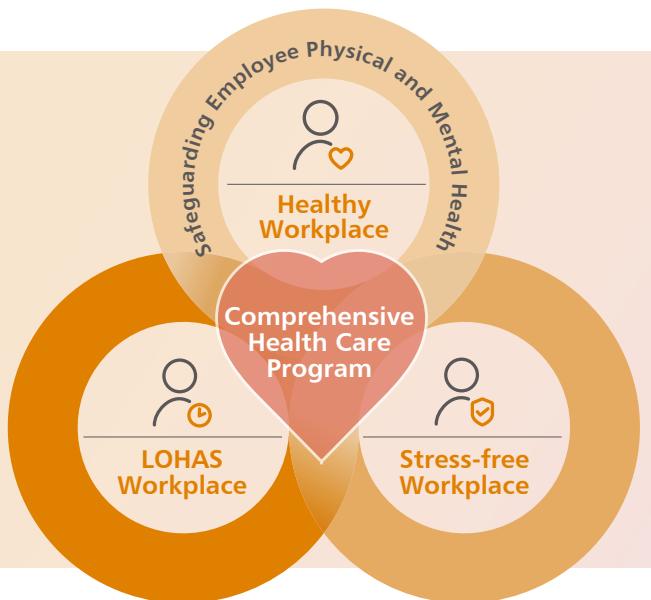
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4.3.2 Creating a Reassuring Workplace

"Healthy, Hassle-free and LOHAS" is UMC's core value to protect the physical and mental health of employees.

"Healthy, Hassle-free and LOHAS" is UMC's core value to protect the physical and mental health of employees. In line with the concept that employees are important assets of the company. Every UMC employee can be perfectly cared for. Through continuous health care, colleagues can work with peace of mind. Through the promotion of activities, employees are promoted to produce healthy behaviors and establish healthy lifestyles, thereby creating a win-win situation of work-family balance.



Based on the "Occupational Safety and Health Act" (later referred to as the "OSHA"), "The Labor Standards Act," "Gender Equality in Employment Act," "Sexual Harassment Prevention Act," "Guidelines for Safety and Health of Middle-aged and Elderly Workers," "Guidelines for Safety and Health of Night Shift Workers in the Workplace," UMC has formulated campaigns for maternal health protection, abnormal workload-induced disease prevention, ergonomics hazard prevention, workplace unlawful infringement prevention, and special protection of middle-aged and elderly workers.

In 2023, a series of health-promoting activities were developed to encourage employees to adopt a healthy lifestyle in their daily lives. Lucky draw prizes were also offered with the expectation that employees would continue to maintain a healthy lifestyle after the end of the pandemic and take their health to the next level.

Safe Workplace Measures

► The Construction of a Gender Equality Culture

Gender equality measures are superior to or in accordance with the Labor Standards Act.

► Safety Measures for Women Working at Night

Nighttime car service, vehicle rescue, emergency button, various emergency assistance, day and night transportation connection, 24-hour employee service hotline, and nighttime emergency response reporting mechanism.

► Special Assistance for Pregnant Women and Employees in Need

Priority meal pickup, reserved parking space, notification of cleaning and disinfection avoidance, night shift transfer, maternity subsidy (both male and female employees are qualified) dedicated lactation room

► Flexible Work and Vacation System for Work and Family Balance

Provide employees with flexible work shifts. For employees with kids under 3, the working hours can be adjusted one hour earlier or later. An extra 7-day spare leave is also provided. According to the "Gender Equality in Employment Act", both women and men can apply for parental leave.

► Sexual Harassment Prevention System

Formulate the "Complaint and Punishment Measures for Sexual Harassment Prevention and Control in the Workplace." Provide case investigation mechanism, membership criteria, dedicated complain channels for privacy protection, education and training, and an internal police security assistance service network

Note: UMC follows various Taiwan government labor regulations, "Gender Equality in Employment Act", "Sexual Harassment Prevention Act" and other relevant norms to formulate regulations in Taiwan and promote various related measures.

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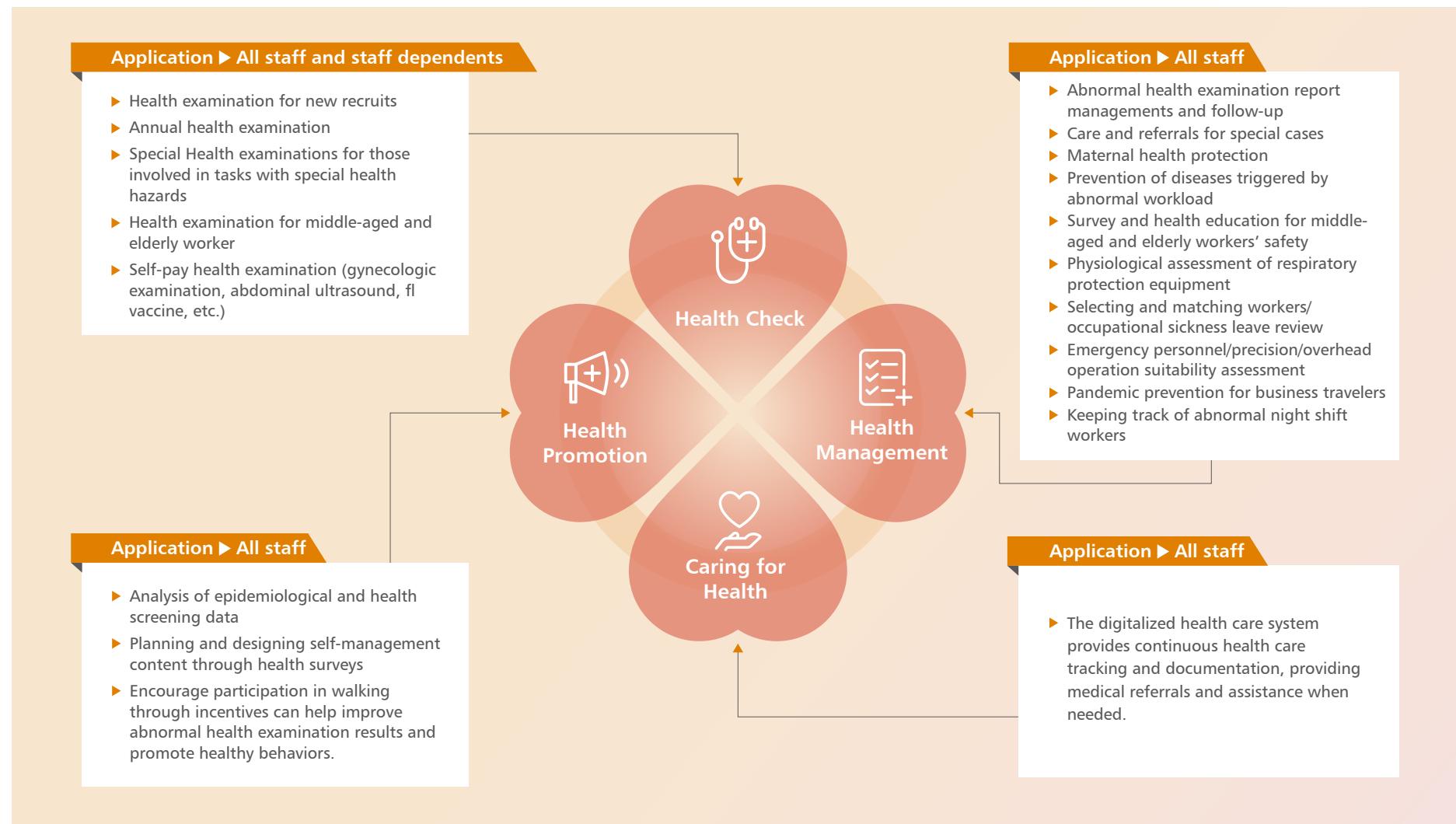
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Healthy Workplace ► Protect the Physical and Mental Health of Employees

Worker Health Promotion

UMC implements a health service management plan every year to maintain the safety, health and well-being of employees and stakeholders. In accordance with the OSHA, we review the results of the 2023 plan, then implement the 2024 health service management plan. After approval by the supervisor, the plan is announced to all employees.



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Health Promotion Activities in 2023

Theme	Event Spine	Key Achievements																		
Health Column/ Health Education	Diversify health education information is regularly promoted through announcements at the safety committee, various forums, BBS or electronic posters.	<ul style="list-style-type: none"> ► 65 pieces of health education information were sent 																		
Health Lecture	Based on the results of health check-ups and a health needs survey, we developed a health promotion plan and invited professional doctors to give lectures at FAB sites to provide health education information and knowledge.	<ul style="list-style-type: none"> ► Three health-related lectures were held ► A total of 289 participants with an average satisfaction score of 96 																		
Health Examination	<p>Better than regulations</p> <ul style="list-style-type: none"> ► Conduct regular health checkups annually ► According to the advice of occupational physicians, the Employee Benefit Committee subsidizes non-regulatory items and additional items. 	<ul style="list-style-type: none"> ► The number of people checked reached 12,524 ► 100% completion rate for mandatory regulatory checks, which is higher than the 91% completion rate for voluntary regulatory checks. ► Participation satisfaction rate averaged 95 points. ► A total of 691 women participated in the three-in-one examination, with an average satisfaction rate of 97 points. ► A total of 740 people participated in the abdominal ultrasound examination, with an average satisfaction rate of 99 points. 																		
Health Promotion Activities	<ol style="list-style-type: none"> Planned 8 tasks under the theme of "Who is the UMC 2023 Health Point King?", including activities such as health walks, metabolic syndrome, stress relief, etc., using points collection and prize draws for achieving goals to motivate employees to value health. Organizing seasonal influenza vaccination events Weight loss classes, improving health check-up results activities, and health walk classes were organized. 	<ol style="list-style-type: none"> According to the analysis of annual health check-up results of employees in the same category in the past two years, by 2023, 30% have successfully overcome metabolic syndrome. A total of 722 people received self-paid seasonal influenza vaccinations, with a satisfaction rate of 99 points. A 26% increase in vaccination rate compared to last year indicated that employees have a better understanding of the importance of preventive vaccination after the epidemic. 																		
Description of Results		Health Autonomy Accreditation and Health promotion seal.																		
<ul style="list-style-type: none"> ► Total number of service users: 27,742 person-times ► Average Satisfaction rate: 96 points. 		<table border="1"> <thead> <tr> <th>Site</th><th>Hsinchu headquarters building.</th><th>Fab 8D</th><th>Fab 8E</th><th>Fab 8F</th><th>Fab 12A P5</th><th>Fab 8AB</th><th>Fab 8S</th><th>Fab 12A P1</th></tr> </thead> <tbody> <tr> <td>Validity Period</td><td>2024-2026</td><td colspan="3">2023-2025</td><td colspan="4">2022-2024</td></tr> </tbody> </table>	Site	Hsinchu headquarters building.	Fab 8D	Fab 8E	Fab 8F	Fab 12A P5	Fab 8AB	Fab 8S	Fab 12A P1	Validity Period	2024-2026	2023-2025			2022-2024			
Site	Hsinchu headquarters building.	Fab 8D	Fab 8E	Fab 8F	Fab 12A P5	Fab 8AB	Fab 8S	Fab 12A P1												
Validity Period	2024-2026	2023-2025			2022-2024															

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Worry-Free Workplace ► Focus on Work Environment Safety

Hsinchu headquarters building. To establish a healthy and friendly working environment, we work with environmental safety organizations and provide various safety and health protection measures based on occupational safety laws. We implement comprehensive hazard identification, risk and suitability assessments, and prevention and improvement measures to prevent occupational injuries and enhance work efficiency.

Safety Protection Items	Execution Instruction	Key Performance in 2023
 Occupational Disease Prevention	<p>Health protection matters such as illnesses caused by abnormal workload and illegal violations in the performance of duties are managed through the notification system. After the health center receives the requests, it will start the care mechanism: refer to doctors for treatment, arrange interviews with doctor of occupational medicine, on-site visits as necessary.</p>	<ul style="list-style-type: none"> ► We conducted multiple on-site visits to understand employees' working conditions, helped identify root causes, provided early treatment, and offered necessary assistance. As a result, there were no reported cases of occupational disease in 2023.
 Maternal Health Protection	<p>UMC has set up breastfeeding rooms in each fab. Women after delivery who need have 60 minutes per day for milk collection. We also build a system for maternal health protection of our company. Employees who need breastfeeding can use the online system to inform the health center to initiate the maternal health protection measures, including risk assessment.</p>	<ul style="list-style-type: none"> ► Pregnant female employees receive maternal health protection. The medical staff has completed the hazard identification risk assessment and fitness for work assessment through telephone or interviews, provided relevant health education information during pregnancy and postpartum, and gave mother gifts and informed birth subsidy and other related information. ► The "Health Care System" automatically arranges care list of the employees according to their major health issues daily. The follow up and care rate was 100%.
 Special Health Protection for Middle and Old Age	<p>Since 2019, before the announcement of "The health and safety guide for middle-aged and elderly workers," the Company already had individualized health protection plans for the middle-aged group workers. Surveys are conducted for workers over 45 years old (including 45). Work fitness survey results were assessed, and employees at risk received physician consultations.</p>	<ul style="list-style-type: none"> ► By using the work fitness and health questionnaire, the Company can identify employees who have a low work ability. This allows the Company to arrange doctor consultations for them, provide health guidance and advice, and refer them to work safety and employee assistance programs as needed. This helps the employees cope with physical and mental problems they may face at work.
 Employee Assistance Program, EAP	<p>Each employee can have up to 6 free psychologist consultations per year. The service is announced to every worker during the new employee training. The entire consultation process is kept confidential. Employees can receive consultations on family, work, and interpersonal relationships. In order to achieve work and life balance. Guide colleagues to self-regulate.</p>	<ul style="list-style-type: none"> ► Emphasis on employee welfare and physical and mental health, through a variety of open-ended professional consulting services, to provide employees with a sound support system ► Interview or telephone consultation satisfaction rate reached 98 points
 Caring for Health	<p>According to the injury and illness caring protocol, the health center worked together with physicians and nurses, department supervisors, human resources, legal affairs staff to perform fitness for work evaluation. For sick or injured employees, the team would help adjust the content of the work in stages according to the recovery situation, and to arrange appropriate or temporary positions without affecting the recovery process.</p>	<ul style="list-style-type: none"> ► By continuously raising awareness among employees about the importance of health, the Company strengthens their understanding of disease prevention and healthcare in maintaining good health. ► A total of 313 care recipients received services for injury and illness, including ongoing follow-up care and appropriate health education.

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2023 UMC Family Day Event

LOHAS Workplace ▶ Emphasis on Work-Life Balance

UMC believes that only healthy and happy employees can build a highly productive enterprise. In addition to providing a safe and healthy workplace environment, an employee oriented LOHAS workplace that integrates benefits, vitality and public service is created. Through diversified activity design, creativity and vitality can be nurtured in the work and leisure activities of employees.

Competition activities are organized to enhance team cohesion

In order to invigorate the atmosphere of the divisions and promote team cohesion, UMC Taiwan organizes team competitions in 2023 in conjunction with the Company's celebration activities, the subsidiary USCXM holds ball competitions, and HJ holds fun competitions such as Dragon Boat Festival Bag Sachet Ring Competition, Fun Games, Karaoke Contest, Christmas Candy Pie and other activities. Through the process of activities, the UMC team continues to inject cohesive energy. In addition to interesting competitions, UMC Taiwan also organizes professional ball competitions such as U Gym Cup-Badminton Tournament and Basketball Tournament in conjunction with the Workplace Happiness Program. A series of parent-child courses were also organized for family members to participate.

Exploring life: Employees are encouraged to participate in club activities, and sports facilities are offered to take care of employees' health

UMC encourages employees to explore the joy of life while using their professional skills. UMC subsidizes community funding through the Employee Welfare Committee to support employees to participate in club activities and communicate with like-minded partners. In addition, in order to encourage employees to maintain good exercise habits, fitness facilities have been set up in various fab locations and some dormitories in Taiwan. In conjunction with the STAY 2025 Program, UMC created an exclusive U GYM and organized a large-scale celebrity group class, with a total of 3,145 person-times participation.

UMC Recreation Center and Lianyuan Activity Center

UMC Recreation Center (in Hsinchu Science Park) and Lianyuan Sports Center (in Southern Taiwan Science Park) provide a high-quality leisure and sports facilities for employees and their families, including swimming pools, gymnasiums, billiard rooms, basketball courts, badminton and volleyball courts, art and cultural spaces, parent-child playrooms and aerobics classrooms, etc., to create an exclusive all-round sports and leisure venue for UMC employees, convenient for employees to carry out sports planning, mediate stress. Massage service provided by visually impaired massagers is also offered for UMC employees and their families on Saturdays and Sundays.



Employee Social Club Activities



Team Competition

Celebrity-led Large Group Class

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Activity List of UMC LOHAS Workplace

Item	Content	2023 Performance
Employee Social Club Events	<ul style="list-style-type: none"> There are five categories of UMC social clubs: body beauty, recreation, indoor activity, outdoor exercise, and social service. Annual social clubs' evaluations are held, and high-performance clubs receive financial subsidies. Additional subsidies are offered to social clubs when they represent UMC in public competitions. 	<ul style="list-style-type: none"> 30 social clubs (Taiwan fabs) 2 rounds of selection - a total of 15 excellent social clubs received subsidies each round. 2,389 club members <small>Note</small>
Recreational Facilities and Services (Recreation Center in Hsinchu / Lianyuan Sports Center in Tainan)	<ul style="list-style-type: none"> Quality Recreation Center in Hsinchu for employees and families. Dormitory in Tainan with integrated recreational facilities. Each site (Fab 8E, Fab 8F, Fab 8S, Fab 12A, and Fab 12A P5) provides fitness equipment for employees. 	<ul style="list-style-type: none"> Recreation Center in Hsinchu: 63,517 person-times visitors. Lianyuan Sports Center, located in the Southern Taiwan Science Park, optimized its fitness center, aerobics classroom and other facilities, providing a better employee experience. Regular inspections, evaluations and replacement of equipment are conducted to ensure that employees have the best exercise environment.
Diversified Employee Activities	<ul style="list-style-type: none"> Family day, team competitions and other team-building activities were organized to promote the relationships between employees and their family members, and to establish a positive corporate image. Travel activities were also organized in each half of the year, with local revitalization as the main theme. A total of 12 activities were held during the art season, including exhibitions, theatrical performances, musical performances, and handicraft classes, allowing employees and their families to enjoy an artistic feast together during the summer. In addition, a "STAY 2025: Workplace Happiness Program" was planned, with the theme of LOHAS and cohesion, to create U Gym exclusively for UMC employees and activities such as parent-child classes. 	<ul style="list-style-type: none"> A total of 5,820 people participated in the Family Day event, with a satisfaction rating of 88.6 points. Three team competitions were held, with a total of 119 teams participating. Two sessions of light travel events were held, with a total of 309 participants. A total of 12 events were held during the art season, with 3,293 participants. A total of 3,145 participants in the U Gym events.

Note: Excluding temporary members and one-time participants.

UMC Leisure Facilities



Hsinchu Science Park UMC Recreation Center



Tainan Science Park Lianyuan Sports Center



Five-star Fitness Equipment



Multi-purpose Basketball and Badminton Court

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5.3 Environmental Protection Initiative

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Enhancing Society Mutual-Prosperity

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5.2 Youth Talent Cultivation

5.3 Environmental Protection Initiative

5.4 Commitments to Public Welfare

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UMC has participation in diversified charity activities for a long time. With the belief of "talents are the foundation of industrial development, the environment is the foundation of human sustainability, and education is the foundation to improve the status of the disadvantaged," UMC believes that enterprises can thrive in a friendly environment, and co-prosperity with society is the only way. Therefore, UMC has joined hands with partners such as supply chains, non-profit organizations, and educational institutions to continue to exert influence through the implementation of various charity activities, inject positive energy into society and the environment, and move forward for a better society.

Important Stakeholders ▶



Employees

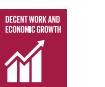


Suppliers



Society

SDGs ▶



Note: The scope of disclosure in this chapter mainly covers information related to UMC fabs located in Taiwan.

Performance Highlights 2023

Employee volunteers
service hours

7,562
service hours



Semiconductor Education
Programs and Science Education Project

129
sessions conducted



The Eco Echo Award
provided a grant support to ecological conservation and green innovation projects

13
projects



Assisted government
agencies in conducting drills of "High-tech Industry Special Disaster Rescue Training"

53
sessions



Beneficiaries in UMC's
social charity participation

41,458
person-times



The UMC Science & Culture Foundation
has been supporting 110 students on a long-term basis and has been recognized by the "Taiwan Fund for Children and Families" for this honorable effort



Energy Saving Service Team
provided services to 11 organizations, bringing energy-saving economic benefit

NT\$ 6,857
million

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Health Center

Scope and Dimension:

- ▶ Blood donation

Projects:

- ▶ Blood donation activities are conducted in fabs twice a year.



UMC upholds the corporate sustainability vision of "centered on people, in harmony with the environment, and enables communities to thrive" to integrate various internal and external resources, and actively engage in charity activities. We have diversified ways of promoting charity activities, such as "UMC Science and Culture Foundation," the "UMC LOHAS Education Foundation," and Employee Social Clubs etc., since 1996. In order to maximize the benefit of social participation, a cross-department and cross-organization, the social participation group, was established in 2021 to integrate existing organizations and make use of innovative thinking in the technology industry. Internally, it empowers employees' abilities and promotes a culture of volunteer activities. Through industry-academia cooperation, it cultivates talents and externally advocates for technology application and deepening public charity activities, with the hope that UMC can use its ubiquitous technological influence to create common good.

Diversified Ways of Promoting Charity Activities

UMC Social and Culture Foundation

Scope and Dimension: Long-term support for diversified education programs with the goal of "All-Around Education." Engage in the development of education for disadvantaged students, cultivate the future competitiveness of young talents, and collaborate with public interest groups to expand social influence.

Projects:

- ▶ **Diversified education**--"Spreading the Seeds of Hope Project," arts and humanities education, media literacy education
- ▶ **Reading education**--"Storytelling Volunteer," "Reading Promotion in Rural Area Program"
- ▶ **Life education**--"Love Storytelling Club," "Diversified Education Promotion in Correctional Institutions"
- ▶ **Parent-child education**--Sponsored program "Education Revitalization Epoch" which was broadcasted on Voice of IC radio station.
- ▶ **Physical education**--Supported Taiwanese sports talents and continued to sponsor the "Nantou Karate Association" and "National Tung-Shih Senior High School" baseball team.

UMC LOHAS Education Foundation

Scope and Dimension:

- ▶ Sports Advocacy - assisting disadvantaged groups in using equipment and promoting sports knowledge sharing during activities at the UMC Activity Center.
- ▶ Sports Promotion - providing campus tour for college students.
- ▶ Various Types of Events - assisting the Hsinchu City and Hsinchu Science Park in providing venues or equipment for sports related events.

Projects:

- ▶ Sponsoring annual events organized by the Hsinchu City Education Department every year.
- ▶ Assisting in organizing sports events for the Hsinchu Science Park Cup.

UMC Fire Brigade

Scope and Dimension:

- ▶ Provide disaster rescue assistance for the Science Park and the neighboring communities
- ▶ Strengthen local and industrial disaster prevention and response capabilities.
- ▶ Offer disaster prevention education to school children.



Projects:

- ▶ Lecture on disaster rescue and chemical disaster prevention and rescue for the Science Parks and local communities.
- ▶ Provide guidance on the use of equipment, disaster prevention, and evacuation knowledge for elementary school teachers and students.

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5.1.1 Core Vision and Strategy

Based on the belief of "take from society and give back to society," UMC has involved enormously in various charity activity projects for a long time. With the belief of "talents are the foundation of industrial development, the environment is the foundation of human sustainability, and education is the foundation to improve the status of the disadvantaged" as the starting point, UMC promotes charity activity in accordance with three major strategic principles--"Cultivating young talents," "Promoting environmental protection," and "Caring for the disadvantaged in society," which echo with the Sustainable Development Goals (SDGs) of the United Nations Through the implementation of various charity activity projects, UMC has joined hands with partners such as supply chains, social welfare groups, and educational organizations to bring positive energy to society and the environment.

Sustainability Strategy and Blueprint

2023

2024

2025

2030

Item

Goal

Achievement

Goal



- ▶ Number of beneficiaries ▶ 33,500
- ▶ Employee volunteer hours ▶ 6,650

✓ 41,458

✓ 7,562

37,000

6,950

39,500

7,100

41,000

8,200



- ▶ Number of partner institutions ▶ ≥27
- ▶ Number of semiconductor promotion events ▶ 30
- ▶ Annual number of participants ▶ 2,500
- ▶ Cumulative investment in semiconductor education (base year 2020) ▶ ≥NT\$25 million

✓ 27

✓ 76

✓ 6,104

✓ NT\$31.05 million

28

60

3,000

NT\$38.1 million

29

62

3,200

NT\$41.1 million

30

65

3,500

NT\$50 million



- ▶ Number of events ▶ 14
- ▶ Number of beneficiaries ▶ 4,150

✓ 53

✓ 4,268

16

4,330

17

4,530

19

5,100

Note: The scope for 2023 is UMC Taiwan, and it will be expanded to include UMC starting from 2024.

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Main Theme of Social Participation

Main Theme	Business Trend	Type	Business Key Performance	Social/Environmental Key Performance	UN SDGs
 <p>Cultivate Young Talents</p>	<ul style="list-style-type: none"> From a forward-looking perspective to strengthen UMC's global competitiveness, UMC is committed to managing industry-academia relationships and cultivating high-tech talents to promote semiconductor research energy and technological progress by securing quality and stable manpower. UMC volunteers share customized semiconductor science knowledge with elementary school students in local communities 	<ul style="list-style-type: none"> Prospective Talent Program (PTP) UMC Chung-Laung Liu Doctoral Scholarship Semiconductor Science Education Project 	<ul style="list-style-type: none"> Expand talent pool to enhance the effectiveness of recruitment <ul style="list-style-type: none"> The PTP program has been recruiting talented individuals since 2013, with a total of 5,984 talents recruited and 680 students participating. Build high-tech talent network based on good business reputations <ul style="list-style-type: none"> In 2023, UMC continuously strengthens industry-academia cooperation according to recruitment strategy and carried out projects with 27 colleges, including equipment operation internship, nanotechnology program, and career planning assistance. These projects increased the recognition and support of UMC from the academia, effectively marketed UMC's corporate image, and expanded its influence among campuses and the communities, thereby laying a cornerstone for future R&D talents. Established the UMC Chung-Laung Liu Scholarships are limited to 10 doctoral students per academic year. 	<ul style="list-style-type: none"> Cultivate high-tech talents and enhance career prospects <ul style="list-style-type: none"> Beneficiaries of special program for industry-academia cooperation: A total of 9,205 person-times participated in these programs. Campus relationship development and seminar management: including a series of brand image cultivation activities such as book and report discussions, career sharing, internship cooperation, company visits, and semiconductor product demonstrations. There were 76 events and over 6,000 person-times accumulated by 2023. Enhancing investment in semiconductor education resources: a total of NT\$31.05 million has been accumulated. Semiconductor Science Education for children. <ul style="list-style-type: none"> UMC custom made a set of semiconductor science knowledge video, and promoted them in near-by elementary schools – 53 sessions were conducted with 4,268 person-times beneficiaries in 2023 	  
 <p>Promote Environmental Protection</p>	<ul style="list-style-type: none"> Strong economic growth leads to excessive consumption of resources. The sustainable growth of an enterprise depends on the sustainability of environmental resources. Therefore, in addition to providing customers with core products that are competitive on the market, enterprises should also bear the responsibility of environmental protection. Through energy-saving, carbon-reduction and ecological conservation initiatives, we look forward to exerting our influence and drive the value chain to jointly mitigate the impact of business operations on the environment. 	<ul style="list-style-type: none"> Eco Echo Award Energy Saving Service Team 	<ul style="list-style-type: none"> Eco Echo Award starts to make a difference, building good corporate image <ul style="list-style-type: none"> In 2023, the UMC Eco Echo Award event received more than 95 news coverages. In addition to establishing a good reputation for UMC, it also provided media exposure for the supplier partners involved. Cost Savings Brought by the Energy Saving Service Team <ul style="list-style-type: none"> Assist the beneficiaries to save on utility bills or operations. In 2023, a total of 1,004 tonnes of CO₂ was reduced, which is equivalent to an overall social/environmental economic value of NT\$6.857 million. 	<ul style="list-style-type: none"> Eco Echo Award support ecological conservation and green innovation <ul style="list-style-type: none"> In 2023, 8 suppliers participated as partners, with a total sponsorship of NT\$4 million. 3 NGO groups' ecological conservation projects, 8 youth environmental action initiatives, and 2 green innovation projects were awarded. Energy-saving team responds to energy conservation and carbon reduction <ul style="list-style-type: none"> 12 vendors participated as partners Served 11 disadvantaged groups and 12,767 beneficiaries A total of 1,004 tonnes of CO₂ was reduced. <p>The services provided included energy-saving and safety consultation, energy technology and engineering improvement, allowing disadvantaged groups to enjoy the wonderful energy-saving and carbon-reduction life as well.</p>	   
 <p>Caring for the Disadvantaged in Society</p>	<ul style="list-style-type: none"> UMC has a long-standing commitment to supporting rural communities and promoting education for disadvantaged students. By prioritizing the education of children from underprivileged families, UMC works to reduce the educational gap between urban and rural areas. Shaping UMC's volunteer culture, encouraging clubs and departments to engage in community service for nearby communities or disadvantaged groups. By rallying colleagues to participate in volunteer activities, we aim to strengthen the Company's cohesiveness. 	<ul style="list-style-type: none"> Supplementary classes for disadvantaged students Community participation and support activities for the disadvantaged Promote on-site charity activities in fabs and divisions 	<ul style="list-style-type: none"> Build a positive image and maintain good corporate reputation <ul style="list-style-type: none"> Total beneficiaries: 41,458 person-time Recipients of these supports include schools, non-profit organizations and environmental groups. By actively supporting disadvantaged groups, it not only builds a good image for the Company, but also earns the recognition from the public. Build a positive image and maintain good corporate reputation <ul style="list-style-type: none"> 7,562 hours of volunteering time in total 19 fabs/divisions have participated in public charity activities, utilizing the power of each fab/division to lead colleagues in performing acts of volunteering service, and ultimately shaping a culture of volunteerism and mutual assistance. 	<ul style="list-style-type: none"> Number of underprivileged school children benefit <ul style="list-style-type: none"> 4,276 volunteers who cumulatively devoted 27,832 hours of their precious time the number of beneficiaries 14,533 person-times. UMC continues to promote the Spreading the Seeds of Hope project, as well as after-school tutoring service in collaborations with the Hsinchu Church of Sacred Heart of Jesus and National University of Tainan. UMC sponsorship 110 domestic children by the Taiwan Fund for Children and Families. <ul style="list-style-type: none"> Over the course of 20 years, a total of more than NT\$30 million has been invested. UMC sponsors sports education to empower underprivileged students to transform their lives through athletics. <ul style="list-style-type: none"> UMC sponsors the Nantou Karate Team and National Tung-Shih Senior High School Baseball Team UMC aims to enhance employee engagement and boost morale by expanding opportunities for staff participation. <ul style="list-style-type: none"> By focusing on social charity investment and improving the system for paid volunteer service leave, UMC aims to enhance employee willingness to engage in such activities. This helps employees understand the Company's dedication and efforts towards the community, promoting a sense of identity and encouraging them to stay with the Company. 	 

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Supporting Art and Cultural Activities

UMC supports domestic cultural development by supporting domestic performing arts groups to cultivate artistic talents, supporting domestic artists and providing performances by performing artists. In 2023, UMC invested over NT\$7 million to support domestic performing arts groups and cultivate artistic talents, with NT\$1.45 million specifically allocated for this purpose. This investment included support for groups such as: supporting the What's Young Association to organize the "Fancy Years - National Youth Drama Festival," providing participation for more than 300 high school students from 61 schools across Taiwan. At the same time, 4 professional local theater troupes and theater workers work together across regions to cultivate young people to enter the field of drama. And in order to help schools and tribes pass on the traditional culture of indigenous peoples, so that students and tribal people can trace their roots, UMC adopted teachers and students from Changbin Junior High School in Taitung County and Shanmei Elementary School in Chiayi County, taught traditional tribal songs and dances, and the "2023 Amazing Music and Dance - Taiwan Aboriginal Music and Dance Feast" was performed at the Sun Yat-Sen Memorial Hall. A total of 8 aboriginal transmission teams, plus the Bay Sound Ensemble and professional technical teams, jointly performed aboriginal traditional music, dance and festivals. The event attracted over 26,000 viewers, both in-person and through online live streaming. UMC also sponsored a high-care drama education project launched by Studio Q Performance Classroom and PMU Sike Orchestra, bringing professional education in drama creation, dance and performing arts to the correctional school -- Chengiheng High School to help lost youths cultivate artistic literacy.

⊕ [For more details, please refer to Chapter 5.4 Commitments to Social Welfare](#)

UMC also supports domestic artists and provide performance opportunities, with a total investment of NT\$5.55 million. These projects include: supporting the creation of domestic artists, purchasing works by artists such as Chuang Che and Hsiao Chin, and planning the "Art Festival." The event launched a series of local art banquets with four major themes: "Art Appreciation," "Listening to Art," "Lecture on Art," and "Art Creation." Art consultant was invited to lead everyone in appreciating art works. Taiwan's first contemporary puppet theater troupe - The Puppet and Its Double, and the 34th Golden Melody Award's Best Vocal Group "Crispy" were also invited to perform at UMC fabs to provide exclusive art nights for employee, family and friends, bringing art closer to daily life and providing a stage for art performers to perform.

Volunteer Culture Promotion

UMC has been committed to promoting and shaping a volunteer culture for a long time, from the early self-organized candlelight club to the establishment of the UMC Technology and Education Foundation. The passion for embracing society and giving back to it is deeply ingrained in the hearts of UMC employees. In order to deepen the connotation and ability of public service among employees, the UMC Technology and Education Foundation also offers diversified volunteer training courses to increase employees' vision and action methods for public service. The Employee Benefits Committee also incorporates public charity elements into various activities such as clubs, family days, light travel, art festivals, and lectures, with the goal of promoting a culture of social good. This positive influence extends to more people in need, creating a virtuous cycle from within the Company and outwards.

To demonstrate the proactive spirit of UMC employees in achieving mutual prosperity with society and to encourage colleagues to initiate volunteer service in functional divisions, fabs, or employee clubs, UMC has established a reward mechanism and also provides 16 hours of paid leave for public service activities each year to encourage more enthusiastic participation in public volunteer services. UMC employees actively participate in various forms of social charity activities, such as ecological conservation, environmental protection, supporting disadvantaged groups, promoting local development, and empowering young people. In 2023, UMC invested 7,562 hours, benefiting 41,458 person-times, demonstrating the importance UMC places on shaping a volunteer culture and the action, love, and selfless dedication of UMC volunteers. To expand the impact of public charity activities, UMC not only holds public charity achievement exhibitions but also establishes internal and external digital platforms to integrate internal and external public charity resources and public charity promotion results, with the goal of leveraging the ubiquitous influence of technology and creating a vision for a better society.



In 2023, UMC invested
7,562 hours, benefiting 41,458
person-times

Volunteering Type	Content
Energy Saving	Assisting organizations for the underprivileged and large energy consumers in implementing water and energy conservation measures to improve efficiency
Environmental Protection	Protection of mountain and beach areas, scenic spots, and public areas, as well as the preservation of wetland ecological habitats.
Education	Semiconductor science education, music instrument instruction, disaster prevention education, and chemical disaster prevention training.
Caring for the Disadvantaged in Society	Donations for earthquake relief in Turkey, companionship for disadvantaged groups or elderly living alone, public benefit performances, and charity handicrafts
Regional Revitalization	Assistance for environmentally friendly farmers in planting and maintaining ecological environments, helping small farmers harvest crops, producing landscape art installations, and assisting in the disposal of agricultural waste in local areas.

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5.1.2 Community Services Benefits Assessment

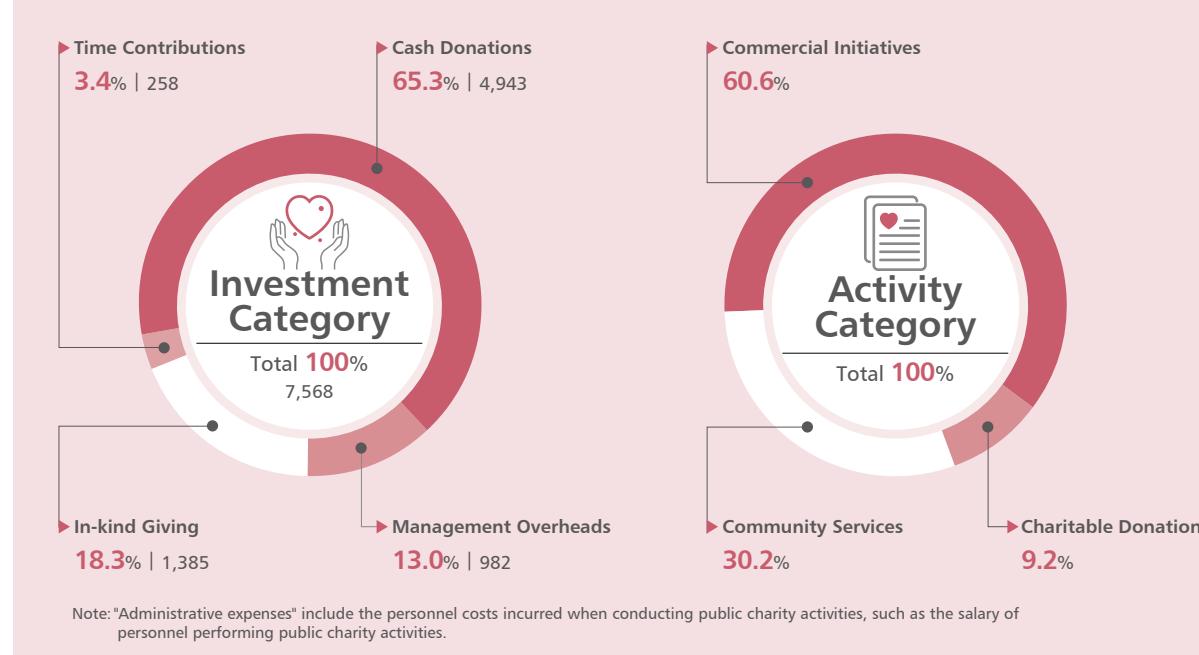
To effectively quantify the benefits brought about by community services, UMC referred to the community investment assessment system established by Business for Social Impact (B4SI). Investment time, cost, material donations, and management expenses were precisely recorded to evaluate the positive benefits brought about by these investments. Outputs of community services include reductions in costs, generation of benefits, and intangible influences such as positive corporate image, becoming a benchmark of corporate social responsibility (CSR), establishing positive value systems amongst school children, and helping to compensate for the inadequacy of educational resources for school children living in remote areas.

Social Charity activities Investment

UMC has dedicated a total of NT\$75.68 million to social charity activities in 2023 to ensure that the care recipients receive long-term and stable support. In addition to the investment in community participation by the UMC Science and Culture Foundation and the UMC LOHAS Education Foundation, UMC also pays more attention to the cultivation of young talents and supports a number of academic key projects through business initiatives to improve the competency of future high-tech talents. These projects include: donations to establish the UMC Dr. Chung-Laung Liu Doctoral Scholarship, UMC Management Thesis Award Fund, and "Nano Integrated Circuit Engineering" Fund of the National Cheng Kung University.

Category and Sums of Community Service Investments in 2023

Unit: NT\$ 10 thousand



Community Service Participation and Number of Beneficiaries in 2023

Charitable Donations ¹	NT\$ 7,568 million
Number of Beneficiarie	41,458 person-times
Total Employee Volunteer Hours ²	7,562 hours

Note:

- 1. This table only covers projects carried out by the Science and Culture Foundation, UMC LOHAS Education Foundation, UMC donations, and employee social clubs as well as employee donations.
- 2. Includes volunteer leave and holiday leave hours.

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5.2 Youth Talent Cultivation

5.2.1 Industry-Academia Collaboration 5.2.2 Semiconductor Talent Cultivation

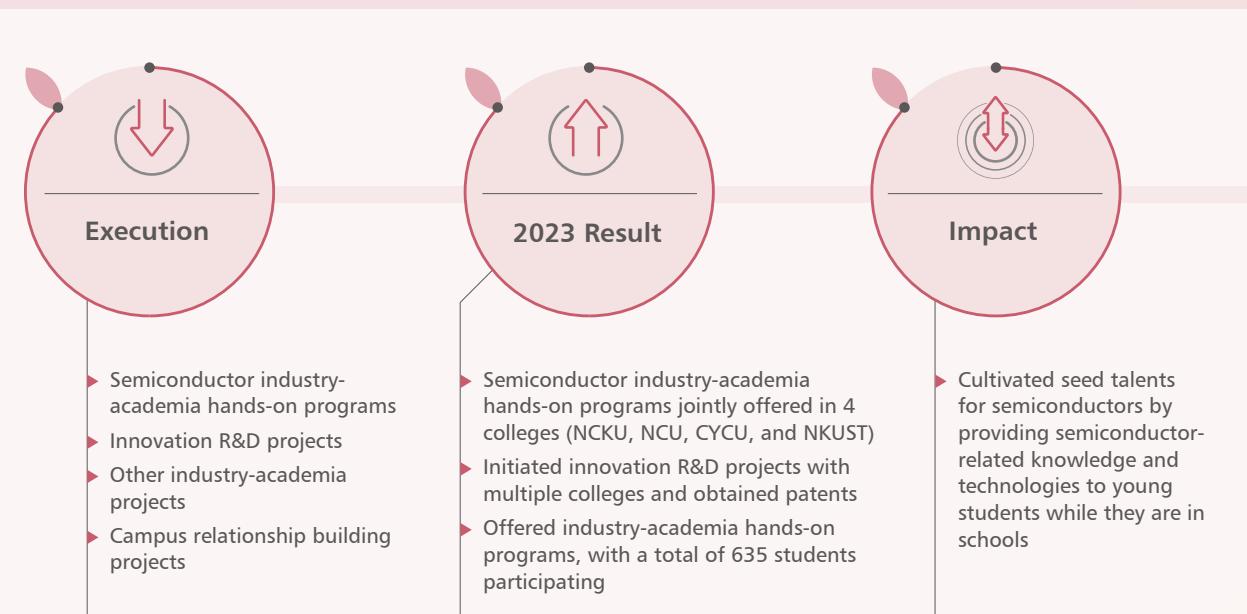
In order to strengthen global competitiveness and promote semiconductor R&D energy and technological advancement, UMC takes a forward-looking approach to campus and is committed to cultivating future young talents. In 2023, UMC continued to actively cultivate future semiconductor professionals through the two major aspects of "deepening industry-academia collaboration" and "semiconductor talent cultivation".

5.2.1 Industry-Academia Collaboration

UMC continued to strengthen industry-academia partnerships in 2023. In addition to the on-going hands-on programs for semiconductor technologies in key institutions, a collaboration project was also implemented to sponsor full-time instructors for the MS Degree Program and certificate courses on Nano-Integrated Circuit Engineering offered by National Cheng Kung University (NCKU). In 2023, more than 9,205 students participated in industry-academia collaboration program.

In addition, a series of brand image promotion activities such as seminars, career sharing panels, on-site internships, and exhibits of semiconductor products were scheduled.

Semiconductor seed - Taiwan high-tech talent cultivation



In 2023, more than 9,205 students participated in industry-academia collaboration program



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5.2.2 Semiconductor Talent Cultivation

Planning for Outstanding R&D Talents

PTP — Prospective Talent Program, PTP

▶ PTP

UMC committed to reducing the gap between academia and industry. Since 2013, we have been continuously promoting the Prospective Talent Program and actively providing various activities for STEM students, such as lectures, internships, and mentoring programs to help young students gain industry knowledge and start career planning. Through communication and interaction with enterprises, students can more quickly connect with future employment markets. In 2023, we added a Women Empowerment lecture series, inviting female UMC executives to share their career development experiences and encourage female students to enter the technology industry.

2023 Result ▶ Since 2013, 5,984 candidates have been recruited, of which 680 are still in school.



Probe — Probing semiconductor careers

▶ Career Coaching Programs

UMC has conducted career planning seminars and career coaching programs in its recent collaboration with key colleges. Based on professional insights of future trends and career instructors' assessment of student characteristics and knowledge level, career plans are recommended to help students define suitable career paths.



2023 Result ▶ Take NCKU as an example, 12 career coaching programs have already been carried out. Each batch had over 310 participants from the university and the program is still on-going to this day.



▶ Target Schools Visits

UMC provided on-site visits to target schools every year for students to gain early understanding of the corporate culture and healthy workplaces.

2023 Result ▶ IUMC received around 866 person-times from different schools.

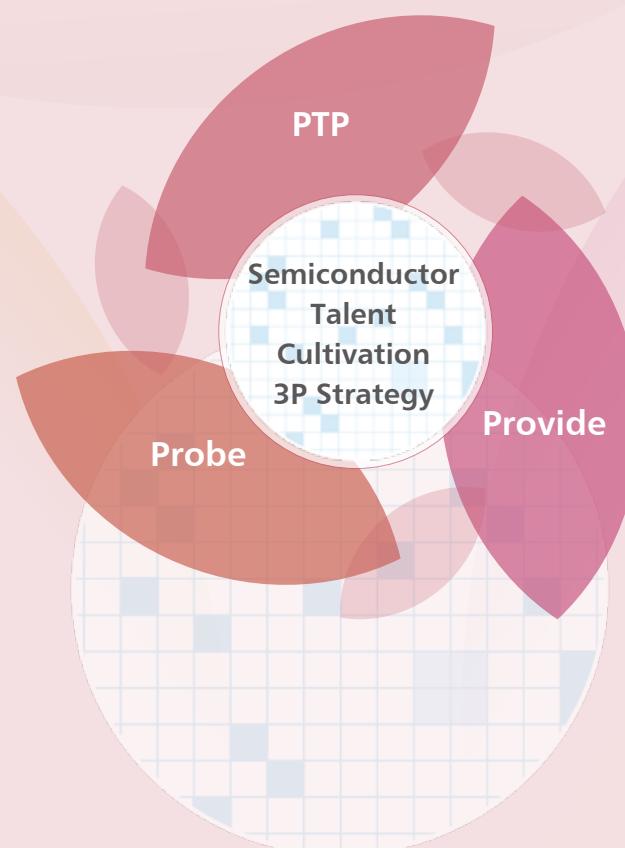


▶ Internship Program

The program continues to select high-quality talent to intern at major departments in domestic and overseas UMC facilities. The interns are guided by designated mentors so that through hands-on practice and involvement in on-going projects, interns can experience the workplace culture. In the meantime, this program effectively creates close interactions between prospective collegiate talents and UMC teams, thereby enabling mutual learning and growth through these close exchanges.

2023 Result ▶ A total of 23 summer interns and 71 equipment engineer interns were recruited.

UMC continues to cultivate high-quality research and development talents, and has developed a comprehensive 3P strategy to enable students to gain knowledge and sensitivity to the semiconductor industry during their studies, and to introduce them to UMC's friendly corporate culture and happy and healthy workplace at an early stage. This effectively promotes UMC's corporate image, expands its influence on campuses and communities, and prepares future research and development talents in advance.



Provide — Providing educational resources

▶ Potential Management Talent Cultivation

The UMC Business Management Thesis Award was established in 2010 and started offering monetary rewards to the Award in 2011 to help further training programs for potential management professionals, encourage academia and industry exchange, achieve effective integration of management practice and theory, and contribute towards sustainable corporate management.



2023 Result ▶ NT\$3.2 million was bestowed to the award.

▶ Scholarship for Key Colleges

UMC collaborates with key colleges to cultivate national STEM talents, providing students with research and development opportunities and resources.



2023 Result ▶ Sponsoring the Dean's Award for Graduate School of Engineering at NTU, benefiting a total of 5 students

▶ Development of Semiconductor Schools

UMC invested in educational resources in the semiconductor colleges of key schools to promote the development of research institutes, cultivate new teaching staff, and hold technical lectures, allowing academic research and industrial technology development to progress hand in hand.



2023 Result ▶ Founded 3 institutions to establish semiconductor schools.

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Semiconductor Science Education for Elementary School Students

In order to strengthen the public's understanding of the semiconductor industry, understand the application of semiconductor technology in life, and take root in schoolchildren in science in terms of literacy-oriented capabilities, UMC staff formed a volunteer team to link up with the core capabilities of the industry to develop semiconductor science textbooks and popular science education courses. At the same time, volunteer employees visited elementary school campuses to deliver interactive lessons to students, demonstrating the process of IC production, manufacturing, and usage in everyday 3C products.

In 2023, the science education volunteer team went to 15 nearby elementary schools, including the Affiliated Experimental Elementary School of National Tsing Hua University, Hsinchu Bei Men Primary School, Hsinchu San Min Primary School, Dong Xing Elementary school of HsinChu Country, Lufong Elementary School Hsinchu country ,Hsinchu Country Da-Tong Elementary School, Liujiayuan elementary school, Hsinchu County Baoshan Elementary School, Sinshih Elementary School, Danei Elementary School , Dacheng Elementary School, Yongkang Elementary School, National Nanke International Experimental High School,Songlin Elementary School, Shanhua Elementary School

They also set up science education booths during UMC family days serving colleagues' children and visitors, with a total of 53 events and 4,268 beneficiaries throughout the year

Development of Doctoral-Level Talents

Doctoral-level research talents play an important role in advancing science and innovative research and are key to the sustainable development of the industry. In order to cultivate excellent semiconductor talents and express gratitude to Academician Liu Chung Lang for his long-term investment in electrical and electronic education, as well as his guidance and contribution to the Company's business decisions during his tenure as an independent director of UMC, the "UMC Chung-Laung Liu Doctoral Scholarship" was established in 2023. It targets the fields of semiconductor components, processes, materials, and equipment, providing a monthly scholarship of NT\$40,000 for each doctoral student for up to four years to encourage them to focus on academic research and devote themselves to technological innovation without worries. This scholarship injects more talent energy into the semiconductor industry. Ten students were awarded this scholarship this year.



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5.3 Environmental Protection Initiative

5.3.1 Energy Saving Service 5.3.2 UMC Eco Echo Award Initiative



5.3.1 Energy Saving Service

To enhance energy efficiency and expand the benefits of our core business functions, UMC has established the "UMC Energy Saving Service Team" with "energy saving and safety" as the core. By stepping out the foundry fabs, the Team allows UMC colleagues to bring their experiences and expertise to bear on diagnosing and improving energy conservation and fire safety for underprivileged social welfare organizations, assisting in building renovation, and enhancing safety and comfort in residential areas, so as to reduce unnecessary energy consumption of these organizations and help them to use their precious resources more effectively.

In addition to calling for the participation of colleagues, UMC also exerts its influence to integrate resources with the parent company as its core platform, in order to promote value chain collaboration, and invite subcontractors and subsidiaries to join the ranks of energy saving services for social welfare organizations, thus creating social value together. This year, the subcontractors such as Dongding, Teacher Wang Zonglin for Woodwork, Star Qiao, Chen Sheng, Cheng Tai, and Kai Fa have all acknowledged and responded to UMC's initiative by providing not only manpower but also sharing the costs for equipment improvements.

In 2023, the Energy Saving Service Teams of Hsinchu Science Park and Southern Taiwan Science Park served 11 organizations, including 8 underprivileged organizations and 3 community units (schools and hospitals), accumulating to a total of 70 units since inception of the Team. A further calculation of the public benefit resulted from the energy saving service in 2023 showed that the relevant staff input and cost brought economic benefits to underprivileged organizations and community units, such as electricity conservation amounting to NT\$6.857 million, which benefited 2,533 people and reduced CO₂ emissions by 1,004 tonnes.

Looking forward, UMC will continue to evaluate the effectiveness of its social welfare services to enable the participating partners to understand the benefit and actual contributions of energy saving services, and additionally use it as a reference for continuous internal review to help identify more opportunities for social improvement, and make future investment planning and management more efficiently. Apart from that, through the promotion and substantial implementation of energy saving services, UMC aims to promote the exchange of energy saving knowledge and education, introduce green technologies, and enhance the resilience of social welfare organizations to environmental changes, and work together to build.

2023 Public Benefit Evaluation

Unit: NT\$

object	Underprivileged Organizations			Community Units		
	Labor Cost	Construction Cost	Total Cost	Labor Cost	Construction Cost	Total Cost
Input	736,250	1,920,030	858,795	156,250	0	156,250
Output	Economic Benefit	Environmental and Social Benefit	Total Benefit	Economic Benefit	Environmental and Social Benefit	Total Benefit
	311,315	28 tCO ₂ e	311,315	6,546,000	976 tCO ₂ e	6,546,000

Note:

- Scope of Statistics: Input and output of all Energy Saving Service Team's service in 2023
- Labor Cost: Volunteer attendance cost (NT\$500/hour)
- Construction Cost: Facility and equipment improvement cost invested
- Economic Benefits: Operating costs that was saved, such as water, energy cost
- Environmental and Social Benefits: To measure carbon emissions reduction performance, the calculation is estimated by saving electricity for operating the equipment for a whole year. Electricity emission factor of 0.495 kg CO₂e/kWh in 2023 was adopted for the calculation of 2022

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UMC Energy Saving Service Team



UMC Turns Packaging Wooden Crates into Reclaimed Furniture – Working with Yu An to Create Exemplar of Charitable Circular Economy

By combining the spirit of circular economy and ESG, UMC donated 28 sets of classroom tables and chairs made with high-quality package timber recycled from its STSP (Southern Taiwan Science Park) fab to Yu An Education and Nursing Home Miaoli. It is hoped that waste can be given new life as demonstrated through this donation in which packaging wooden crates were turned into beautiful and functional reclaimed furniture to create a comfortable and safe learning environment for disadvantaged students. Moreover, this can become an exemplar in combining the practice of circular economy and social charity with enterprise partnership to create a sustainable and mutually beneficial society.

The waste timber, which originally needed to be disposed of by outsourced contractors, was recycled and reused to make functional and exquisite reclaimed furniture items through the efforts of collaborative manufacturers and skillful carpenters. The packaging wooden crates that offered protection for semiconductor precision equipment have been turned into classroom tables and chairs to protect disadvantaged students' safety during their learning to realize the concepts of circular economy and green sustainability, and to extend the benefits of such practices, thereby achieving a win-win result between economic development and environmental protection.

Through cooperation with UMC, a connection was made between the woodworking teacher and the Yu An Education. The woodworking teacher used excess waste wood to create practical and sturdy wooden frames to be gifted to the Yu An Education. The solid wooden frames hold musical instruments, lion and dragon dance equipment, and other items, becoming a cultural and artistic support for the teachers and students at the Yuaan Children's Home.



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Improvement Procedure



IR inspection of electrical panel



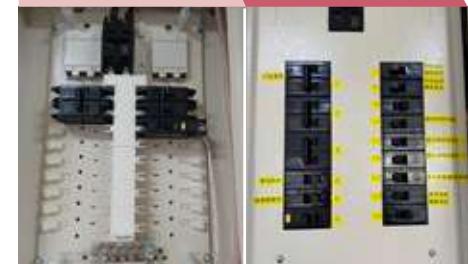
Electrical panel improvement



Electrical panel improvement



Energy-saving fan Before After the improvement



Inspection of water leakage issues



Improvement of water leakage



Water leakage Before After the improvement



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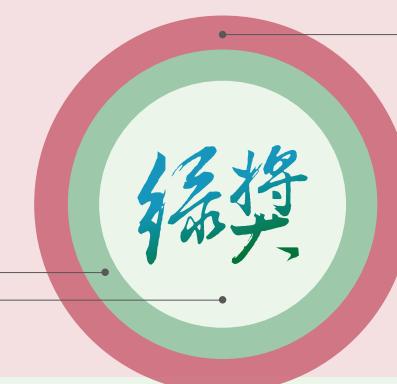
5.3.2 UMC Eco Echo Award Initiative

[UMC Eco Echo Award Official Website](#)



UMC is well aware of the huge impact it can have on society and the environment before the climate change issue was widely recognized. After completing the first EPA (Environmental Protection Administration)-approved carbon emissions trading in 2014 in Taiwan, UMC donated the trading yield to launch the "Eco Echo Ecological Conservation Hope Project" in order to promote environmental and biodiversity conservation, restore species and ecosystems, and enhance the public awareness of environmental protection.

In 2016, the UMC Eco Echo Award was established to solicit high-quality ecological conservation projects. Since the 3rd UMC Eco Echo Award, the total prize money has grown to NT\$3 million per year, making it the highest prize money in the field of ecological conservation initiated by enterprises in Taiwan. Apart from that, in order to stimulate young students' awareness and understanding about protecting the environment and ecology, the "Youth Environmental Action Award" has also been established since the 4th UMC Eco Echo Award, with the aim to encourage young students to turn their enthusiasm and creativity for environmental protection into practical actions and further bring changes to the environment. In response to global attention on climate change and resource shortages, the 7th Eco Echo Awards added the Green Innovation Award. This award encourages start-up teams to propose solutions for net zero/carbon reduction and resource reclamation. Total prizes were raised to NT\$4 million.



UMC used carbon trading proceeds to create a special environmental protection fund, and launched the Eco Echo Awards to spur on joint initiatives with business partners.

The Eco Echo Awards encourage ecological conservation groups, start-up teams, and students to commit to environmental protection; benefits are seen all over Taiwan.

In 2023, UMC awarded and supported 3 NGO ecological conservation projects, 8 youth environmental initiatives, and 2 green innovation projects. The winning project of the "Ecological Conservation Award" focuses on the conservation of Taiwan's rich ecological species, including project "Conservation of Old Iron Bridge Wetland," "Protecting Cormorants," and so on.

Two companies won the "Green Innovation Award." Agrifoward Company responded to the issue of climate change and applied intelligent Internet of Things (AIoT) technology to optimize agricultural water use, assisting farmers to significantly save energy and water, and solve agricultural water use in extreme climates dilemma; Charco Scientific Research Company reuses agricultural waste and transforms it into products such as plant protection agents and preservatives, replacing the use of chemicals and promoting sustainable agricultural development with the concept of circular economy.

In the "Youth Environmental Action Award" category, the winning students proposed a variety of environmental solutions, including: reducing garbage pollution in rivers, protecting natural forests in urban areas, promoting the reuse of fallen leaves for composting, reducing the use of disposable lunch boxes, etc. In response to new technological trends, they developed energy-saving technology for electric motorcycles. In addition to influencing peers, it also extends to the general public, demonstrating students' determination to integrating creative practice into daily life and taking action to participate in environmental protection.

In the eight years since the inception of the UMC Eco Echo Awards, 68 ecological conservation and green innovation projects have been implemented across Taiwan. In addition to our own effort, UMC has also linked resources from various parties and combined the power of supply chain partners to realize more outstanding ecological conservation projects. In 2023, UMC joined hands with partners such as 3M Taiwan, Tokyo Electron, Hermes-Epitek, Wholitech System, Faraday, Taiyo Nippon Sanso, Chiyo, and Unimicron. UMC expects the UMC Eco Echo Award to achieve the co-prosperity of enterprises and the environment, and to be the powerful guardian of Taiwan's ecological environment.

Helping attention to environmental issues; raising public awareness of environmental protection; creating a better environment in Taiwan.



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5.4 Commitments to Public Welfare

Over the past 28 years, The UMC Science and Culture Foundation (below, the "Foundation") has continued our long-term engagement in schools and communities, caring for social needs. Through long-term sponsorship and support of public welfare groups in different fields. The Foundation has reinforcing disadvantaged education and supported the diversified development of young people. We look forward to children Transform the future through education. By linking public welfare agencies' efforts and integrating corporate resources with volunteer labor, the CSR spirit can be promoted and realized.



The UMC Science and Culture Foundation was awarded the honor of "Adopting Domestic Children for 20 Years" by the Taiwan Fund for Children and Families. It has long-term adopted 110 students and has invested more than NT\$30 million in total.



The UMC Science and Culture Foundation has been supporting the Nantou Karate Team for 19 years. Tsui-ping Ku and Shiau-shuang Gu once again won 1 gold and 1 silver medals in the 2023 Hangzhou Asian Games, and the Team also won 4 gold, 2 silver and 3 bronze medals in the National Games in the same year.

Seeds of Hope A Diverse Educational Program for Youth Empowerment

Supporting the Nantou Karate Team

The Nantou Karate Team is led by instructors Huang Tai-chi and Liao Te-lan; they nurture over 60 children from underprivileged families in Taiwan to practice karate. Students are provided with meals and accommodation to meet their basic needs; students are also encouraged their confidents through karate and take control of their future. The Team not only won 1 gold and 1 silver medals in the 2023 Hangzhou Asian Games, but also won 4 gold, 2 silver and 3 bronze medals in the National Games in the same year. The Foundation has been supporting the Nantou Karate Team since 2005, through occasional support and concern, as well as course exchange and sharing, students are encouraged to grow and thrive.



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Building a Charitable Tutorial Platform

Since 2005, the UMC Science and Culture Foundation has collaborated with different public welfare organizations in Hsinchu and Tainan to establish tutorial centers. The Foundation enrolls students from vulnerable families, such as single parents, intergenerational parenting, and new immigrants, and provides them with diversified support and tutoring free of charge. Over an 11-year period since 2013, the Hsinchu site has undergone adjustments and become integrated into the community. It has cooperated with local universities such as National Tsing Hua University and National Yang Ming Chiao Tung University to offer service-learning courses, and at the same time, it has teamed up with corporate volunteers and social volunteers to provide services to children from vulnerable families in the form of tutorial teachers and tutorial volunteers. In Tainan, the Foundation has long collaborated with the National University of Tainan to reach out to Tainan's remote villages, dispatching the university's resources and teacher trainees to provide services to elementary schools outside the downtown area and assisting in regions that lack resources. In addition to providing academic tutoring, the two tutorial centers also introduce diversified learning courses to broaden students' horizons, and emphasize the development of children's daily practices, cultivating their self-care skills and positive learning attitudes.

Apart from helping students, university students also learn and grow through the tutorial centers. They themselves develop empathy and care through their interactions with students, and learn how to lead creative activities and courses. The UMC Tutorial Center of National University of Tainan also provides guidance to teacher trainees to help them obtain teacher certification and pass the teacher examination, giving rise to a two-way partnership where both sides learn from each other and succeed together.

Supporting National Tung-Shih Senior High School Baseball Team

In May 2023, the Foundation arranged for the team to visit to UMC's Southern Taiwan Science Park fab, providing an opportunity for coaches and players to learn about the work of engineers at the Science Park. UMC also organized thematic lectures and career counseling sessions to provide them with unique learning experiences.

2023 was the third year of our five-year cooperation and sponsorship program with Tung-Shih. In addition to supporting the Team with donation, the Foundation also committed to providing more connection and care.



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◀ Supporting the What's Young Association

Since 2011, UMC has been supporting the What's Young Association to organize the "Fancy Years" National Youth Drama Festival. This year of the festival "The Future" has more than 300 high school students from 61 schools across Taiwan participating. And four theater groups from different parts of Taiwan have been integrated to collaboratively support high school drama clubs. Through drama production and teamwork, the Foundation aims to cultivate senior high school students' abilities to create, express, and take actions. Theater productions also give students an opportunity to self-reflect, learn about society, empathize with others, and accept themselves, enabling young people to discover their goals and dreams.

Supporting TECO Technology Foundation's "Exclamation Mark" Plan

The UMC Science and Culture Foundation collaborates with TECO Technology Foundation to support Taitung County Chang-Bin Junior High School and Chiayi County Shan-Mei Primary School work to learn and carry on traditional Indigenous songs and dances, and assist schools and Indigenous villages in preserving Indigenous traditional culture. Through these efforts, Indigenous groups can understand their roots and enhance their self-identity.

The 2023 Musical and Dancing Exclamation Mark! – Taiwan Indigenous Music and Dancing Festival was performed at Sun Yat-Sen Memorial Hall. Together, they presented the traditional music, dance and rituals of six ethnic groups, including the Paiwan, Amis, Bunun, Seediq, Tsou, and Kavalan. There were more than 300 performers from eight tradition-inheriting groups. The One Song Orchestra and professional technical teams also joined in the performance. Both live performance and livestreaming were provided for audience and online viewers, and both sessions were packed. The live video has been played over 26,000 times. Through this, indigenous people's ancient songs gained wider audiences, and can be continued and carried forward. During this event, the Foundation also invited colleagues to participate as behind-the-scenes volunteers, helping to ensure that the performance team had a smooth and successful performance.

[Video ▶](#)



◀ Supporting the Home from Above Association

UMC supports the production plan for the "Home from Above" program initiated by the Home from Above Association. It has organized seven elementary and junior high schools to produce documentaries about their hometowns. Through the camp courses, media instructors teach the children how to operate cameras and aerial cameras in order to film and interview local residents. Students then have an opportunity to record the people and things in their hometowns, which enables them to connect with their hometowns, document their hometowns, and build up a sense of local cultural identity and cohesion. Furthermore, the program cultivates their technological and media literacy, which is in line with the trend of the future.

[Video ▶](#)



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Promoting Arts Education in Chengjheng High School

The Foundation leads the Reading Promotion Club in Chengjheng High School for 14 years since 2010. The Foundation also organizes relevant charity activities and invites different organizations to perform at schools, hoping to influence young people through diversified life experiences. Since 2021, The Foundation has also sponsored the Drama Education Program for At-risk Teens, launched by Studio Q Performance Art Theater and PUMUSIC, in Chengjheng High School. Through this, professional education in drama creation, Such as Peking Opera, dance, physical expression, drama creation. Cultivate students' concentration, empathy, cooperation spirit and reflective ability, and allow them to see more possibilities. After the course is finished, there will be a presentation of the results where students will showcase the works they have created based on what they have learned. This will boost the confidence and sense of achievement of young people, and give them the opportunity to explore different aspects of development and stimulation. This will also ignite their interest in different aspects of life and encourage them to re-examine their relationships with themselves, society, family, and peers.



the "Pushing the Strong to the Front and Supporting the Weak from the Back" Sponsorship Program

Sponsoring the Taiwan Fund for Children and Families

The Foundation has long adopted 110 students from the Taiwan Fund for Children and Families, and in 2023, the Foundation was awarded the honor of "20 Years of Adoption of Domestic Children". The Foundation supports the Taiwan Fund for Children and Families by helping vulnerable families through professional social workers and grants, ensuring that children can receive proper care. In addition to donations, the Foundation also invites UMC colleagues to serve as "Letter Caring Volunteers". They read letters to understand children's recent situations and write back to provide positive companionship, as well as to deliver small gifts of love in day-to-day life and on special occasions so that the children can experience warmth through letters. With UMC colleagues participating in charity work, not only are the benefits doubled, the compassion also has a greater impact.

The UMC Science & Culture Foundation has been supporting 110 students on a long-term basis and has been recognized by the "Taiwan Fund for Children and Families" for this honorable effort

Seeds of Reading National Reading Culture Promotion

Newspaper Reading Program

Since 2003, the Foundation sponsors Mandarin Daily News' Newspaper Reading Program to teachers in remote areas who need education resources or promote newspaper-reading education. Mandarin Daily News evaluated and selected "Newspaper Reading Education Experimental Class", provide the reading resources, students can broaden their perspective, keep up with current events, and develop media literacy from a young age through newspaper reading.

Feedback from A Teacher:

Thanks to your dedication, we have been able to enjoy quality newspaper resources and provide students with more learning opportunities, allowing children in remote areas to improve their reading ability and broaden their international perspectives.

- Teacher Yi-Shan Hsu,
Nan He Elementary School, Hsinchu County

Storytelling Volunteers

The Foundation has been committed to reading education at Baoshi Elementary School in Hsinchu County for more than 13 years. In 2023, the Foundation continued to call for UMC colleagues to serve as storytelling volunteers at the school. Moreover, the Foundation cooperated with the Mandarin Daily News in May and June to bring the Reading Education Challenge activity to the school. Through easy-to-follow tasks and pre-trip instructions, the Foundation encouraged UMC colleagues to participate in social welfare activities, and students enhanced their language and media literacy skills through the fun reading challenges.

Feedback from a participating student:

Thank you for coming to school to organize activities for us in the hot weather. I had a great time.

- Student of Baoshi Elementary School



Seeds of Volunteering Life Education Promotion

UMC Love story Group

Established in 2009, UMC Love Story Group is the first technologist-based theater group in Taiwan, comprised of colleagues from different divisions. From the initial stage of using existing scripts to producing plays, to the later stage of writing and directing their own performances, the Group has completed six plays, with a total of 69 performances across Taiwan and over 22,000 audience. Through theater performances, UMC Love Story Group has been educating children about life and providing techies with the opportunity to express themselves on stage, conveying their inner warmth. The new 2023 play, "The Gentleness of Not Giving Up", incorporates the United Nations' Sustainable Development Goals (SDGs) and addresses the issues of regional revitalization and the mind, body, and spirit through the play. In order to explore current social issues, UMC colleagues have spent over 1,000 hours on rehearsals during lunch breaks and after work to jointly prepare for the play's premiere in 2024.



Sponsorship of IC975 Radio Program "Education Revitalization Era"

The Foundation is the sole sponsor of the radio program "Education Revitalization Era", which is co-hosted by teachers Chih-Feng Chien and Chun-Min Lai. Through sharing cross-disciplinary education and regional revitalization cases, together with the contributions from the program's guests, the show aims to provide the public with educational, scientific, and social perspectives to inspire new sparks in education. The program is linked to the Company's platform, enabling UMC employees to acquire new knowledge about education without much effort.

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Public Welfare Projects

In 2023, a total of 5,685 person-times volunteers participated in activities organized by the Foundation, accumulating 40,987.5 service hours and benefiting 20,264 person-times (including volunteers). The following is a list of the different public welfare projects:

Item	Method	Content	2023 Achievement
Seeds of Hope A Diverse Educational Program for Youth Empowerment	<ul style="list-style-type: none"> ▶ After-school tutoring and care ▶ Encouraging athletes ▶ Promoting arts, humanities, and cultural education ▶ Supporting popular science education 	<ul style="list-style-type: none"> ▶ Providing after-school tutoring sessions in Hsinchu and Tainan ▶ Sponsoring the Nantou Karate Association ▶ Sponsoring National Tung-Shih Senior High School Baseball Team ▶ Supporting the What's Young Association ▶ Supporting TECO Technology Foundation's "Exclamation Mark!" Plan ▶ Promoting arts education at Chengjhang High School ▶ Supporting the Home from Above Association 	<ul style="list-style-type: none"> ▶ Hsinchu and Tainan Tutoring Class Volunteer Service: 4,276 person-times; Total service hours: 37,442 hours. ▶ Sponsorship funding used to provide training and room & board for more than 60 young karate students ▶ Sponsorship funding used to help train more than 40 baseball players from Tung-Shih Senior High School and renew the gym ▶ 23th "Fancy Years" National Youth Drama Festival has more than 368 high school students participating. ▶ Sponsoring two Indigenous schools to learn and carry on traditional Indigenous songs and dances ▶ Sponsored event: 2023 Musical and Dancing "Exclamation Mark!" – Taiwan Indigenous Music and Dancing Festival ▶ Six colleagues volunteered to provide logistical support and ushering for three performance groups ▶ 45 sessions focusing on motivational dramas, dance creation, etc.; participants influenced: More than 600, and made two outcome videos ▶ Sponsored the 2023 Home from Above Project; professional teachers guided students from seven schools and six groups of returning student directors to complete 13 home-town documentaries.
Seeds of Caring "Pushing the Strong to the Front and Supporting the Weak from the Back" Sponsorship Program	<ul style="list-style-type: none"> ▶ Sponsoring public welfare agencies ▶ Volunteering 	<ul style="list-style-type: none"> ▶ Inviting UMC employees to serve as letter-writing volunteers to provide care and encouragement to foster children. 	<ul style="list-style-type: none"> ▶ Sponsoring the Taiwan Fund for Children and Families – NT\$1.32 million per year for a total of 110 foster children, living in many parts of Taiwan. ▶ Supported for 20 years to date and sponsoring over NT\$30 million. ▶ Correspondence between letter-writing volunteers and school kids in 2023: 280 letters. ▶ Periodically gave birthday gifts and small gifts to students to show care.
Seeds of Reading National Reading Culture Promotion	<ul style="list-style-type: none"> ▶ Promoting a Culture of Reading ▶ Volunteering 	<ul style="list-style-type: none"> ▶ Leading reading activities for Baoshih Elementary School in Hsinchu County 	<ul style="list-style-type: none"> ▶ 2022 academic year: Newspaper reading project implemented in 26 classrooms across 18 elementary schools. ▶ 2023 academic year: Newspaper reading project implemented in 24 classrooms across 17 elementary schools. ▶ Organized two newspaper-reading educational challenge activities in the first half of the year, with a total of 40 volunteers participating and 170 students benefited; another two trips were organized in the second half of the year, with a total of 12 volunteers participating and 156 students benefited
Seeds of Volunteering Life	<ul style="list-style-type: none"> ▶ Script writing and acting for UMC Love Story Group ▶ Organizing volunteer training sessions 	<ul style="list-style-type: none"> ▶ UMC Love Story Group Tour ▶ Story Group performing art training sessions ▶ Deepening group members' understanding of the SDGs ▶ Script writing ▶ New Drama Rehearsal ▶ Providing volunteer training sessions for staff and social volunteers ▶ Sponsored IC 975 radio program "Education Revitalization Era" 	<ul style="list-style-type: none"> ▶ A total of 69 performances have been held since 2010, with total attendance of 22,000. ▶ UMC colleagues utilized their lunch breaks and after-work time to prepare for the event, totaling 1,275 hours and 737 person-times participants. ▶ Organized three training courses and seminars with a total of 214 person-times participants ▶ 50 episodes with over 956,000 listeners

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2023 Highlights of Foundation Volunteer Activities



Jan.

08

◀ "Ah Ping's Fantastic Adventure in the Universe" Children's Charity Musical Theatre

In collaboration with Lumorkids Children's Theatre Troupe, formed by students from National Tsing Hua University, the Foundation took the first step to connect with the Hsiangshan community by organizing the children's charity musical "Ah Ping's Fantastic Adventure in the Universe" at the Hsiangshan Catholic Church. Through the interesting drama and lively music, children were able to learn about emotions, see their own state, and express and accept all kinds of emotions through the fantastical drama. There were two performances on that day, and over 200 parents and children participated in the program.

Feb.

15

◀ "UMC Mobile Volunteers" Turkey-Syria Earthquake Supplies Collection and Organization

In the early morning of February 6, 2023, an earthquake rated 7.8 on the Richter scale struck southeastern Turkey near the Syrian border, causing hundreds of thousands of casualties and affecting tens of millions of people. The Foundation and the Candlelight Club immediately collected donations from UMC colleagues and sent 37 boxes of supplies to the Tzu Chi Neihu Park for collection.

A few days later, we learned that the amount of donations was so large that the Tzu Chi Foundation needed a large number of volunteers to help organize them, so the Foundation gathered 17 UMC colleagues to go to the Tzu Chi Neihu Park to assist in the packing and transportation of the supplies. The Foundation subsequently collaborated with the Candlelight Club to initiate a fundraising campaign for the earthquake victims, raising a total of NT\$3,181,900.

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◀ “Unlocking Future Education”
IC975 Radio Station Seminar

In 2023, the Foundation started a new program in collaboration with the IC975 Radio Station. In order to provide UMC colleagues with solutions for educating the next generation, the Foundation invited two program speakers to share the experience of independent learning at the teaching site. The seminar explored how the advancement of the times affects children’s learning styles, and emphasized that maintaining enthusiasm and critical thinking skills are still the keys to learning. More than 200 colleagues from Hsinchu Science Park and Southern Taiwan Science Park fabs attended the seminar to learn how to cultivate children’s self-directed learning across multiple disciplines and how to unlock the future trend of education.

Apr.
13 & 19



May
8

▶ “UMC Love Story Group 2.0 Course”
Metal Mosaic Collage Class by Da-Hua Hu

As the only master of metal mosaic collage in Taiwan, Master Da-Hua Hu utilizes metal scraps to create artwork with themes of local scenes and humanistic landscapes. The UMC Love Story Group’s new play, “The Gentleness of Not Giving Up”, incorporates the theme of local revitalization. In order to create props for the Group, the Foundation invited Master Da-Hua Hu to teach the group members how to make metal mosaic collages, using different colors of aluminum cans, tin cans, and so on, as pigments on wooden boards to make unique collages. This course also raised the Group members’ awareness of Taiwan’s local artists.

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May
16

Jun.
6

◀ "UMC Mobile Volunteers" Newspaper Reading Educational Gateway Activity at Baoshi Elementary School

The UMC Foundation has been cooperating with Baoshi Elementary School for 13 years. Every semester, UMC colleagues organize reading programs at the school. In 2023, the Foundation incorporated the resources of the Mandarin Daily News to bring a newspaper-reading educational challenge activity to the school to enhance the students' language and media literacy skills in a fun and educational way. Additionally, the easy-to-follow volunteer tasks also gave the participating staff a sense of accomplishment and increased their willingness to participate in future charity activities.

May
19

◀ Tung Shih Baseball Team's Visit to UMC's Southern Taiwan Science Park Fab

Walking through the Science Park, seeing the big world. This is the third year that the Foundation has supported the Tung Shih Senior High School Baseball Team. In the past, the Foundation visited the school to show cares for the students, but this time, the Foundation arranged for four teachers and 45 players of the team to visit UMC's Southern Taiwan Science Park fab. During the visit, they learned about the semiconductor industry and the working environment of the Science Park through introductions by staff as well as a career exploration seminar organized by the secretaries of the Southern Taiwan Science Park fab. Furthermore, members of the Music Club were invited to communicate with students about their off-duty leisure life, which brought a deep impression of experiential learning to the youth of Tung Shih.

Jun.
27&29

◀ National Tsing Hua University International Volunteers' Charity Sales Activity

UMC and National Tsing Hua University International Volunteers Group have been cooperating with each other for more than 16 years. Although they have been unable to travel overseas for the past few years as a result of the pandemic, with the easing of pandemic restrictions, they are preparing to serve in East Africa and Malaysia after three years of absence. The university students went to UMC for charity sales to raise funds before the trip, and UMC colleagues used their lunch breaks to learn about foreign cultures, support the students, and exchange new ideas.

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Parent-child Learning Tour in Guanxi ►

This summer, let's take a trip to the Rare Disease Welfare Center! Located in Guangxi, Hsinchu, the Taiwan Foundation for Rare Disorders' Rare Disease Welfare Center not only serves patients, but also serves as a social education center for the public to learn more about rare diseases. The Foundation led 64 colleagues, family members, and tutorial students to visit the Center, where they learned about the causes of rare diseases through guided tours. In addition, they also experienced the daily lives of the patients and their spirit of perseverance through the interactive handicap devices and the handicraft courses conducted by the instructors with rare diseases. In the afternoon, a tour around the old town of Guanxi was arranged for participants, where local tour guides led them to learn the town's stories. Through this small trip, participants were able to care for the different needs of the community, cultivate empathy, and gain a deeper understanding of the local culture of Guanxi.



Sep.

27

Moon Cake Collection for Youth ►

Every year, the Foundation collects moon cakes for charity organizations before the Mid-Autumn Festival. In 2023, with the love and care of UMC employees and the Company, we collected more than 160 boxes of moon cakes, and distributed them to Where Youth Service Center, Shih Kuang Home for the Disabled, Pingtung Christian Bethany Home, UMC Sacred Heart Tutorial Center, Nantou Karate Association, Chiayi Tung Shi Senior High School, and UMC Tutorial Center at National University of Tainan. We are grateful to UMC's executives and colleagues for their love and care, and for bringing the love and warmth of UMC people to the recipients during the holiday season.



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◀ "UMC Mobile Volunteers"
Green Thumb Volunteers at the
Rare Disease Welfare Center

Located in Guangxi, Hsinchu, The Taiwan Foundation for Rare Disorders' Rare Disease Welfare Center, a welfare service center for the mentally and physically challenged, not only serves those suffering from rare diseases, but also serves as a social education center for the public to learn more about rare diseases. The Center has a beautiful greenhouse, which is usually taken care of by Sin-Hui Huang, an instructor on rare diseases, and is a place where many visitors and residents of the Center can feel the healing of the body and mind. Since the Center is newly established and covers a large area, when the seasons change, the plants need to be replaced; therefore, the Foundation called on ten colleague volunteers to help the teacher to organize the greenhouse, change pots, replenish the soil, etc. The task was completed successfully in one afternoon, and it also brought the volunteers a healing afternoon and a sense of accomplishment.



◀ UMC Sacred Heart Tutorial Center
Christmas Party

December is the month of Christmas, which is full of warmth and gratitude. UMC Sacred Heart Tutorial Center held a Christmas party and birthday party, and invited UMC colleagues, volunteers from Sacred Heart Catholic Church, and students from National Tsing Hua University and National Yang Ming Chiao Tung University to enjoy the party together. The party kicked off with a saxophone performance by the volunteers. The guests sent their blessings to the children and the students expressed their gratitude to the tutorial class and teachers through a video. Everyone made galaxy bottles, drew gifts, enjoyed cake and desserts, and laughed and enjoyed a warm and pleasant evening together.

Nov.

16

Dec.

20

[Find out more about us](#)

[The Foundation's website ►](#)



[UMC Sacred Heart Club Tutorial Center's Facebook page ►](#)



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5.4 Commitments to Public Welfare

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Blood Donation for Charity

"Donate one bag of blood, save one life." UMC cares for the community with practical actions and through blood donation activities, helping to extend the lives of those in need. In 2023, a total of 599 UMC colleagues from Taiwan fabs participated, donating a total of 898 bags of blood with passion and dedication.

Experience of Disaster Prevention Sharing for Charity

UMC established a high-tech fire brigade in April 1999—the UMC Fire Brigade—making it the only company within Taiwan's electronics industry to form its own dedicated brigade. Over the past 23 years, the Brigade has participated in over 30 disaster relief missions, deploying firefighter personnel that amounted to hundreds of person-times. The UMC Fire Brigade provides disaster prevention training and exchanges with industry peers, leveraging its influence across the supply chain to enhance Taiwan's emergency response capabilities through internal and external disaster prevention and rescue education and training.

The UMC Fire Brigade is responsible for the Company's facility safety, protection, and emergency rescue missions. In addition to regular basic training, they invite external experts to provide specialized fire handling training, thus continuously enhancing the Brigade's rescue techniques, tactics, and professional disaster relief skills. This not only protects the Company's safety, but also assists neighboring companies and communities in emergency response.

UMC's high-tech fire brigade actively participates in the Science Parks' public safety joint defense mechanism; furthermore, it maintains a close cooperative relationship with county and city fire departments. The Brigade shares resources with these departments and exchanges disaster prevention knowledge and concepts to mutually enhance disaster response capabilities. Additionally, the Brigade passes on disaster prevention knowledge to social charity organizations and schools in rural areas, conducts disaster prevention education and advocacy, assists in reviewing potential safety risks in locations of concern, and provides improvement recommendations.

For more information, please visit ►



Achievements in 2023

- ▶ Supported Hsinchu City's Min'an Exercise No. 9 and the STSP (Southern Taiwan Science Park) Earthquake Joint Response Drill, integrating local disaster relief capabilities to enhance team cohesion.
- ▶ Assisted government agencies in conducting 53 sessions of "High-tech Industry Special Disaster Rescue Training".
- ▶ Completed retraining through the National Fire Agency's "Chemical Disaster Training for the Trainers" course, with a total of 30 participants.
- ▶ Conducted disaster response exercises for electric vehicles and solar equipment, and exchanged experiences with 11 personnel from other companies.
- ▶ Provided Extended Reality (XR) chemical response training to the Tainan City Fire Department and the Southern Region Response Team.
- ▶ Conducted a total of 21 disaster prevention education and advocacy sessions, with 528 person-times participants completing the training.



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Statement of Use: United Microelectronics Corporation has reported in accordance with the GRI Standards for the period 2023.1.1-2023.12.31

► GRI 1 Used: GRI 1: Foundation 2021

► Applicable GRI Sector Standard(s): NA

GRI 2: General Disclosures 2021	Location	Page	Note/Omission	External Assurance
► 1. The organization and its reporting practices				
2-1 Organizational details	About UMC	5		●
2-2 Entities included in the organization's sustainability reporting	About This Report	4		●
2-3 Reporting period, frequency and contact point	About This Report	4		●
2-4 Restatements of information	About This Report	4		●
2-5 External assurance	About This Report Appendix External Assurance	4 202		●
► 2. Activities and workers				
2-6 Activities, value chain and other business relationships	About UMC Determination of Material Topics	5 17-18		●
2-7 Employees	4.2.1 Human Resource Development	132		●
2-8 Workers who are not employees	4.2.1 Human Resource Development 1.3.1 Localization of Supply Chain and Procurement	132 56		●
► 3. Governance				
2-9 Governance structure and composition	1.1.1 Board of Directors Operation Sustainable Governance	26 9		●
2-10 Nomination and selection of the highest governance body	1.1.1 Board of Directors Operation	26		●
2-11 Chair of the highest governance body	1.1.1 Board of Directors Operation	27		●
2-12 Role of the highest governance body in overseeing the management of impacts	1.1.1 Board of Directors Operation Sustainable Governance	28 9		●
2-13 Delegation of responsibility for managing impacts	Sustainable Governance	9		●
2-14 Role of the highest governance body in sustainability reporting	Sustainable Governance Determination of Material Topics	4 16		●
2-15 Conflict of interest	1.1.1 Board of Directors Operation	29		●
2-16 Communication of critical concerns	Sustainable Governance	9		●
2-17 Collective knowledge of the highest governance body	1.1.1 Board of Directors Operation	27		●

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GRI 2: General Disclosures 2021		Location	Page	Note/Omission	External Assurance
2-18	Evaluation of the performance of the highest governance body	1.1.1 Board of Directors Operation	28		●
2-19	Remuneration policies	1.1.1 Board of Directors Operation	29-30		●
2-20	Process to determine remuneration	1.1.1 Board of Directors Operation	29-30		●
2-21	Annual total compensation ratio	1.1.1 Board of Directors Operation	30		●
► 4. Strategy, policies and practices					
2-22	Statement on sustainable development strategy	Message from the ESG Steering Committee Chairman Sustainability Strategy and Blueprint	3 10		●
2-23	Policy commitments	4.1.1 Enforce Human Rights Management	119		●
2-24	Embedding policy commitments	4.1.1 Enforce Human Rights Management	119		●
2-25	Processes to remediate negative impacts	4.1.1 Enforce Human Rights Management	121-123		●
2-26	Mechanisms for seeking advice and raising concerns	4.1.2 Employer-employee Communication	124		●
2-27	Compliance with laws and regulations	1.1.3 Legal Compliance	32	In 2023, due to the failure to complete overtime applications for extended working hours in a timely way, the Company violated Article 24 of the Labor Standards Act and was fined NT\$100,000. The Company continues to review and improve its work hour management operations, regularly promotes relevant regulations, and reminds supervisors to monitor and care for the working conditions of employees on an ongoing basis.	●
2-28	Membership associations	About UMC	7		●
► 5. Stakeholder engagement					
2-29	Approach to stakeholder engagement	Determination of Material Topics	19		●
2-30	Collective bargaining agreements	4.1.2 Employer-employee Communication	125	UMC and its subsidiaries USCXM and Wavetek currently do not have labor unions. Hence, no collective bargaining agreements have been signed by the employees. However, the subsidiaries HJ and USJC have established labor unions.	●
GRI 3: Material Topics 2021		Location	Page	Note/Omission	External Assurance
3-1	Process to determine material topics	Determination of Material Topics	15-16		●
3-2	List of material topics	Determination of Material Topics	17-18		●
List of Material Topics		Location	Page	Note/Omission	External Assurance
► Sustainable Supply Chain Management					
GRI 3: Material Topics 2021					
3-3	Management of material topics	1.3 Building Sustainable Supply Chain	55		●
GRI 204: Procurement Practices 2016					
204-1	Proportion of spending on local suppliers	1.3.1 Localization of Supply Chain and Procurement	56		●

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List of Material Topics	Location	Page	Note/Omission	External Assurance
GRI 308: Supplier Environmental Assessment 2016, GRI 414: Supplier Social Assessment 2016				
308-1 New suppliers that were screened using environmental criteria				●
308-2 Negative environmental impacts in the supply chain and actions taken	1.3.2 Sustainable Supply Chain Management	58-60	UMC has established and formulated the "Supplier Sustainable Evaluation and Management Measures," incorporating sustainable management requirements into the evaluation indicators. All new suppliers must complete the ESG ESG & RBA self-assessment questionnaire and meet the criteria before transactions can proceed.	●
414-1 New suppliers that were screened using social criteria				●
414-2 Negative social impacts in the supply chain and actions taken				●
KPIs of Sustainability Strategy and Blueprint				
Ratio of Tier 1 suppliers who have included 'signing Employment Ethics Terms and Conditions Agreement' in their supply chain management requirements	1.3 Building Sustainable Supply Chain	55		●
► Innovation Management and Intellectual Property Rights Protection				
GRI 3: Material Topics 2021				
3-3 Management of material topics	2.1 Innovation & Technology Development	66		●
UMC Specific Topic				
R&D and patent deployment for new product, technology, and process optimization; employees must respect the company's patents and intellectual property rights.	2.1 Innovation & Technology Development	66		●
	1.1.3 Legal Compliance	32		
KPIs of Sustainability Strategy and Blueprint				
Revenue from sustainable products as % of total revenue	2.1 Innovation & Technology Development	66		●
Number of innovative energy-saving specialty process platforms	2.1 Innovation & Technology Development	66		●
Cumulative patents granted worldwide	2.1 Innovation & Technology Development	66		●
► Customer Relationship Management				
GRI 3: Material Topics 2021				
3-3 Management of material topics	2.2 Customer Satisfaction	74		●
UMC Specific Topic				
Establishing a smooth communication mechanism to understand customer opinions, strengthening service quality, improving customer satisfaction, and maintaining customer relationships.	2.2.1 Customer Satisfaction Improvement	74		●
	2.2.2 Continuous Quality Improvement and Innovation	76		
GRI 418: Customer Privacy 2016				
418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	1.1.3 Legal Compliance	33	No complaints concerning breaches during the reporting period	●
KPIs of Sustainability Strategy and Blueprint				
Ratio of satisfied customers	2.2.1 Customer Satisfaction Improvement	74		●

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► Product Responsibility and Lifecycle Assessment				
GRI 3: Material Topics 2021				
3-3 Management of material topics	2.3 Product Responsibility	78		●
UMC Specific Topic				
Management of hazardous substances, development and application of green processes, and product environmental impact assessment.	2.3 Product Responsibility	78		●
Management KPI				
No customer complaints, product scrap and recalls due to violations of hazardous substance management	2.3 Product Responsibility	78		●
► Climate Strategy and Action				
GRI 3: Material Topics 2021				
3-3 Management of material topics	3.1 Climate Action 1.2.5 Managing Climate Risks and Opportunities	88 46		●
GRI 305: Emissions 2016				
305-1 Direct (Scope 1) GHG emissions	3.1.2 GHG Emissions Management	90	1. Gases included in the calculation: CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆ , and NF ₃	●
305-2 Energy indirect (Scope 2) GHG emissions	3.1.2 GHG Emissions Management	90	2. There are no emissions of CO ₂ from the combustion or biodegradation of biomass in 2023.	●
305-3 Other indirect (Scope 3) GHG emissions	3.1.2 GHG Emissions Management	91		●
305-4 GHG emissions intensity	3.1.2 GHG Emissions Management	90-91		●
305-5 Reduction of GHG emissions	3.1.3 GHG Emissions Reduction	92		●
KPIs of Sustainability Strategy and Blueprint				
Reduction of GHG emissions per unit product	3.1 Climate Action	88		●
Reduction of GHG emissions	3.1 Climate Action	92		●
► Energy Management				
GRI 3: Material Topics 2021				
3-3 Management of material topics	3.2 Energy Management	94		●
GRI 302: Energy 2016				
302-1 Energy consumption within the organization	3.2.1 Energy Mix	95	Adjusted the boundaries of information coverage to align with greenhouse gas inventory.	●
302-3 Energy intensity	3.2.1 Energy Mix	95		●

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List of Material Topics	Location	Page	Note/Omission	External Assurance
302-4 Reduction of energy consumption	3.2.2 Energy Efficiency Improvement	97		●
KPIs of Sustainability Strategy and Blueprint				
Reduction of electricity consumption per unit product	3.2 Energy Management	94		●
Cumulative energy savings	3.2 Energy Management	94		●
Ratio of renewable energy in total electricity used	3.2 Energy Management	94		●
► Water and Wastewater Management				
GRI 3: Material Topics 2021				
3-3 Management of material topics	3.3 Water Resources Management	98		●
GRI 303 Water and Effluents 2018				
303-1 Interactions with water as a shared resource	3.3.1 Water Structure 3.3.3 Water Pollution Control	101 105		●
303-2 Interactions with water as a shared resource	3.3.3 Water Pollution Control	104		●
303-3 Water withdrawal	3.3.1 Water Structure	106		●
303-4 Water discharge	3.3.1 Water Structure	106		●
303-5 Water consumption	3.3.1 Water Structure	106		●
KPIs of Sustainability Strategy and Blueprint				
Reduction of water withdrawal per unit product	3.3 Water Resources Management	98		●
Cumulative water savings	3.3 Water Resources Management	98		●
Key water pollution indicators better than regulated standards	3.3 Water Resources Management	98		●
Reclaimed water usage rate	3.3 Water Resources Management	98		●
► Waste Management and Circular Economy				
GRI 3: Material Topics 2021				
3-3 Management of material topics	3.4 Waste Management	108		●
GRI 306 Waste: 2020				
306-1 Waste generation and significant waste-related impacts	3.4 Waste Management	109		●
306-2 Management of significant waste-related impacts	3.4.2 Source Reduction 3.4.3 Circular Economy Promotion 3.4.4 Contractor Management	110 111 113		●
306-3 Waste generated	3.4.1 Waste Output Structure	109		●

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306-4 Waste diverted from disposal	3.4.1 Waste Output Structure	109		●
306-5 Waste directed to disposal	3.4.1 Waste Output Structure	109		●
KPIs of Sustainability Strategy and Blueprint				
Reduction of waste generated per unit product	3.4 Waste Management	108		●
Cumulative waste reduction	3.4 Waste Management	108		●
Develop circular economy solutions/products (cumulative)	3.4 Waste Management	108		●
Ratio of in-fab resource conversion	3.4 Waste Management	108		●
Other management indicator: waste diversion rate	3.4.3 Circular Economy Promotion	111		●
► Talent Attraction and Retention				
GRI 3: Material Topics 2021				
3-3 Management of material topics	4.2 Diversity, Equity and Inclusion in the Workplace	128		●
GRI 401: Employment 2016				
401-1 New employee hires and employee turnover	4.2.1 Human Resource Development	133, 136-137		●
401-2 Benefit provided to full-time employees that are not provided to temporary or part-time employees	4.2.2 Compensation and Benefit	138-140		●
401-3 Parental leave	4.2.1 Human Resource Development	137		●
KPIs of Sustainability Strategy and Blueprint				
Mid- and high-performance retention rate	4.2.1 Human Resource Development	129		●
► Diversity and Inclusion				
GRI 3: Material Topics 2021				
3-3 Management of material topics	4.2 Diversity, Equity and Inclusion in the Workplace	128		●
GRI 405: Diversity and Equal Opportunity 2016				
405-2 Ratio of basic salary and remuneration of women to men	4.2.2 Compensation and Benefit	139		●
KPIs of Sustainability Strategy and Blueprint				
Proportion of women among managerial personnel	4.2.1 Human Resource Development	128		●
► Occupational Health and Safety				
GRI 3: Material Topics 2021				
3-3 Management of material topics	4.3 Protecting the Employees and the Work Environment	148		●
GRI 403: Occupational Health and Safety 2018				
403-1 Occupational health and safety management system	4.3.1 Maintain Workplace Safety	149		●

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403-2 Hazard identification risk assessment, and incident investigation	4.3.1 Maintain Workplace Safety	149-150		●
403-3 Occupational health services	4.3.2 Creating a Reassuring Workplace	154		●
403-4 Worker participation, consultation, and communication on occupational health and safety	4.3.1 Maintain Workplace Safety	150		●
403-5 Worker training on occupational health and safety	4.3.1 Maintain Workplace Safety	149		●
403-6 Promotion of worker health	4.3.2 Creating a Reassuring Workplace	155-157		●
403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	4.3.1 Maintain Workplace Safety	151		●
403-8 Workers covered by an occupational health and safety management system	4.3.1 Maintain Workplace Safety	149		●
403-9 Work-related injuries	4.3.1 Maintain Workplace Safety	151		●
403-10 Work-related ill health	4.3 Protecting the Employees and the Work Environment	151, 157	There is no case of legally define occupational disease during the reporting period. For the number of cases of mental and physical heath related problems in employees, please refer to Chapter 4.3.	●
KPIs of Sustainability Strategy and Blueprint				
Disabling injury frequency rate (FR) and disabling injury severity rate (SR)	4.3.1 Maintain Workplace Safety	148		●
► Human Rights				
GRI 3: Material Topics 2021				
3-3 Management of material topics	4.1.1 Enforce Human Rights Management	118		●
GRI 406: Non-discrimination 2016				
406-1 Incidents of discrimination and corrective actions taken	4.1.1 Enforce Human Rights Management	121-123		●
GRI 407: Freedom of Association and Collective Bargaining 2016				
407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	4.1.1 Enforce Human Rights Management	120		●
GRI 408: Child Labor 2016				
408-1 Operations and suppliers at significant risk for incidents of child labor	4.1.1 Enforce Human Rights Management	120		●
GRI 409: Forced or Compulsory Labor 2016				
409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	4.1.1 Enforce Human Rights Management	120		●
KPIs of Sustainability Strategy and Blueprint				
The coverage rate and score of work engagement questionnaire	4.1 Respect for Human Rights	118		●

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Industry: TECHNOLOGY & COMMUNICATIONS SECTOR-SEMICONDUCTORS Version 2018-10

Scope: UMC Group (the parent company and its subsidiaries HJ, USCXM, Wavetek and USJC which covers revenue accounting for over 99% of UMC's consolidated financial statements.

Topic/Code	Accounting Metric	Category	Location	Page	2023 Performance Summary	External Assurance
Greenhouse Gas Emissions TC-SC-110a.1	(1) Gross global Scope 1 emissions (2) Amount of total emissions from perfluorinate compounds	Quantitative	3.1.2 GHG Emissions Management	90	(1) Amount of total Scope 1 direct emissions: 509,555 tonnes CO ₂ e.	●
			3.1.3 GHG Emissions Reduction	92	(2) Amount of total F-GHGs (Fluorinated greenhouse gas) emissions: 399,129 tonnes CO ₂ e.	
Greenhouse Gas Emissions 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	Discussion and Analysis	3.1.3 GHG Emissions Reduction	92	Scope 1 GHG emissions is mainly due to the F-GHGs used in the manufacturing process. UMC has promoted reduction measures including source reduction with gas replacement, and the installation of high efficiency local scrubbers. UMC has set goals through its Sustainability Strategy and Blueprint to track the progress of action plans. The goals of GHG reduction were all achieved in this year.	●
					(1) Total energy consumption: 4,060,941MWh (1.4619388x10 ⁷ GJ)	
Energy Management in Manufacturing TC-SC-130a.1	(1) Total energy consumed (2) Percentage grid electricity (3) Percentage renewable energy	Quantitative	3.2.1 Energy Management	95	(2) Percentage of purchased electricity in total energy consumed: 83.5% (renewable energy is excluded from the purchased electricity)	●
					(3) Percentage of renewable energy in total energy consumption: 10.4% (11.1% of total electricity consumption)	
Water Management TC-SC-140a.1	(1) Total water withdrawal (2) Total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	Quantitative	3.3 Water Resources Management	106 101	(1) Total water withdrawal: 26,277 thousand cubic meters. (2) Total water consumption: 7,259 thousand cubic meters. (3) The subsidiary HJ is located at Suzhou identified as water-stress area by WRI. The water withdrawal and water consumption of HJ were accounted for 7.9% and 3.6% respectively. In addition to the ample water resources provided by the nearby Taihu Lake, which has a storage capacity of 4.5 billion tonnes, and a dual water source and dual water plant safety supply model, the dual water sources (Taihu Lake and Jiuyang Lake) have a combined supply capacity of 500,000 tonnes/day. HJ also implements water-saving measures to improve water use efficiency and reduce the impact of water risks on operations.	●
Waste Management TC-SC-150a.1	Amount of hazardous waste from manufacturing and the percentage that is recycled	Quantitative	3.4.1 Waste Output Structure	109	Total hazardous waste output was 39,496 tonnes, accounting for 61.4% of total waste output. The percentage of hazardous waste recycled was 92.7%.	●
Employee Health & Safety TC-SC-320a.1	Description of efforts to assess, monitor, and reduce exposure of employees to human health hazards	Discussion and Analysis	4.3.1 Maintain Workplace Safety	149	UMC performs hazard identification and risk assessment for routine and non-routine operations, including: 1. Workplace Hazard Assessment; 2. Safety and health risk assessment for manufacturing processes and activities; 3. Risk identification for engineering by FMEA.	●
Employee Health & Safety TC-SC-320a.2	Total amount of monetary losses as a result of legal proceedings associated with employee health and safety violations	Quantitative	1.1.3 Legal Compliance	32	There were no incidents of such violations and the total related monetary loss was NT\$0.	●

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Topic/Code	Accounting Metric	Category	Location	Page	2023 Performance Summary	External Assurance
Recruiting & Managing a Global & Skilled Workforce TC-SC-330a.1	Percentage of employees that are (1) Foreign nationals (2) Located offshore	Quantitative	4.2.1 Human Resource Development	134	The percentage of local employees (full-time) in each country and region as follows: 94.9% for Taiwan (including its subsidiary Wavetek); 24.8% for Singapore; 95.1% for its Chinese subsidiaries HJ and USCXM; and 96.8% for its Japanese subsidiary USJC.	●
Product Lifecycle Management TC-SC-410a.1	Percentage of products by revenue that contain IEC 62474 declarable substances	Quantitative	2.3.1 Hazardous Substance Management	79	In response to domestic and foreign regulations, UMC regularly updates its hazardous substance management regulations, which cover the substances listed in IEC62474 that require reporting. The percentage of materials not complying with IEC62474 is 0%.	●
Product Lifecycle Management TC-SC-410a.2	Processor energy efficiency at a systemlevel for: (1) servers, (2) desktops, and (3) laptops	Quantitative	-	-	Considering foundry fir is not an end product manufacturer, and thus there is no applicable content.	●
Materials Sourcing TC-SC-440a.1	Description of the management of risks associated with the use of critical materials	Discussion and Analysis	1.3.2 Sustainable Supply Chain Management	59	UMC completed its supply chain risk database and the management system of earthquake spare parts (quartz, fragile parts) for over 2,000 key raw materials supplied by approximately 100 vendors. A production area risk warning automatic is established, sending and return monitoring and risk identification system. Besides, 95% of UMC's 8-inch fabs and 99% of 12-inch fabs have completed earthquake spare parts preparation.	●
Intellectual Property Protection & Competitive Behavior TC-SC-520a.1	Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	Quantitative	1.1.3 Legal Compliance	32	There were no incidents of such violations and the total related monetary loss was NT\$0.	●
Activity Metrics TC-SC-000.A	Total production	Quantitative	About UMC	5	UMC Group manufactured and integrated approximately 3.202 million pieces of 12-inch equivalent wafers.	●
Activity Metrics TC-SC-000.B	Percentage of production from owned facilities	Quantitative	About UMC	5	100% production came from UMC Group's own fabs.	●

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► Governance		
The board's oversight of climate-related risks and opportunities.	1.1.1 Board of Directors Operation 1.2.5 Managing Climate Risks and Opportunities	26 46-47
Management's role in assessing and managing climate-related risks and opportunities.	Sustainable Governance 1.2.1 Risk Management System 1.2.5 Managing Climate Risks and Opportunities	9 36 46-47
► Strategy		
The climate-related risks and opportunities the organization has identified over the short, medium, and long term.	1.2.5 Managing Climate Risks and Opportunities	48
The impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	1.2.5 Managing Climate Risks and Opportunities	48
The resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	1.2.5 Managing Climate Risks and Opportunities	48
► Risk Management		
The organization's processes for identifying and assessing climate-related risks.	1.2.5 Managing Climate Risks and Opportunities	46
The organization's processes for managing climate-related risks.	1.2.1 Risk Management System 1.2.3 Improving Operational Risk Management 1.2.5 Managing Climate Risks and Opportunities	36 42 46
How processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	1.2.1 Risk Management System 1.2.3 Improving Operational Risk Management 1.2.5 Managing Climate Risks and Opportunities	36 42 46
► Metrics and Targets		
Metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	1.2.5 Managing Climate Risks and Opportunities	46
Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	1.2.5 Managing Climate Risks and Opportunities 3.1.2 GHG Emissions Management	46 90
Targets used by the organization to manage climate-related risks and opportunities and performance against targets.	Sustainable Governance 2.1.1 Robust Wafer Manufacturing Services 3.1.3 GHG Emissions Reduction 3.2.1 Energy Mix 3.3.1 Water Structure 3.3.2 Water Saving	9 68 92 95 99 102

Appendix 4. United Nation Global Compact Index

10 Principles	Location	Page
► Human Rights		
Businesses should support and respect the protection of internationally proclaimed human rights.	4.1.1 Enforce Human Rights Management	119
Make sure that they are not complicit in human rights abuses.	1.3.2 Sustainable Supply Chain Management 4.1.1 Enforce Human Rights Management	57 119
► Labor		
Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.	4.1.2 Employer-employee Communication	125
The elimination of all forms of forced and compulsory labor.	4.1.1 Enforce Human Rights Management	119
The effective abolition of child labor.	4.1.1 Enforce Human Rights Management	119
The elimination of discrimination in respect of employment and occupation.	4.1.1 Enforce Human Rights Management	119
► Environment		
Businesses should support a precautionary approach to environmental challenges.	Chapter 3 Implementing Green Operations	84
Undertake initiatives to promote greater environmental responsibility.	Chapter 3 Implementing Green Operations	84
Encourage the development and diffusion of environmentally friendly technologies.	2.1 Innovation & Technology Development 2.3 Product Responsibility	66 78
► Anti-Corruption		
Businesses should work against corruption in all its forms, including extortion and bribery.	1.1.2 Integrity Management	31

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► Labor Practices		
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Social dialogue	Determination of Material Topics 4.1.2 Employer-employee Communication	15 124
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Appendix 6. TWSE-required Disclosure of Indicators

According to TWSE's "Rules Governing the Preparation and Filing of Sustainability Reports by TWSE Listed Companies", relevant attachments have been disclosed below.

► Disclosure of sustainability indicators as required by Attachment 1-8: Semiconductor Industry

Scope: UMC Group (the parent company and its subsidiaries HJ, USCXM, Wavetek and USJC which covers revenue accounting for over 99% of UMC's consolidated financial statements.

Item	Accounting Metric	Category	2023 Performance Summary	Unit	Remarks
	Total energy consumption		1.4619388×10^7 GJ	billion joules (GJ)	
1	Percentage of purchased electricity	Quantitative	83.5%	percentage (%)	Consumption of purchased grid electricity ÷ total energy consumption
	Percentage of renewable energy usage		10.4%	percentage (%)	Renewable energy ÷ total energy consumption. The percentage of renewable energy usage in the total electricity consumption in 2023 is 11.1%
2	Total water withdrawal	Quantitative	26,277	1,000 cubic meters (m^3)	
	Total water consumption		7,259	1,000 cubic meters (m^3)	
3	Total hazardous waste output	Quantitative	39,496	tonne (t)	
	The hazardous waste recycling rate		92.8%	percentage (%)	
4	Explain the occupational accident categories	Quantitative	There were five minor or above accidents reported. The five accidents can be categorized: walking injury: 1, heavy object crush injury: 2, chemical exposure injury: 1.		
	Number of people with disabling injuries		10	person	
	Percentage of people with disabling injuries		0.05%	percentage (%)	No. of people with disabling injuries ÷ total employees
5	Weight of scrap products and electronic waste	Quantitative	43.7	tonne (t)	Including the scraps and scrapped chips reused by outsourced manufacturers
	Disclosure of product life cycle management	Quantitative	92.0	percentage (%)	All are outsourced for processing and reuse; the reason for not reaching 100% is that, by the end of this fiscal year, some scrapped wafers are still pending reuse processing.
6	Description of the risk management associated with the use of key materials	Discussion and Analysis	The Company completed its "Supply Chain Risk Database" and the management system of earthquake spare parts (quartz, fragile parts) for over 2,000 key raw materials supplied by approximately 100 vendors. In addition, 95% of UMC's 8-inch fabs and 99% of 12-inch fabs have completed earthquake spare parts preparation. 200 major suppliers of raw materials completed risk assessment surveys, all of which met UMC's requirements.		
			Not applicable		
7	Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	Quantitative	0	Currency	There were no incidents of such violations in 2023 and the total related monetary loss was NT\$0
8	Total production	Quantitative	UMC Group manufactured and integrated approximately 3.202 million pieces of 12-inch equivalent wafers.		
			-		

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► Climate-related Response Measures of List Company (UMC)

1. Climate-related Response Measures: Please refer to Chapter 1.2.5 Managing Climate Risks and Opportunities of this report.

1-1 Results of Greenhouse Gas Emissions Inventory and Verification

In accordance with the Sustainable Development Roadmap for TWSE-listed/TPEx-listed Companies announced by the Financial Supervisory Commission, UMC must disclose at least the inventory and assurance information of the parent company this year. In addition to the parent company information, UMC has completed the inventory of 27 subsidiaries included in the consolidated financial statements. Therefore, starting from 2023, UMC will disclose the inventory and assurance information for these subsidiaries in the consolidated financial statements.

Year	Scope	Total Emissions (tonne CO ₂ e)		Intensity (tonne CO ₂ e/million NT\$)		Verification		
		Scope 1	Scope 2	Scope 1	Scope 2	Party ^{Note3}	Criteria	Status
2022	Parent company	591,781	1,373,914	3.09	6.28	DNV	ISO14064-1:2018	Reasonable assurance
	Subsidiary ^{Note1}	274,203	383,919			SGS/DNV		
2023	Parent company	356,911	1,376,960	2.29	7.36	DNV	SGS/DNV	Reasonable assurance
	Subsidiary with a consolidated financial report ^{Note2}	152,644	259,248					

Note: 1. The data scope covers the four foundry subsidiaries (HJ, USCKM, Wavetek, and USJC), whose revenue, combined with the parent company, accounts for more than 99% of the total revenue of the consolidated entities.

2. Beyond the above four foundry subsidiaries, the greenhouse gas emissions of the remaining 23 subsidiaries, after inventory, account for less than 5% of the total emissions of the consolidated entity and are not included in the scope of disclosure based on materiality standards.

3. Verification party: of HJ and USCKM is SGS-CSTC Standards Technical Services CO., LTD.; Wavetek and USJC are issued by DNV Business Assurance Co., Ltd.

1-2 Goals and Action Plans of Greenhouse Gas Emissions Reduction

In 2021, UMC announced its pledge to reach net zero emissions by 2050 as the first semiconductor foundry globally. The 2030 GHG emissions reduction target set by UMC was approved by the Science-Based Targets Initiative (SBTi) in 2022, and the Company continues to drive further reductions by three resolutions. In 2023, in order to actively implement UMC's low-carbon commitments and take actions to speed up emission reduction, UMC has further signed the SBTi net-zero target commitment and raised the 2030 GHG emissions reduction target in accordance with the SBTi Net-Zero Standard to a 42% reduction of Scope 1 and Scope 2 emissions with 2020 as the base year. The GHG emissions of UMC and its foundry subsidiaries reduced by 26% in 2023 compared to the base year emissions of 2.895 million tCO₂e. For more details about UMC's climate action, please refer to Chapter 3.1 Climate Action of this report.

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Scope: UMC Parent Company

Indicator	Unit	2020	2021	2022	2023	Remarks
► Governance & Economic						
Total board size	seat	8	9	9	9	
Composition of the board of directors	Independent directors	seat	4	5	5	5
	Other non-executive directors	seat	1	1	1	1
Female director	Executive directors	seat	3	3	3	3
	Seat	seat	1	2	2	2
Proportion	%	12.5	22.2	22.2	22.2	
Average attendance rate of Board meeting	%	97.2	98.7	100.0	100.0	
Ratio of satisfied customers	%	87	89	91	92	Ratio of satisfied customers is conducted by a third-party agency since 2021.
Product Recalls	number	0	0	0	0	
R&D Expense	Amount	10 million NT\$	954	1,002	1,024	1,072
	Percentage of operation income	%	7.1	6.3	4.9	6.2
Revenue from sustainable products of total revenue	%	66.9	68.7	74.9	82.2	82.2% of total revenue derived from sustainable products in 2023, with 77.0% from low power consumption, low leakage, and power management products, 13.6% from automotive chips which used in advanced driver assistance systems (ADAS) and powertrain, etc., and 9.0% from microcontroller unit (MCU) and epidemic prevention & medical related products.
Accumulated granted patents worldwide	number	13,991	14,423	14,771	15,196	
► Environment						
GHG	F-GHG emission per unit product (wafer weight)	kg F-GHGs/wafer-tonne	143	133	107	80
	Indirect greenhouse gas emissions (Scope 2)	tCO ₂ e	765,218	712,639	591,781	356,911
	Indirect greenhouse gas emissions (Scope 2)	tCO ₂ e	1,286,601	1,298,439	1,373,914	1,376,960
	GHG emission per unit product (Scope 1 & 2)	tCO ₂ e/wafer-m ²	9.28	8.25	7.91	9.36
	Others indirect greenhouse gas emissions (Scope 3)	tCO ₂ e	2,318,460	2,834,727	2,064,284	1,893,167
Energy	Total energy consumption (including renewable energy)	MWh	2,835,702	2,883,399	3,000,645	3,050,481
	Total non-renewable energy consumption	MWh	2,623,197	2,676,665	2,796,662	2,856,931
	Total renewable energy consumption	MWh	649	2,146	4,175	6,310
						Adjusted the boundaries of information coverage to align with greenhouse gas inventory, and update historical data.

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	Indicator	Unit	2020	2021	2022	2023	Remarks
Water	Total water withdrawal	1,000 m ³	16,200	16,213	17,410	17,258	
	Total water discharge	1,000 m ³	10,914	10,676	11,475	11,389	
	Total water consumption	1,000 m ³	5,286	5,537	5,935	5,869	
	Third-party water: Municipal Water	1,000 m ³	12,232	12,024	13,053	12,591	
	Third-party water: Reclaimed Water	1,000 m ³	3,263	3,324	3,566	3,921	
	Condensate water and rainwater	1,000 m ³	705	733	791	746	
	Surface freshwater, underground water, salt water	1,000 m ³	0	132	0	0	The groundwater withdrawal in 2021 indicated the groundwater supply (withdrawn from renewable groundwater formations) by water tankers activated for Hsinchu plant to cope with a severe drought in the year.
	Total water withdrawal from third party	1,000 m ³	15,495	15,348	16,619	16,512	Including municipal water and reclaimed water
	Percentage of water withdrawal from alternative water sources	%	24%	25%	25%	27%	Including reclaimed water, condensate water and rainwater
	Water withdrawal per unit product	m ³ /wafer-m ²	73.34	66.54	70.08	93.08	
General Waste	Water consumption per unit product	m ³ /wafer-m ²	23.93	22.72	23.89	31.65	
	Manufacturing-process recycling rate	%	81.4	81.9	82.8	84.3	All fabs' manufacturing-process water withdrawal ÷ UMC's total manufacturing process water withdrawal × Sum of all fabs' manufacturing-process water recycling rate
	Ultra-pure water usage	1,000 m ³	18,204	18,538	19,529	19,528	
	Total waste recycled/ reused	tonne	7,641	8,557	10,387	9,813	
	Total waste disposed	tonne	1,955	1,887	1,881	1,253	
	Waste landfill	tonne	1,429	1,280	1,179	669	
	Waste incinerated with energy recovery	tonne	382	376	390	305	
	Waste incinerated without energy recovery	tonne	144	231	312	279	
	Waste otherwise disposed	tonne	0	0	0	0	Including solidification and chemical treatment
	Total hazardous waste recycled/reused	tonne	19,813	21,976	22,560	18,766	
Hazardous Waste	Total hazardous waste disposed	tonne	2,846	3,116	2,586	2,482	
	Hazardous waste landfill	tonne	0	0	0	0	
	Hazardous waste incinerated with energy recovery	tonne	1,915	2,153	1,620	1,775	
	Hazardous waste incinerated without energy recovery	tonne	276	298	328	231	
	Hazardous waste otherwise disposed	tonne	654	664	638	476	Including solidification and chemical treatment

Note: The calculation of statistic above is based on the definition of Dow Jones Sustainability Index (DJSI). Liquid waste and waste recycled inside the fab are excluded from general waste. And waste recycled inside the fab are also excluded from hazardous waste.

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Indicator	Unit	2020	2021	2022	2023	Remarks
Direct VOC emissions	tonne	41.37	35.65	29.01	24.86	
Costs and Benefit	Amount of fine related to environmental violations	million NT\$	0	0	0	0 environmental violation and fine in all years.
	Cost saving	million NT\$	469	477	226	549 Cost saving mainly calculates the benefit generated through the implementation of management measures for water, electricity, waste, and GHGs.
	Capital investments	million NT\$	554	1,670	2,920	3,317
	Operating expenses	million NT\$	1,193	1,463	1,688	1,803
► Social						
Human Resource Development	Total number of new employee hires	%	8.4	15.9	16.2	6.2 Total number of newly hired employees ÷ the average number of existing employees.
	Total employee turnover rate	%	7.8	10.5	9.4	5.5 Total number of employees who resigned ÷ the average number of existing employees
	Voluntary employee turnover rate	%	7.6	10.4	9.3	5.4
	Internal transfer rate	%	57.4	57.1	58.6	65.1 Internal transfer rate= number of internal transfers÷number of job vacancies. Including direct employees, the reported information of 2020-2022 has also been adjusted.
	Female top management position rate	%	22.6	20.8	20.7	22.5 The management positions include junior, middle and top management positions
	Average amount spent per FTE on training and development	NT\$	3,110	2,882	3,743	4,074
	Average hours per FTE of training and development	hour	21.4	20.5	26.9	44.7
Employee Health & Safety	No. of people with disabling injuries	person	4	11	13	8
	People with disabling injuries rate	%	0.02	0.06	0.09	0.05 No. of people with disabling injuries ÷ total employees
Total amount of charitable donations		million NT\$	161.9	241.2	104.0	75.7

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Third-Party Independent Assurance Statement



Independent Assurance Statement

Scope and Approach

United Microelectronics Corp. ("UMC" or "the Company") commissioned DNV Business Assurance Co., Ltd. ("DNV" or "we") to undertake independent assurance over the Company's 2023 Sustainability Report for the year ended 31 December 2023 ("the Report"). The Report is prepared in accordance with the reporting principles and requirements of the Global Reporting Initiative (GRI) Standards, which also serve as the basis of our verification.

We planned and performed our work to obtain the evidence we considered necessary to provide a basis for our assurance opinion. In accordance with AA1000 Assurance Standard v3, we provide Type 2 reporting principle assessment and a high level of assurance on the reliability of specified sustainability performance information.

We understand that the reported financial data and information are based on the data from the Company's financial statements on a consolidated basis, which are subject to a separate independent audit process. The economic data and information have been obtained from the certified financial statements of the Company and were not in the scope of our assurance, as DNV has relied on relevant information as accurate for the purposes of our scope of work. In addition, the Company's data on greenhouse gas emissions is not within the current scope of work as the results had been verified by other assurance engagements.

The Report also incorporated disclosures with reference to relevant sustainability reporting guidelines, such as the Sustainability Accounting Standards Board's (SASB) Sustainability Accounting Standard for the Semiconductors industry (version 2018-10) and the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

Responsibilities of United Microelectronics Corp. and the Assurance Provider

The management of UMC has sole responsibility for the preparation of the Report in accordance with the stated criteria and for the design, implementation, and maintenance of necessary internal controls. In performing our assurance work, our responsibility is to the management of UMC. Our statement, however, represents our independent opinion and is intended to inform all of UMC's stakeholders.

DNV was not involved in the preparation of any statements or data included in the Report except for this Assurance Statement. We have no contractual or other affiliations that could lead to conflicts of interest against the current assurance engagement under the established policies and procedures to ensure unwavering adherence to the independence principle.

Our assurance engagement is based on the assumption that the data and information provided by the Company are complete, sufficient, and authentic. DNV expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Assurance Statement.

Basis of Our Opinion

A multi-disciplinary team of sustainability and assurance specialists performed work at the Company's headquarters and site level. We undertook the following activities:

- Review of UMC's materiality assessment process for the current Report, including the recent sustainability issues that could affect the Company and are of interest to stakeholders identified.
- Review of UMC's stakeholder engagement approach and recent outputs.
- Review of information provided to us by UMC on its reporting processes and management relating to the Principles.
- Conducted interview with the selected senior managers responsible for the management of sustainability issues and stakeholder relationship to understand the level of commitment and recent stakeholders' feedback.
- Conducted on-site visits to UMC's Headquarters in Hsinchu, Taiwan and data checks on the Company's main sites of operation located in Taiwan (Hsinchu and Tainan) and Singapore, and also the fabs managed by UMC's subsidiaries in Taiwan (Hsinchu), China (Suzhou and Xiamen), and Japan (Mie), to assess the systems and processes for implementing sustainability initiatives and preparing site-level data.
- Review of supporting evidence for key claims and 2023 data in the Report, as reported information beyond 2023 is not within the scope of the current engagement. Our checking processes were prioritised according to the materiality of issues at the consolidated corporate level. In addition, we were able to conduct interviews with the corporate functions involved, considering the nature and management of the sustainability issues concerned.
- Review of the processes for gathering and consolidating the specified performance data and, for a sample, checking the data consolidation. Where data on financial performance and greenhouse gas emissions had been checked by other assurance providers or engagements, we tested the transcription from these sources to the Report.



Opinion

- Review of UMC's performance data and key performance indicators on environmental/social topics based on the material topics, management approaches and corresponding sustainability strategies UMC set forth.
- An independent assessment of UMC's reporting in accordance with the Global Reporting Initiative (GRI) Standards.
- The verification was conducted based only on the Chinese version Report.

Observations

Without affecting our assurance opinion, we also provide the following observations.

- Continual advancement of the management approaches and data collection protocols is recommended, considering the Company's extensive geographical span and the different local contexts the subsidiaries confront, to further facilitate sound monitoring and reporting on the Company's sustainability initiatives.
- We acknowledge the UMC's long-standing commitment and would accordingly encourage the Company to continuously evaluate and address the issues potentially induced by the changes and the intertwined nature of its diverse programs, timeframes and corresponding targets.
- As the concept of impact has been reaffirmed, we also encourage continued efforts in advancing the impact management methodology across the Company's material topics and to be informed by its stakeholders.

Stakeholder Inclusiveness and Responsiveness

The Company has identified the expectations of stakeholders through internally devised mechanisms in dialogue with different groups of stakeholders. The stakeholder concerns are well identified and documented, and the significant sustainability issues identified through this process are reflected in the Report.

Sustainability Context

The Report provides an accurate and fair representation of the level of implementation of related corporate sustainability policies and meets the requirements of the GRI Standards.

Materiality

The process developed internally has not missed out any significant, known material issues, and these issues are fairly covered in the Report. A methodology has been developed to evaluate the priority of these issues.

Completeness

The Report covers performance data against the GRI Standards disclosures that are identified as material within the Company's reporting boundary. The information in the Report includes the Company's most significant initiatives or events that occurred in the reporting period.

Accuracy and Reliability

The Company has developed the data flow for capturing and reporting its sustainability performance. In accordance with the assurance requirements, we conclude that no systematic errors were detected which causes us to believe that the specific sustainability data and information presented in the Report are not reliable.

Impact

The Company presents the impacts related to its identified material topics by measuring and monitoring impacts through appropriate performance metrics demonstrating outcomes and outputs of its value creation processes. Nothing has come to our attention to suggest that the Report does not meet the requirements related to the Principle of Impact. For and on behalf of DNV Business Assurance Co., Ltd.

Date: 11 June, 2024

Yu Chung Chen
Lead Verifier
Business Assurance
DNV Taiwan

David Hsieh
District Manager
Business Assurance
DNV Taiwan

Statement Number: C665849-2023-AG-TWN-DNV

2023

UMC

Sustainability

Report

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TCFD ASSURANCE STATEMENT

Introduction

DNV Business Assurance Co., Ltd. Taiwan (hereafter "DNV") has been commissioned by the management of United Microelectronics Corp. (hereafter "UMC" or "the Company") to perform an assurance engagement on the Company's reporting against the Recommendations of the Task Force on Climate-related Financial Disclosures (version June 2017, hereafter "TCFD Recommendations")

Scope of Assurance

Subject to our assurance engagement was the Company's reporting against the four overarching recommendations presented in the TCFD Recommendations, which has been incorporated in the Company's Sustainability Report (hereafter "the Report") for the year ended 31 December 2023 which includes relevant disclosures on climate-related management and performance. The current assurance engagement does not explicitly cover the disclosures on Scope 1, Scope 2, and Scope 3 greenhouse gas emissions, as the data has been checked in another engagement based on the verification results from multiple assurance providers.

United Microelectronics Corp.'s Responsibilities

The management of UMC has the sole responsibility for the collection, assessment, analysis, and consolidation of information within the Report. DNV's assurance engagements are based on the assumption that the data and information provided by the Company to us as part of our review have been complete, accurate, and provided in good faith.

DNV's Responsibilities and Independence

In performing the current assurance engagement, our responsibility and independent opinion are to the management of UMC. Provided the consent that UMC may refer to this Assurance Statement under the terms we agreed with the Company, DNV expressly disclaims any liability or co-responsibility for any decision a person or an entity having potential access to this Assurance Statement or our Assurance Report, may make based on our opinion.

DNV has not been involved in the preparation of any statements or data included in the Report except this Assurance Statement, and we have no other contractual relationship with UMC that constitutes a conflict of interest against the current assurance engagement under the established policies and procedures.

Conclusions

It is DNV's opinion that based on the Company's reporting against the TCFD Recommendations, nothing has come to our attention that causes us to believe that relevant disclosures in the Report is not reliable in accordance with the TCFD Recommendations. We can conclude that the Company's management of the climate-related risks and opportunities and information consolidated accordingly is reasonable and balanced, as presented in the Report.



TCFD ASSURANCE STATEMENT

Basis of Our Opinion

- A multi-disciplinary team of sustainability and assurance specialists performed work at the Company's Headquarters and site level. We undertook the following activities to assess the Company's disclosures as per the four overarching recommendations:
 - Review of the Company's governance structure and management procedures on climate-related risks and opportunities.
 - Review of the Company's approach in identifying and assessing the climate-related risks and opportunities, which takes into consideration the following climate scenarios: IEA NZE, IEA APS (incl. NDC), IEA STEPS for the transition risks; and IPCC AR5 RCP-8.5, IPCC AR6 SSP1-2.6, and IPCC AR6 SSP5-8.5 for the physical risks.
 - Review of the Company's climate-related initiatives, including the Net Zero commitment and Science-Based Target by 2050; and the Company's RE100 roadmap, which reflects the commitment of 100% of energy consumption from renewable sources by 2050.
 - Review of supporting evidence for key claims and 2023 performance data in the Report, as reported information beyond 2023 is not within the scope of the current engagement. Our checking processes were prioritised according to materiality, and we based our prioritisation on the materiality of issues at the consolidated corporate level.
 - Review of the processes for collecting and consolidating the specified assessment data and, for a sample, checking the data consolidation.
 - The verification was conducted based only on the Chinese version Report.

Limitations

This Assurance Statement is based upon the application of sample principles and professional judgment on certain facts and assumptions, with resulting subjective interpretations. Professional judgments expressed herein are based upon the data made available to us at the moment of assurance engagement performed under the agreed scope of work and pertinent time and resource constraints.

DNV's Competence and Independence

DNV is a global provider of sustainability services, with environmental and social assurance specialists working in over 100 countries. DNV was not involved in the preparation of any statements or data included in the Report except for this Assurance Statement. DNV expressly disclaims any liability or co-responsibility for any decision a person or entity would make based on this Assurance Statement.

For DNV Business Assurance Co. Ltd. Taiwan,
Signed:

Name of Lead Verifier: Yu Chung Chen

Signed:

Name of Reviewer: David Hsieh
District Manager

DNV Business Assurance Co. Ltd.,
Taiwan, 06 May, 2024
Statement Number: C665870-2023-AG-TWN-DNV



United Microelectronics Corporation

www.umc.com

