

2017

UMC

Corporate Social Responsibility Report

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Words from Co-President and CS Committee Chairman

About This Report

Important Achievements and Sustainable Performance in 2017

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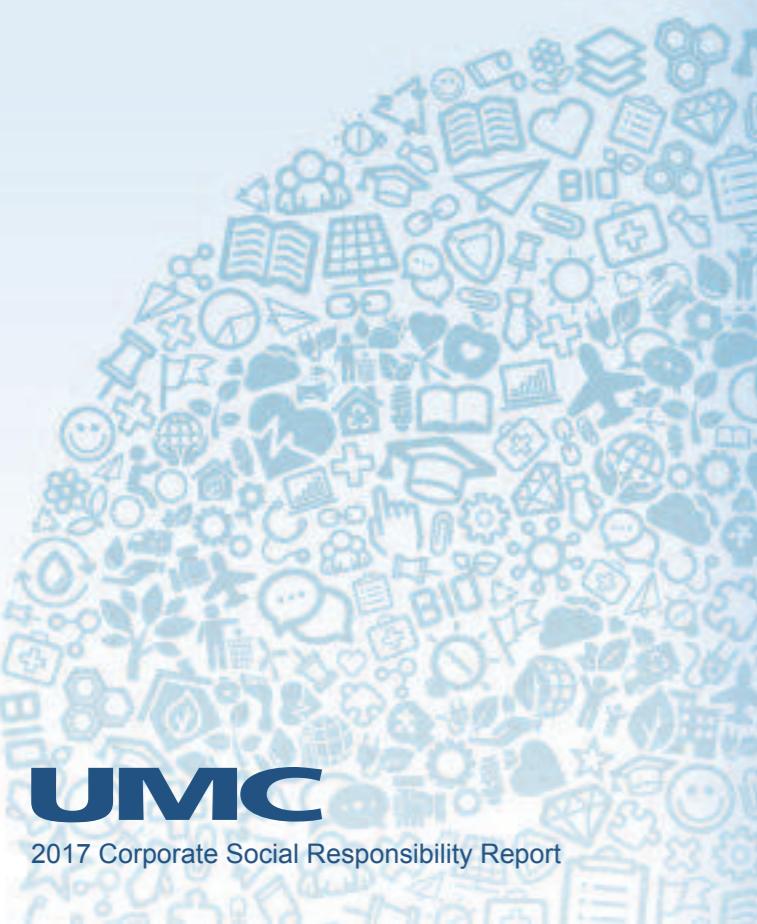
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UMC

Words from Co-President and CS Committee Chairman

To everyone who is concerned with sustainability at UMC:

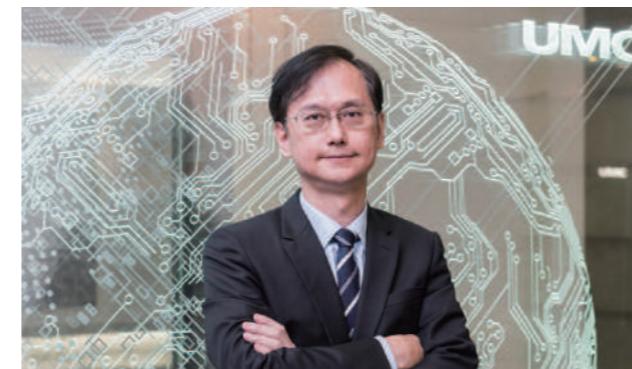
Focus, Nurture, and Continuity make up the core attitude of UMC in promoting corporate sustainability. As a global leader in the semiconductor industry, not only do we pursue stable growth in our core businesses, but we also uphold the vision of "People-oriented, Environmental Symbiosis, and Social Prosperity." UMC is committed to ESG, "Environment, Society, and Governance," a three-pronged sustainable concept to promote the implementation of the 17 global Sustainable Development Goals (SDGs) of the United Nations. In 2017, UMC continued to improve its performance in the implementation of sustainable management strategies, achieving productive results. In addition to being listed as a Dow Jones Sustainability World Index component for ten consecutive years, we have continued to receive the Corporate Citizenship Award from Commonwealth Magazine as well as the Corporate Social Responsibility Award from Global Views Monthly. At the same time, we are the only company to receive the Republic of China National Sustainable Development Award for overall corporate performance three times since the award's inception.

In terms of strengthening corporate governance, the company has recently established the "Nominating Committee" and has conducted initial external performance evaluation of the Board. These measures are in addition to the operational supervision and management done by the "Remuneration Committee," "Audit Committee," and the "Capital Budget Committee," created by the Board of Directors. The company's purpose is to further promote the transparency of corporate governance and operations as well as to safeguard stakeholder interests. In 2017, UMC's corporate governance performance continued to be rated by the Dow Jones Sustainability Index (DJSI) as "better than the average" in terms of the semiconductor industry's performance in emerging markets. UMC's corporate governance evaluations conducted by the Taiwan Stock Exchange garnered the honor of being in the top 5% for four consecutive years; our efforts are recognized both in Taiwan and around the world.

In terms of environmental sustainability, we consider the issues of climate change, water and energy resources management as corporate challenges and opportunities and integrate them closely with operational development. In 2017, we successfully reached the second-year goal of the "Green 2020" plan for saving electricity and water as well as reducing waste. For its efforts, the company received for the 15th consecutive year the "Enterprise Environmental Protection Award," the highest recognition given by the country in the field of environmental protection. At the same time, the company was also given "Leadership Level" designation both for international CDP climate change and water disclosure. These commendable achievements demonstrate UMC's long-term active efforts in environmental protection. We have also served as an outstanding model for a variety of different sectors.

In the area of social value creation and participation, UMC has invited supply partners to carry out Reuse, Recycle and Reduce (waste, energy and resource reduction) through the environmental 3R League initiative. Furthermore, we advocate for the realization of a circular economy and the upgrading of the value green supply chain. In addition, we have fully embraced the spirit of "Global Partnership" of the United Nations Sustainable Development Goals and have called for companies with similar ideas to participate in the Green Eco Echo Award and Energy Saving Service Team, bringing together people and talent. The Green Eco Echo Award promoted by UMC in 2016 has gradually expanded and gained momentum. Not only has the cash prize doubled, enabling more outstanding ecological conservation plans to be realized, but it has also raised public awareness towards environmental sustainability. Furthermore, the services done by the Energy Saving Service Team have encompassed the whole of Taiwan. We take our expertise in energy conservation and carbon reduction deeper into communities, creating environments that address both environmental protection and personal comfort for disadvantaged groups and the social workers who serve them. By raising the quality of care, UMC believes that this is the most direct and most effective testimony of social participation.

Looking forward, UMC will continue strengthening its advantages, using its core competencies to realize the UN's sustainable development goals, promoting sustainable cooperation and consolidating capabilities to exert a strong positive influence to make a world a better place.



Co-President and CS Committee Chairman

Sun-Chieh Chen

About This Report

This report is the 13th Corporate Social Responsibility Report issued by UMC and the 18th consecutive public non-financial annual report. UMC consistently upholds the principles of sincerity, pragmatism, transparency and joint sustainable development, and discloses its corporate sustainability philosophy and approaches to the general public. This report makes public the implementation of the 2017 UMC corporate sustainable development and social responsibility.

Scope

Information disclosed in this CSR Report includes various performance metrics and data of environmental protection, corporate governance, and community participation work carried out by UMC from January 1 to December 31, 2017. For the disclosure of major activities, the period was further extended to March 31, 2018. In addition to information about UMC Headquarters and wafer fabs in Taiwan and Singapore, this CSR Report also included information from HeJian Technology Company (HJTC) and United Semiconductor Company (USC), which are UMC subsidiaries relevant to the key material topics. For other information of affiliated joint ventures and subsidiaries, please refer to Page 147 in this Report.

Reporting Guidelines and Principles

The content framework in this report is based mainly on major UMC corporate sustainability issues in 2017 and stakeholder concerns, to report on impacts related to specific economic, social, and environmental topics. In addition, this report is compiled according to the GRI standards of the Global Reporting Initiative (GRI) for global sustainability reports, and complies with the AA1000 standards and principles for identifying, implementing and disclosing information pertaining to the implementation of corporate social responsibility. Data from the annual financial report prepared by certified accountants (Ernst & Young Accounting) are used in this report, and data on greenhouse gas emission and reduction are based on ISO 14064-1 standards and verified by DNV GL Business Assurance Co. Ltd. Taiwan. For further details, please refer to Chapter 3.

Internal Management Process and Issuing of this Report

After being approved by the top management of each department, this report is sent to the Corporate Sustainability Committee for inspection and review. The report is issued after being approved by the chairman of the committee.



2017 Corporate Social Responsibility Report: Issued in June 2018.

2018 Corporate Social Responsibility Report: Scheduled to be issued in June 2019.

In support of environmental protection, a paperless, electronic version of this report is posted on the company website.

Report Assurance

This report was verified by SGS Taiwan Ltd. in March 2018 according to GRI Sustainability Reporting Standards Comprehensive option and the Accountability 1000 Assurance Standard TYPE II. The SGS verification report is attached in the appendix of this report.

Your Feedback

For any questions or comment about the report content or activity, please contact us at:

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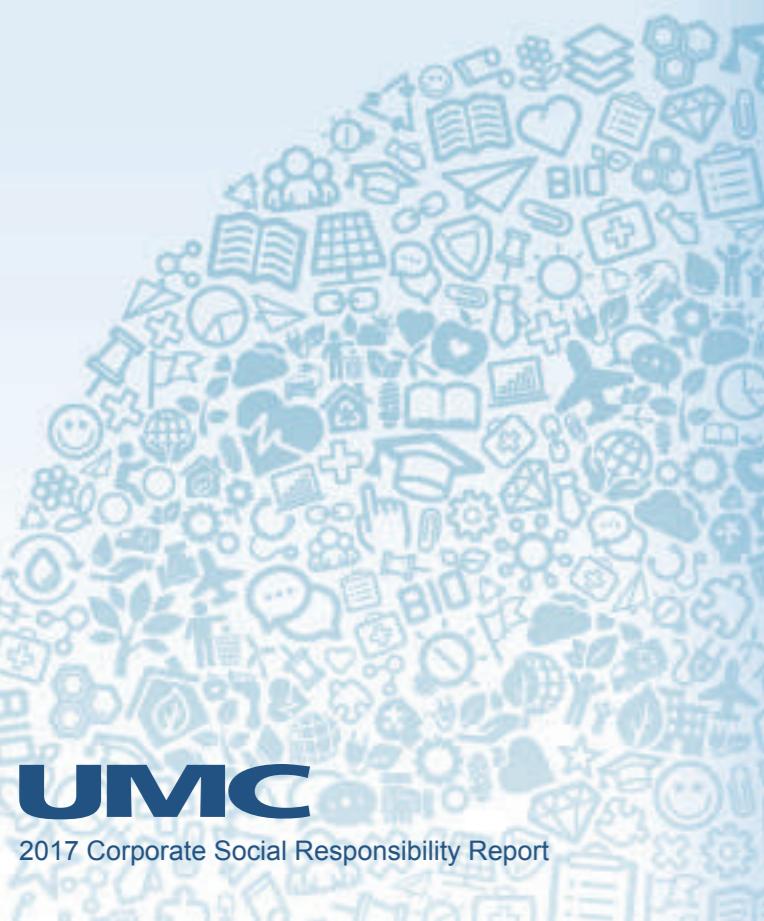
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Important Achievements and Sustainable Performance in 2017

Important Results

- UMC led Taiwan's semiconductor industry by setting up a nominating Committee
- UMC led semiconductor foundry companies in completing an alternative PFOA-related program
- We were the first to create a green public welfare award to propose value chain cooperation
- UMC Obtains LEED Gold Certification for Fab 12X
- UMC Fab 8S received Green Factory Label certification from the Ministry of Economic Affairs' Industrial Development Bureau
- UMC Announces Availability of 40nm SST Embedded Flash Process
- Cypress Achieves Aerospace-Grade QML Certification for its 65nm and 40nm SRAM Devices at UMC
- 14nm customer wafers went into mass production

Positive Acclaim for Our Corporate Sustainability

Dow Jones Sustainability Indices	National Sustainable Development Award	International CDP Organization
Selected as a DJSI global component for the 10th consecutive year. DJSI awarded UMC with the industry's highest scores for "Environmental Dimension"	Awarded the National Sustainable Development Award by the National Council for Sustainable Development, Executive Yuan (the first company awarded three times)	Climate Change Score Level : Achieved Leadership Level Score of A- Water Score Level : Achieved Leadership Level Score of A- The carbon disclosure performance of the supply chain was awarded the highest distinction as Supplier Engagement Leader.
Taiwan Corporate Sustainability Awards	CommonWealth Magazine Corporate Citizenship Award	CSR Award from Global Views Monthly
Awarded the Corporate Sustainability Report Awards for 10 consecutive years.	Won 4th place in the 2017 CommonWealth Magazine Corporate Citizenship Award (Top 10 in the last 6 consecutive years).	For 15 consecutive years, UMC's Taiwan fab was awarded the Enterprises Environmental Protection Award by the Environmental Protection Administration.
Corporate Governance Accreditation for listed companies	Enterprises Environmental Protection Award	National Water Efficiency Award
Top 5% for 4 consecutive years, Corporate Governance Assessment Award of the TWSE.	UMC received the '2017 Global Views Magazine CSR Award' - Electronic Technology Group Model award and first prize for the Outstanding Project Happy Enterprise Group.	UMC Fab 12i Wins Singapore's National Water Efficiency Award

2017 Sustainability Performance

Economic Performance

94.4% production capacity utilization
Annual growth rate of 5.8%
NT\$149.285 billion
Annual consolidated revenue reached a record high
10.8% Annual increase in product manufacturing volume
Annual product manufacturing volume of approximately 6,837,000 in term of 8" wafer, with an annual increase rate of 10.8%.
18.1% Gross margin
12,568 patents
In 2017, UMC was awarded 605 domestic and foreign patents, totaling 12,568 patents to date.
45.4% high-end production process capacity
High-end production process products of below 40nm (inclusive) accounted to 45.4% of revenue.
50% reduction in power consumption
We achieved a milestone in 14nm FinFET mass production; the process is 55% faster and consumes approximately 50% less power than 28nm.
42 Billion of investment in advance technology R&D and manufacturing equipment
Approximately NT\$ 42 Billion was invested in advance technology R&D and manufacturing equipment.
1 st ISO 22301 Certification
First wafer foundry in Taiwan to pass ISO 22301 operation sustainability management certification for supplying car-use chips.
3,000 suppliers
More than 3000 suppliers joined UMC in committing to sustainable development.
86.9% Customer satisfactory rate
Satisfaction improves steadily year by year.
0 High-risk Suppliers
UMC has established the ISO 22301 business continuity management system, and completed business continuity risk assessment for vendors who supply 95% of the company's procurement.
0 Conflict Minerals
UMC's 22 suppliers and 16 affiliated companies use nonconflict minerals.

Environmental Performance

54,248 Mwh Power reduction
The newly added reduction for 2017 was 54,248Mwh, which is equivalent to a decrease of 28,697 tons in CO ₂ emissions and a savings of about NT\$ 125 million.
7,552 Mwh Natural gas reduction
The newly added reduction for 2017 was 7,552Mwh, reaching the targeted goal, which is equivalent to a decrease of 1,525 tons in CO ₂ emissions and a savings of about NT\$ 8,130,000.
47.6% Reduction in Units of Fluorinated Greenhouse Gas Emissions.
Achieved the objective for reducing emissions by 47.6%. Reductions in fluorinated greenhouse gas emissions were equivalent to 1,213,000 tons of CO ₂ e. Gas replacement measures also achieved savings in raw material procurements of over NT\$ 20 million.
505,000 tons of reduction in water usage
The newly added reduction for 2017 was 505,000 tons, reaching the targeted goal, which is equivalent to a savings of about NT\$ 12,620,000.
32.09 Million Tons of Recovered Water
Recovered water is equivalent to saving 1.02 of the stored water in No.2 Baoshan Reservoir.
28% or more in ammonia and nitrogen concentration reduction for wastewater
Owing to ammonia source reduction, ammonia and nitrogen concentration in wastewater was reduced by 28%-63%, which saved annual raw material cost of NT\$ 48 million and annual wastewater treatment cost of approximately NT\$ 180 million.
3,183 Tons of waste reduction
The newly added reduction for 2017 was 3,183 tons, reaching the targeted goal, which is equivalent to a savings of about NT\$ 15 million in annual treatment cost.
90% Waste Recycling
The amount of reused waste was 35,998 metric tons, which is a gain of more than NT\$30 million from recycled resources.
100% Certification
All UMC fabs have passed the ISO 14064-1 greenhouse gas emissions certification, the ISO 14001 environmental management certification, and the QC 08000 Hazardous Substance Process Management Certification. All fab sites in Taiwan received the "Clean manufacturing assessment system certification" of Industrial Development Bureau, Ministry of Economic Affairs.
0 Environmental Incidents or Fines
In 2017 there were no environmental incidents or fines.
2 million prize money in UMC Eco Echo Award
UMC invested NT\$ 2 million in rewarding annual excellent eco preservation innovative proposals.

Words from Co-President and CS Committee Chairman

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2017 Sustainability Performance

Social Performance

	93.9% overall satisfaction with the courses.
In 2017, a total of 9,625 courses were held that were attended by a total of 260,802 individuals. Overall satisfaction for these training courses was 93.9%, while satisfaction for the lecturer and teaching materials attained 93.4% and 93.7% respectively.	
	91.9% completion for training courses on The 7 Habits of Highly Effective Managers and Employees
To achieve company core values and attain the spirit and principle of responsibility, 91.9% of employees completed training courses on The 7 Habits of Highly Effective Managers and Employees.	
	100% Holistic Health Management Program.
Created a safe working environment, and protected health and work-life balance of employees. All factory sites in Taiwan received the "Self-Certification Health Promotion Badge" from Bureau of Health Promotion, Department of Health, Executive Yuan.	
	95% satisfaction with health promotion activities
On the average, 95% satisfaction with health promotion activities such as health seminars, relaxation series and health check activities.	
	9,230 - total number of volunteers hours
26,443 - number of beneficiaries	
In 2017, UMC invested a total of 9,230 hours in terms of volunteer work, with more than 26,443 beneficiaries.	
	100% communication meetings were completed
By the end of 2017, a total of 146 sessions of company-wide forums, fab communication meetings, secretary forums, newcomers' forum, labor-management conferences, and benefits committee meetings were conducted.	
	0 labor dispute
Actively promoted harmonious labor relations to reduce the likelihood of labor conflict. In 2017, there was no case of labor dispute.	
	100% of eSuggestions were handled and closed
Through the audit and reminder system, 100% of cases were closed in 2017.	
	86.2% employee satisfaction
In 2017, the overall employee level of satisfaction towards education and training, work environment, salary and benefits, employee performance, communication mechanisms, career development, administrative services, and so on, reached 86.2%.	
	<5 on the annual EICC labor / ethics risk index
In 2017, the EICC labor /ethics risk index was less than 5.	
	0 cases of human rights complaints
	0 major occupational hazard
	30% reduction in workplace accidents
8 less accidents compared to the reference basis (the year of 2011) and achieved a savings of NT\$ 1.54 million in potential asset loss. In 2017, the disabling injury frequency rate was 0.30, and disabling severity rate was 7, which were much lower than the semiconductor industry average.	

About UMC

Company Profile

United Microelectronics (UMC) is a world leading semiconductor foundry. The company leverages its manufacturing excellence and extensive technology portfolios to produce IC wafers for every major electronics sector. UMC offers comprehensive solutions that give IC design companies a competitive edge through advanced processes and a wide range of specialty technologies, helping customers differentiate their products in the competitive IC market.

Company Name

UMC United Microelectronics Corp.

Date Founded

May 1980

Company Headquarter

No. 3, LiHsin2nd Road, Hsinchu Science Park

Firm Taiwan Roots, Global Presence

UMC plays an important role in Taiwan's semiconductor industry. In addition to being Taiwan's first wafer fabrication company, it is also Taiwan's first listed semiconductor corporation. To meet the needs of customers worldwide, UMC has established service locations in Taiwan, Japan, China, Singapore, South Korea, Europe and the United States. UMC will continue to strive to provide its customers with world leading process technologies and a full range of professional foundry solutions so that they may continue to build a competitive advantage in today's rapidly changing industry.



UMC has several operational IC manufacturing fabs. For 12-inch IC manufacturing, the fabs include Fab 12A in Taiwan, Fab 12i in Singapore and Fab 12X in Xiamen, which belongs to United Semiconductor (Xiamen) Co.,Ltd., a subsidiary of UMC. In addition, HeJian Technology (Suzhou) Co., Ltd., a subsidiary of UMC, owns Fab 8N which is an 8-inch IC fab.

The manufacturing base of Fab 12A spans from phase one to phase six. Currently, Fab 12A is responsible for manufacturing customer products that involve the most advanced 28nm and below processes. Fab 12i is UMC's special technology center. With its specialty 12-inch manufacturing processes, it produces ICs that are essential for a wide variety of application products demanded by customers. Fab 12X of United SemiconductorCo., Ltd. is the first 12-inch IC manufacturing fab in Southern China, which began its commercial operation in late 2016. Fab 12X offers an excellent diversity of manufacturing services for local and global IC design companies in the region. It also helps fulfill the IC tremendous manufacturing demand from electronic products in China.

Management Team

	Chairman Stan Hung
	President SC Chien
	President Jason Wang

Participation in Outside Associations

Besides promoting corporate sustainability related activities within the organization, UMC also actively participates in events that are initiated by outside organizations such as industrial unions and associations. It is hoped that by offering practical experiences and suggestions to the industry, UMC could help government and related authorities to come up with appropriate policies and regulations.

Key UMC Association Involvement

Association of Industries in Science Parks (ASIP)	Taiwan Semiconductor Industry Association (TSIA)	Taiwan IC Industry & Academia Research Alliance(TIARA)
Member fees paid in 2017 (NTD) 1,026,000	Member fees paid in 2017 (NTD) 900,000	Member fees paid in 2017 (NTD) 100,000
Business Council for Sustainable Development of Taiwan (BCSD-Taiwan)	Taiwan Electrical and Electronic Manufacturers' Association (TEEMA)	Chinese Professional Management Association (CPMA)
Member fees paid in 2017 (NTD) 60,000	Member fees paid in 2017 (NTD) 42,000	Member fees paid in 2017 (NTD) 20,000

Member Participation in Project or Committee

The cost of UMC participating in important associations in the past:

2017	NT\$ 2,148,000	2016	NT\$ 2,729,000
2015	NT\$ 2,048,000	2014	NT\$ 2,204,000

Words from Co-President and CS Committee Chairman

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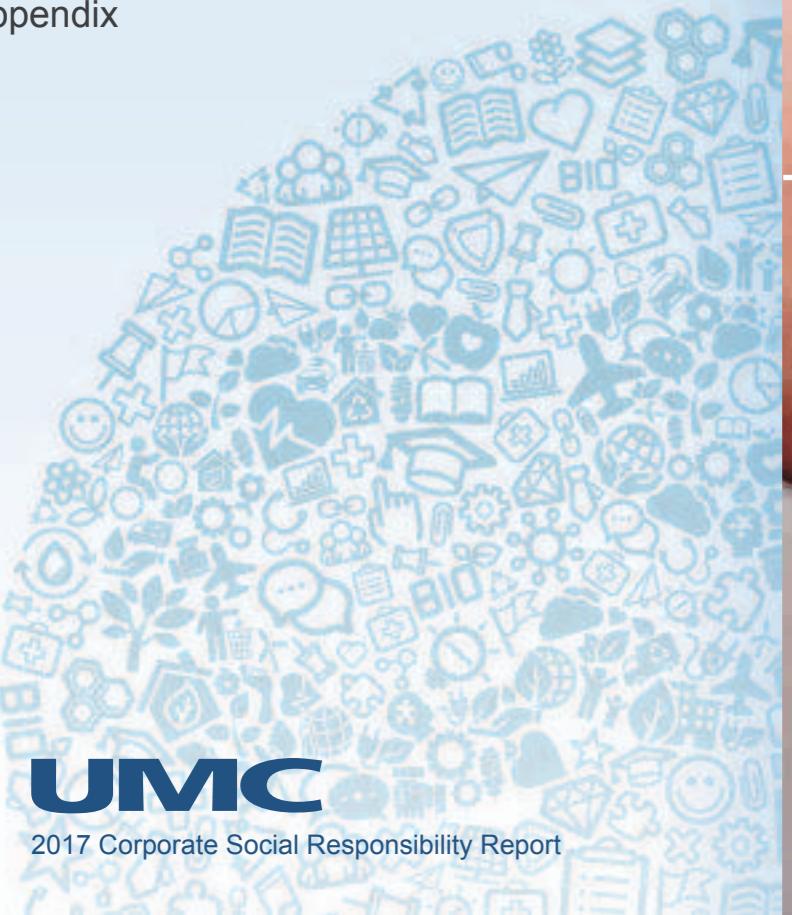
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Appendix



1st

1st Nominating committee

UMC led Taiwan's semiconductor industry by setting up a nominating committee.

36 items

36 KPI items

The corporate sustainability committee proposed a total of 36 KPI items. All 36 items were implemented and completed by each and every department within UMC, achieving a completion rate of 100%.

7 types

7 types of stakeholders

The UMC referenced the nature of its businesses as well as the 5 key principles of AA1000 SES-2011 Stakeholder Engagement Standard (SES) to identify a total of 7 types of stakeholders.

42 categories

42 categories of sustainability topics

Members of the Corporate Sustainability Committee Report Group compile and analyze topics.

479 copies

479 copies of questionnaires

Conduct questionnaire surveys to determine the degree of stakeholder concern over the various types of sustainability issues so that stakeholders can express their needs in terms of sustainable information.

17 material topics

Multiply the score for degree of stakeholder concern over each topic and the score for its significant economic, environmental, and social impacts. Rank 17 topics for disclosure.

Words from Co-President and CS Committee Chairman

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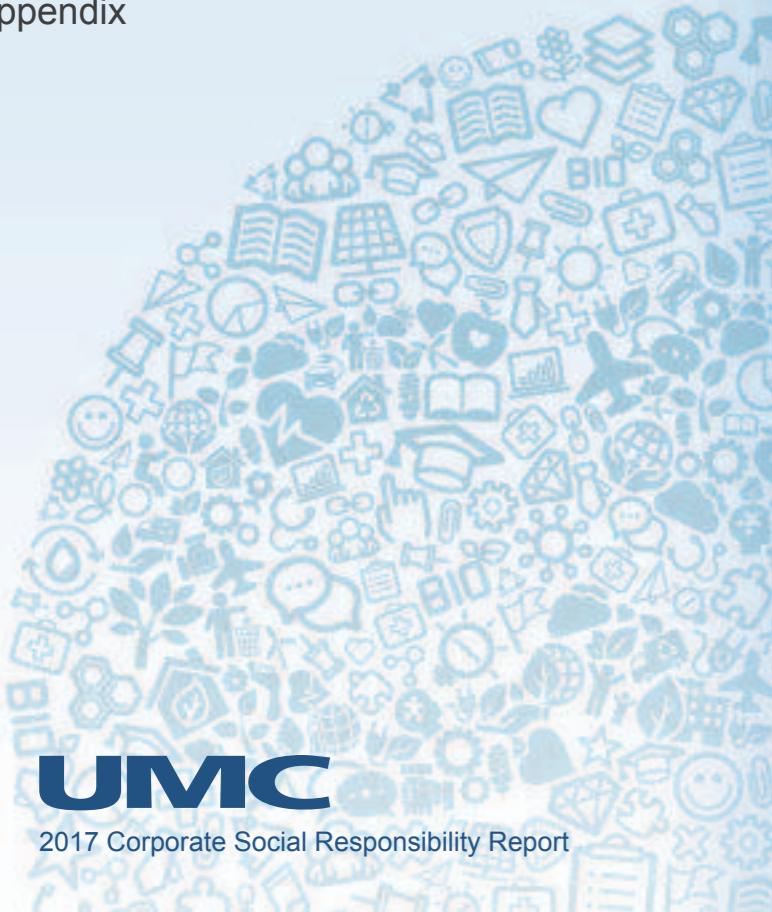
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1-1 Sustainable Development Strategy and Organization

1-1-1 Commitment to Sustainability

UMC is committed to the philosophy of "employee care, environmental focus and public service," and furthering sustainable development, corporate social responsibility and guiding society towards a positive cycle. UMC sustainable development is built on the vision of "creating a friendly global ecology where the new value is people orientation, co-existence with the environment and shared social prosperity." "Customers, shareholders, employees, the environment and society" are the primary focus of the joint pursuit of sustainable growth.

Vision

Creating a friendly global ecology where the new value is people orientation, co-existence with the environment and shared social prosperity.

Mission

Company growth is built on green innovation and corporate social responsibility, and helping customers meet the challenge of sustainable development.

Corporate Social Responsibility Principles

UMC has stipulated its Corporate Social Responsibility Principles as a reference and guiding rule for fulfilling corporate social responsibility (CSR), improving the economy, environment, and society, and achieving the goals of sustainable development.

The Corporate Sustainability Committee of UMC shall constantly review the development of relevant CSR guidelines and codes in Taiwan and other countries as well as changes to the business environment in order to review and improve upon the CSR system established in UMC and improve the performance of CSR activities.



Equal Emphasis on Core Competitiveness and Social Responsibility

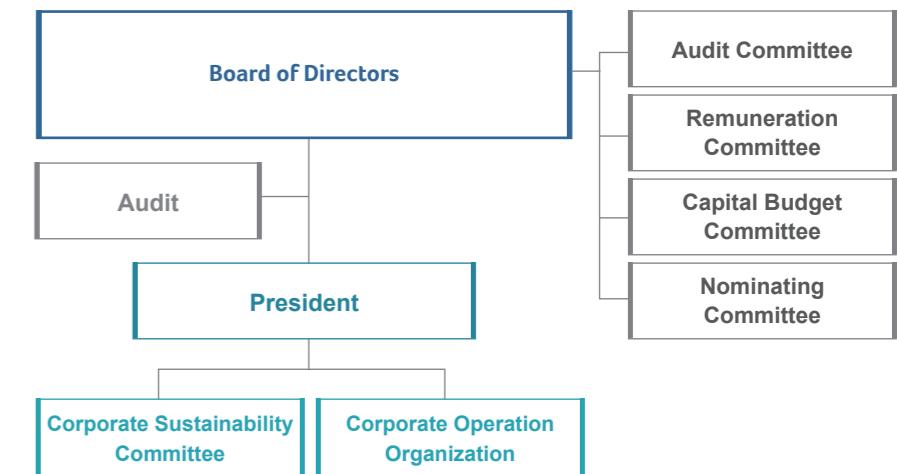
Based on the four competitive advantages of "Independent R&D capability," "Excellent manufacturing capability," "Capable employees" and "Sound financial structure," as well as the five business cultures of "customer orientation," "integrity," "innovation," "accountability" and "efficiency" that have been deeply rooted in the company's operations, UMC is able to maintain its position as an industry leader. Combining its competitive advantages, UMC also defines its corporate social responsibility and the three major directions based on its business culture:



1-1-2 Corporate Sustainability Committee Organization and Operation

The structure of UMC's sustainable organization consists of the Board of Directors headed by the chairman. The Board directs the "Corporate Operations Organization" and "Corporate Sustainability (CS) Committee," both of which are headed by the Co-president and CS Committee Chairman. The execution of sustainable policies is carried out from the top-down, and an audit committee oversees the execution. The "Audit Committee," "Remuneration Committee," "Capital Budget Committee" and "Nominating Committee" enhance the capabilities of the board and strengthen corporate governance. "Corporate Operations Organization" and "Corporate Social Responsibility Committee" also set up sub-committees to meet their respective needs and to jointly execute and practice sustainable commitments.

Corporate Operations Organization vs. Corporate Sustainability Committee



The President is a member of the Board of Directors, and simultaneously serves as the Chair of the Corporate Sustainability Committee.

Corporate Sustainability Committee

The Corporate Sustainability Committee of UMC was established in 2008 and serves as the highest ranking CSR organization in the company. The Committee is responsible for stipulating the direction and goals of CSR and sustainable development. Every 6 months, the Director and member of the Committee shall review the performance and target achievements of sub-committees. The Committee shall also provide annual reports to the Board of Directors on the performance and plans of CSR activities. The Sustainability Office of the Corporate Sustainability Committee will report the yearly CSR promotion results and plans to the committee board. The scope of the report will include the management and review of material issues in the area of economics, environment and society.



High level executives such as the Chief Financial Officer and Chief Human Resource Officer form the core members of the committee. Vice Presidents, Assistant Vice Presidents and Senior Division Directors of the Operations Organization functional divisions serve as the administrators of the various committees.

Words from Co-President and CS Committee Chairman

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The Corporate Sustainability Committee has seven functional committees: Corporate Governance Committee, Customer Relationship Management Committee, Supplier Management Committee, Innovation Technology Committee, Human Rights and Social Participation Committee, Environmental Committee and Green Manufacturing Committee.

Descriptions of Committee Functions



Corporate Governance Committee

Help strengthen the function of the Board and shareholder equity, integrate related regulations and policies of relevant departments, and help complete and implement the company's internal control system to ensure information transparency and disclosure, and compliance with regulations. Fulfill the company's business philosophy of core integrity, information transparency, shareholder equity protection, and good internal business management.



Customer Relationship Management Committee

Refine customer service and quality control, improve service quality and customer satisfaction, and protect customer interests and relevant trade secrets.



Human Rights and Social Participation Committee

Responsible for protecting the basic rights of employees and promoting communication with outside communities and society. Integrate the UMC Cultural and Educational Foundation, and with focus on education, arts, sports, public service and environmental protection, strive to promote technological research and development cooperation, long-term educational assistance, arts and sports activities and other social welfare events.



Innovation Technology Committee

Promote green product research and development and innovations, and lead in cutting-edge green technology.



Supplier Management Committee

To establish a protective environment and emphasize the obligation to society, labor rights, security and health while pursuing the goal of a continuously evolving supply chain, this sub-committee develops long-term partnerships with vendors for quality, cost leadership, delivery, service/response, and sustainability.



Environmental Committee

Promote company-wide environmental, safety and health, energy, water and greenhouse gas emission management. Establish sustainable supply chains and long-term partnerships with suppliers to enhance sustainable competitiveness.



Green Manufacturing Committee

Promote company-wide green processes, such as hazardous materials management and increases in resource productivity.

To maintain and effectively implement UMC's corporate sustainability promises, UMC's corporate sustainability committee will adjust the organizational structure in accordance with actual operating results.

Operation Management Model



Depending on the communication results with stakeholders and other critical considerations, each functional committee will submit an annual promotion plan to the corporate sustainability committee every year for review and approval.



Functional committees follow up and assess the progress of their respective annual plan during quarterly meetings.



The Corporate Sustainability Committee follows up and reviews implementation performance every six months.

Corporate Sustainability Committee Management Mechanisms

Monthly	Quarterly	Once every 6 months
Key Corporate Sustainability Projects	Functional Committees	Corporate Sustainability Committee
Management Content • Follow up and review base on company project management system • Follow up progress, and present results to the Corporate Sustainability Committee for review	Management Content • Develop key performance indicators (KPI) to quantify the execution of management performance • Implementation programs • Follow up implementation progress	Management Content • Committee reviews • Operational progress of various functional committees • Review and approve goals and plans, review executive performance
Participant Functional committee administrators, Members	Participant Chief administrator, Functional committee administrators, Members	Participant Committee chair, Committee members, Chief administrator, Functional committees administrators

• In 2017, the corporate sustainability committee proposed a total of 36 KPI items.

The corporate sustainability committee proposed a total of **36** KPI items. All 36 items were implemented and completed by each and every department within UMC, achieving a completion rate of **100%**.

• For 2018

46 KPI items in 5 categories were proposed by the corporate sustainability committee based on UMC's operational goals and **11** of United Nation's Sustainability Development Goals (**UN SDGs**).

UMC's Operational Goals

- Focus on differentiating advanced manufacturing and development of specialty technology to help customers succeed.
- Continue to strengthen manufacturing capabilities, shorten lead-time, and improve overall quality and productivity.
- Expand marketing and customer management to maintain the company's leadership in foundry.
- Motivate employee potential and responsibility, integrate the organization's operational efficiency, and increase competitiveness in sustainable management.

Direction

- | | |
|--|--------------------------------------|
| • International trend/assessment integration | • Strengthen employee's CS cognition |
| • Ensure completion of Green2020 Plan | • Cultivate volunteer work culture |
| • Strengthen the connection with subsidiary/supply chain/customers in terms of CS issues | |

The Main Projects

3 GOOD HEALTH AND WELL-BEING 	GOOD HEALTH AND WELL-BEING Health and Safety Workplace	4 QUALITY EDUCATION 	QUALITY EDUCATION • Environmental Education and Green Concept Promotion • Talent training • Campus talent cultivation	5 GENDER EQUALITY 	GENDER EQUALITY Ensure labor rights
6 CLEAN WATER AND SANITATION 	CLEAN WATER AND SANITATION • Water resources management • Process water saving • Water pollution prevention and improvement	7 AFFORDABLE AND CLEAN ENERGY 	AFFORDABLE AND CLEAN ENERGY • Green energy • Energy resource productivity improvement plan	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 	INDUSTRY, INNOVATION AND INFRASTRUCTURE Advanced technologies research and development
10 REDUCED INEQUALITIES 	REDUCED INEQUALITIES • Promotion of UMC volunteer culture • Ensure labor rights	11 GLOBAL PARTNERSHIP 	GLOBAL PARTNERSHIP • Community service participation • Spreading the Seeds of Hope plan • Energy saving service team	12 RESPONSIBLE CONSUMPTION AND PRODUCTION 	RESPONSIBLE CONSUMPTION AND PRODUCTION • Clean production promotion • Green product • Waste management
13 CLIMATE ACTION 	CLIMATE ACTION • Greenhouse gas reduction and energy saving • Green factories and buildings	17 GLOBAL PARTNERSHIP 	GLOBAL PARTNERSHIP • UMC 3R League: reduce, reuse, recycle • Circular economy collaboration program • UMC EcoEcho award		

Words from Co-President and CS Committee Chairman

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1-2 Communication with Stakeholders

To maintain effective stakeholder communication, UMC formulated a management system for the identification of and communication with various stakeholders. This report and the UMC official website were used as a means of disclosing important information.

Principles for Communication with Stakeholders

- Active and timely disclosure
- Providing adequate amounts of information
- Providing suitable and a diverse selection of communication channels

Objectives

- Evaluate and understand the reasonable expectations and requirements of the stakeholders and providing appropriate response to key corporate social responsibility (CSR) topics that the said stakeholders are concerned with.
- Consider all related CSR topics and analyze the potential impact that each topic may exert upon the environment, society, economy, and business operations.
- Employ a system-based mechanism to continuously review and enhance corporate sustainability.

1-2-1 Mechanisms for Stakeholder Communication

Identified major stakeholders, topics and concerns

Frequency : Annually

Integrated and coordinated by the Corporate Sustainability Committee.

Stakeholders communication plan and implementation

Frequency : According to plan

- Consultation and communication channels with stakeholders are established by respective sub-committees.
- Designated personnel to receive, record and reply to messages from stakeholders and to come up with appropriate responding measures.

Assessment of stakeholder communication outcome

Frequency : Bi-annually

Stakeholder communication outcome reported, and key topics reviewed and responded to the Corporate Sustainability Committee.

Public disclosure

Frequency : Annually

Annual financial reports, corporate social responsibility report, etc.

- Press Releases
 - UMC official website
- (The Stakeholder Area was established for stakeholder inquiry)
http://www.umc.com/English/CSR/c_2.asp

1-2-2 Procedure for Defining Report Content

Identify Stakeholders

The UMC referenced the nature of its businesses as well as the 5 key principles of AA1000 SES-2011 Stakeholder Engagement Standard (SES) to identify a total of 7 types of stakeholders.

5 Key Principles of AA1000 SES

Dependency, Responsibility, Influence, Diverse perspective, Tension



Topics Identification, Communication and Review



Collect sustainability topics

Adopt the GRI sustainability reporting standards, ISO 26000 social responsibility standard guidelines, UN Global Compact and domestic and international sustainability assessments as basis for topics.

74 sustainability topics



Compile sustainability topics

Members of the Corporate Sustainability Committee Report Group compile and analyze topics.

42 categories of sustainability topics



Survey stakeholders concerns

Conduct questionnaire surveys to determine the degree of stakeholder concern over the various types of sustainability topics so that stakeholders can express their needs in terms of sustainable IT.

479 copies of questionnaires



Analyze impact of topics on company operations

The Sustainability Report Group analyzes the impact of topics on company operations sustainability, and screens for materiality topics.

22 UMC report task group members



Rank materiality topics

Multiply the score for degree of stakeholder concern over each topic and the score for its significant economic, environmental, and social impacts. Rank topics for disclosure.

17 material topics, **3** major material topics

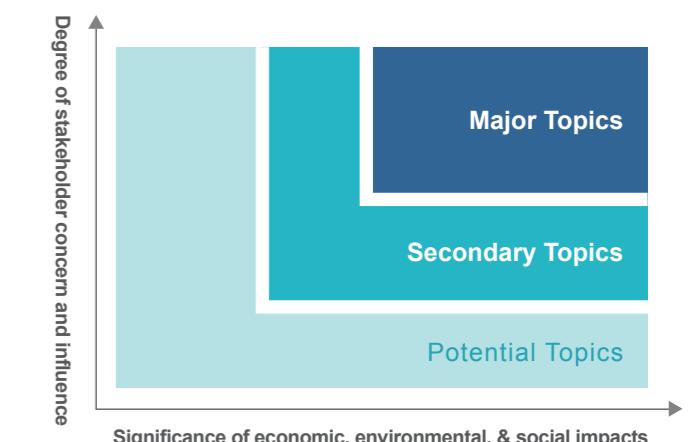


Discussion and review

1. Following materiality analysis, the company discusses and decides on the disclosure ranking of sustainability topics.
2. The Sustainability Committee shall conduct management review for material topics related to the economy, environment, and society.

17 material topics, **3** major material topics

Ranking the materiality analysis result of sustainability topics



Secondary Topics	Major Topics
Compensation and Benefits	Sustainable Development Strategy
Human Rights	Compliance with Regulations
Customer Service	Occupational Health and Safety
Environmental Management	Economic Performance
Stakeholder Communication	Waste
Market Image	Innovation Management
Risk Management	Waste Water Discharge/Water Resource Use
Employee Communication	Employee Greenhouse Gas Emissions/Energy Use
Waste Gas Emission	Corporate Governance
Complaint Mechanism	Training and Education
Labor Relations	Employer-Employee Relations
Chemical Use	Anti-corruption
Product Management	Supplier Assessment
Social Welfare	Procurement Practices
Ecological Conservation	Ethics and Integrity
	Customer Privacy

Note1 : Stakeholders scored differently in their degree of concern and influence for each topic
(10 points = very concerned, 8 points=concerned, 6 points =somewhat concerned, 4 points=little concerned, 2 points=not concerned)

Note2 : UMC Sustainability Report Group member score for impact of each topic on economic, environmental, & social impacts(5 points=highly impacted, 4 points= impacted, 3 points=moderately impacted, 2 points=not very impacted, 1 point=not impacted)

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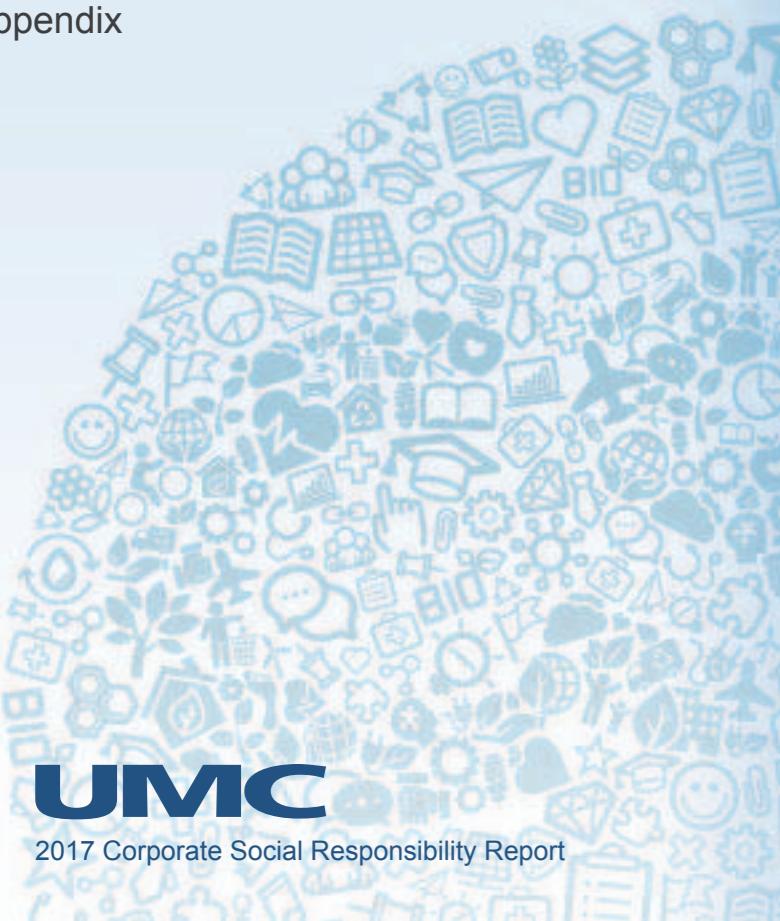
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Major Topic Identification and Management Disclosure

In 2017, a total of 17 major topics were identified in contrast with the GRI topic category and one UMC self-defining topic. For each sustainability topic, the respective management policies, goals and their current state of practices are disclosed in the relevant sections of this report in accordance with the requirements of the GRI Guidelines.

Of these, 'Sustainable Development Strategy' and 'Regulatory Compliance' have been the topics of greatest concern, followed by the topics of 'Occupational Health and Safety,' 'Waste Disposal,' 'Wastewater Discharge/Water Resources Use,' 'Risk Management,' and 'Greenhouse Gases/ Energy Usage,' which have continued to rise for two consecutive years.

1.Sustainable Development Strategy GRI Topic Category : 102: General Disclosures Direction of Response and Management Approach : Fulfill CSR and achieve improvements to the economy, environment, and society.	CH1 Corporate SustainableDevelopment Increase
2.Compliance with Regulations GRI Topic Category : 307 Environmental Compliance 419 Socioeconomic Compliance Direction of Response and Management Approach : Comply with various statutory regulations and make compliance as an integral part of routine management processes.	2-1-6 Legal Compliance Decrease
3.Occupational Health and Safety GRI Topic Category : 403 Occupational Health and Safety Direction of Response and Management Approach : Safeguard employees' physical and mental health with special focus on work environment safety and work-life balance.	4-3 Health and Safety Workplace Increase
4.Economic Performance GRI Topic Category : 201 Economic Performance Direction of Response and Management Approach : Continue to commit towards the development of advanced technologies to improve competitiveness of UMC.	2-2-2 Business performance Sustain
5.Waste GRI Topic Category : 306 Effluents and Waste Direction of Response and Management Approach : The strategies of total waste reduction and waste reutilization were considered. By implementing source management measures such as process improvement and raw material reduction, the generation of waste were minimized to achieve waste reduction.	3-4 Waste Management Increase
6.Innovation Management GRI Topic Category : UMC self-defining topic Direction of Response and Management Approach : Provide specialized solutions for wafer foundry technologies that fulfill market trends and customer requirements.	2-2 Innovation Management Decrease
7.Waste Water Discharge/Water Resource Use GRI Topic Category : 303 Water/306 Effluents and Waste Direction of Response and Management Approach : Maximize water use efficiency and improve the water risk handling capacity of upstream and downstream industries in the supply chain, and encourage efforts and savings in water resource utilization.	3-3 Water risk management Increase
8.Risk Management GRI Topic Category : 102: General Disclosures Direction of Response and Management Approach : Sustainability business operation was taken as the ultimate management direction for the corporation. Sound risk management and appropriate risk handling plans were implemented to come up with the right emergency responding measures and crisis prevention drills.	2-4 Risk and Crisis Management Increase
9.Greenhouse Gas Emissions/Energy Use GRI Topic Category : 302 Energy/305 Emissions Direction of Response and Management Approach : Maximize energy efficiency, adopt green building and development of renewable energy.	3-2 Carbon Asset Management Increase
10.Corporate Governance GRI Topic Category : 102: General Disclosures Direction of Response and Management Approach : Establish an effective corporate governance framework, safeguard the interests of the shareholders, strengthen the functions of the board of directors, and improve information transparency.	2-1 Corporate Governance Decrease
11.Training and Education GRI Topic Category : 404 Training and Education Direction of Response and Management Approach : Formulation of a complete education and training system and organization providing comprehensive and diverse learning environments.	4-2-3 Education and Training Increase
12.Employer-Employee Relations GRI Topic Category : 401 Employment Direction of Response and Management Approach : We consider our employees to be our most important partners, ensure that their employment and labor rights are safeguarded, and we are committed to creating harmonious and jointly shared operational benefits.	4-2 Recruitment and Cultivation Increase
13.Anti-corruption GRI Topic Category : 205 Anti-corruption Direction of Response and Management Approach : Effectively managing relevant operational conduct and ensuring that it is in compliance with our business, marketing, and honest management principles prevents the occurrence of any incidence of corruption.	2-1-5 Code of Ethics and Anti-Corruption Increase
14.Supplier Assessment GRI Topic Category : 308 Supplier Environmental Assessment 414 Supplier Social Assessment Direction of Response and Management Approach : Establish a supply chain that protects the environment, places emphasis on social responsibility, human rights, safety, health, and sustainable development, and builds long-term partnerships with our suppliers.	2-5 Sustainable Supply Chain Management Increase
15.Procurement Practices GRI Topic Category : 204 Procurement Practices Direction of Response and Management Approach : Establish close relationships with our local partners, stimulating local socio-economic development, and reduce the environmental footprint of raw materials needed by manufacturing.	2-5 Sustainable Supply Chain Management Increase
16.Ethics and Integrity GRI Topic Category : 102: General Disclosures Direction of Response and Management Approach : Improve behavioral integrity and professionalism of every UMC employee.	2-1-5 Code of Ethics and Anti-Corruption Decrease
17.Customer Privacy GRI Topic Category : 418 Customer Privacy Direction of Response and Management Approach : Improve service quality and customer satisfaction; protecting customer assets.	2-3 Customer service Decrease

Difference Between the Years



Secondary Topic Identification and Management Disclosure

A total of 14 secondary topics were identified in 2017, which will be highlighted in this report with reference to the GRI topic category. No special response has been made to any remaining general topics.

Compensation and Benefits GRI topic category 202 Market Presence/ 401 Employment/ 405 Diversity and Equal Opportunity	Chapter in the 2017 CSR Report 4-2-1 Human Resource 4-2-2 Compensation and Benefits
Human Rights GRI topic category 406 Non-discrimination/407 Freedom of Association and Collective Bargaining/ 408 Child Labor/409 Forced or Compulsory Labor/412 Human Rights Assessment	Chapter in the 2017 CSR Report 4-1-1 Human Rights
Customer Service UMC self-defining topic	Chapter in the 2017 CSR Report 2-3 Customer Service
Environmental Management UMC self-defining topic	Chapter in the 2017 CSR Report 3-1 Clean Production
Stakeholder Communication GRI topic category 102: General Disclosures	Chapter in the 2017 CSR Report 1-2 Communication with Stakeholders
Market Image GRI topic category 202 Market Presence	Chapter in the 2017 CSR Report 4-2-1 Human Resource 4-2-2 Compensation and Benefits
Employee Communication UMC self-defining topic	Chapter in the 2017 CSR Report 4-1-2 Employer-employee Communication
Waste Gas Emission GRI topic category 305 Emissions	Chapter in the 2017 CSR Report 3-1-3 Air Pollution Control
Complaint Mechanism GRI topic category 102: General Disclosures	Chapter in the 2017 CSR Report 2-1-5 Code of Ethics and Anti-Corruption 4-1-2 Employer-employee Communication
Labor Relations GRI topic category 402 Labor/Management Relations	Chapter in the 2017 CSR Report 4-1 Labor Rights
Chemical Use UMC self-defining topic	Chapter in the 2017 CSR Report 3-5-1 Hazardous Substance Management
Product Management GRI topic category 301 Materials/302 Energy/416 Customer Health and Safety	Chapter in the 2017 CSR Report 2-1-6 Legal Compliance 3-5 Green Product
Social Welfare GRI topic category 413 Local Communities	Chapter in the 2017 CSR Report 3-1-4 Promoting the "Green" concept 4-4 Community Service
Ecological Conservation UMC self-defining topic	Chapter in the 2017 CSR Report 3-1-4 Promoting the "Green" concept

Management Review of Material Topics

In addition to disclosing the outcomes of the Phase 1 material topic identification process, UMC also implements a management review (Phase 2) conducted by the senior managerial staff to review material economic, environmental and social topics and to discuss and verify the value of the said topics in UMC or their potential impact on the company's financial performance.

Risk in corporate merger and acquisition

Important clients was acquired or merged by a competitor or a major client of a competitor, leading to a loss of purchase orders to the said competitor.

Strategy
Improving the proportion of orders with advanced processing that hard-to-transfer.

KPI
Weight of revenue for advanced processing.

Performance in 2017

The percentage of revenue from 40 nm and below wafers is 45.4%.



Greenhouse Gas Emissions and Energy Use

The government of Taiwan has announced the 2025 Nuclear Free Homeland and 2030 INDC reduction goal. In addition, the government also plans to implement regulations on the total volume of greenhouse gases.

Singapore government plans to collect carbon tax in 2019.
The emission of greenhouse gases in semiconductor industry is originated mainly from the use of electricity. Limiting the use of electricity not only will effect company's productivity and revenue, implementing control regulations will also increase the business operation cost.

Strategy
Actively promote energy reduction measures, such as the use of energy optimization processes, the implementation of green building construction and the introduction of renewable energies.
Implement reduction measures for greenhouse gases such as FCs, N₂O, etc.
KPI
369+ power and FCs reduction plan
Green 2020 power reduction plan

Performance in 2017

Annual added power reduced was by 54,248 Mwh, reaching the stage goal of Green2020.

FC emissions per wafer area was reduced by 47.6%, reaching the reduction goal set for 2020. Regulations on N₂O emission reduction was determined for equipment.



Occupational health and safety

Any occupational health and safety risks may lead to severe economic or social losses to the company, and lower the company's competitiveness.

Strategy
Establish a 10-year accident prevention management plan

KPI
Achieve a 67% reduction in the number of accidents from 2011 to 2020
Number of extremely severe disasters: 0

Performance in 2017

Number of extremely severe disasters: 0
Number of slight accidents: 19



Words from Co-President and CS Committee Chairman

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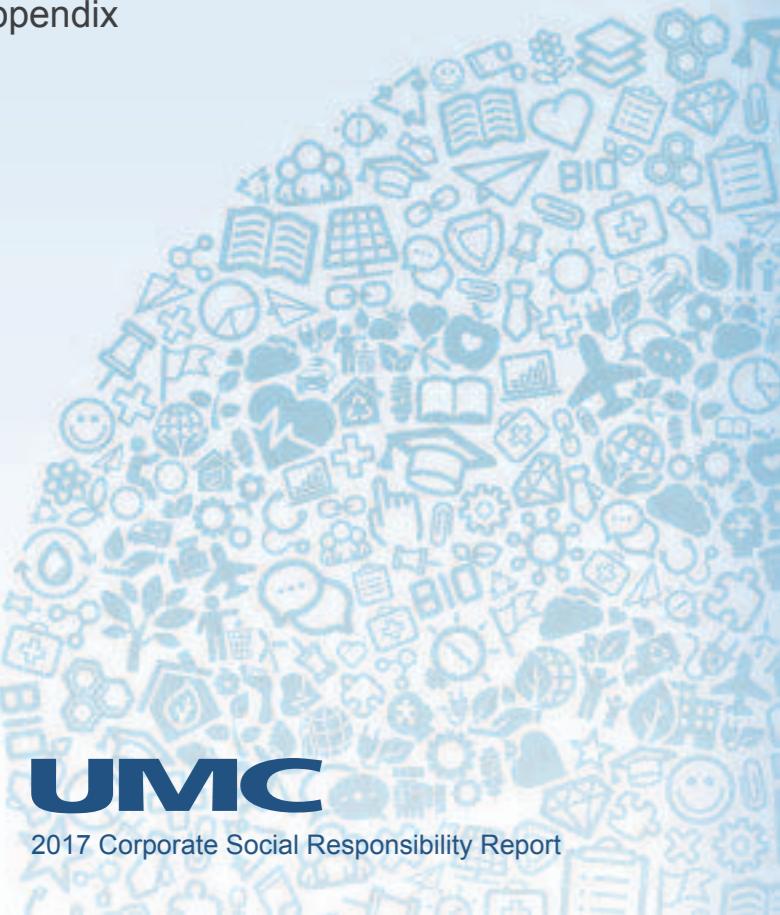
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Special Topics and Expectations

In addition, based on the outcome of the open survey questionnaires and this year's communication results (excluding the above mentioned topic), stakeholders believed that topics such as air pollution (PM2.5), circular economy and green low carbon application, corporate development and management deserve further discussion.



Air pollution (PM2.5) Topic

Current status

UMC currently uses only natural gas and low-sulfur diesel as fuel. High performance preventive treatment facilities were also deployed to treat waste gases that include acidic exhaust, basic exhaust, and volatile organic compounds (VOC) exhaust in order to reduce the amount of pollutants entering the atmosphere and ensure that the levels of pollutants in emitted gases are compliant to (or lower than) the limits imposed by the environment protection laws.

Responding measures

- The company-wide Safety Committee was charged with providing PM2.5 topic reports. Employees in various departments were also given reminders and instructions on how to protect their personal health.
- Employee's cognition on PM2.5 will be strengthened. Knowledge about PM2.5 will be incorporated into factory's environmental education program.
- In 2017, voluntary measurement on PM2.5 was taken in the demonstration factory. The result showed low PM2.5 concentration, implying no significant risk.



Circular Economy and Green Low Carbon Application Topic

Current status

"Zero Waste" is UMC's ultimate goal in waste management. In addition, waste total volume reduction and waste reutilization are the strategies taken by UMC. By implementing source management measures such as process improvement and raw material reduction, the amount of waste generated can be reduced, achieving the goal of waste volume reduction.

Responding measures

- A special project was established to promote a circular economy within the organization. The goal is to convert waste that costs money for treatment into products that can be sold for money.
- The UMC 3R League will be promoted to expand the collaboration with suppliers in terms of a circular economy.



Corporate Development and Management Topic

Current status

The global economy has continued to recover in 2017. However, it will still be impacted by the unresolved high debt and low inflation in major economies, as well as the high-profile US protectionist stance and the uncertainty of geopolitical black swan events.

Responding measures

- Commit to providing customers with a full range of wafer manufacturing solutions, working closely with partners throughout the supply chain, as well as continuing to enhance technology research and development and capacity expansion.
- Make full use of the company's manufacturing capabilities to invest in a product line with a better return on investment, including upgrade of 12-inch mature technology and 8-inch fab equipment.
- Develop a new manufacturing process according to market demand, introduce applications of future trends including IoT, 5G mobile devices, and industrial applications. Increase market share through the momentum brought about by a new wave of growth opportunities.

Other Opinions and Expectations of Communications with Various Stakeholders :



Economic Dimension

Expectations of communication

- Make timely proposals to the government regarding the rational distribution of power and water resources; improve utilization efficiency and increase resource recycling and reuse.
- Make recommendations for the company to be more active and aggressive in utilizing its influence and provide practical suggestions regarding promotion of public interests to assist in the future development of society.
- Propose paying more attention to topics concerning circular economy as well as green low-carbon applications.

Feedback

- Participate in organizations such as the Business Council for Sustainable Development of Taiwan, The Allied Association for Science Park Industries, and the Taiwan Semiconductor Industry Association and lead and promote activities relevant to environment, safety, health, and corporate sustainability. Serve as a representative in providing advice to advocate sound formulation and development of CSR policies by government and academic institutions.
- Strengthen governance of subsidiaries as well as CSR evaluation of the supply chain; organize sharing and exchange of relevant experiences.
- Promote cooperation between 3R League and suppliers, propose circular economy initiatives, and expand the influence of the value chain.

1-2-3 Key Points and Outcomes of Stakeholder Communication

Stakeholder communication method, key concerns and major outcome for 2017 are compiled as follows:

Communication Method

- President-employee forums, , secretary forums, Benefits Committee conference, factory dialogues, labor relations, communication platforms.
- eUMC information website for employees, BBS message boards, sexual harassment complaint channel, mailbox for reporting fraud or professional ethics violation, e-suggestion and feedback platform, confidential complaint system, 12885ER help hotline.
- My UMC website, UMC CSR Newsletter.
- Employee satisfaction survey

Key Concern

Compensation and benefits, Sustainable development strategy, Economic Performance, Employee satisfaction, Market Presence, Occupational Health and Safety

Key Stakeholder Communication Outcome in 2017

- Continue to implement industrial salary surveys and provide competitive performance-based and differentiated remuneration and welfare systems (that include rewards, bonuses, and shares).
- Continue to enhance the UMC ice-cream APP 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 in 2017.
- e-suggestion opinion feedback platform received 373 opinions from various employees in 2017; all cases (100%) have been closed.
- Strengthen the EICC Committee; continue to promote and respect international code and standards of laborers as well as human rights.
- 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.

Communication Method

- Online Service Platform
- Regular communication and discussion meetings
- Questionnaire response
- On-site audit and discussion
- Voice of Customer (VOC) instant customer online complaint system
- Customer satisfaction monitoring

Key Concern

Customer service, Risk management, Customer privacy, Ethics and integrity, Sustainable development strategy, Innovation management

Key Stakeholder Communication Outcome in 2017

- Continue to carry out information security product common criteria (ISO 15408) certification to improve asset management security for both the company and its customers.
- Established Rescue & Recovery SOP information platform and invited Marsh&FireEye , a Cyber Security Leader ,held a network and data security workshop.
- Continuous customer services - provide a total of 63 BCM / BCP pieces of risk management data.

Communication Method

- General Shareholders:
- Annual general shareholder meeting
- Quarterly investor conferences
- Financial report
- Corporate shareholders:
- Quarterly domestic and overseas investor conferences
- Domestic and overseas seminar for investing institutions

Key Concern

Corporate governance, Innovation management, Customer service, Ethics and integrity, Compliance with regulations

Key Stakeholder Communication Outcome in 2017

- Worked with the Financial Supervisory Commission (FSC) to complete corporate governance accreditation.
- Continue to hold stockholder's meetings and seminars.
- Upload multimedia information of the financial and business report in the stockholders' section of the UMC official website <http://www.umc.com/English/investors/e.asp>

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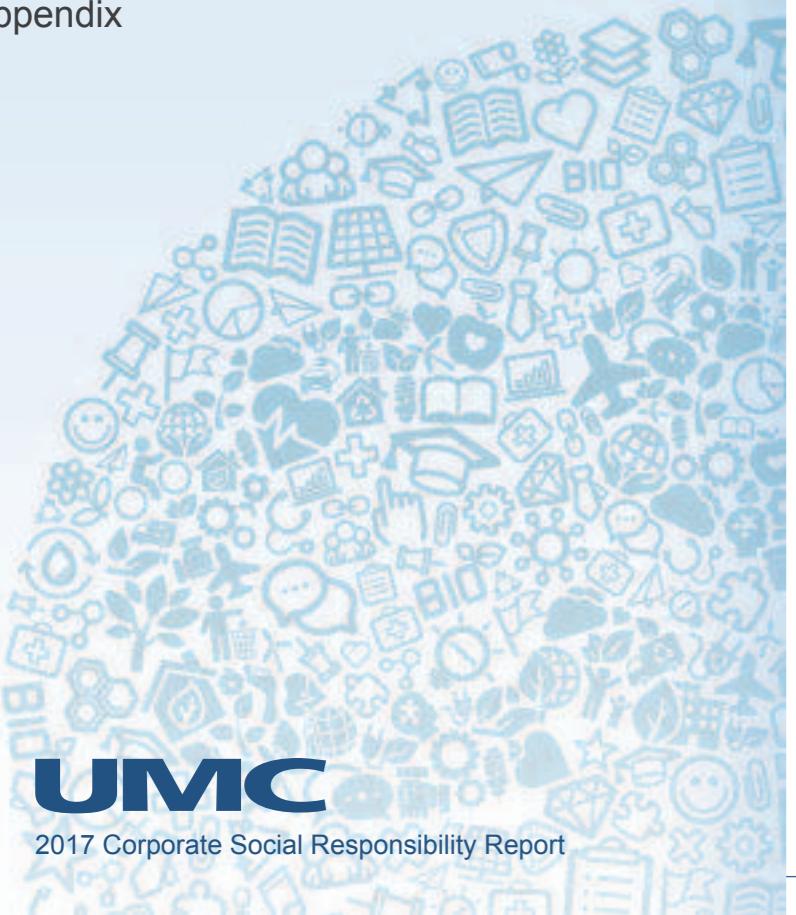
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Supplier

Communication Method

- Review reports or meetings
- Questionnaires and audit visits
- Jointly implement ESH and corporate social responsibility program with suppliers

Key Concern

Compliance with regulations, Occupational Health and Safety, Customer privacy, Risk management

Key Stakeholder Communication Outcome in 2017

- Promote BCM management amongst suppliers; completed risk assessments for suppliers that constitute 95% of UMC purchases.
- Implemented anti-corruption measures and promoted the signing of Agreement on Supplier Code of Ethics and Conduct.
- Completed conflict mineral surveys for 2017.
- The UMC 3R League held 3 sharing sessions to invite suppliers to share experiences in order to promote the concept of circular economy advocacy in energy saving and waste reduction.

Summary of Outcomes from UMC Partnerships and Feedback



Suppliers

Green Award

As a member of the global village, Hermes-Epitek not only pursues sustainable management, but also provides its own strength to the fulfillment of its corporate social responsibility. Drastic changes in the ecological environment and in the climate have brought us to a profound realization that corporate social responsibility is no longer the responsibility of a single group of people, but the responsibility of all stakeholders, and it involves the improvement of the quality of life of employees and their families, and even entire communities and society. Showing concern for the Earth's environment and taking relevant action is our responsibility. The purpose of the Green Award is to support and encourage the sustainable development of ecological conservation groups. This precisely fits with Hermes-Epitek's concept of actively responding to environmental protection and fulfilling its responsibility as a global citizen. It is hoped that with the injection of funding, each of the award-winning bodies will be able to implement the content of the proposal appropriately, observe Taiwan's environmental issues, and consequently make a contribution to nature conservation.

(Hermes Epitek Corporation / General Manager / C.Y. Shu)



Community/
Non-profit
Organization

Communication Method

- Assigned a department for community communication
- Invite community residents to participate in the company's Family Day activities
- Participate in community activities or seminars
- Participate in the operations of outside associations

Key Concern

Occupational Health and Safety, Waste water discharge, Sustainable development strategy, Ethics and integrity

Key Stakeholder Communication Outcome in 2017

- Organized the 2017 UMC family day activity.
- Volunteer work culture was promoted to provide volunteer work opportunities for minority groups. A total of 9,230 hours of volunteer work was conducted, which benefited more than 26,400 people (visits).
- Worked with the Society of Wilderness (SOW), an ecological conservation organization, to promote the Sauer's Frog (Ranasaute) Habitat Conservation Project.
- The UMC Green Award was established to provide subsidy for eco protection proposals.
- Practical experiences of UMC's "Water Shortage Warning and Decision Support System" were shared at the corporate sustainable forum.
- The UMC Energy Conservation Service Team helped 6 organizations in energy saving, water saving and environmental safety improvement.
- Participated in IHTESH meetings to share the assessment of nano particulate exposure in semiconductor fabs.
- Participated in the chemical classification management promotion session of the health and hygiene technology service department of the Industrial Safety and Health Association of the R.O.C. to share chemical management practices.

3R League: Reduce, Reuse, Recycle, a Circular Economy Cooperative Initiative

Versum Materials, Inc. is a global supplier of advanced materials, process materials and electronic materials supply systems and services for the semiconductor and flat panel display industries. With annual sales of approximately US\$1 billion and having approximately 1,900 employees around the world, the company has a total of 10 benchmark divisions in Asia and North America. With safety as our highest priority, we place sustainable development and accountability at the forefront of all our work. We let employees and customers achieve their best performance without compromising safety, integrity or the environment. We believe that sustainable development is a good practice for business operations and brings value to our customers, employees, communities and shareholders.

(Versum Materials Taiwan/ Global Sales Director/ Al Chuang)



around the world and technology. We inclusive innovation solutions that bring market faster, easier ever before. We can five key values we b



Governmental
Agency

Communication Method

- Participate in parks and Science Park Administration functional organizations for operations.
- Participate in public hearings and symposiums organized by governmental authorities

Key Concern

Waste, Water resource use, Energy use, Occupational Health and Safety, Chemical use

Key Stakeholder Communication Outcome in 2017

- Played the role of coordinator for the Science Industrial Park Union to discuss regularly related laws and regulations and to provide operation experiences and suggestions for draft.
- Participated in the "Occupational Safety and Health and Risk Management Training Program" sponsored by the Hsinchu Science Park Administration Bureau of the Ministry of Science and Technology and provided relevant experiences.
- Participated in the safety and health professional platform of the Hsinchu Science Park Administration Bureau of the Ministry of Science and Technology, and provided guidance as well as shared relevant management experiences.
- The PFOA-related Free Program and Green 2020 Program were promoted within the organization.



Community/Non-profit Organization

Lighting Up Love ~ LED Energy Conservation Scheme

The economic downturn and rising oil and electricity prices in recent years have made it difficult to raise funds for charity, which is very worrying. Our gratitude goes out to Everlight Electronics for donating LED energy-saving lighting equipment and UMC for the installation, successfully completing the foundation's LED energy conservation program. In doing so, we have seen lighting savings of more than 50%. This charitable act by Everlight and UMC will light up every corner of St. Joseph, illuminating the face of each of our young angels.

(St. Joseph Social Welfare Foundation Executive Director/ Hsiang-ya Lin)



Media

Communication Method

- Press conferences
- Press releases
- Company Website

Key Concern

Compliance with regulations, Waste gas emission, Ecological conservation, Sustainable development strategy

Key Stakeholder Communication Outcome in 2017

- Released 27 press articles on corporate governance and sustainability management.
<http://www.umc.com/English/news/2017/2017.asp>



Customers

Strengthen collaborative efforts for manufacturing processes and expand strategic partnerships

- 40nm SST Embedded Flash Process
- 65nm and 40nm technology platforms are the industry's first to achieve Qualified Manufacturers List (QML) certification
- We expect that UMC's 40nm SST will improve the performance of our MCU products. Working with UMC will also allow us to maintain a robust business continuity plan (BCP) through stable manufacturing supply and flexible capacity support based on our production requirements.—Toshiya Matsui, Vice President, Mixed Signal IC Division of Toshiba Electronic Devices & Storage Corporation (<http://www.umc.com/English/news/2017/20171221.asp>)
- QML certification of our most advanced technology platforms is a major milestone. Our new radiation-hardened memory products will be the first QML-V-certified, high-density SRAM products to augment and support existing and future FPGA- and processor-based space applications. Being able to access the next-generation technology platforms from our foundry partner UMC enables us to deliver leading-edge, high-density and power-optimized memory products for our space customers.—Helmut Puchner, Senior Director of Aerospace and Defense for Cypress' Memory Products Division (<http://www.umc.com/English/news/2017/20171115.asp>)
- FinFET process technology is becoming very popular with our customers, but FinFET layout can be a challenge. We collaborated with UMC to enable Custom Compiler for their 14-nanometer process, so UMC customers can use Custom Compiler's visually-assisted layout to improve FinFET layout productivity.—Bijan Kiani, vice president of product marketing at Synopsys (<http://www.umc.com/English/news/2017/20170314.asp>)

(Puli Town, Nantou County, Yixin Community Development Association/ Director Lin You-tsuan)



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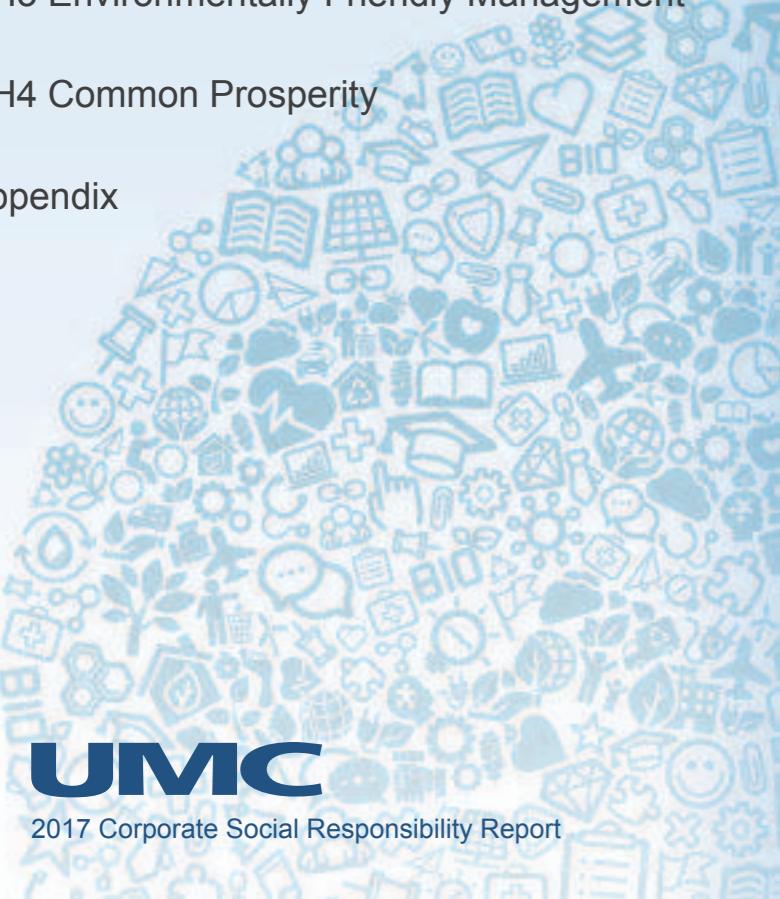
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Economic Sustainable Growth

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- 2-4 **Risk and Crisis Management**
- 2-5 **Sustainable Supply Chain Management**

NT\$
149.285
billion

NT\$149.285 billion

Annual consolidated revenue reached a record high.

10.8%

10.8% Annual increase in product manufacturing volume

Annual product manufacturing volume of approximately 6,837,000 8" wafer equivalents, a 10.8% annual increase.

12,568
patents

12,568 patents

In 2017, UMC was awarded 605 domestic and foreign patents, totaling 12,568 patents to date.

\$42
Billion

\$42 Billion of investment in advanced technology R&D and manufacturing equipment

Approximately NT\$ 42 Billion was invested in advance technology R&D and manufacturing equipment.

86.9%

86.9% Customer satisfactory rate

Satisfaction improves steadily year by year.

0

0 High-risk Suppliers

UMC has established the ISO 22301 business continuity management system, and completed business continuity risk assessment for vendors who supply 95% of the company's procurement.

Words from Co-President and CS Committee Chairman

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2-1 Company Governance

UMC has an effective corporate governance framework that is consistent with Taiwan's Company Act, Securities and Exchange Act, and other related laws and regulations. UMC also established the "UMC Corporate Governance Practice Principles", "UMC Ethical Corporate Management Best Practice Principles" and "UMC Corporate Social Responsibility Principles" as practical company considerations to protect shareholders' equity, respect stakeholders, enhance information transparency, strengthen the competency of the Board, and uphold corporate integrity and code of conduct. The Corporate Sustainability Committee reports the performance to the Board on the regular basis. It is hoped that through effective corporate governance, the company can fulfill its corporate responsibility in sustainable development and enhance corporate performance.



Plans and Objectives for 2018

Establish effective corporate governance framework

The Corporate Sustainability Committee will meet regularly with the Board to report promotional outcomes and plans.

Ensure shareholder equity, strengthen competencies of the Board

The performance of the board will be reviewed and evaluated annually according to the Rules for Performance Assessment of the Board of Directors.

The performance assessment of the board will be conducted by an external independent professional institution or a panel of external experts and scholars.

The 14th Board of Directors will be elected according to the operation and system of the Nominating Committee.

The 4th Audit Committee will be established by the independent members of the 14th Board of Directors.

The 4th Remuneration Committee members will be decided by the 14th Board of Directors.

The 2nd Nominating Committee members will be decided by the 14th Board of Directors.

In addition to the company's annual operational disclosure, the company has the corporate governance section on the UMC website so that stakeholders can easily access UMC corporate governance information to view its Corporate Governance Policy.

(URL: http://www.umc.com/english/investors/corp_gov.asp).

Enhance information transparency

Continue to promote the effectiveness of the Corporate Governance Evaluation.

The UMC Board of Directors, Audit Committee, Remuneration Committee, Capital Budget Committee and Nominating Committee conduct their duties according to the regulations of "Convention Rules for Meetings of Board of Directors", "Audit Committee Charter", "Compensation Committee Charter", "Capital Budget Committee Charter" and "Nominating Committee Charter". To implement corporate governance, enhance capabilities and review the performance of the Board, UMC instituted the Rules for Performance.

Assessment of the Board of Directors to self-assess the performance of the Board annually in order to enhance the Board's role and responsibilities, the participation degree of company operations and understanding the business and its risks, the improvement of policy decision quality, the composition and structure of the board of directors, the election and continuing professional education training of directors, internal control and Audit Committee communications, oversight of the financial reporting process and so on. Furthermore, the Company's board performance assessment will be conducted by an external independent professional institution or a panel of external experts and scholars at least once every three years.

The conclusion of the Board of Directors' Self-Assessment of Performance in 2017 is that the Board is functioning efficiently and as intended.

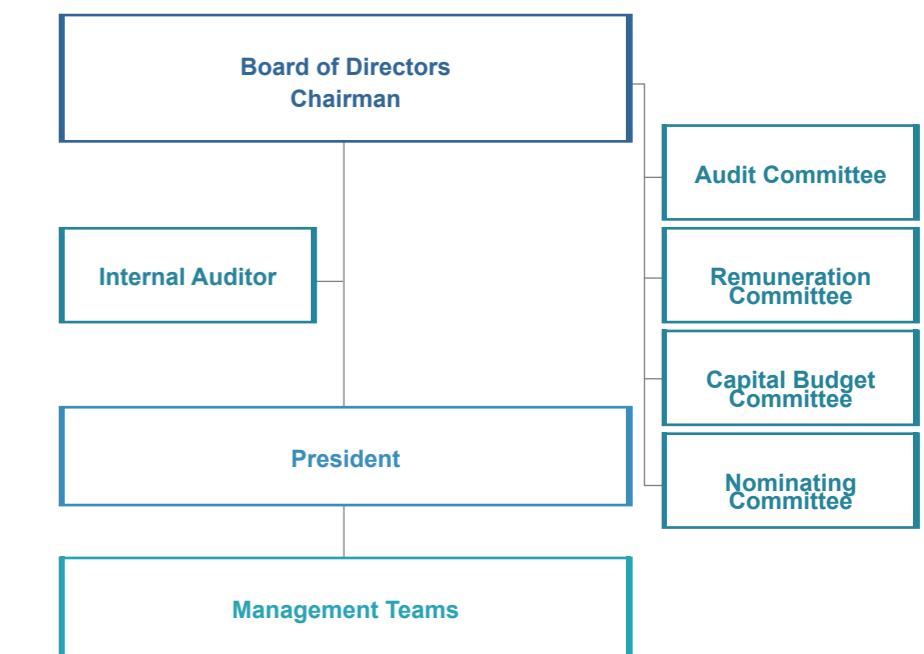
To ensure the fair, just, and open election of directors, the nomination and election procedures of the Company's directors shall comply with the Company Act and all related laws and regulations. The organizational culture, business model and long-term development of the Company shall be taken into consideration when determining the composition of the Board members. The criteria established to ensure the diversity of the Board members shall include, but are not limited to the following three dimensions:



2-1-1 Board of Directors

The UMC Board of Directors comprises of 8 members from different professional backgrounds, and is responsible for company operations and supervision. The diverse academic and industrial experience of the Board members are an asset to corporate decision-making and long-term strategy planning. Currently, the Board has three seats for independent directors and one for outside director. Half of the director seats are filled by members of outside companies. In 2017, a total of 6 board meetings were held. The average attendance rate was 95.83%, and ratio of total remuneration for board directors to company after-tax net income was 0.7%.

Board of Directors Structure



Policy for Nomination and Election of Directors

To ensure the fair, just, and open election of directors, the nomination and election procedures of the Company's directors shall comply with the Company Act and all related laws and regulations. The organizational culture, business model and long-term development of the Company shall be taken into consideration when determining the composition of the Board members. The criteria established to ensure the diversity of the Board members shall include, but are not limited to the following three dimensions:



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Chair of Board	Independent Director
Stan Hung ♂ 57 Attendance Rate 83.33%	Chung Laung Liu ♂ 84 Attendance Rate 100%
Director	
Jason S. Wang ♂ 55 Attendance Rate 100%	Chung Laung Liu ♂ 84 Attendance Rate 100%
SC Chien ♂ 60 Attendance Rate 100%	Cheng-Li Huang ♂ 64 Attendance Rate 100%
Chitung Liu ♂ 52 Attendance Rate 100%	Audit Committee member and financial expert
Ting-Yu Lin ♂ 56 Attendance Rate 100%	Remuneration Committee member
	Capital Budget Committee member
	Nominating Committee member
	Audit Committee member and financial expert
	Remuneration Committee member
	Capital Budget Committee member
	Nominating Committee member

Note: 1. Independent director Chun-Yen Chang resigned from his director position, effective January 1, 2017.
 2. Chitung Liu was assigned as representative and director by Hsun Chieh Investment Co., Ltd. on September 15, 2017.
 3. The board will be reelected on June 12, 2018.
 4. Directors' current position at UMC or other company is disclosed on Page 17 of the company's annual report.

The Board has 8 seats, of which 3 are occupied by independent directors. The various committees are composed of independent directors and outside directors, and members do not include members who also serve as administrative directors.	The Board has 8 seats, of which 4 are occupied by members who also serve as administrative directors, namely the President, Chief Strategy Officer and Chief Financial Officer.
Each year, UMC arranges for its directors and managers to participate in economic, social and environmental courses in corporate sustainability. Continuing education for directors in 2017 is disclosed on Page 38 of the company's annual report.	Board members are elected by shareholders according to regulations for Director Election during shareholder meetings, and in compliance with the Board of Directors Regulations and company constitution. Jurisdiction for each committee is based on organizational constitution, and committee members are nominated and approved by the Board.
Independent director Cheng-Li Huang, with research expertise in international accounting, green accounting and CSR, attended the Asian Pacific Conference on International Accounting Issues in 2009 and won the Vernon Zimmerman Best Paper Award with his paper on environmental accounting.	To implement corporate governance, enhance capability and review performance of the Board, UMC instituted the Board of Directors' Self-Assessment of Performance in 2015 to assess the performance of the Board annually, and the company engages an external evaluation institution to conduct evaluations of board performance every three years in order to enhance operation efficiency of the Board.

Principles for Avoiding Conflict of Interest in Management

Provisions for avoiding conflict of interest are stated in the company's Board Meeting Regulations and Audit Committee Regulations. Directors with vested interest in an agenda, whether it is personal or representing organizations, should explain the key content of their interest at the meeting. Should that interest undermine company interests, the said directors are not permitted to participate in discussions or votes, and must be excused from discussions and decisions, and must not vote on behalf of another director. The name, key content and excuse from participation are recorded in the meeting minutes.

The company has formulated the "Ethical Corporate Management Best Practice Principles," the "Procedure of Transaction with Related Parties," the "Code of Ethics for Directors and Officers" and the "Employee Code of Conduct" to avoid conflict of interests. In addition, employee code of conduct implementation is reported to the Audit Committee.

Detailed regulations, stakeholder communication contacts and information regarding disclosure are available in the Stakeholder Engagement section of the company website. The company has spokespersons and a dedicated email address for handling enquiries and input from various stakeholders.



2-1-2 UMC Functional Committee

UMC Functional Committee

Function



Capital Budget Committee

Disclosure Oversight Committee



Audit Committee



Remuneration Committee



Nominating Committee

Effectiveness in 2017

The UMC Capital Budget Committee was established in October 2013. In 2017, the committee met 5 times, audited and approved capital budget expenses of NT \$26,905 million.

In 2018, UMC's information disclosure for 2017 was rated among the top 5% in the results of the 2017 Corporate Governance Evaluation.

In 2017, the Committee convened 6 times. The attendance rate was 100% and the Committee maintained positive communication channels with the company's internal auditors, certified accountants, management team and employees.

In 2017, the committee convened meetings in February, June, and October, respectively. Please refer to UMC's annual report for the actual attendance.

The UMC Nominating Committee was established in December 2017. The first meeting of the committee was convened in March 7, 2018 to review and to propose the candidate list of the directors to the Board.

Words from Co-President and CS Committee Chairman

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Remuneration for High Level Managers

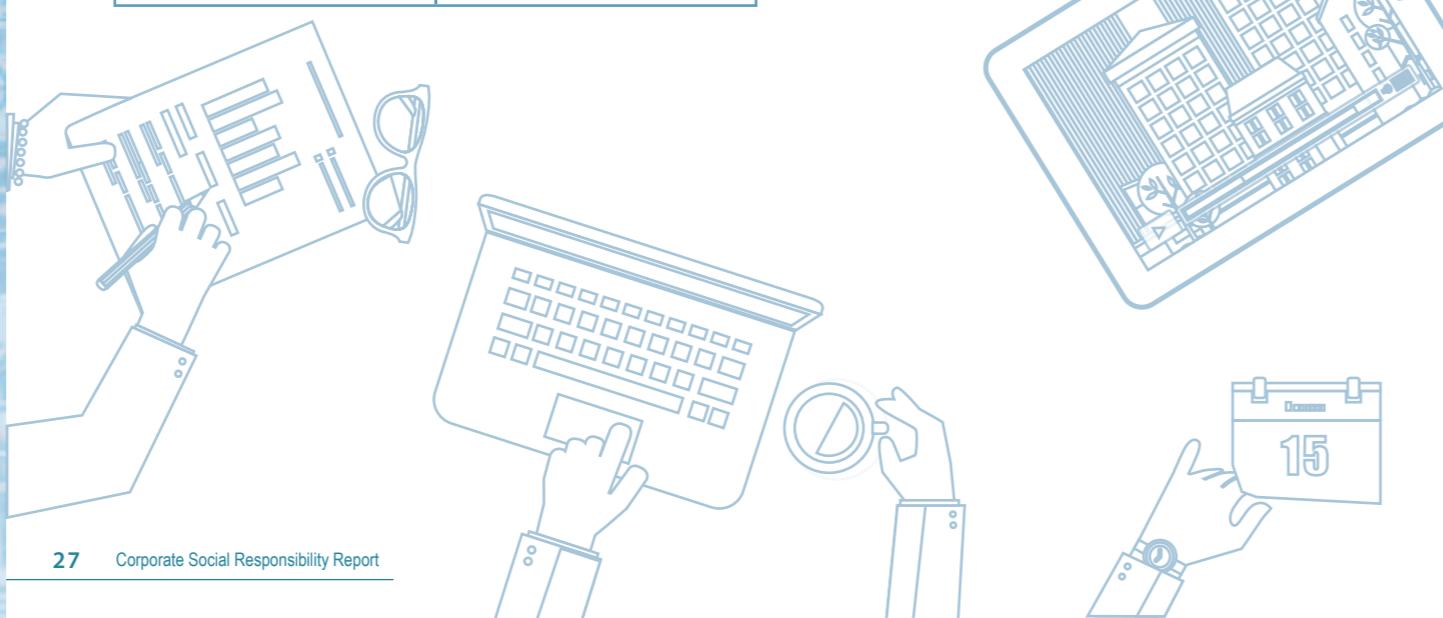
Remunerations for UMC directors (including independent directors), general managers and deputy general managers include salary, performance bonus, pension, and so on, will be disclosed regularly in UMC annual report. To ensure the steady operating growth and breakthrough innovation power for the company, remunerations for UMC general managers and deputy general managers are primarily divided into two parts, fixed and variable. Furthermore, according to the responsibility and job importance, UMC provides fixed compensation, and to fully reflect individual and team performance, UMC provides variable compensation such as performance bonus, retention contracts, employee compensation, stock options, and so on.

For motivation and talent retention purposes, performance evaluation and salary remuneration policies, system, standards and structure for directors and managers are determined and reviewed by the Remuneration Committee. The committee members include independent directors who can provide suggestions from an external perspective. The committee meets at least twice a year to review and ensure compensations remains competitive.

In addition to leading the company towards its operational direction and goals, UMC's high level managers also maintain focus on sustainable development indicators, and work diligently in economic, environmental and social development and innovation to create common harmony and prosperity for the corporation and society.

Ratio of maximum remuneration to median annual remuneration	
Taiwan	Singapore
11.17	5.5

Ratio of % increase in highest total annual remuneration to % increase in median total remuneration	
Taiwan	Singapore
Personnel with the median wage showed no increase in total income (comparing 2017 with 2016)	3.57



2-1-3 Shareholders' Participation of Corporate Decision



2-1-3 Shareholders' Participation of Corporate Decision

At the 2017 UMC shareholder meeting, electronic voting accounted for 54.3% of total shares outstanding, and 67.2% of those attending the meeting. Investors may exercise their voting rights via direct electronic voting, thereby significantly reducing the difficulty of transportation and schedule conflict to attend shareholder meetings. Direct participation of shareholders in decision-making can reduce agency costs and risk, and increase the motivation of shareholders to exercise their voting right.

All admitted bills and motions during UMC shareholder meetings are discussed and voted by meeting attendees, and resulting shareholder support and vetoes for each bill are recorded so that shareholder opinions are fully reflected in the resolutions. °

Following the global trend of Shareholder Activism, UMC legally accepted the motions of shareholders holding more than 1% of shares to the regular shareholders' meeting. Given that activist shareholders pay more attention to financial performance, compensation schemes and corporate governance of the company, the sub-committee of the Board shall assist management with such issues. The Nominating Committee will be responsible to review shareholder's proposals and to propose responses to the Board for discussion.

2-1-4 Internal Audit

Internal Audit

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

Main Purpose



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 internal control system, and audit implementation details and annual internal self-assessments.
- Communicate with independent directors, and report to the Audit Committee and Board of Directors.

Since UMC is listed on the New York Stock Exchange (NYSE), it is also subjected to US regulations for foreign issuers. Since 2006, UMC has complied with the SOX 404 Act, and has been audited by certified accountants. To date, the certified accountants have given unqualified opinions on the effectiveness of UMC's internal control plans and implementation.

For details of the internal audit and operation, please refer to the company's website at http://www.umc.com/English/pdf/the_Organization_&_Operation_of_UMC's_Internal_Audit_eng.pdf



Words from Co-President and CS Committee Chairman

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2-1-5 Code of Ethics and Anti-Corruption

The purpose of this is to promote ethics, honesty and professionalism within the company and among its employees. The company believes in being an integrated organization and that the action of every employee affects its entire organization and reputation. Any employee is obligated to strive for the extension of the Company's interests within legal limits, and responsible of preventing damages or loss of the Company's interests.



How We Manage

- By formulating a management code of practice
- By establishing a thoroughgoing corporate governance organization

Purposes

The establishment of a corporate culture of ethical management and sound development

Goals and Targets

All the Company's employees should abide by the Company's ethical standards during their daily work and business operations in order to gain public trust and ensure the Company's sustainable growth and development.

Relevant Principles

'Corporate Governance Practice Principles', 'Ethical Corporate Management Best Practice Principles', 'Corporate Social Responsibility Principles' and 'UMC Code of Conduct'

Applicable Entities:

1. UMC
2. Subsidiaries and company business units and organizations with actual control capabilities.

UMC expects all employees to comply with the company's principles in their daily work and business execution to gain public confidence and ensure sustainable growth and development for the company. By promoting the UMC Code of Conduct (targets include company subsidiaries, joint ventures, suppliers, customers and others entities pertaining to UMC operation and development), it is hoped that joint efforts can be put into fulfilling corporate social responsibility and promoting balanced and sustainable economic, social and environmental development.

UMC encourages open communication with employees and third parties. Questions pertaining to ethical and legal conduct or unequal treatment in the workplace may be referred to the Human Resource Office or Employee Care Office for assistance, and reports may be filed to uncover, stop and prevent major misconduct or violation of government regulations.

For relevant information, please refer to the company Website at http://www.umc.com/English/CSR/c_4.asp

UMC provides online self-testing and training courses to help employees clearly understand the concept of appropriate employee conduct. In addition, the employee code of conduct is posted on the company's intranet for employee reference. Employees may refer relevant questions to the Human Resource Office for inquiry and assistance in implementing the code of conduct in their daily work and tasks. In 2017, 100% of employees completed and passed the online employee code of conduct training and self-testing course.

Through annual internal control and self-assessment, UMC has also conducted a self-review of all fab, department and subsidiary operations, including compliance with laws and regulations, awareness of professional code of conduct and risk assessment. The design and implementation of internal control systems are also adjusted to achieve self-monitoring. In addition, based on the provisions of Taiwan and in the event of risks, the Audit Division has formulated audit plans for relevant reviews, and regularly reports results and follow-up improvements to the Audit Committee and the Board of Directors.

Number of grievances received in 2017

Anti-corruption

The total number of grievances filed through the mechanism	3
The number of grievances that were addressed (or reviewed)	3
The number of grievances that were resolved	3

Environmental issues / Social issues

The total number of grievances filed through the mechanism	0
The number of grievances that were addressed (or reviewed)	0
The number of grievances that were resolved	0

Note: No proof of corruption or bribery was found in 2017.



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2-1-6 Legal Compliance

UMC's customers are located around the world, and its operations are distributed over several countries. To ensure that operations are in compliance with the laws and regulations of each country, thereby avoiding losses due to legal violations or avoiding profit loss due to fines, UMC has consistently paid close attention to all changes in policies or laws that might impact the company's business or finances.



How We Manage

- By dedicating a legal department to serve as a legal platform to offer legal advice and assistance to each department.
- By arranging training programs and courses on legal compliance to familiarize employees with updated regulations.

Purposes

Ensure that the company keeps its commitment to comply with the law to realize its core values of integrity and honesty

Goals and Targets

- Company employees should always adhere to the relevant laws and regulations while carrying out their work.
- No major violation of Corporate Social Responsibility*

Relevant Principles

'Corporate Governance Code of Practice', 'Honest Business Operations Code', 'Corporate Social Responsibility Code of Practice' and 'The UMC Code of Conduct'

Applicable Entities:
1. UMC
2. Hejian Technology (Suzhou) Co., Ltd. and United Semiconductor (Xiamen) Co., Ltd., which are UMC subsidiaries selling and manufacturing integrated circuits

Note: Refers to a single incident with a fine of more than NTD 1 million.

All UMC departments must comply with relevant laws and regulations. The company has a dedicated legal department serving as a legal platform to offer legal advice and assistance to each department. UMC and its employees are required to comply with relevant business laws and regulations. The company arranges training programs and courses on legal compliance to familiarize employees with updated regulations. Prompt updates allow employees to implement job regulations into their daily management, thereby ensuring that the company complies with the law.

UMC Training Courses for Legal Compliance

Online Courses

Allow employees to learn at any time, and strengthen awareness of the latest laws, and offer online testing, review and correction of employees' legal knowledge. Other related online courses or tests include: Fair Trade Law (antitrust law), import and export control.

Classroom Courses

Classroom instruction on important policy or statutes, including fair trade, insider trading, classified information protection, high-tech export controls, intellectual property protection and personal data protection are offered.

Seminar Courses

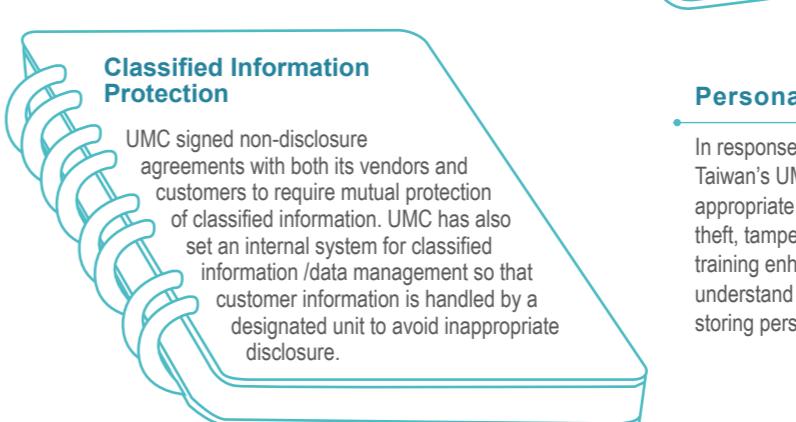
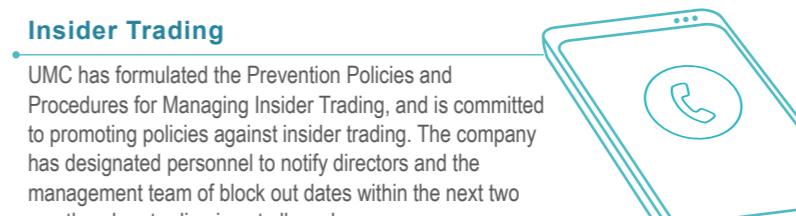
Outside legal professionals and experts are invited to lecture on the latest legal trends and information, and exchange ideas.

Outsourced Courses

Arrangements are made for legal staff to attend outside training to update their knowledge of amendments and latest news and details to ensure compliance with latest requirements.

Employees can obtain training course information and promotional information from the company's internal intranet site. Information updates, internal reviews, regulation amendments and implementation ensure our compliance with legal standards.

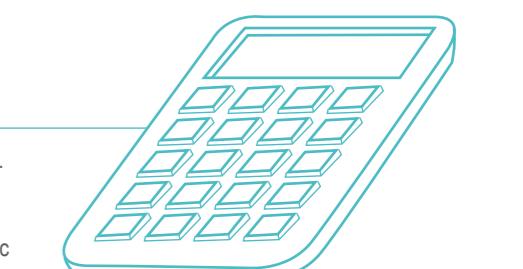
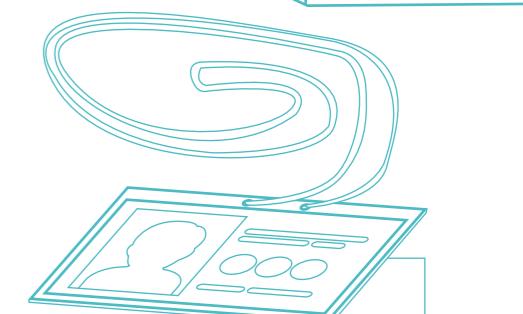
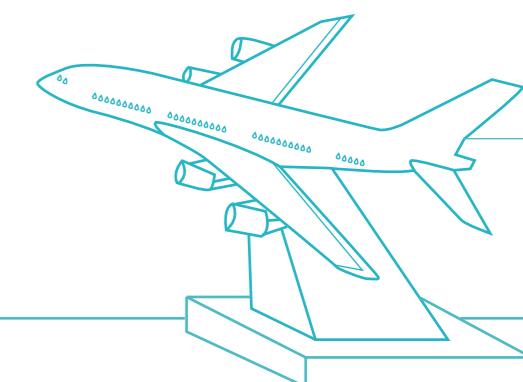
Examples of UMC Legal Compliance:



In 2017, no penalty cases with regard to violation of company governance, anti-corruption, or fair trade were observed and no cases of insider trading from the management personnel were found. Furthermore, UMC received no complaints from customers accusing anyone associated with UMC of violating their privacy or disclosing confidential customer information. For other violations and fines amounting to less than NT\$100,000, company employees that were involved were punished according to company rules and corrective improvement measures implemented. Please refer to the company's annual report on page 67 for details.

High Technology Export Control

To ensure that UMC export controls meet international requirements, the company has long since implemented internal controls for review and feedback, and has simultaneously introduced the Internal Control Program (ICP) in Taiwan and Singapore. For overall control of the export process, the company requires customers to provide necessary information for a series of self-examination and screening from beginning Customer Inquiry to Order Processing to Shipping, and outlines clear control procedures to its various departments. With government certification, UMC customers can now enjoy preferential export licensing and reduce operation time.



Words from Co-President and CS Committee Chairman

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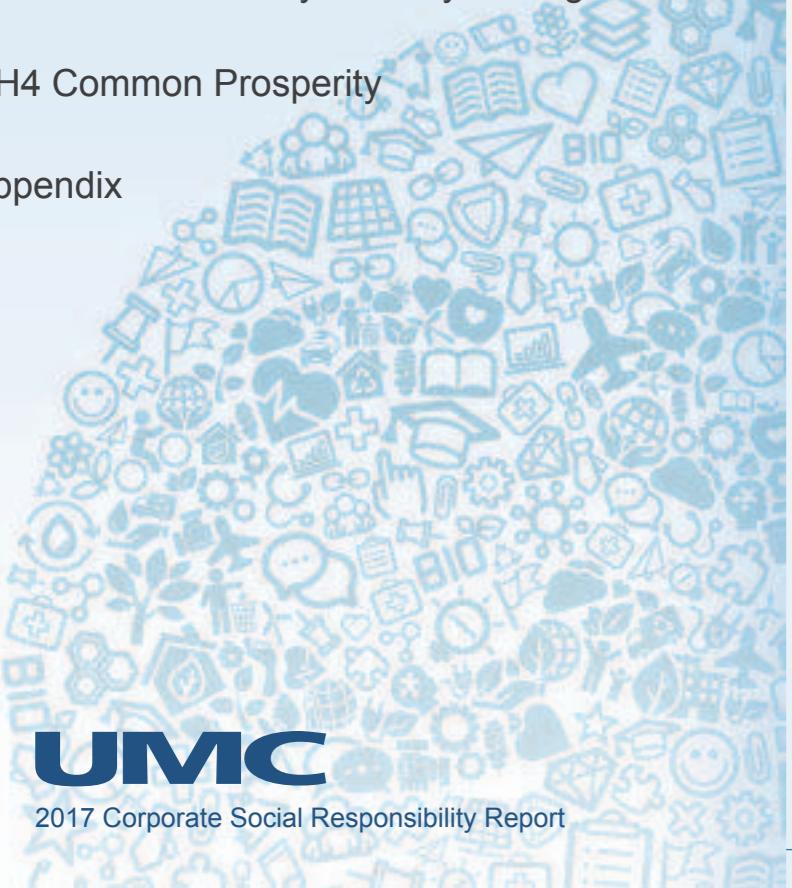
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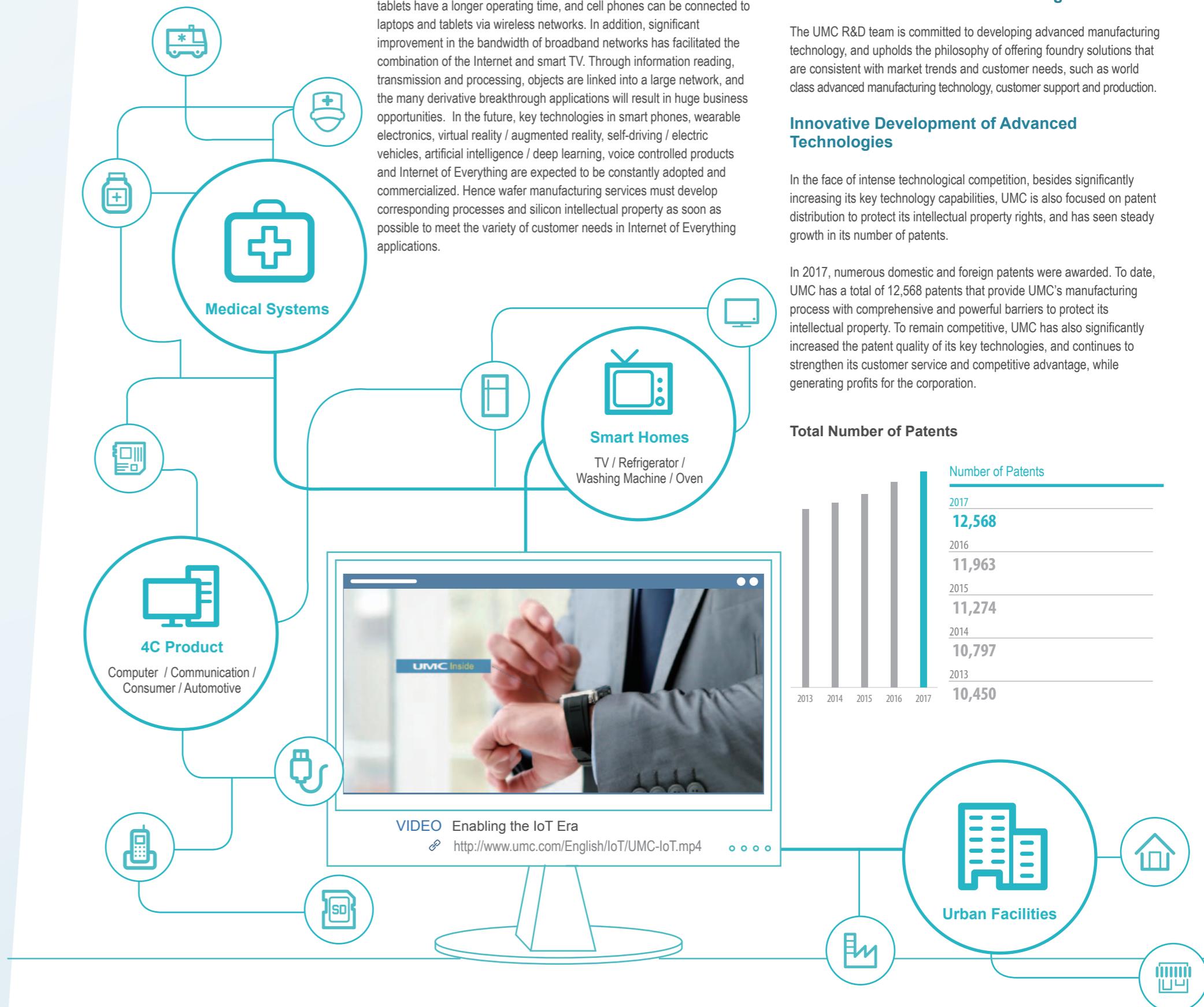
UMC

2-2 Innovation Management

End-user electronic products are becoming more functional, lightweight, energy saving and carbon reducing. In recent years, the incorporation of concepts such as artificial intelligence, deep learning and voice control have also influenced the direction of wafer design. Therefore, in view of factors such as functional integration, increased performance and low power consumption, chip design has become increasingly complex. Moreover, for production efficiency, semiconductor manufacturing technology must continue to miniaturize, and wafer surface area must increase in diameter. Hence, given these two major trends, the threshold for semiconductor manufacturing is increasing, and investment cost is rising rapidly. UMC continues to be involved in new research and development to strengthen corporate competitiveness and to help the company create profits.



The Internet of Things (IoT)



Future Business Opportunities in the Semiconductor Market

The four types of traditional IC products are computers, communication, consumer and automotive. Electronic products are already more compact, save more power and are interconnected. For example, notebooks and tablets have a longer operating time, and cell phones can be connected to laptops and tablets via wireless networks. In addition, significant improvement in the bandwidth of broadband networks has facilitated the combination of the Internet and smart TV. Through information reading, transmission and processing, objects are linked into a large network, and the many derivative breakthrough applications will result in huge business opportunities. In the future, key technologies in smart phones, wearable electronics, virtual reality / augmented reality, self-driving / electric vehicles, artificial intelligence / deep learning, voice controlled products and Internet of Everything are expected to be constantly adopted and commercialized. Hence wafer manufacturing services must develop corresponding processes and silicon intellectual property as soon as possible to meet the variety of customer needs in Internet of Everything applications.

2-2-1 Practicing the Philosophy of Sustainable Operations

Innovative Products and Technologies

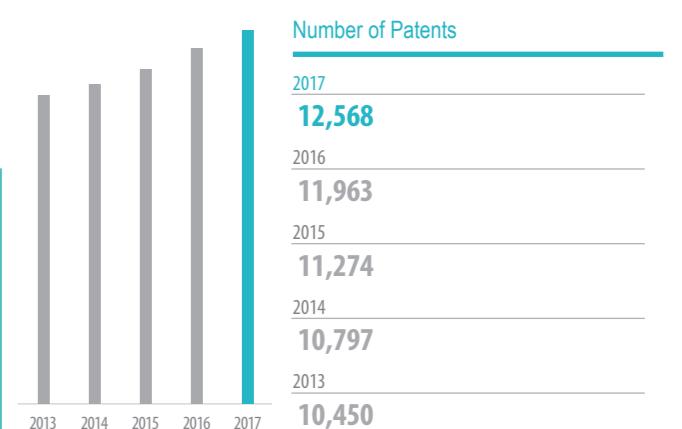
The UMC R&D team is committed to developing advanced manufacturing technology, and upholds the philosophy of offering foundry solutions that are consistent with market trends and customer needs, such as world class advanced manufacturing technology, customer support and production.

Innovative Development of Advanced Technologies

In the face of intense technological competition, besides significantly increasing its key technology capabilities, UMC is also focused on patent distribution to protect its intellectual property rights, and has seen steady growth in its number of patents.

In 2017, numerous domestic and foreign patents were awarded. To date, UMC has a total of 12,568 patents that provide UMC's manufacturing process with comprehensive and powerful barriers to protect its intellectual property. 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, while generating profits for the corporation.

Total Number of Patents



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Successful Development of Technology or Products in 2017



FinFET

14nm fin field effect transistor (FinFET) process technology has been successfully developed for customer mass production. The mass production wafer yield has reached industry-competitive levels, and products are being delivered to our customers on an ongoing basis.



28HPCU+

28nm 28HPCU+ continuous refinement process technology has been successfully developed to provide our customers with chips of higher speed with better power saving capability, and it has entered the pilot production stage.

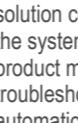


SST

We have launched a 40nm process platform integrated with Silicon Storage Technology (SST) embedded SuperFlash® non-volatile memory. It features low power consumption, high reliability, outstanding data retention and high durability, ideal for automobile, industrial, consumer, and IoT applications. It can also meet the requirements for long battery life in wireless IoT products.

Mobile Fab

All information required to handle faulty machines will be integrated based on mobilization and touch control in order to timely handle any malfunction.



The malfunction handling process flow is modularized for engineers of various sections to select the proper solution combinations. After the system diagnosis of product malfunction, the troubleshooting will be automatically executed according to the process flow.

300 mm Automated Fab



Production planning and systems for wafer fabrication, dispatch, conveyor, and machine automation have been integrated to achieve the automation of production for the entire fab.



It supports the automatic process synchronization and free wafer delivery among fabs, such that the production volumes of multiple fabs can be integrated for seamless manufacturing to achieve the objective of One Fab Operation.



The central information center has been established to control equipment remotely and integrate production information so that the number of people accessing the cleanroom can be reduced.



The cross-fab integration has led to a Giga Fab production scale with more than 99% full automation.



2017 Environmental and Social Benefit R&D Progress

In addition to continuing to develop technologies that reduce power consumption, UMC also develops processes for energy management, body sensor and medical, mobile communications, imaging sensors and displays to reduce the environmental impact of end product use, promote social communication and enable health care and safety.



28nm/22nm High Performance, Compact, Low Power Process Technology Platform

This technological platform can reduce current leakage and power consumption by nearly 40% compared to the Company's previous generation technological platform, and by nearly 15% compared to today's industry standards, and continues to give UMC a leading edge in the industry. In addition to excellent performance in terms of current leakage and power consumption, the HPCU+ has reached the existing 28nm HK / MG production line standard for wafer yield and defect density.

The 22nm Ultra Low Power Consumption/Ultra Low Leakage technology and 28nm High Performance Ultra Low Power Consumption Process Platform have been developed with the same number of photo masks and design criteria. For the 22nm process technology, the performance is enhanced by 15%, the power consumption is reduced by 35%, and the chip size is reduced by 10%. Therefore, the cost competitiveness of 22nm process is greatly improved to provide more options to our customers.



Power Management Process Technology

To meet the demands of the wide range of power management (PMIC), UMC has already begun mass production using its Ultra High Voltage (UHP) process, which is suitable for power chargers, LED light bulbs, power amplifiers, AC-DC converters and motor drives and other special applications. In addition, a higher voltage 800V process has also been developed to meet the higher voltage needs of industries and achieve energy conservation by reducing energy loss during voltage conversion.

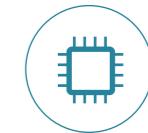
A platform that is compatible with standard logic and comprehensive silicon intellectual property is provided for customers requiring high integration PMIC.

In addition, world class third generation low-resistance high-voltage (5V~200V) components are combined with an integration of nanometer technologies in applications such as cell phones, tablets and home appliances, and automotive industries. Furthermore, UMC's 55nm uses PMIC copper processing for a comprehensive SoC solution to serve green energy needs.



14nm Process Technology

UMC successfully reached the mass production milestone for 14nm FinFET ICs in early 2017. The process performance competitiveness and the mass production yield of this process has reached the leading industry standard with 55% faster performance and twice the gate density of 28nm. In addition, the power consumption of 14nm process is reduced by 50% compared to the 28nm process.



Display Driver Process Technology

This technology includes displays for smart phones, portable telephones / personal digital assistants (PDAs), computer screens, touch screens, tablets, eBooks, televisions, digital cameras, car screens and wearable displays. UMC's high voltage process technology is leading the development of various voltages to meet the need for different specifications in a variety of application markets.



Complementary Metal Oxide Semiconductor Image Sensor Technology (CIS)

New processes such as backside-illuminated sensor (BSI) and 55nm CIS process technology are in the verification phase, and the technology is expected to provide higher sensor resolution to meet the demands for next generation product.



Micro-electromechanical Technology (MEMS)

For the analog and digital SoC microphone that UMC manufactures for customers using CMOS-MEMS technology, the signal to noise ratio (S/N ratio) has out-performed the 60dBA standard. The design process flow can be optimized by the MEMS microphone design platform. UMC shipped more than 150 million units of customized MEMS microphone products in 2017.

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2-2-2 Business Performance

Key Performance Indicators in 2017

Capacity Utilization Rate

91.3% Variance
+3.1 ppts
94.4%

Revenue contribution from 40nm and below.

51.1% Variance
-5.7 ppts
45.4%

■ Expected Rate ■ Actual Rate

Profitability

Return on assets

3.21%
2.73%

17.6%

Return on equity

4.48%
3.75%

19.5%

Pre-tax profit to paid-in capital ratio

8.26%
7.14%

15.7%

Net profit rate

7.28%
6.13%

18.8%

Earnings per share

0.79%
0.68%

16.2%

Note: The above entity financial information is based on the Executive Yuan Financial Supervisory Commission approved international financial reporting guidelines. Please refer to the Company's 2017 Annual Report on Page 146.

Continual Growth in Advanced Processes

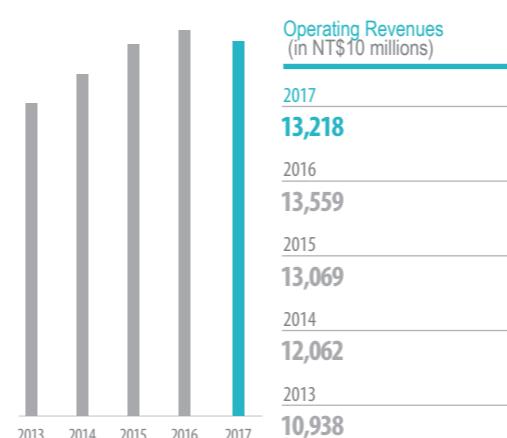
40nm

Proportion of advanced process capacity for 40nm or below has reached 35%.

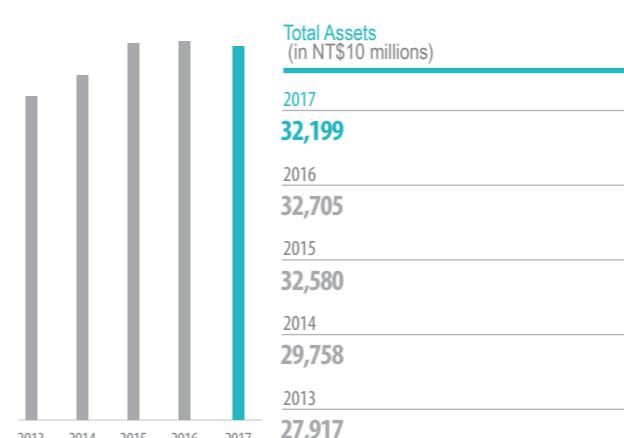
28nm

Compared to the previous year, the proportion of advanced manufacturing capacity for 28nm or below has increased by 35%.

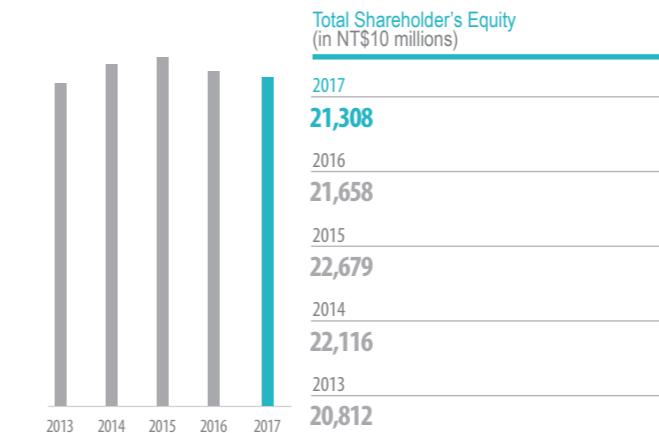
Operating Revenues



Total Assets



Total Shareholder's Equity



Income Tax Paid



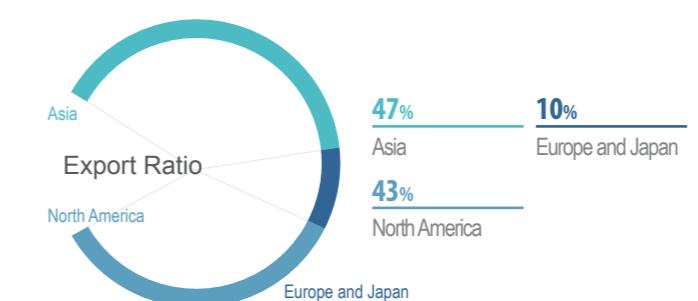
Note 1: The above information is in accordance with the Executive Yuan Financial Supervisory Commission approved international financial reporting guidelines.

Note 2: The above information is UMC's financial information. For consolidated information, please refer to Page 95 of the company's 2017 Annual Report.

Marketing and Sales Overview

Being highly recognized by customers, UMC's customer base includes major vendors in different regions. Asia Pacific and North America account for most of the product sales, where respective total sales in 2017 were 47% and 43%, while Europe and Japan accounted for 10% of the company's total revenue. UMC will continue to strengthen cooperation with world class customers, and is committed to developing high level customer products to ensure long-term stable growth.

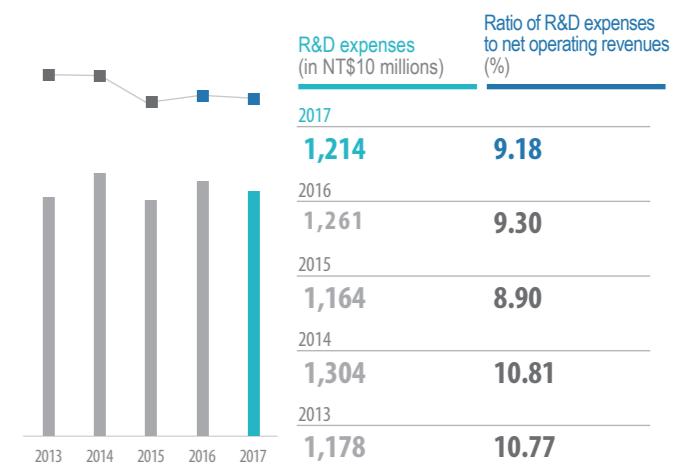
Export Ratio



2-2-3 Increase UMC's Investment Competitiveness

UMC's R&D team is committed to promoting the development of advanced manufacturing technology, and upholds the philosophy of foundry solutions that are consistent with market trends and customer needs, including world class advanced manufacturing technology, customer technical support and production. With the expansion of the Southern Taiwan Science Park, the company continues to employ a large number of R & D personnel, and spares no effort in recruiting and nurturing R & D talents.

R&D Expenses



Note 1: The R&D expense is in accordance with the Executive Yuan Financial Supervisory Commission approved international financial reporting guidelines.

Note 2: The above information is UMC's financial information. For consolidated information, please refer to Page 95 of the company's 2017 Annual Report.

China has the world's highest domestic demand for semiconductors, and recently, the Chinese government has supported the semiconductor industry through different approaches. Since 2015, UMC and its subsidiaries have a plan to invest about US\$1.35 billion over the subsequent 5 years to better approach the market and meet the needs of local IC design industries. Capital was invested into United Semi's 12-inch fab in Xiamen according to this investment schedule to provide 28nm and 55nm wafer processing services and further the development of the Group.

Moreover, in recent years, energy conservation and carbon reduction have become important administrative goals in major advanced and developing countries to cope with energy shortage and the potential crisis of environmental changes. Therefore, UMC established the UMC New Business Investment Corp in 2009. Since then, through strategic investments, the Company has channeled its existing technological talents and resources into solar energy, LED and other green industries. In addition, with the benefit of global growth in smart phone shipments and extensive construction of wireless communication stations by emerging markets, the Company continues to focus and invest in pure gallium arsenide wafer foundry service related industries. Recently, the solar energy and LED industries have undergone a round of industrial phase-out, reorganization and consolidation, but market conditions continue to slump. However, UMC will strive to increase the operational efficiency and reduce the costs of its new investments, and is committed to assisting its investment companies to grow and the parent company to profit.

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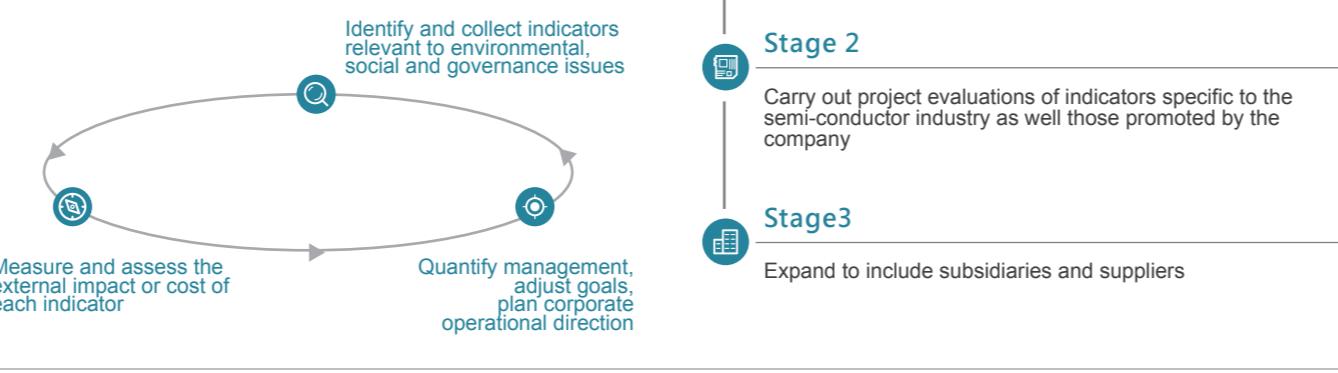
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2-2-4 Measurement and Evaluation of True Value

UMC considers issues of interest to stakeholders, and plans to evaluate the environmental and social externalities generated by the entire value chain in the course of operations in stages according to the types of issues and attributes. At the same time, UMC uses true value assessment methods developed by KPMG to monetize various external costs and impacts to enable companies to conduct comprehensive business opportunity evaluations and risk assessments. Subsequently, the company will step up and quantifiably manage the issues related to sustainability, making them important pieces of reference information when making relevant decisions.

Schematic Diagram of True Value Measurement and Evaluation Steps



2. Aside from UMC, the scope of this evaluation includes upstream and downstream value chains; content and description of relevant indicators are shown in the table below.

	Greenhouse gas emissions	Employee compensation and benefits
UMC upstream	Greenhouse gas emissions of scope 1, 2, 3	Salary, labor and health insurance, pension, and other employee benefits
UMC	Description of external factors Carbon emissions have an additional social cost due to impact on agriculture, human health, and climate systems	Description of external factors Compensation and benefits are the labor costs incurred by the company in the process of creating economic value
UMC downstream		
	Use of renewable energy	Public expenditures
UMC	Solar generated electricity	Income tax paid, government subsidies related to asset acquisition
Economy	Description of external factors Renewable energy can prevent the social costs incurred by carbon emissions	Description of external factors Public expenditures paid by companies is one of the major sources of the country's infrastructure
	Use of water resources	Work injuries and accidents
UMC	Amount of water used	Direct company financial loss, financial loss of injured person, money given by the Bureau of Labor Insurance and insurance company
Environment	Description of external factors The extent of the lack of water resources reflects the social costs we are required to pay	Description of external factors Work accidents have corresponding social costs for employees, businesses and the society
	Recycled water	Value Chain
UMC	1. Amount of recovered condensed water and rainwater 2. Amount of recycled water in the entire fab (manufacturing process/equipment)	Headquarters/ fab areas/subsidiary business units
UMC upstream	Description of external factors Recycling of water can prevent the social costs of water consumption	Suppliers/logistics companies/equipment manufacturers
UMC downstream		Community/general public/waste treatment company/waste recycling company
	Waste material handling	
UMC	Amount of waste materials landfilled and incinerated	
UMC upstream	Description of external factors Air pollution emissions and bad odors from landfilled or incinerated waste materials result in additional social costs	
UMC downstream		

Scope of Evaluation:

1. In the face of expanding global climate change and increasing shortages of energy and resources, UMC endeavors to give priority to evaluating significant environmental issues and indicators commonly used in industries. In the future, UMC plans to gradually expand into the assessment of other issues and indicators.

Evaluation Results

1. Through the scope of this analysis, it can be seen that the external benefits of 2017 as a whole have increased by

NT\$ 13.1 billion in comparison to traditional financial performance, reflecting an increase of 24%.



2. Greenhouse gas emissions and use of water resources are still the most important external costs in the overall assessment. As UMC has continued to promote a number of GHG scope 1 and scope 2 reduction plans over the years, the external cost of scope 3 is greater than the costs of scopes 1 and 2. On the other hand, the impact of the use of water resources accounts for a significant proportion, which means, in addition to reduction done at the source, efforts can be made toward water recycling to reduce the overall impact.

Note: For emissions and reductions of greenhouse gases and water resources, please refer to Chapter 3-2 on Carbon Asset Management as well as Chapter 3-3 on Water Risk Management.

External Costs and Benefit Evaluation Results



True Value 54,934,615 13,083,894

Note: EBITDA (Earnings Before Interest, Taxes, Depreciation and Amortization)

Future Promotion Focus

Reduce negative impact

- Actively carry out in-fab regenerative energy installation, list solar energy system as a new fab standard design and build project, and expand the promotion of greenhouse gas reduction plan, including reduction in major subsidiaries, procurement of green products, localization of procurement, and change of transportation methods, etc. to reduce overall greenhouse gas emissions.
- The company continues internal promotion of the Green 2020 program, to reduce power and water consumption as well as production of waste materials by 10%.
- Promote the security mindset 4.0 program and reinforce the prevention and management of accidents.

Promote increase of positive benefits

- Through education, training and social participation, the company will expand the holding of the Eco Echo award program and support the Energy Saving Service Team as well as the Spreading the Seeds of Hope Project, creating social value.
- Promoting a circular economy – The 3R League plans to work with suppliers to Reuse, Recycle, and Reduce (waste material energy and resource reduction) and increase the value of the environmental aspect.



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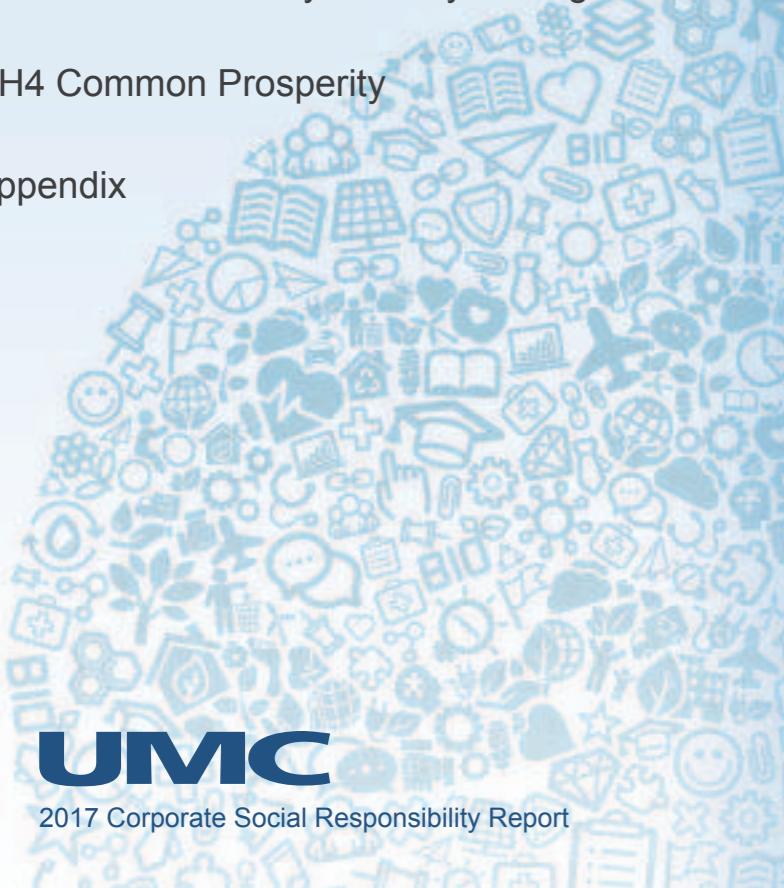
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2-3 Customer Service

In the spirit of UMC's philosophy of towards sustainable development, we believe sustainable economic development requires stability and growth in business performance, respect for customer feedback, customer demand, customer recognition and customer long-term support. While striving to strengthen operational performance, the company's economic growth and business sustainability is facilitated by a virtuous cycle that can only be truly created by investing and giving back to society, so that mutual benefits can be realized.

UMC is a leader in the semiconductor foundry industry. It provides advanced process technology and foundry services, and is a major wafer manufacturer for various application products in the IC industry. UMC is committed to meeting customer product demand, and emphasizes customer orientation and professional support. The company thinks from the customers' perspective, and based on their needs, provides a full range of services to achieve customer satisfaction and business sustainability.



2-3-1 Protecting Customer Assets

The UMC intellectual property (IP) protection policy is based on the following three principles:



Integrity

Uphold integrity toward self and customers.



Partnership

Through respect and mutual support, maintain positive long-term partnership to ensure maximum success.



Commitment

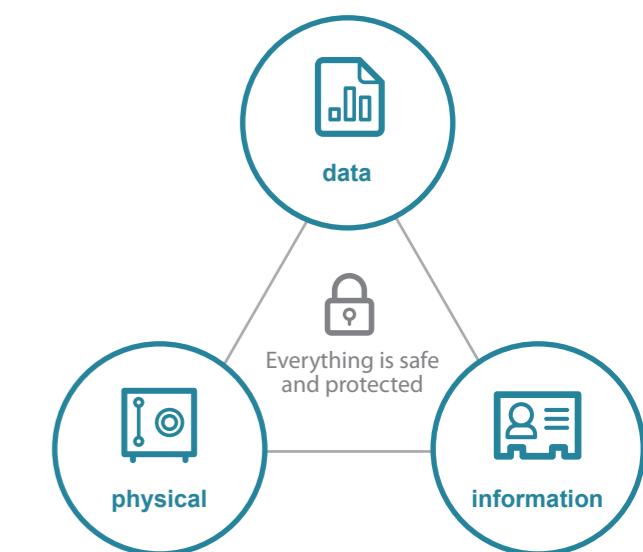
UMC is committed to ensuring the success of our partners, which marks our success in our objectives.

We carefully explain the UMC policy and principles on IP protection mentioned above to demonstrate our commitment to ensuring the important IP security of our customers. UMC is fully convinced that our philosophy of operation has not only helped us and our customers achieve today's growth and prosperity, but is also the best guarantee for achieving long-term success in the future.

UMC satisfies customer needs by helping manufacturers systematically develop, design and manufacture reliable and safe products that comply with international standards.

In 2014, UMC began pushing for International Organization for Standardization (ISO 15408) certification. In addition, its Fab 12A fab was awarded ISO 15408 Level EAL6 safety certification by the Germany Federal Office for Information Security, becoming the first wafer foundry in Taiwan to win such a certification and possessing manufacturing conditions that comply with the ISO 15408 Common Criteria. In addition to the comprehensive increase in the security of company and customer assets, customers are not required to verify wafer fabrication safety in their future applications for product safety certification, thereby reducing their costs in time and resources, and accelerating their product entry into the market.

Protecting Customer Assets - Customer Property (physical + information + data) Confidentiality (diagram)



In addition, the IT department also received ISO 27001 certification and established a complete information security management system (ISMS). Through the process of certification, IT security policies and management procedures are implemented and employees' information security is improved. Furthermore, through regular reviews conducted on security KPIs and implementation of information security audits, UMC reduced the information security threat to the company from the technical and procedural aspects. The benefits achieved include strengthening internal security controls, enhancing the security, trust, and satisfaction of external customers' with regard to intellectual property rights, as well as reducing customers' own repeated requests for UMC information security audits.



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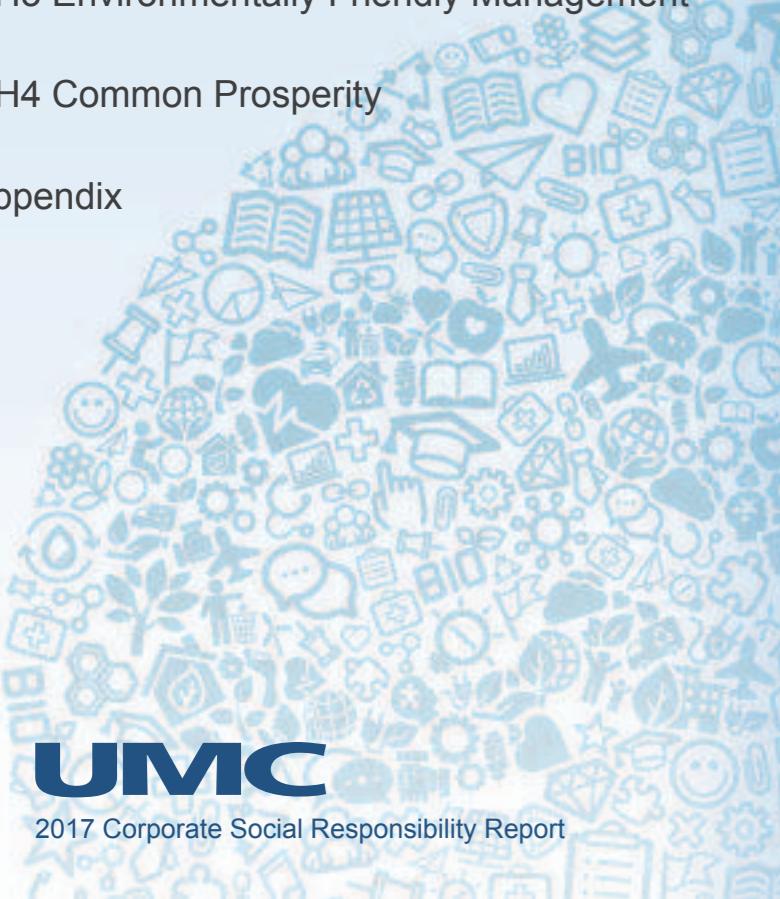
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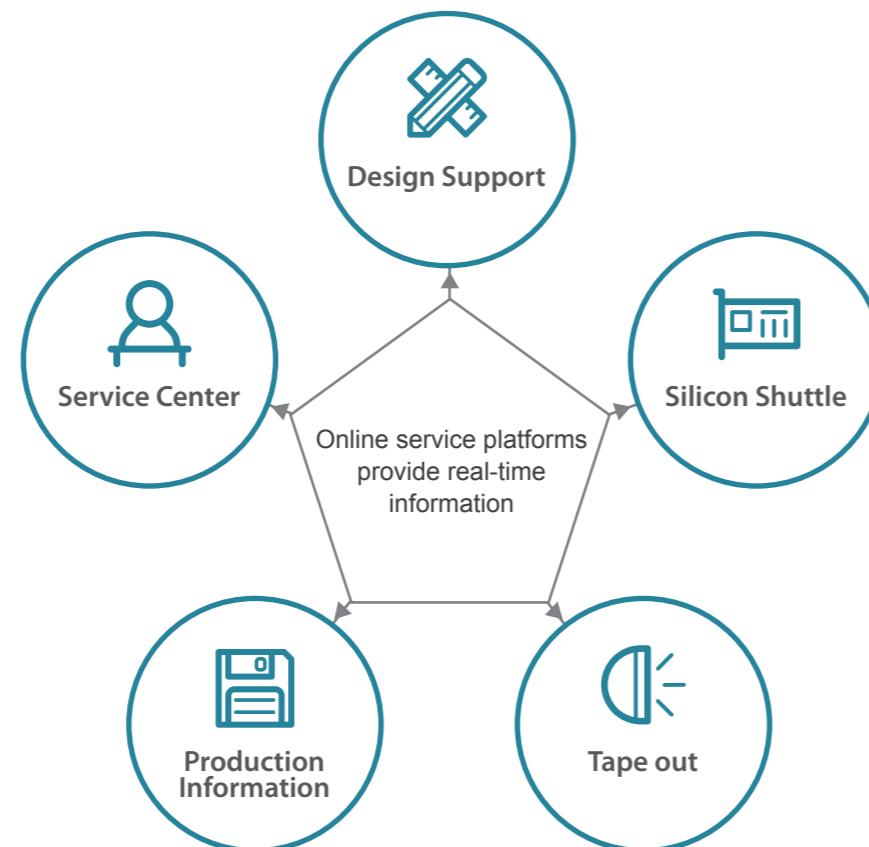
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2-3-2 Improving Service Quality and Customer Satisfaction

Since the beginning of its operations, UMC has been committed to customer satisfaction as its duty and long-term objective. This customer-centric mentality became the core value of the company. Customer-oriented products and services are our priorities, and overall solutions for fulfilling demands are based from a customer perspective. UMC has introduced the My UMC, My HJTC (reserved for HJTC customers) and MyUSC (reserved for USC customers) online service platforms to provide customers with complete and immediate online supply chain information, including production status of orders, shipping date inquiry, and product quality data and status. At the same time, the website also offers an Engineering Data Analysis feature which provides an easy engineering analysis function for customers. Moreover, the Voice of Customer (VOC) instant online complaint system allows customers to request UMC products or services, or offer comments or suggestions. Designated employees are responsible for distributing the feedback and managing and responding to customers, who may make online enquiries about the progress at any time. For UMC, understanding customer needs through the VOC, and transforming these requests into practical action enhance the company's service quality and competitiveness, and ultimately achieves customer satisfaction.



My UMC ~ My HJTC and My USC instant online complaint systems for customers

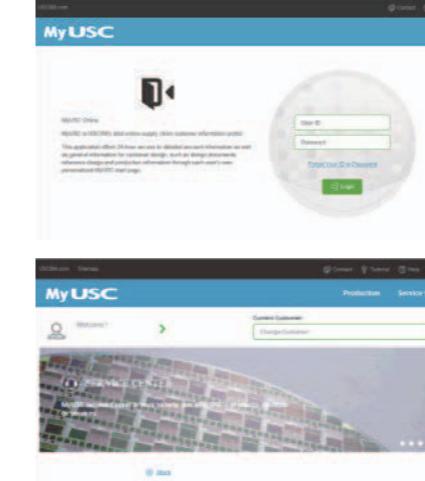
My UMC



My HJTC



My USC



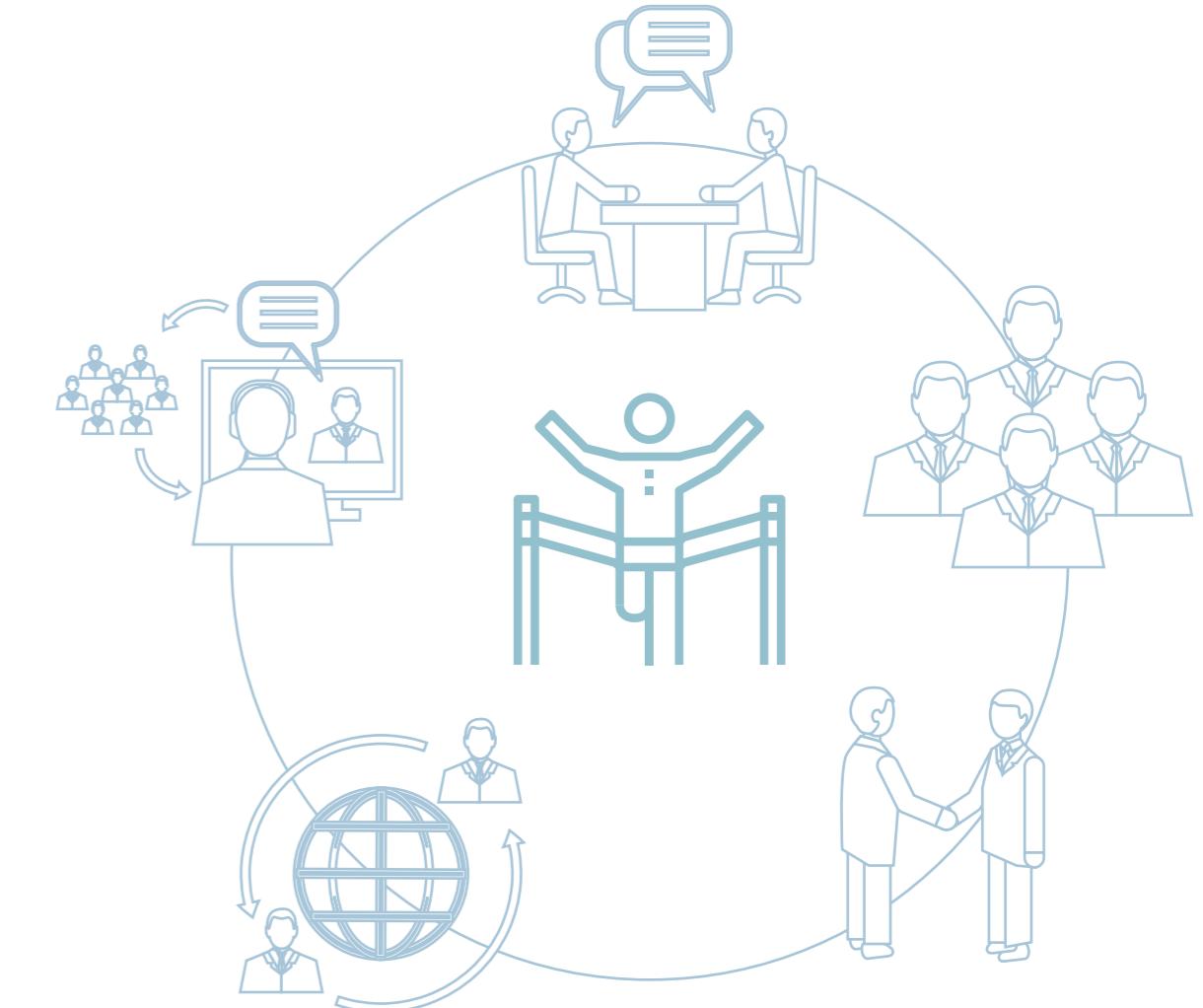
Improving Customer Satisfaction

UMC (including its subsidiaries HJTC and USC) regularly receives satisfaction ratings from those customers. Customer scorecards are distributed on an annual, semi-annual or quarterly basis. All customers scorecards will be analyzed to identify opportunities for improvement, and UMC upholds its responsibility to make timely and effective improvements to increase customer satisfaction.

UMC's (and its subsidiaries HJTC and USC) utilization of scorecards to determine customer needs and satisfaction allows for more immediate knowledge of customer needs. In addition, UMC also responds to customer needs through meetings, and ensures that their needs receive proper attention. At the same time, the company lists product quality and timeliness as key indicators of the company's internal performance to further enhance customer satisfaction and create a win-win business.

Customer scorecard ratings show that customer satisfaction towards UMC (and its subsidiaries HJTC and USC) has been growing steadily. At the same time, UMC's overall performance over the years has also received customer approval and awards, thereby indicating customer endorsement of UMC's product and service quality, and demonstrating the positive interaction and cooperation between UMC and its customers.

Customer Ratings



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2-4 Risk and Crisis Management

The ultimate direction of UMC's business operations is sustainable development, sound risk management and appropriate crisis management to ensure sustainable operations. To reduce accidents and their subsequent negative impact and losses, UMC is diligent in its crisis response, crisis prevention and drills in order to maintain its company image and protect the interests of stakeholders.



How We Manage

- Financial and Operational Risks Management
- Hazard Risk Control

Purposes

With sustainable business as the ultimate focus of operations, and using comprehensive risk management and timely crisis handling, the company actively implements crisis response, pre-crisis prevention, and disaster drills.

Goals and Targets

- Pursue sustainable business operations.
- Provide customers with wafer manufacturing that is diverse, uninterrupted, and of good quality.

Relevant Policies

Business Continuity Management Policy.

Applicable Entities:

1. UMC
2. Hejian Technology (Suzhou) Co., Ltd. and United Semiconductor (Xiamen) Co., Ltd., which are UMC subsidiaries selling and manufacturing integrated circuits

2-4-1 Financial and Operational Risks

UMC appointed Marsh Risk Consulting to perform Strategic Risk Assessment in November 2016. The consultants interviewed executives and collected and analyzed questionnaires completed by risk owners in order to define the strategic risks of UMC, analyze the impacts and develop a risk map. Through this hosted workshop, UMC executives internally discussed the topic of corporate risks to reach common consensus on objectives and structure of risk management, followed by how to plan and execute risk management strategies.

Analysis of the impact to financial performance indicates the following financial risks for UMC:

Liquidity Risk
Revenue and capital expenditure in the semiconductor industry is mainly calculated in currencies other than NT, and hence fluctuates with exchange rates. However, due to large exposure of deposits and loans in the semiconductor industry, changes in interest rates could result in deviations from expected financial performance.

Risk Strategy
To continue operations in emergency situations, UMC maintains a cash reserve equivalent of about three months of operational revenue to cope with operational needs under various situations. In addition, UMC maintains cash balance and bank facilities of no less than the amount of monthly revenue to ensure liquidity.

Credit Risk
Due to financial deterioration or other factors, customers may be unable to fulfill their contractual obligations, resulting in risk of loss from default.

Risk Strategy
UMC's Credit Management Department controls customer credit amount according to the company's credit policies and customers' financial conditions.

Property and Operational Disruption Risk

Natural disasters or accidents may result in risk of property or operational loss.

Risk Strategy

UMC mitigates natural or man-made disaster risks through property damage and business interruption insurance policies. The insurance scheme balances risk management costs, insurance premiums and risk retention capacity.

Currency Interest Rate Risk

Revenue and capital expenditure in the semiconductor industry is mainly calculated in currencies other than NT, and hence fluctuates with exchange rates. However, due to large exposure of deposits and loans in the semiconductor industry, changes in interest rates could result in deviations from expected financial performance.

Risk Strategy
UMC balances foreign currency assets and liabilities by natural hedging. In addition, appropriate management of debt period and fixed or floating interest rate structure reduces interest rate risk.



2-4-2 Emerging Semiconductor Risks and Global Risk Trends

Taiwan's semiconductor industry growth outpaces the global average. Driven by factors such as advanced process technology R&D, peripheral equipment and material cluster effect and the characteristics of emerging markets, the competitive advantage and growth potential of Taiwan's semiconductor industry is optimistic. Although the semiconductor market is expanding, the trend is expected to slow compared to the highly complex growth of past demand cycles. Moreover, the impact of Mainland China's national support strategies for its semiconductor industry in recent years cannot be ignored.

UMC assessment of possible emerging risks and countermeasures in the semiconductor industry.

Risk 1

In 2014, China announced a nearly \$600 billion investment to support its domestic semiconductor industry, and used national strategies to define semiconductors as a future key industry in China.

Impact on Operations

May affect customer's choice of OEM.

Countermeasures

- In 2014, UMC announced a joint venture with China's Xiamen municipal government in Fujian Province to establish the first Taiwan-funded 12-inch wafer fab. United Semiconductor (Xiamen) Co., Ltd. is the first 12-inch wafer fab in South China; it began mass production in 2016. It provides Chinese and global IC design companies with quality and geographically diverse manufacturing services, while satisfying the demand of China's huge electronics market's for wafer fabrication.
- Expand the technology and production capacity of Hejian, UMC's subsidiary in Suzhou, and maintain close cooperation with customers in China.
- In 2017, over 90% of revenue was generated by UMC's integrated semiconductor manufacturing operations.

Risk 2

Over the past four decades, Moore's Law has driven revenue growth, power, performance and cost improvement in the semiconductor industry. However, with shrinking processes, Moore's Law will reach a physical limit that will result in new challenges to progress.

Impact on Operations

With the cessation of Moore's Law, customer groups may contract, causing revenue to become concentrated to a few customers, which undermines profit and sustainable business development.

Countermeasures

- IoT is the next breakthrough application of science and technology that will become prevalent in daily life. Applications such as smart city, smart car (car networking), smart home, smart medicine (telemedicine), smart individual (health and fitness), smart factory and smart process may become the next important opportunities for the semiconductor industry.
- Characteristics constructed by innovative companies create market competitiveness for more and smaller customers. Since 2014, UMC has established an IoT task force to develop specialized platforms for helping customers to quickly gain an edge in the IoT market. In 2017, 14nm fin field effect transistor (FinFET) process technology was successfully developed for customer mass production.

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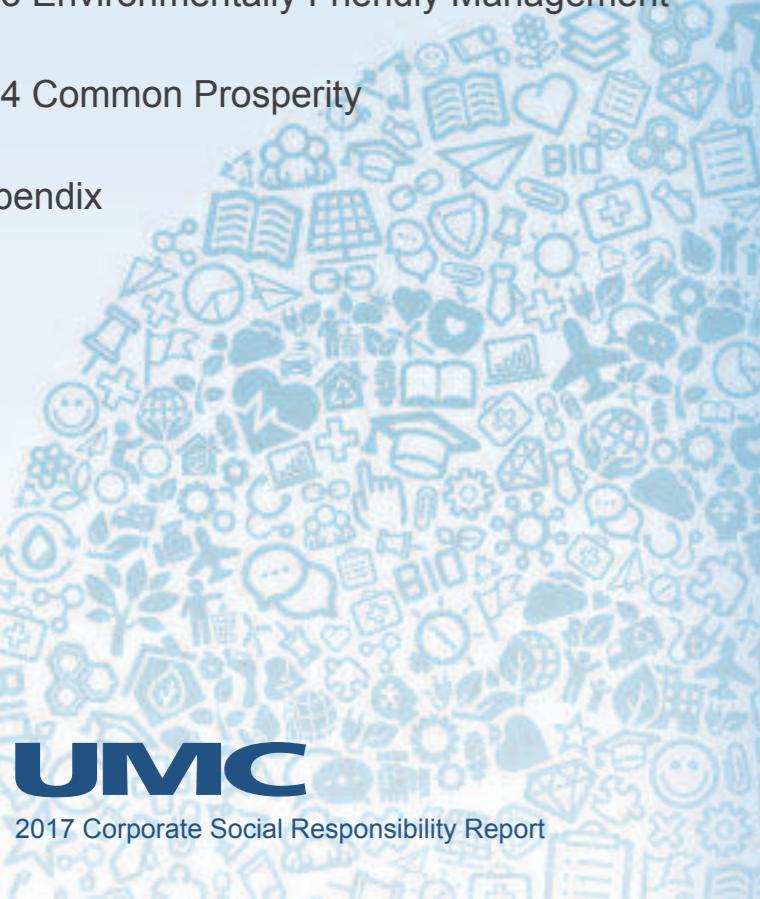
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2017 Corporate Social Responsibility Report

As a link in the supply chain, UMC remains aware of both emerging industry risks and the trend in global risks. Based on the Global Risk Report released each year by the World Economic Forum (WEF), UMC discerns risk trends and formulates early countermeasures for reducing risks.

Environment

- **Extreme weather event**
UMC Countermeasures
Refer to 2-4-3 for disaster and risk control.
- **Natural catastrophes**
UMC Countermeasures
Refer to 2-4-3 for disaster and risk control.

Society

- **Water crises**
UMC Countermeasures
Establish UMC water risk management tools for early warning and develop coping strategies.
- Strengthen Fab 12A flood control capacity, and complete the installation of flood gates and drills at specific entrances to prevent direct losses caused by floods.

Technology

- **Cyberattacks**
UMC Countermeasures
Install online defensive systems such as NG IPS, Anti-APT and WAF, and the SIEM information security management system to strengthen defense capability against attacks.
- NG IPS: Next Generation Intrusion Prevention System
- APT: Advanced Persistent Threat
- WAF: Web Application Firewall
- SIEM: Security Information & Event Management
- **Data fraud or theft**
UMC Countermeasures
Install encryption mechanisms for computer systems to reduce the risk of information leak due to laptop loss or inappropriate use.
- Install computer endpoint protection mechanisms for recording data output to reduce the risk of information leaks due to inappropriate use.

2-4-3 Business Continuity Management

With rising global risk, UMC recognizes the issue of business continuity, which means providing uninterrupted services to strategic customers and key relationships, and upholding customer diversity, sound quality and uninterrupted foundry manufacturing as the highest mission for business continuity management. Since 2002, UMC has established a Business Continuity Plan (BCP) for its fabs, and became a leader in the industry in 2013 when the Hsinchu headquarters and Fab 12A were awarded the ISO 22301 Business Continuity Management System Certification by SGS Taiwan Ltd. Under such an operation and maintenance mechanism, continuous and sophisticated evaluation ensures that in the event of a disaster or impact, the highest operational goals can be fully maintained and recovered, thereby protecting the maximum interest of customers and stakeholders. During 2018 manager reviewing meetings, the president approved the next management plan, which is within the following 3 years, ISO 22301 Business Continuity Management System will be promoted in all UMC 8-inch fabs, the subsidiary Hejian Technology Company (HJTC) and United Semiconductor (USC) to strengthen the fabs' production allocation and back up capabilities and comply with customer supply chain risk management requirements.

UMC Business Continuity Management Organization

The UMC business continuity management system comprises of the Business Continuity Management executive representative who is responsible for promoting management matters. The executive director periodically reviews management performance and makes decisions on business continuity management policies. Note: Please refer to the Risk Management section of the company website for information on policies and organization. http://www.umc.com/English/CSR/c_1.asp

System Operation Goals

2017 System Operation Goals Achieved in 2017

- (a).Construct the BCMS information rescue and recovery platform.
- (b).Achieve 85% purchase amount on the supplier BCP survey.
- (c).Cyber risk MFL assessment.

2018 System Operation Goals

- (a).Develop BCMS framework for 8" fabs (completed in two 8" fabs)
- (b).Deploy Earthquake Early Warning System pilot for Fab 12A
- (c).Establish supply chain risk map

2020 System Operation Goals

Fully develop BCMS for all UMC fab, the subsidiary Hejian Technology Company (HJTC) and United Semiconductor (USC)

2017 Operational Results of Business Continuity Management

UMC believes that only with robust emergency response management and recovery strategies could the company achieve its business continuity goals. Thus, all UMC fabs and functional departments deployed emergency response and recovery plans for specific events such as earthquake, fire, chemical spill, power disruption, water shortage and material shortage. Table-top drills are conducted every year in order to continually improve emergency response and recovery procedures. In 2017, UMC established a Rescue & Recovery SOP information platform to standardize the response procedure. In consideration of several recent large-scale cyber-attacks around the world, UMC invited Marsh&FireEye , a Cyber Security Leader, to hold a network and data security workshop on Aug. 2017. Afterwards, UMC implemented its Cyber Risk assessment and developed response and recovery plans for the top 3 Cyber risks to reinforce its cyber-attack response ability and resilience.

2-4-4 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 an active attitude toward preventive disaster risk management, and seeks to achieve the highest standard of semiconductor industrial safety through rigorous risk engineer controls and implementation of safety regulations and norms.

Fire Disaster Risk Management Objectives

Fire Safety

UMC incorporated the international standards of the U.S. Factory Mutual Insurance Company (FM), Underwriters Laboratories Inc. (UL), the U.S. 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 additional requirements.

Earthquake Protection

UMC actively planned and established sound disaster risk management and response procedures, and collaborates with internationally renowned structural consultants specializing in earthquake response, which is structural engineering consultants, JENSEN HUGHES to assess the earthquake safety of its buildings, factory facilities, pipelines and production machines.

Equipment Safety

The Environmental Health and Safety Standards (SEMI-S2) for semiconductor manufacturing equipment is the primary international standard adopted by UMC for reviewing newly procured fab tools, and is the company standard. Introducing the Equipment ESH Purchasing Specifications into its procurement activities, equipment must conform to review standards before being brought into the fab, and conform to inspection after installation for effective equipment safety control.

Earthquake Risk Management

UMC establishes comprehensive disaster risk management procedures and invited Stevenson & Associates (S & A) and Marsh earthquake prevention experts to conduct anti-shock inspection for buildings, facilities, pipelines and production tools. Moreover, UMC continues to import the latest anti-seismic technologies, such as anti-earthquake damper for buildings and seismic isolation platforms for reticle stocker and furnace. Researching the application of an earthquake early warning system in 2017 with National Center for Research on Earthquake Engineering (NCREE), UMC will introduce an earthquake early warning system at Fab 12A in 2018 to gradually establish an earthquake safety protection network to improve personnel safety and reduce the risk of earthquake damage to production tools and facilities.

Response and Action for Extreme Climate

UMC remains actively alert to the possible impact of extreme weather. In terms of flood risk, UMC will incorporate flood control standards into the specifications of new plants. The base of the new Fab 12A_P5 / P6 plant is 2m above the surrounding roads, and meets the 200-years flood control standard. The flood potential risk assessment and overall recovery strategy and plan for Taiwan was conducted in 2014, and compared to the Hsinchu fab which is situated higher up in hilly terrain and therefore faces no flood risk, Tainan's Fab 12A is situated in a flood potential area. Hence, flood control gates are installed in specific entrances to strengthen flood control capacity, and the protection level is increased to the 500-years flood control standard. In terms of water shortage crisis, UMC collaborated with Professor Tong Chingbin from the National Taiwan University Department of Bioenvironmental Systems Engineering in 2016 to install the UMC water shortage warning system for forecasting the water situation for three months to help UMC prepare for or implement water conservation and reduce operational risks.

Triple-Star Rating system

Since 1998, UMC has introduced the Triple-Star Rating System. The international insurance company AIG has been invited to conduct audits every year, thereby continuously upgrading the risk protection level to comply with UMC's commitment of Highly Protected Risk to customers and the insurance market.



AIG MATTHEW ROBERT SCRIVENER was invited to conduct the inspection in 2017.

2-5 Sustainable Supply Chain Management

Words from Co-President and CS Committee Chairman

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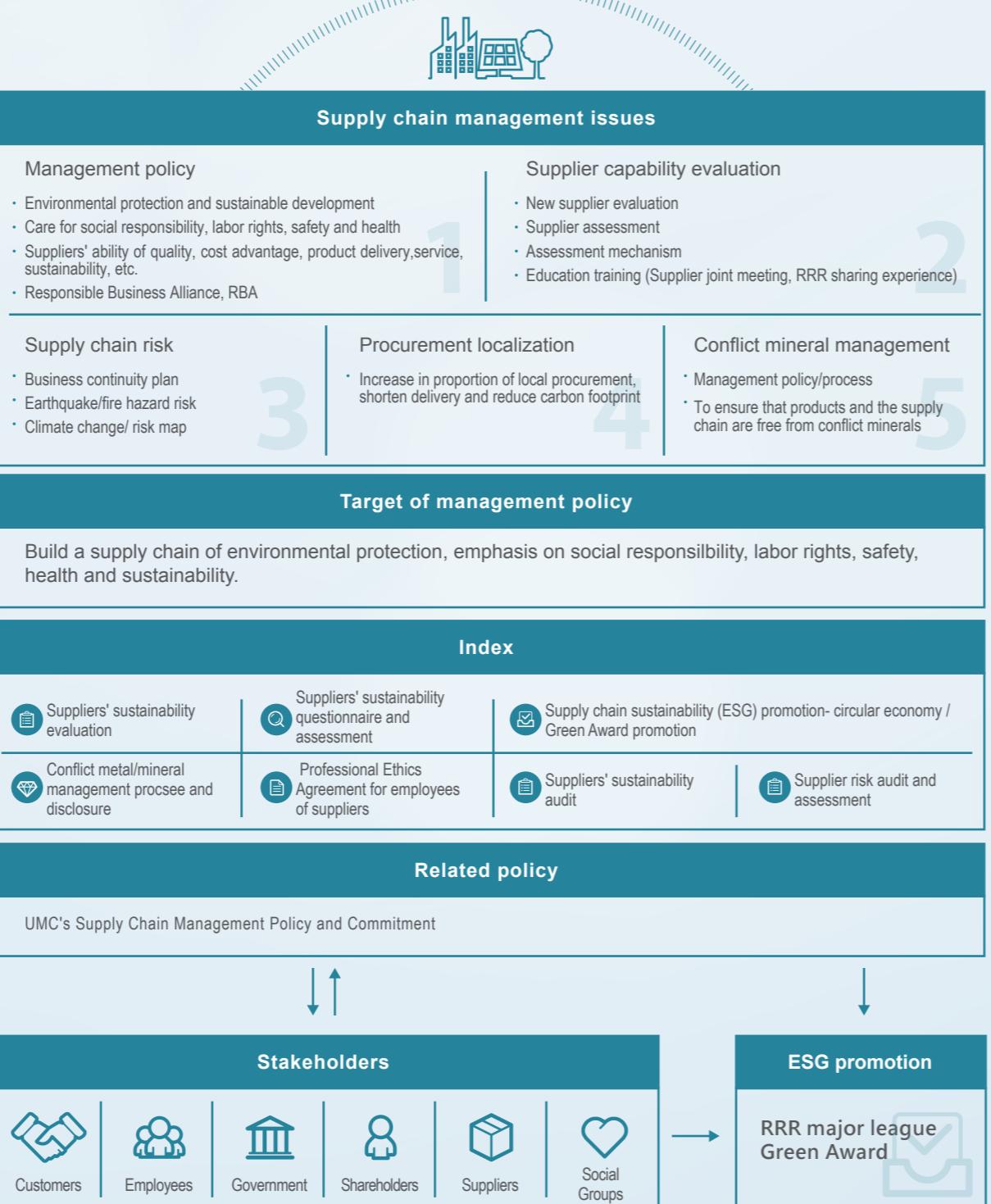
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Regardless of where in the supply chain, corporate social responsibility must be confronted. For UMC, such a challenge also presents opportunities. The Supplier Management Committee has formed a special task force to promote sustainable supply chain management. Not only are UMC's suppliers being business partners, but also follow their social responsibility in related issues. Management model and major performances are summarized as follows:

Operation Management Model



Major Performances

Item	Target and conformity in 2017 (conform/not conform)	Short-, mid-term Goal
Supplier sustainability questionnaires and assessment percentage	<ul style="list-style-type: none"> 1.1 Complete ESG assessment for raw material suppliers from 100% of the procurement 2. New supplier's ESG assessment <p><input checked="" type="checkbox"/> 1.1 Completed the ESG assessment for 100% of raw material suppliers; a total of 488 suppliers</p> <p>1.2 ESG assessment for 90% of equipment and facility suppliers; a total of 85 suppliers (573 of them are Tier-1 suppliers and 19 of them are Tier-2 suppliers)</p> <p>2. New suppliers' main assessment criteria is based on estimated procurement amount above NTD one million, and suppliers who are highly related to environmental and manpower service. 29 suppliers are planned to be assessed, 26 have been carried out.</p>	<ul style="list-style-type: none"> 1-1. 100% of production related raw material suppliers 1-2. 80% of equipment and facility related suppliers 1-3. Existing 600 suppliers to be done annually 1-4. New suppliers' main assessment criteria is based on estimated procurement amount above NTD one million, and suppliers who are highly related to environment and manpower service.
Quantity of supplier sustainability (ESG) audit	<p><input checked="" type="checkbox"/> Completed ESG on-site audit for 148 suppliers (suppliers with low self-evaluation scores, new suppliers and key suppliers with high material risk), 6 suppliers failed the ESG audit, and they will be monitored for improvement.</p>	Complete ESG on-site audit for more than 120 suppliers annually.
Quantity of supplier continual management (BCM) audit	<p><input checked="" type="checkbox"/> Completed the supplier BCM management promotion, performed the ongoing risk assessment for suppliers that accounted for 95% of our procurement, completed on-site audit of 23 suppliers.</p>	Complete BCP on-site audit for more than 23 suppliers annually.
Conflict mineral management	<ul style="list-style-type: none"> 1. Conflict mineral investigation report 2. On-site audit for 3 suppliers <p><input checked="" type="checkbox"/> 1. Completed the 2017 conflict mineral investigation report (no conflict minerals were found in 13 suppliers, 9 contractors and 16 affiliated companies)</p> <p>2. Completed on-site audit for 3 suppliers, and no misconduct was found</p>	<ul style="list-style-type: none"> 1. Complete Conflict mineral investigation report annually. 2. On-site audit for more than 4 suppliers annually. 3. Conflict-metal free in 2020.
Ethics and anti-corruption	<p>100% of the newly added suppliers signed the UMC Supplier and Employee Professional Ethics Agreement</p> <p>In 2017, 97% of the newly added suppliers (294 suppliers) signed the UMC Supplier and Employee Professional Ethics Agreement; over 3000 suppliers have already signed in total.</p>	100% of the newly added suppliers must sign.
Supply chain risk	<p>Establish risk databank</p> <p><input checked="" type="checkbox"/> Completed the supply chain risk databank and earthquake spare parts (quartz, fragile parts) management process for 2000 key raw materials (covered around 100 suppliers)</p>	Complete supply chain risk map in 2020.
Supply chain sustainability (ESG) promotion: circular economy	<p>Propose 1 sustainability (ESG) promotion plan</p> <p><input checked="" type="checkbox"/> 1. Completed the promotion of UMC RRR League, invited suppliers of chemical raw materials, waste treatment, parts cleaning, and maintenance to form the UMC RRR League.</p> <p>2. Held 3 shifts of RRR sharing events.</p>	<ul style="list-style-type: none"> 1. Impress local suppliers on Triple R DNA to present best practice of Triple R. Organize a commitment rally in 2017, launch a three-year special project that will run from 2017-2019. 2. Valuable recycle material amount to NTD 100 million in 2020.

Words from Co-President and CS Committee Chairman

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Appendix



2-5-1 Localize Supply Chain and Procurement

When corporate social responsibility becomes the key to business continuity, UMC must fulfill increasing international expectations towards business standards in Taiwan.



2017

UMC cooperated with more than **2,300** suppliers worldwide.

The proportion of all suppliers is as follows:

106 suppliers for equipment

(10% of procurement amount)

200 suppliers for raw material

(47% of procurement amount)

395 suppliers for facility

(5% of procurement amount)

495 suppliers for spare parts

(16% of procurement amount)

7 suppliers for wafer and mask

(5% of procurement amount)

around **1,100** suppliers for other items including cost expenditure

(17% of procurement amount)

Procurement localization became a key strategy adopted by UMC when looking for potential partners and suppliers. In addition to enhance close partnerships with local suppliers, UMC hoped suppliers would provide services more efficiently, shorten delivery time and reduce carbon footprints of raw materials required through local production. UMC also provided job opportunities and promoted local socio-economic development indirectly. UMC believes that a procurement localization strategy is a key value for fulfilling corporate sustainable development and is a part of corporate social responsibility.

UMC applies procurement localization strategy to all production sites. In 2017, approximately 93% of UMC's suppliers were domestic suppliers in Taiwan. Proportion of procurement amount to total amount is 84%. For the supply chain in Singapore, up to 78% of UMC's suppliers were domestic suppliers in 2017. 88% of procurement amount is domestic. Among the supply chain in China, up to 72% of UMC's suppliers are domestic suppliers for HeJian Technology (Suzhou) Co., Ltd. 43% of procurement amount is domestic. Up to 62% of UMC's suppliers are domestic suppliers for United Semiconductor (Xiamen) Co., Ltd. 27% of the procurement amount is domestic.

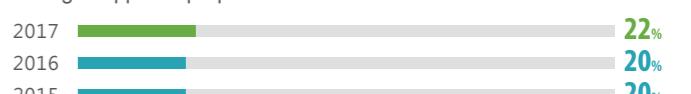
Analysis of suppliers for the Singapore Branch in 2017: Up to 78% of the procurement was acquired from local suppliers and the procurement amount was up to 88%.

UMC Singapore branch

Domestic suppliers' proportion



Foreign suppliers' proportion



Domestic procurement amount



Foreign suppliers' proportion



Domestic procurement amount

Foreign procurement amount

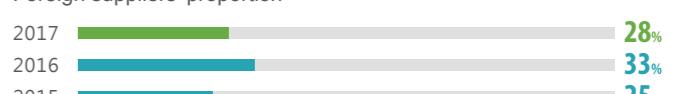
Analysis of suppliers for the Mainland China subsidiary HJTC in 2017: Up to 72% of the procurement was acquired from local suppliers and the procurement amount was up to 43%.

HJTC (Subsidiary He Jian Technology)

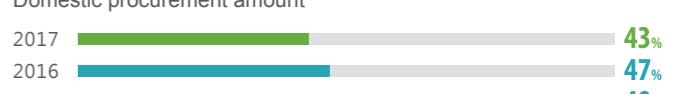
Domestic suppliers' proportion



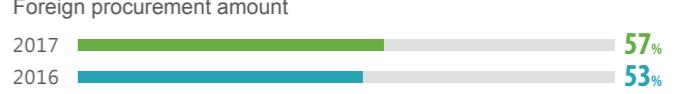
Foreign suppliers' proportion



Domestic procurement amount



Foreign procurement amount



Major UMC production bases in Taiwan are located in Hsinchu Science Park and Tainan Science Park. Overseas locations are mainly located in Singapore (UMC Singapore Branch) and Mainland China (subsidiary He Jian Technology). In addition to HeJian Technology Co., Ltd. located in the Suzhou Industrial Park, UMC's manufacturing base in China also includes United United Semiconductor (Xiamen) Co.,Ltd. founded in 2015. United Semiconductor Co., Ltd. is a semiconductor manufacturing company, specializing in the manufacturing of 12-inch wafers.



Analysis of suppliers for the Mainland China subsidiary United Semiconductor (Xiamen) Co., Ltd in 2017: Up to 62% of the procurement was acquired from local suppliers and the procurement amount was up to 27%.

United Semiconductor (Xiamen)

Domestic suppliers' proportion



Foreign suppliers' proportion



Domestic procurement amount



Foreign procurement amount



(Note: Data is based on orders made to local vendors)

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2-5-2 Sustainable Supply Chain Management

UMC's Management Policy and Commitment



Policy

- To protect the environment and emphasize society's obligation, labor rights, security, health and the goal of a continually developing supply chain.
- Our suppliers should have a sustainable procurement policy to manage vendor's quality, cost leadership, delivery, service/response, and sustainability. To fulfill demand in accordance with UMC and promote the spirit of competition.
- To regard vendors as partners, and guide them towards long-term cooperation. To build up an eternal supply chain to continually develop the semiconductor industry.
- To ensure products and the supply chain do not contain conflict minerals.
- To cooperate with upstream & downstream vendors and collaboratively create business opportunities.
- To firmly believe the key point of an enterprise's management is to fulfill economic, environmental, and society obligations. To voluntarily reinforce the enterprise's commitment to these obligations, and promote the benefits to customers, employees, suppliers & the community.
- To monitor fire and earthquake damage, security risks & hygiene, environment, and labor rights. Supply chain risk management is also a competitive capability; as such, the company shall focus on supply chain vendor risks and voluntarily provide any assistance if necessary.
- To require suppliers to conduct the survey and management of the current business operating status, material sourcing diversification and the geographic dispersion of suppliers' production. To reduce the material shortage risks from extreme climate or serious natural disasters.
- To build up our risk evaluation program for supply chain vendors and establish an eternal evaluation method for them. To regard the method as the risk evaluation element and become one of the most important UMC procurement strategic references with elements of delivery date, quality, finance and business operation.
- UMC requires suppliers to guarantee that they have conducted supplier assessment and obtained supplier signatures certifying that gold, tin, tantalum and tungsten have come from non-conflict mineral regions. UMC shall exercise due diligence in supply chain audits to exclude the use of conflict minerals from the Democratic Republic of Congo (DRC) or Central Africa. UMC encourages suppliers to promote a similar management policy and has announced a related procurement policy in its CSR section of its official website to ensure our metal procurement procedure meets social and environmental responsibilities.
- To respect and protect the rights of intellectual patent property and conduct fair trade, advertisement and competition.
- To commit to business integrity and forbid any inappropriate profit acceptance, corruption, extortion, or defalcation. To establish a confidential identification mechanism for accusation.

UMC Supplier Management Capability Assessment

UMC has planned a comprehensive supplier management approach, and expects to establish a sustainable supply chain management mechanism for providing control and counsel in the following 4 major dimensions:

New Supplier Selection:

- Review suppliers' dimensions of quality / finance / price / delivery / service / sustainability
- Request new suppliers to sign UMC Supplier and Employee Professional Ethics and Code of Conduct
- New suppliers will be recognized once suppliers' conditions meet UMC's requirements

Supplier Review/Management

- Score suppliers according to supplier review mechanism
- Stop purchasing from or cancel qualified status of suppliers who score below UMC requirements

Grade Suppliers and Counsel Accordingly

- Categorize suppliers according to characteristics and risks
- Assess suppliers according to categories during annual supplier audits
- Based on assessment outcome, provide counsel to achieve company requirements

Supplier Education and Training

- Conduct supplier education and training periodically
- Promote and communicate UMC supply chain management approach

New suppliers' main assessment criteria is based on estimated procurement amount above NTD one million, and suppliers who are highly related to the environment and manpower services.

New Suppliers Selection

Currently, criteria for selecting new suppliers include



In 2016 UMC Taiwan added 12 new suppliers that were assessed through Dow Jones Sustainability Index questionnaire. Suppliers providing manpower and accessory equipment are prioritized for assessment. As a result of the assessment, all environmental suppliers agree that UMC is committed to improving environmental protection measures such as energy, waste, hydropower resources, and reduction of greenhouse gas emissions. Some suppliers have realized the possibility of risk management affecting the company's operations in terms of risk management. In 2017, UMC added 294 new suppliers in Taiwan, of which 26 (new suppliers accounted for 8.8% in 2017) were evaluated by ESG. Suppliers for labor, health and safety, environment, business ethics and management were all required to meet UMC's criteria. All suppliers are required to meet the company's standards and fully comply with the laws and regulations of the countries/regions in which they operate.

97% of new suppliers added in 2017 agreed to sign the above-mentioned Professional Ethics Agreement, pledging to promote corporate social responsibility.

Sustainable Supplier Assessment



Economic

- Supplier cooperation in terms of material delivery/stock management
- Emergency response plan for material provision
- Banned conflict minerals disclosure
- Suppliers annual financial report



Environmental

- Greenhouse gas emission information and carbon risk management
- Water resource usage information and water risk management
- Energy usage information and risk management
- Waste production information and management
- Overall environmental assessment



Social

- Performance in human rights and labor index
 - Labor and professional ethics
 - Human resource assets and development
 - Labor criteria assessment
- Community assessment
- Sustainability and corporate social responsibility
- Others: Business sustainability plan, social impact
- Employee safety

Supplier's Risk Assessment

ESG assessment questionnaire

Method: UMC ESG risk assessment questionnaire
Target: Fulfill supply chain management, focusing on sustainable business plan
Object : 1. 100% procurement amount of raw materials
2. 80% procurement amount of equipment and facility

Frequency : Periodically

Positive/flexibility risk assessment

Method: Flaw found under audit or purchase order ongoing
Target: Ensure suppliers' quality, delivery, service and sustainability
Object : All suppliers

Frequency : Randomly

High-risk supplier risk assessment / audit

Method: 1. On-site audit, review flawed items 2. Request improvement proof within limit period 3. Check result of improvement and continuous observation
Target: Fulfill supply chain management
Object : High-risk suppliers

Frequency : Randomly

Assessing Supplier Sustainability Level and Response Measures



100-90

Good

Increase procurement amount.



89-80

Satisfactory

Maintain current operation, but request supplier to strengthen management mechanism.



79-70

Needing Improvement

- Audit suppliers who scored less than 80 points in the current year, and counsel improvement.
- The Supply Chain Management Group should review procurement from suppliers who scored between 70-79 points for two consecutive years.



Below 70

Significant Deficiency

- Audit suppliers who scored below 70 points in the current year, and counsel improvement.
- The Supply Chain Management Group should discuss terminating procurement from or canceling supplier status of suppliers who scored below 70 points for two consecutive years.

Words from Co-President and CS Committee Chairman

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Mechanism for Assessing Supplier Sustainability

Management Target

- Suppliers for various raw materials used for production

Management Unit

- Supplier Chain Management Committee

Management Approach

- Suppliers' flaws are found under audit or during ongoing purchase orders
- UMC requires suppliers to improve on flawed items
- Suppliers need to submit improvement proof within a limited period
- Close case and maintain probation if the results are approved
- Cancel suppliers' qualification or terminate business if concerned issues remain
- On-site audit of major suppliers annually

Assessment Item

- Sustainability Index
- Quality Index
- Price Index
- Delivery Index
- Service Index

ESG Assessment for All Qualified Suppliers

To operate sustainably, UMC considers suppliers as partners and draws them into long-term cooperation to build up a stable, developed sustainable supply chain and reduce delivery risk. Targeting at "sustainability" items for assessment, UMC audits suppliers who responded to questionnaires regarding the three dimensions of economy, environment and society. UMC enforces suppliers to put emphasis on E.S.G. internal control and reach sustainable supply.

UMC Taiwan has conducted assessment on its qualified diversified suppliers including suppliers for raw material, equipment, facility and spare parts. Among the investigated suppliers, 573 of them were major suppliers that accounted for over 90% of UMC's procurement volume. Deducting 9 suppliers due to single transaction, the result of the assessment revealed that 414 of them reached the "Good" level. In addition, 119 of them reached the "Satisfactory" level, 17 of them reached the "Needing Improvement" level, and 15 of them failed the assessment in the aspects of economy, environment and society, receiving a score of less than 70 on the responding questionnaires.

Subsequently, on-site audit was carried out for 148 suppliers with low scores in self-assessment, and for key suppliers with higher material risk. After the on-site audit, 6 suppliers failed to meet requirements. For these 6 suppliers, additional audit will be carried out next year and corrective measures will be implemented for improvement. If the supplier receives a score between 70 and 79 for two consecutive years, its procurement percentage will be reviewed by the supply chain management committee. So far in 2017, no supplier has been disqualified or terminated. In 2018 UMC will continue executing its supply origin survey and systemize it for responding how to review and manage risk when suffering material shortage due to global severe disaster or from human accidents.

The result of the 2016 suppliers' questionnaire revealed 6 suppliers at the "Needing Improvement" level. Through continuous counseling, all 6 suppliers were qualified during the 2017 assessment. 3 of them reached "Satisfactory" level, while the remaining 2 reached to the "Good" level. All 6 suppliers improved in environmental and social dimensions.

Results of UMC Taiwan and Singapore ESG questionnaire in 2017



HJTC (Subsidiary Hejian Technology) and United Semiconductor (Xiamen) will execute its ESG questionnaire in 2018 prioritizing raw-material suppliers.

Methods of Suppliers Failure Improvement Management

Flow found under audit or purchase order ongoing

Received flawed items

Improvement Process

Improvement proof provided

Not Improveve

Improvement

Keep conselling

cancel suppliers'qualification in short term or terminate business if issue is concerned

Case close, keep probation

For suppliers whose audit results reveal flaws, UMC guides suppliers that lack certain management mechanisms to improve on their shortcomings and expects them to complete this improvement. If the manufacturer fails to improve, UMC will continue to counsel while implementing short-term suspensions of suppliers, or terminating the business relationship altogether if supply chain risk management is not properly conducted.

Facility-A,B,C,D Significant Deficiency & Needing Improvement Level

Remark

- 1. There is no BCP procedure guidance. Suppliers are suggested to set up a complete BCP procedure guidance.
- 2. Human right and labor ethic policy should be propagated periodically and alongwith training.
- 3. Suppliers are requested for improvement due to score under 80 points, and listed in to be assessed list in 2018 to track improvement results.

Spare Parts-A,B Significant Deficiency Level

Remark

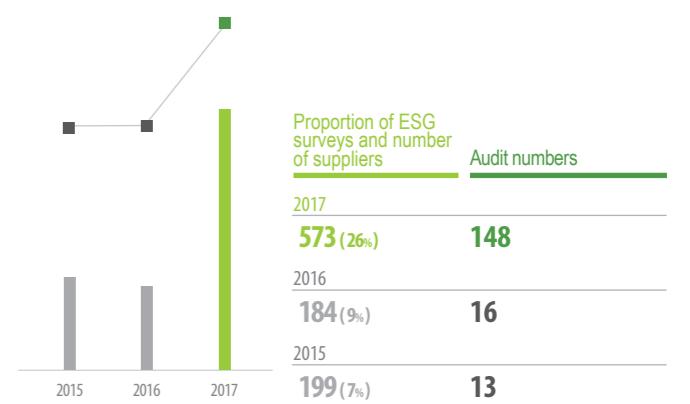
- 1. Suppliers didn't execute risk assessment of natural disaster. There is no BCP record for rehearsal and practice.
- 2. Code of conducts should be set up, including human right/ ethic-related policy and declaration.
- 3. Suppliers are requested for improvement due to score under 80 points, and listed in to be assessed list in 2018 to track improvement results.

UMC Singapore also investigated their qualified material suppliers in the aspects of the economy, the environment and the society through questionnaires. A comprehensive investigation of suppliers was conducted in 2017. Among the investigated suppliers, 51 of them, which accounted over 95% of the procurement volume at UMC, and 48 of them were rated as "Satisfactory" or above. 3 of them didn't reach the "Satisfactory" level. UMC will continue to counsel those who were imperfect in their BCP plan.

In 2018 Q1 UMC will audit suppliers who were assessed in 2017, targeting major suppliers for raw material, equipment, facility and spare parts. Among the investigated 607 suppliers, each of them is based on NTD 2 million transaction amounts, and accounted for over 80% of UMC's procurement volume. The investigation was completed and the responding questionnaires were assessed. It is hoped that such comprehensive ESG investigation on qualified suppliers can provide guidance for improvement. As for the suppliers with low self-assessment score, new suppliers, and key suppliers with high risk, on-site audit will be performed.

From 2015 to 2017, the number of ESG surveys and suppliers is as follows. In 2017, the number of suppliers increased significantly, from 16 in 2016 to 573 in 2017. In 2017, ESG will investigate the types of suppliers, from the expansion of raw material suppliers to the suppliers of equipment, plant engineering, and consumable parts. The percentage of purchases of the assessed suppliers grew from 44% in 2016 to 90% in 2017.

Suppliers's social responsibility "ESG" audit and consuelling



Based on NTD 2 million transaction amounts, an estimated 600 suppliers will take the questionnaire in 2018. 120 suppliers are planned for on-site audit.

Words from Co-President and CS Committee Chairman

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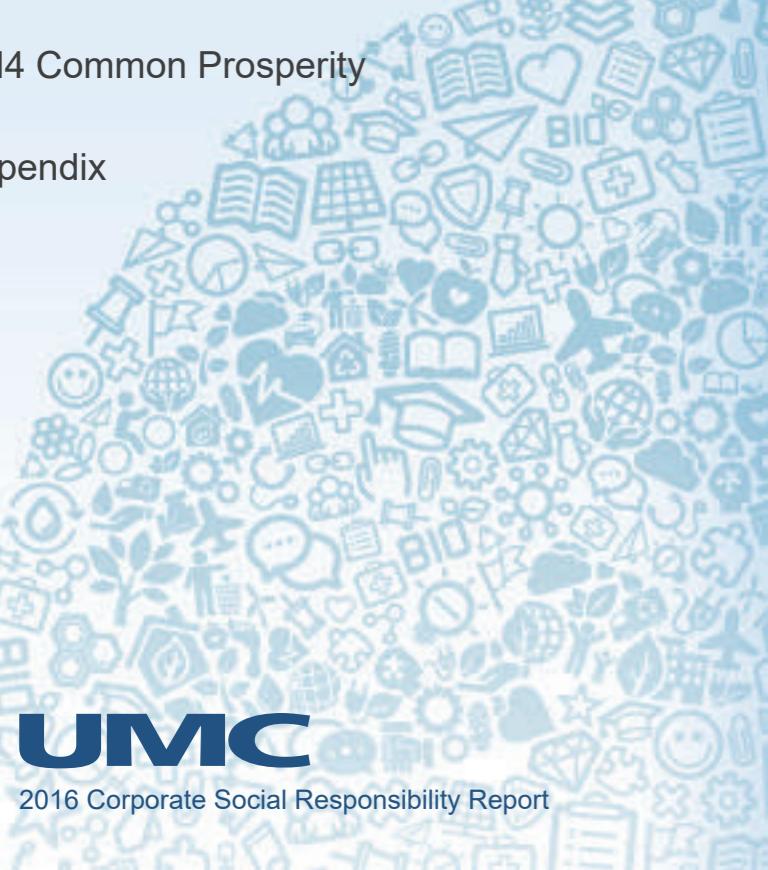
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UMC

2016 Corporate Social Responsibility Report

Sustainable Supplier Risk

In order to fully understand the operation conditions of suppliers, such as their material source distribution as well as their material production line locations, and also minimize the risk of material shortage due to extreme climate or devastating natural disaster, UMC has established a risk assessment system for collaborated suppliers. Each year, UMC primarily conducts an annual sustainability risk survey, audits and scores major suppliers of raw materials such as silicon wafer, gases, chemicals, quartz components, photo masks, and component cleaning, who represent more than 95% of procurement dollar value at UMC. This fully demonstrates the close cooperation between the company and its partner suppliers to facilitate the commitment to increase overall value of the supply chain.

Business Sustainability Plan

Request suppliers to formulate contingency plans and procedures for potential natural or man-made threats that may result in their production loss to ensure operational continuation and impact reduction for UMC.

Earthquake Risk

UMC offers vendors instructions on strengthening earthquake resistance and establishing emergency notification systems so that in the event of a disaster, the suppliers can immediately report the situation and update recovery progress to UMC. UMC shares experience with suppliers for fire prevention.

Climate Change and Water Risk

UMC requires suppliers to prepare a response plan, such as production backup plan and increased inventory to reduce the impact of an incident.

Suppliers' Origin Investigation

UMC conducts supplier origin survey on 2,000 key raw materials (approximately 100 suppliers), and establishes an emergency notification system in advance to prepare response plans.



Suppliers and Contractors Training



UMC attaches great importance to contractors' training and ensures that the contractor has sufficient knowledge of environmental safety. In 2017, a total of 12 joint conferences of contractors were held and a total of 605 companies attended. The monthly contractors' joint meeting will carry out safety management announcements and accident advocacy for each site, and all meeting minutes are recorded.

In response to the launch of the 3R Grand Alliance, UMC held 3 sharing sessions in 2017 to invite suppliers to share experiences in order to promote the idea of energy conservation and waste reduction in a circular economy.



Supply Chain Sustainability Propose (RRR Major League, Green Award)

Circular Economy-RRR Major League

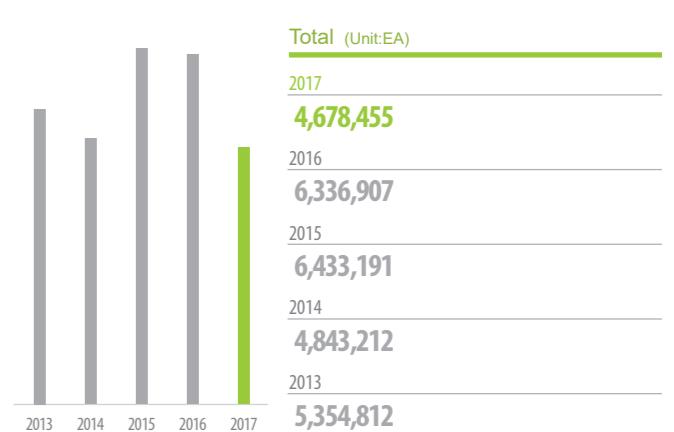
In response to the implementation of corporate social responsibility, UMC is a citizen of the Earth and has been committed to environmental protection, energy conservation and carbon reduction in recent years. In order to expand the promotion of corporate social responsibility, in 2017 we initiated the development of the UMC 3R Alliance, Reuse, Recycle, and Reduce. We invite suppliers' partners to join the green supply chain to enhance the value of the green supply chain. In 2017, 26 vendors were invited to participate in the project, including 3 large-scale chemical raw material suppliers (9 companies), UMC waste suppliers (10 companies), spare parts cleaning and maintenance companies (7 companies). In addition to reviewing the achievements of energy saving, waste reduction and recycling economy through vendor-specific quantifiable indicators, UMC has organized three sharing sessions to invite suppliers to share experiences to promote and communicate the company's efforts to promote green supply chain management. We expect to be able to unite the green product consensus with suppliers and work together to achieve a win-win goal.

Cross-over Join-Green Award, Sustainable View

UMC's pursuit of environmental protection is based on very high standards so that we may fulfill our responsibilities to the society and the earth. CSR is a global trend. In 2017, UMC will expand its green award and encourage ecological conservation groups. UMC also called on the same companies to have the same idea, including equipment component suppliers, OEMs and fab engineering suppliers. UMC expects to work together in the upstream and downstream supply chain to jointly fulfill its responsibilities for the society and the planet, and to award prizes to six like-minded companies.



Quantity of Excess or WasteMaterials Recycled



Leftover Material Flow in Recent Years

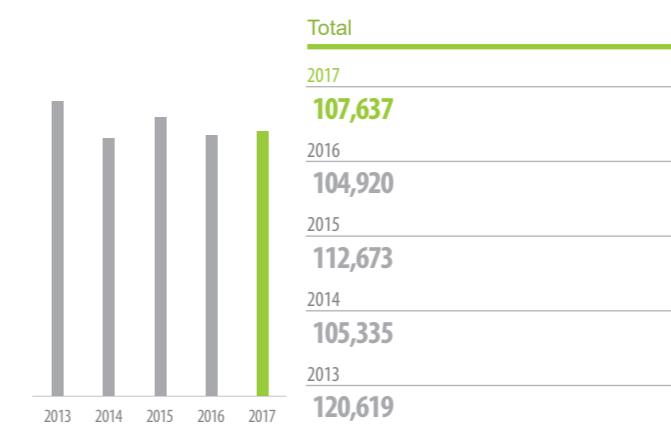


Note : The leftovers include targeted materials such as waste solvent, waste plastic, precious metal solution, wafer and various kinds of metals.

Quantity Recycled Items In Recent Years.

In 2017, there were 4.67 million recyclables. The additional benefits created each year amounted to NTD 100 million, effectively reducing waste and making the best use of waste products.

2012~2017 Quantity and Revenue of Recyclables



Dummy Wafer

Use reclaimed wafers, purchase quantity of 471,475 pieces, which accounted for 51.7%.

Oxide Slurry SS25

1,682 tons of slurry particles were recycled for reuse.

Words from Co-President and CS Committee Chairman

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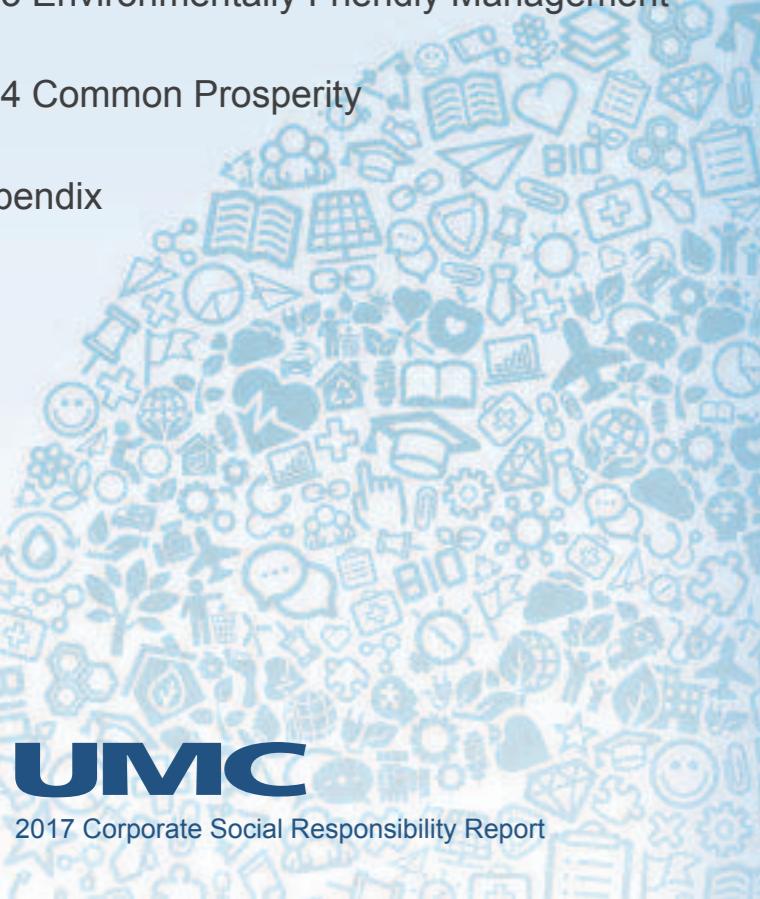
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2-5-3 Conflict Minerals Management

In its conflict minerals management, UMC has been conducting supplier assessment and obtaining supplier signatures since 2009 to guarantee non-conflict minerals and ensure that products from suppliers are not in violation of conflict minerals guidelines. To date, all suppliers have returned assurances of non-conflict minerals in all of their products.

According to the finalized statutes and provisions in Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act enacted by the US Securities and Exchange Commission on August 22, 2012, Specialized Disclosure Reports must be completed every May. http://www.umc.com/English/CSR/c_3.asp

UMC Conflict Minerals Management Measures



In 2017, 13 UMC suppliers, 9 subcontractors and 16 UMC affiliated corporations were investigated.

Conflict Minerals



UMC expects every business in the supply chain to uphold these principles. Clear objectives have been established with relevant guidelines and tools to help suppliers enhance the effectiveness of their efforts in improving the society and the environment. UMC also collaborated with other companies in the industry to promote various projects, encouraging employees to incorporate corporate social responsibility into procurement decisions as well as supplier management procedures. In addition, UMC also voluntarily applied to join CFSI (Conflict-Free Sourcing Initiative) in Q1 of 2016. Suppliers were also requested to actively monitor foundries and mines that were lacking relevant certification to undergo Conflict-Free Smelter Program (CFSP) or other equivalent and independent third party's audit program inspections. To ensure transparency in the entire supply chain, UMC also voluntarily performed on-site audit of 3 suppliers for their origin of supplies, making sure that the supply chain does not contain conflict mineral supplies in 2017.

The use of tin, tantalum and tungsten (3TG) in each UMC site in 2017 is shown in the following table. Minerals from conflict areas or countries are not observed. To comply with the US Dodd-Frank Act and fulfill its corporate social responsibility, UMC will add "conflict-free" logo on its packaging to declare that UMC products are Conflict-minerals free, (refer to below attachment). UMC's Taiwan sites will begin this practice on April 1, 2018, with other sites (12X8N/12i) providing notifications separately.

Old Label

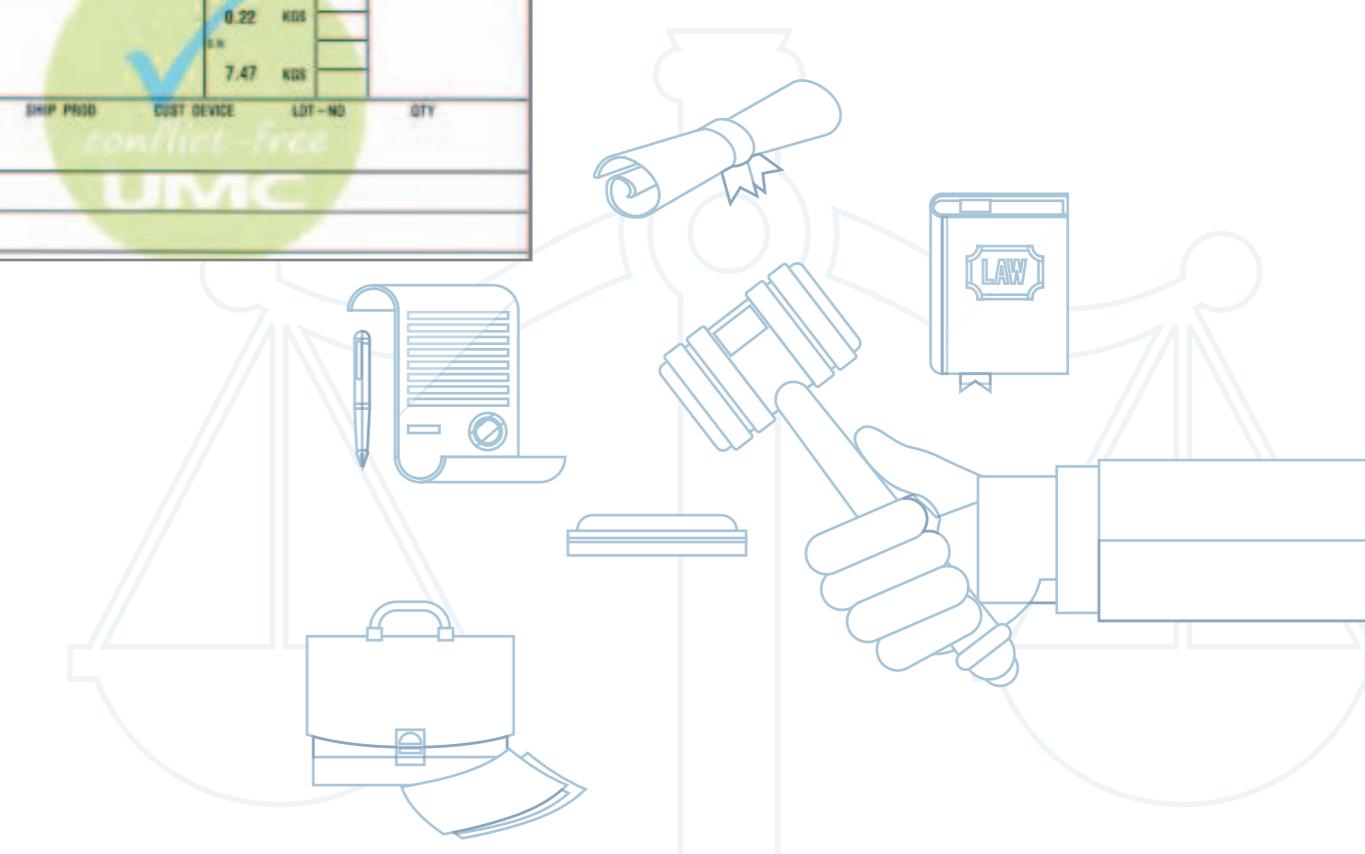
New Label

2-5-4 Responsible Business Alliance and UMC Supplier & Employee Professional Ethics Agreement

Since 2013, UMC has been self-evaluating its own regulations and operating procedures in the aspects of labor, health & safety, environment, ethics, and management system from each of its fab sites and departments according to the most updated version of the Electronics Industry Citizenship Coalition (EICC), ensuring that the intention and the spirit of EICC are complied with. Due to the Electronic Industry Code of Conduct (EICC) being renamed as Responsible Business Alliance (RBA), UMC has followed the Code of Conduct - Responsible Business Alliance, RBA Version 5.1.1 since 2017. Besides self-evaluation, UMC also requested its suppliers to comply with EICC regulations via the Supplier & Employee Professional Ethics Agreement. The purpose of the Agreement is not only to allow suppliers to understand clearly UMC's requirements regarding code of conduct, but also to deliver the message that suppliers should obey EICC as well as local laws. Furthermore, the agreement also ensures that the operation of suppliers and their upstream partners must comply with the intention and spirit of the EICC.

Additionally, UMC also responded on the content related to EICC survey forms sent to our customers based on the latest EICC Code of Conduct. A total of 128, 254, 44, 168, 193 responses were provided in 2013, 2014, 2015, 2016, and 2017 respectively.

For further information about RBA, please refer to <http://www.responsiblebusiness.org/>



Words from Co-President and CS Committee Chairman

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100%

100% Certification

All UMC fabs have passed the ISO 14064-1 greenhouse gas emissions certification, ISO 14001 environmental management certification, and QC 080000 Hazardous Substance Process Management Certification.

47.6%

47.6 % Reduction in Units of Fluorinated Greenhouse Gas Emissions.

Achieved the objective for reducing emissions by 47.6%. Reductions in fluorinated greenhouse gas emissions were equivalent to 1,213,000 tons of CO₂e.

505,000 Tons

505,000 Tons of Reduction in Water Usage

The newly added reduction for 2017 was 505,000 tons, reaching the targeted goal, which is equivalent to a savings of about NT\$ 12.6 million.

3,183 Tons

3,183 Tons of Waste Reduction

The newly added reduction for 2017 was 3,183 tons, reaching the targeted goal, which is equivalent to a savings of about NT\$ 15 million in annual treatment costs.

54,248 Mwh

54,248 Mwh Power Reduction

The newly added reduction for 2017 was 54,248 Mwh, which is equivalent to a decrease of 28,697 tons in CO₂ emissions and a savings of about NT\$ 125 million.

90%

90% Waste Recycling

The amount of reused waste was 35,998 metric tons, which is a gain of more than NT\$30 million from recycled resources.

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Major Material Environmental Issues

There were three major categories of material environmental issues in 2017: (1) Energy and Greenhouse Gas Management (2)Waste Management (3) Water Risk Management



Energy and
Greenhouse
Gas
Management



Waste
Management



Water
Risk
Management

Indicator	Compliance for 2017	2018 Goal
Certification for management system.	100% passing rate for annual environmental management system certifications. <input checked="" type="checkbox"/> The entire company (8 fab areas) passed ISO 14001 and ISO 14064 certifications.	Continue to pass various annual environmental management system certifications.
Fluorinated greenhouse gas emission.	Reduce fluorinated greenhouse gas emission intensity by >40% <input checked="" type="checkbox"/> Fluorinated greenhouse gas emissions were reduced by 47.6%	Reduce fluorinated greenhouse gas emissionintensity by >48%
Electricity consumption.	Promote Green2020 Reduction Plan to reduce electricity consumption of each unit by 4% <input checked="" type="checkbox"/> Additional reduction of 54,248Mwh of electricity consumption for the year, reaching the annual targeted goal.	Promote Green2020 Reduction Plan to reduce electricity consumption volume of each unit by 6%.
Natural gas consumption.	Reduce natural gas consumption by 2.87% <input checked="" type="checkbox"/> The consumption of natural gas was reduced by 2.98%.	Reduce the consumption of natural gas in each unit by 1.8%.

Indicator	Compliance for 2017	2018 Goal
Compliance with regulations.	0 cases of environmental regulation violation. <input checked="" type="checkbox"/> No cases of environmental regulation violation.	0 cases of environmental regulation violation.

Indicator	Compliance for 2017	2018 Goal
Waste generation	Promote Green2020 Reduction Plan to reduce waste production volume of each unit by 4% <input checked="" type="checkbox"/> Additional reduction of 3,183 tons of waste generation for the year, reaching the annual targeted goal.	Promote Green2020 Reduction Plan to reduce waste generation volume of each unit by 6%

Indicator	Compliance for 2017	2018 Goal
Waste disposal company assessment	Conducted on-site audits for 33 waste disposal companies <input type="checkbox"/> A total of 29 waste disposal companies have been audited. All of the suppliers were graded as "Excellent" or above. In four instances, on-site auditing of waste disposal companies was not performed because they had no cooperative relationship with us.	Conduct on-site audit of more than 44 waste disposal companies.

Indicator	Compliance for 2017	2018 Goal
Proper disposal of waste	Establishment of the UMC Waste Disposal and Transportation GPS virtual vehicle fleet monitoring system <input checked="" type="checkbox"/> Completed the first phase of system construction, 100% monitoring of removal and transportation processes for waste of concern, and proper disposal of all waste.	Management system maintenance and optimization

Indicator	Compliance for 2017	2018 Goal
Water consumption.	Promote Green2020 Reduction Plan to reduce water consumption of each unit by 2% <input checked="" type="checkbox"/> Additional reduction of 505,000 tons of water consumption for the year, reaching the annual targeted goal.	Promote Green2020 Reduction Plan to reduce water consumption volume of each unit by 6%.

Indicator	Compliance for 2017	2018 Goal
Water Recycling	To make our overall fab recycling rates and process water recycling ratessuperior to science park control standards <input checked="" type="checkbox"/> Despite the various operation schedules of UMC's fabs, the water recovery rate still outperformed the standard regulated by the Science Park.Annual total recovery amounts reached 32.09 million tons of water.	To keep our overall fabrecycling rates and process water recycling rates superior to science park control standards

Indicator	Compliance for 2017	2018 Goal
Wastewater quality improvement (reducing ammonia nitrogen in waste water).	Establish wastewater treatment system for reducing ammonia nitrogen concentration in wastewater. <input checked="" type="checkbox"/> Completed newly installed electrolytic process technology at Fab8F and Fab8S to decompose ammonia nitrogen wastewater into normal nitrogen gas.	Maintaining the normal operation of the system

Note 1: The various annual indicators are included in the company's and Corporate Sustainability Committee's KPI (Key Performance Indicator) and policy development, integrated with major company policies, and continually reviewed and improved.

Note 2: Green2020 Reduction Plan uses 2015 as the base year. The calculation was conducted by using the statistical data of 2015 as the basis.

Note 3: Fluorinated greenhouse gas emission reduction is calculated by using 2010 as the base year.

Environmental Information

Number of sites that are certified by the ISO 14001 environmental management standards.

Percentage of the company's total worksites that are certified by the ISO 14001 environmental management standards.

8

100%

Output Wafer 323 ton		
	Greenhouse Gas Emission	
Scope 1 /Direct Greenhouse Gas Emissions	604	1000ton CO ₂
Scope 2 /Indirect Greenhouse Gas Emissions	1,356	1000ton CO ₂
Scope 3 Greenhouse Gas Emissions	2,218	1000ton CO ₂
(+) please refer to page xx		
	Waste Generation	
Total Waste	39.99	1000ton CO ₂
Hazardous Waste	23.25	1000ton CO ₂
Recycling Waste	36.00	1000ton CO ₂
Landfill Waste	1.84	1000ton CO ₂
	Waste Water	
Total Waste Water Discharge	10,890	1000 m ³
Chemical Oxygen Demand (COD)	1.85	1000 ton
	Paper	
Recycling Waste Paper	0.32	1000 ton
	Spills of hazardous materials	
Number of spills	0	
Amount of spills	0.00	ton
	Fines	
Number of environmental fines paid	0	cases
Total amount of fines paid	0	millions

Input Wafer 341 ton		
	Energy	
Total Energy Consumption	2,748	1000 MWh
Electricity	2,542	1000 MWh
Renewable Energy	2.73	1000 MWh
Natural Gas	206	1000 MWh
	Fuel	
Natural Gas	34,440	1000 m ³
Diesel	0.12	1000 m ³
Coal	0.00	1000 ton
	Raw Materials	
Major Raw Materials	81	1000 ton
	Paper	
Paper Consumption	0.03	1000 ton
	Environmental Protection Capital and Expense Cost	
Expense cost	1,148	millions
Capital cost	762	millions

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3-1 Clean Production

Currently, environmental issues are a major issue of business sustainability among stakeholders. To alleviate ecological deterioration, reduce the greenhouse effect and slow global warming, UMC's environmental protection policies aim to minimize the consumption of resources and create minimum waste. Therefore, the company continues to enhance its technology, self-regulate and introduce high-performance pollution control technology and equipment to achieve environmental symbiosis, shared prosperity and sustainable global development.



How We Manage

- Introduce management systems and accreditations that are environmentally relevant
- Endorse construction of green factories and buildings
- Advocate for resource productivity enhancement initiatives
- Bring in and develop environmentally-friendly technology, reinforce source reduction of waste and pollution prevention
- Promote environmental education

Purposes

Minimize resource and energy consumption in product lifecycle

Goals and Targets

- Obtain relevant environmental management accreditation for all fabs maximizing utilization of resources
- Continue to reduce negative impact of production on the ecological environment, maintaining zero environmental accidents
- Increase employees' knowledge of environmental protection and "green living"

Relevant policy

Environmental Protection Policy

Applicable Entities

- UMC
- Hejian Technology (Suzhou) Co., Ltd. and United Semiconductor (Xiamen) Co., Ltd., which are UMC subsidiaries selling and manufacturing integrated circuits

To realize the company's commitment to environmental sustainability, we continue to bring in various management systems and accreditation that are relevant to the environment. We also reduce implementation risks through standardization and promote the introduction of cleaner production and green buildings to reduce negative impact to the environment.

Environmental Management System

ISO 14001 Environmental Management System

Issuing Agency: DNV-GL
Range: Entire UMC and its subsidiaries HJTC and USC



Business Continuity Management System

ISO 22301 Business Continuity Management System

Issuing Agency: SGS
Range: UMC Headquarters, Fab 12A and Fab 12I



Greenhouse Gases Emissions Verification

ISO 14064-1 Greenhouse Gases Emissions Verification

Issuing Agency: DNV-GL, SGS
Range: Entire UMC and its subsidiaries HJTC



Green Product Certifications

IECQ HSPM QC 080000

Issuing Agency: DQS-UL
Range: Entire UMC and its subsidiaries HJTC and USC



Sony Green Partner

Issuing Agency: Sony
Range: Entire UMC and its subsidiary HJTC



Environmental Production Declaration

Issuing Agency: DNV-GL
Range: UMC Fab 12A and Fab 8A



Carbon Footprint Verification on Integrated Circuit Wafers

Issuing Agency: DNV-GL
Range: UMC Fab 12A and Fab 8A



ISO 14046 Water Footprint Verification on Integrated Circuit Wafers

Issuing Agency: DNV-GL
Range: UMC fabs in Taiwan



ISO 14051 Material Flow Cost Accounting Verification

Issuing Agency: DNV-GL
Range: UMC Fab 8A



3-1-1 Green Factories and Buildings

Using past promotional experience and success of its departments in source reduction, recycling and reuse, UMC employs outside green building and ecology experts and collaborates with relevant academic programs to plan and construct green buildings that are consistent with the US LEED and domestic EEWH standards. In 2010, the company participated in the Green Factory Promotion Alliance, which integrates industrial, governmental and academic forces, to help the government formulate a green building and clean production evaluation system for developing Green Factory standards for Taiwan. In 2012, the company's new fab in Tainan Science Park and over 17-year old Fab 8A in Hsinchu Science Park were awarded the 1st Green Factory logo by the Industrial Development Bureau. Moreover, Fab 8A was the first 8-inch foundry facility in the nation to receive the award.

UMC Future Plans for Green Building and Green Fab

1

Designs for new fabs will adhere to green building, green factory and smart building principles.

2

Existing fabs will undergo green building and green factory assessments, and green design and construction will be gradually incorporated.



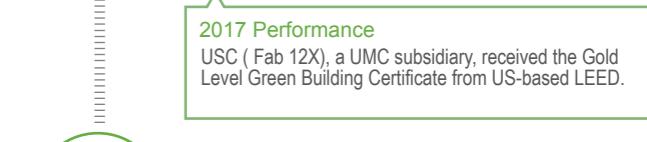
Green Factory (UMC Fab 12A)

2017 Performance



LEED of the United States

- Fab 12A P3&4 (Gold Rating)
Fab 12A P5&6 (Gold Rating)
Fab 12X (Gold Rating)



2017 Performance
USC (Fab 12X), a UMC subsidiary, received the Gold Level Green Building Certificate from US-based LEED.



Fab 12A P5&6 (Diamond Rating)



2017 Performance
UMC Fab 12A P5&6 plants were awarded the Diamond Level Green Building Certificates by the Ministry of the Interior.



- Fab 12A P3&4 (Gold Rating)
Fab 8A (Certified)
Fab 8F (Certified)
Fab 8S (Certified)



2017 Performance
UMC Fab 8F and Fab 8S plants were awarded Green Building Certificates by the Ministry of the Interior.



- Fab 12A P3&4
Fab 8A
Fab 8S



All 8 inch fabs and Fab12A in Taiwan



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3-1-2 Energy Resource Productivity Improvement Plan

To improve energy resource productivity and reduce greenhouse gas emissions, UMC recently promoted various reduction measures and set targets for each stage.

UMC Energy Resource Improvement Status



Note 1: The base year for the 369+ reduction plans to reduce the intensity of fluorinated greenhouse gases (FCs) is 2010.

Note 2: For the Green 2020 reduction plan, please refer to: <http://www.umc.com/English/news/2015/20150420.asp>

Note 3: The reduction goal of 2017 is determined based on the statistical data of 2015

3-1-3 Air Pollution Control

Status of UMC's "Green 2020 Reduction Plan"^{note 3}

Electricity Usage

2017 Goal: Cumulative 4% reduction
Reduction Measures
Efficiency improvement : energy-saving Chiller and energy-saving Di-pump were adopted
Energy recovery technology (Innovation) : MAU heat recovery and high-temperature pump
Supply condition optimization technology (Innovation) : CDA inverted frequency compressor, high-temperature chiller
Supply efficiency stabilization technology : saving efficient main chiller main unit's sponge ball automatic sponge cleaning system
Process simplification: production optimization to reduce equipment purchase and to save energy

Water Usage

2017 Goal: Cumulative 4% reduction
Reduction Measures
LHF recovery system
AWR recovery system was installed
LSR water supply improvement + CMP wastewater recycling

Waste Generation

2017 Goal: Cumulative 4% reduction
Reduction Measures
Reduction in waste diluted sulfuric acid
EKC reduction
Sludge reduction
Photoresist reduction

Water consumption reduction plan: 26 projects

Economic benefits:Savings of NT\$12.78 million
Environmental benefits:Additional water savings: 515,503 tons (3.19% based on 2015)

Power consumption reduction plan: 391 projects

Economic benefits:Savings of NT\$124.77 million
Environmental benefits:Additional power savings: 54,248 Mwh (2.13% based on 2015)
-28,697 tons of CO₂e

Waste reduction plan: 105 projects

Economic benefits:Savings of NT\$15 million
Environmental benefits:Additional waste reduction: 3,183 tons (8.5% based on 2015)

UMC air pollution control strategies involve using high-performance equipment to treat exhaust gas from rational contaminants to reduce the emission of air pollutants to a level that complies with (or less than) the government's environmental stipulations. Test results over the years showed that UMC air pollutant emission is less than the emission standard set by the EPA. UMC categorizes waste gas from manufacturing processes into acidic exhaust, alkaline exhaust, volatile organic exhaust and general exhaust.

Acidic and alkaline exhaust

Stage 1

Installed abatement equipment on tools to treat toxic, flammable, Perfluorinated compounds (PFCs) and other process gases.

Stage 2

After end treatment by a central exhaust treatment system, gas is released into the atmosphere via a stack.



Facilities for treating acidic and alkaline exhaust

Volatile organic compounds

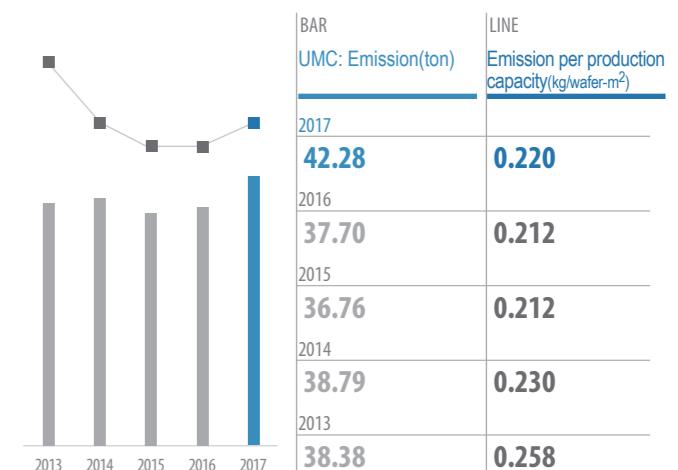
Volatile organic compounds exhaust (Solvent Exhaust) is treated using VOC Zeolite carousel wheels, which treat and release gases using low temperature adsorption and high temperature desorption.



Facilities for treating volatile organic compound (VOC) exhaust

Total Hydrocarbon Reduction

In 2017, the efficiency of UMC's volatile organic compounds (VOC) treatment was maintained at an average of 94.83%, which exceeded the 90% legal standard. Total emission of hydrocarbon pollutants was 42.28 tons / year, which was a reduction of 776.32 tons / year. The emission per production capacity was 0.220 kg/wafer-m².



Note 1: In 2017, the emission for HJTC (Fab 8N) was 5.47 tons / year
Note 2: In 2017, the emission for USC (Fab 12X) was 0.175 tons / year

Other Air Pollutant Emissions

UMC uses natural gas and only a small amount of low sulfur diesel fuel. Based on regular stack inspection and air pollution expense calculation, estimated nitrogen oxide (NOx) and sulfur oxide (SOx) emissions in 2017 are listed in the table below.

Emissions in 2017

	UMC	HJTC (Fab 8N)	USC (Fab 12X)
SOx(kg)	2.5	288	20
NOx(ton)	96.04	0.515	3.255

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3-1-4 Promoting the “Green” concept

Each year, UMC organizes activities to celebrate Environmental Protection Month, promoting the tenets of protecting our planet to its internal stakeholders. On Earth Day, celebrated on April 22, 2017, the company came up with the theme “A Plastic-Free Ocean” and invited employees from the Hsinchu, Tainan, and Singapore factories to participate in a series of beach cleaning activities. The aim of this exercise is to encourage employees to take action in protecting the environment and instilling the concept of safeguarding the environment beyond borders. In addition, UMC also launched the 2nd UMC Eco Echo Award on Earth Day, announcing with their suppliers that the prize had been increased from NT\$1 million to NT\$2 million. The increase serves to boost the financial assistance given to creative ecological conservation proposals and to promote the sustainable development of environmental groups. Apart from organizing environmental promotion activities during environmental protection month, UMC also started an environmental education course this year. At the same time, it also set up a training hour requirement of “At least 4 hours of environmental education courses every year,” which is comparable to the training hours for national public sector agencies. Learning makes use of both classroom instruction as well as online audiovisual teaching, using environmental education to convey a “green” mindset to UMC employees. To promote waste reduction and create a healthy diet, UMC advocated for single-use cutlery reduction programs, encouraging colleagues to bring their own eating and drinking utensils. Furthermore, a series of reduction activities has been organized in conjunction with environmental protection month, with the company’s corporate e-newsletter providing relevant environmental knowledge and information, increasing employees’ understanding of environmental protection and “green living.” Hopefully, these efforts may reduce the damage done to the planet and provide a healthier dining environment for all.



Beach cleaning activity organized by Tainan fab on Earth Day



Beach cleaning activity organized by Hsinchu fabs on Earth Day



Beach cleaning activity organized by Singapore fab on Earth Day
21/04/2017 15:50

Environmental Protection Month Activities and Impact



Earth Day Beach cleaning Activity

I sea U – meeting by the sea

UMC’s domestic and overseas fabs were invited to jointly organize beach cleaning activities, promoting the concept of environmental protection without borders. Participating factories included those based in Hsinchu, Tainan, and Singapore; employees were encouraged to protect the planet through their own actions. At the same time, an environmental e-check “Marine Waste” was issued during that month, reinforcing UMC employees’ awareness of protecting our oceans and the concept of “green living.”

About 500 people participated in this event.



Plastic Cup Reduction

Bring your own cup for free coffee

According to a survey, coffee is one of the most common products employees buy. However, a coffee a day means an additional piece of single-use trash. To encourage its employees to use their own thermoses when buying coffee, the company organized this activity, which offers a free coffee voucher to those who bring their own drink container a certain number of times.

A total of 176 people participated in this activity.



Eco Travel

Hsinchu Science Park – National Museum of Marine Science and Technology Southern Taiwan Science Park – Syuejia Wetlands

This year’s eco-travel found the company teaming up with two of the recipients of the 1st UMC Eco Echo Awards, “Taiwan Association for Marine Environmental Education” and “Tainan Ecological Conservation Society.” Trips were organized at Keelung’s National Museum of Marine Science and Technology and Tainan’s Syuejia Wetlands, respectively. Professional tour guides and introduction of the award-winning programs not only allowed employees to get to know the local ecology, but also to understand environmental protection concepts behind the programs, raising the employees’ environmental awareness.

A total of 100 people attended the event.



Beeswax Saran Wrap DIY Project

In line with the concept of plastic reduction at the beach cleaning site, teachers from Nature Miffy were invited to the Zhunan factory to hold classes. There, they introduced the latest trend, beeswax saran wrap, which uses natural and environmentally friendly beeswax to make non-plastic and non-toxic natural plastic wrap. This activity, attended by 99 people, aims to promote “green” DIY projects and the concept of plastic waste reduction.

This activity, attended by 99 people



Green Mobile Library

Recycling and reusing timber from the plant area, the company organized a woodwork camp to build mobile library carts. During environmental protection month, these carts were filled with books on protecting the planet, from which employees could borrow and keep up with the latest environmental protection information.

About 828 people took part in this activity.



Sea Lover Salon

The activity features marine conservation as the main theme, inviting Ocean Studio’s founder Mr. Ren Pingto lecture on “Eating Right = Save the Ocean.” Mr. Ping used an interactive approach to teach the audience how to select and purchase seafood in a way that is both healthy and safe for the ocean.

50 people participated in this event.



Creative Proposal Competition

Participants submitted creative environmental protection proposals for plastic reduction. Participation and contribution awards were given to encourage employees to think out of the box and come up with creative ways of protecting the environment.

The company received a total of 146 entries.

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The 1st UMC Eco Echo Award Program and its Impact

UMC responded to environmental issues of concern from the general public by launching the first UMC Eco Echo Award in 2016. Through the Eco Echo Award Program, UMC expanded partner relations and media cooperation to communicate environmental issues to communities and non-profit organizations. UMC encouraged ecological conservation groups to present concrete environmental sustainability development and groundbreaking plans to support Taiwan's local action plans related to green environmental protection and land sustainability. During the implementation period of the 1st Eco Echo Award Program in 2017, it sought to link up the executive committee of the program with UMC employees to study the issues and exert influence on protecting Taiwan's local ecology.

Saving the endangered Moltrecht's minnow at Yixin Community (Yixin Community Development Association of Puli Township, Nantou County)

The members of the Yixin Community Development Association of Puli Township have long promoted friendly farming to rehabilitate Taiwan's endemic species, "Taiwan Moltrecht's minnow." Through the Eco Echo Award Program, they have organized 14 environmental education lectures with a total of 500 participants, recruited 12 volunteers to form patrol teams, and conducted six Moltrecht's minnow ecological surveys. Recognizing the importance of maintaining diversity of species as well as friendly farming, UMC specially contracted a 969.9 m² plot of land planted with organic Manchurian wild rice and welcomed employees to purchase a total of 800 kilograms of the crop. This is an invitation to all employees to cherish and protect the environment and safeguard Taiwan's sustainable ecology.

Nutritious or Toxic? An Investigation into the Gastric Presence of Plastic Granules in Neritic Squids in Taiwan (Taiwan Association for Marine Environmental Education)

Plastic granules and plastic waste in the ocean are already recognized as environmental problems. Sadly, there are very few relevant studies in Taiwan. The Taiwan Association for Marine Environmental Education hopes that, through the Eco Echo Award program, it will be able to study the hazardous situation of plastic granules in the digestive system of oceansquid, which are commonly consumed by Taiwanese and promote sustainable ocean environmental education. In 2017, 26 volunteers were recruited to set up workshops to dissect 300 ocean squid as well as to organize 12 public environmental education lectures, which were attended by about 1,500 people. The association also worked with UMC to organize activities for environmental protection month.

Xiangshan Wetland Bird Habitat Conservation (Wild Bird Society of Taipei)

In the Xiangshan Wetland Bird Habitat Conservation Scheme of the UMC Eco Echo Award Program, the Wild Bird Society of Taipei and Hsinchu City's Puting Elementary School cooperated to organize a training activity for junior wetland bird habitat guides. 40 young volunteers were trained as lecturers, allowing them to familiarize themselves with the environment, ecological value, and the challenges of the Xiangshan Wetlands. These young lecturers then took turns going to classrooms to introduce the unique features of the Xiangshan Wetlands to teachers and students alike. 750 people participated in this activity. In addition, a photography exhibition featuring the wetlands' avian ecology was also held in Puting Elementary School, which attracted 900 visitors.

All Together for the Xuejia Wetlands! (Tainan Ecological Conservation Society)

The Tainan Ecological Conservation Society has been involved in promoting the Xuejia Wetlands as well as the development of the surrounding community. It has worked with the local community as well as the nearby universities to organize weekend tour guide classes to introduce the wetlands, guide demonstrations, and the tourism value of the local culture. At the same time, it has held two environmental education courses in the nearby elementary school and has planned a small scale rehabilitative area for saltwater plants, where 800 of these plants were saved and replanted. The society also worked with UMC to organize activities for environmental protection month.



UMC employees purchase organic Manchurian water bamboo shoot



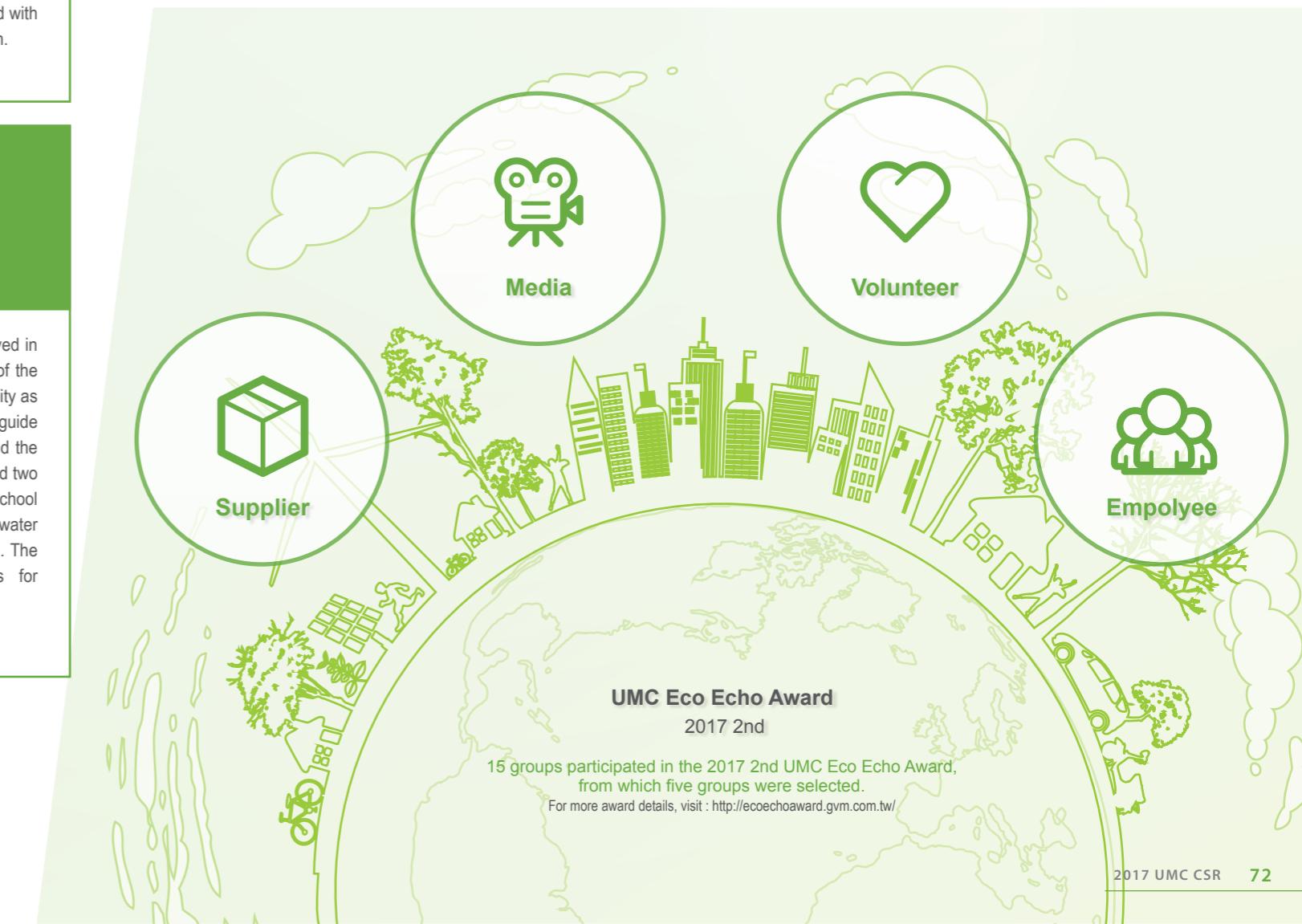
Marine environmental education seminar



Moltrecht's minnow environmental education course



Junior environmental education lecturers



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3-2 Carbon Asset Management

Energy use not only consumes the earth's resources, but also produces carbon dioxide that causes greenhouse gas emissions. In recent years, temperature rise in the earth's surface has caused the melting of polar ice, rising sea level and decreasing land. The frequency and intensity of abnormal climate changes such as changing ocean current patterns, changing rainfall patterns, floods, droughts and storms have increased. These climate changes caused by global warming have directly or indirectly impacted natural ecosystems. In the face of global climate change and dramatic changes in the ecological environment, UMC has been actively drafting environmental protection goals in various stages in recent years to respond to energy and greenhouse gas management issues. The company has set specific implementation plans and gradually promoted them.

How We Manage
<ul style="list-style-type: none"> Low-carbon design process Energy efficiency optimization Installing high efficiency FCs abatement in new tools Adopting green building standard for new buildings Carbon partnerships with customers and suppliers Complete carbon footprint inventory for all fabs Investing in green technology industry
Purposes
Climate change mitigation and adaptation
Goals and Targets
<ul style="list-style-type: none"> Implement Green 2020 program, improve efficiency in energy use, reduce electricity consumption by 10% in 2020 Implementation of the Fluorinated Greenhouse Gas Reduction Program, emissions intensity reduction by 36% in 2020
Relevant policies
UMC Climate Change Policy, Environmental Protection Policy
Applicable Entities
1. UMC 2. Helian Technology (Suzhou) Co., Ltd. and United Semiconductor (Xiamen) Co., Ltd., which are UMC subsidiaries selling and manufacturing integrated circuits 3. UMC's supply chain

UMC Climate Change Policy



3-2-1 Challenges and Opportunities

Based on policies and regulations, market and technological changes, reputation, and physical risks, UMC conducts climate change risk analysis and develops response practices to reduce the potential impact.

Policy and Legal

Potential Risks

- Carbon tax, energy tax
- Product labeling and disclosure.
- UMC's Response
 - Lower carbon emission voluntarily. (As of 2017, UMC has 3.023 million tons of reduction credits approved by the EPA)
 - Continue to inventory greenhouse gas emissions and product carbon footprint.

- Greenhouse gas emissions permit and reporting, cap and trade schemes.

Technology

Potential Risks

- Need for low carbon products and services
- UMC's Response
 - New fab meets IEEE (Institute of Electrical and Electronics Engineers) requirements

- Commitment to investment in new technology

Market

Potential Risks

- Products that are less eco-friendly will be eliminated because of changing consumer demands.
- UMC's Response
 - Promoting the product life-cycle analysis and certification. (UMC has passed carbon footprint / water footprint certification, and participated in the LCA to go project to help customers acquire information on their products' carbon footprint with minimal time and resources)

Reputation

Potential Risks

- Changes in customer preferences.
- Bad reputation brings about negative feedback.
- UMC's Response
 - According to UMC's current status, the company proceeds with current greenhouse gas responses (no significant risks).

- Bad reputation brings about negative feedback.

Short-term

Potential Risks

- The intensity and frequency of natural disasters caused by typhoons prevent employees from going to work, may cause damage to fab facilities, and may disrupt energy supply.
- UMC's Response
 - Continue to improve AIG Insurance audit.
 - Promoting business continuity management system. Strengthen resilience and adaptability in climate-related and natural disasters.(UMC has received ISO 22301 BCM certification)
 - Globalize fabs and supply chains.

- Bad reputation brings about negative feedback.

Long-term

Potential Risks

- Rising of average temperatures and sea levels may result in water shortages and damage to fab facilities.
- UMC's Response
 - Expanding water recycling and reuse to lower the demand for water.
 - Implementing effective water-saving measures.

On the other hand, taking into account UMC's own core technologies and manpower, the company actively seeks opportunities for improving operational competitiveness in terms of resource efficiency, energy sources, products/services, markets, and reputation.

Future Opportunities and Responses

Opportunity

UMC Responses



Resource Efficiency

Respond to government-promoted policies to reduce and increase the operational efficiency of machine equipment and fab as a whole, as well as developing the "FCs Gas Reduction Methodology for Semiconductor Industry."



Energy Source

Change business models through involvement in the green energy industry.



Product/ Service

- Participate in the EU FP7 Framework Programmes for Research and Technology Development, promote product carbon footprint survey, lead the industry in completing the verification of Scope 3 greenhouse gas emissions, and assess more reduction opportunities from the product life cycle.
- Continue innovation to develop advanced technologies, providing customers with chips that are faster and more energy efficient.



Market

- Promote LCA project to reduce carbon in overall supply chain.
- Participate in international CDP's carbon emissions project as well as disclosure and communication regarding carbon emissions.



Reputation

Establish environmental protection fund in accordance with proceeds from carbon rights trading to promote greenhouse gas reduction and ecological conservation work.



Words from Co-President and CS Committee Chairman

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Carbon Disclosure and Communication

Apart from representing the TSIA (Taiwan Semiconductor Industry Association) in the discussion meeting of the WSC (World Semiconductor Conference) every year, UMC also actively participates in various types of domestic and international discussions and exchanges, sharing experiences in carbon management. UMC has been invited to participate in the carbon disclosure project of the international CDP organization since 2006, now going strong for 12 consecutive years. Furthermore, it has worked on the disclosure of the above-mentioned results on carbon risks and opportunities and management-related information to the public.

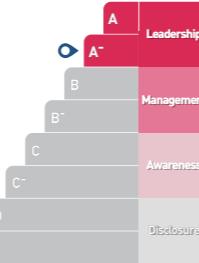
Yearly Progress in CDP Evaluation



In 2017, UMC's carbon disclosure achievements were recognized by being awarded Level 4 Leadership (A-), while the carbon disclosure performance of the supply chain was awarded the highest distinction as Supplier Engagement Leader.



Achieved Leadership Level Score of A-



Awarded the highest ranking for Carbon Performance Band among all Taiwanese enterprises. (99A-)

99A-

Awarded the highest Carbon Disclosure Score among Taiwan semiconductor companies. (96B)

96B

First Taiwanese Company Listed both on CDP's Climate Performance Leadership Index and Climate Disclosure Leadership Index. (91A)

91A



Carbon Assets and Carbon Trading



From 2013 to 2014, UMC supported the EPA early reduction project and acquired a carbon reduction allowance of 3.02 million tons.



In 2014, a 2 million ton carbon trading deal was signed with Dragon Steel. This was the first carbon trading transaction recognized by the EPA and marked an important milestone for the carbon trading market in Taiwan.



Revenue obtained from this carbon trading transaction was wholly used by UMC to establish the UMC Eco-Echo Ecological Conservation Hope Project that was exclusively dedicated to environmental protection, promoting environmental protection measures, and contributing towards environmental sustainability.

3-2-2

Greenhouse Gas Inventory

In accordance with inventory guidelines defined by domestic and international organizations such as the ISO14064-1 and GHG Protocol, UMC established its greenhouse gas inventory standard mechanism. The company regularly inventories the greenhouse gas emissions of all its fabs each year to fully determine the status of its greenhouse gases and verify the effectiveness of their reduction.

UMC Greenhouse Gas Inventory Scope



Scope 1

Direct GHG emissions

Direct GHG emissions occurring from sources that are owned or controlled by the company (i.e., sources within the organizational boundary). For example, emissions from combustion of fuel in owned or controlled vehicles.



Scope 2

Energy indirect GHG emissions

Indirect GHG emissions occurring from the generation of purchased electricity (heat/cool, steam and fossil fuel derived energy products) consumed by the company.



Scope 3

Other indirect GHG emissions

Other indirect GHG emissions occurring as a consequence of the activities of the company, but generated from sources not owned or controlled by the company.

Direct (Scope 1) GHG Emission and Emissions per Wafer Area

	BAR		LINE UMC: Emissions per production capacity (tCO ₂ e/Wafer-m ⁻²)
	UMC: Emissions (tons)	HeJian/Fab8 N: Emissions (tons)	
2017	603,958	127,975	3.1
2016	615,917	112,038	3.5
2015	621,421	141,423	3.6
2014	628,535	157,067	3.7
2013	587,108	270,210	3.9

Note 1: In 2017, the overall emissions per wafer area for UMC and its subsidiary HJTC (Fab 8N) was 3.34 t CO₂e/Wafer-m⁻²

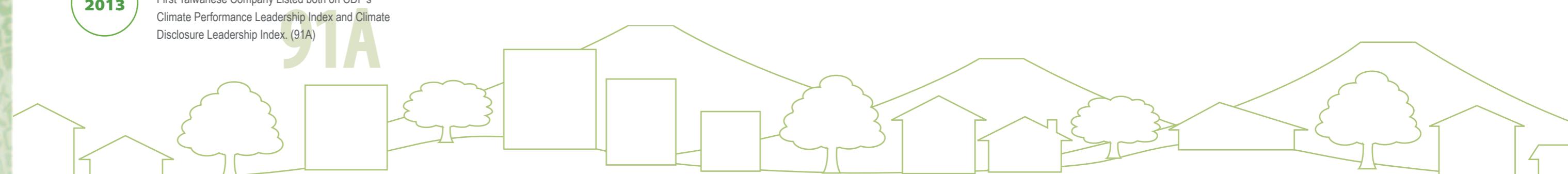
Note 2: In 2017, the total emissions of UMC's subsidiary USC (Fab 12X) was 14,557 t CO₂e; data has not been verified by a third party.

Scope 2 Indirect GHG Emissions and Emissions per Wafer Area

	BAR		LINE UMC: Emissions per production capacity (tCO ₂ e/Wafer-m ⁻²)
	UMC: Emissions (tons)	HeJian/Fab8 N: Emissions (tons)	
2017	1,356,479	191,836	7.07
2016	1,186,435	154,177	6.80
2015	1,167,237	150,391	6.79
2014	1,222,602	141,293	7.25
2013	1,162,219	135,915	7.65

Note 1: In 2017, the overall emissions per wafer area for UMC and its subsidiary HJTC (Fab 8N) was 6.8 t CO₂e/Wafer-m⁻²

Note 2: In 2017, the total emissions of UMC's subsidiary USC (Fab 12X) was 159,658 t CO₂e; data has not been verified by a third party.



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Scope 3 (Other Indirect Greenhouse Gas Emissions)

In 2015, UMC began referencing carbon footprint calculation methods and technical documents provided by WRI and WBCSD for inventory checks, in order to estimate scope 3 GHG emissions listed in the following. UMC also passed DNV GL verification, making us the first semiconductor company in Taiwan to complete scope 3 GHG emission verification.

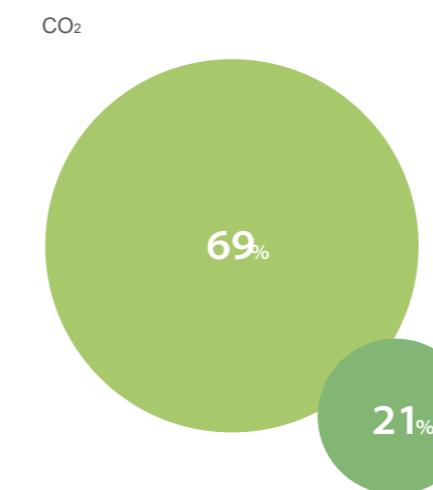
Purchased goods and services	Fuel-and-energy-related activities
Boundary Upstream (cradle-to-gate) emissions of 85% (by weight) of purchased goods	Boundary Upstream emissions of purchased fuels (diesel and NG) and electricity
2017GHG Emissions (t CO ₂ e) 651,779	2017GHG Emissions (t CO ₂ e) 361,671
Upstream transportation and distribution	Downstream transportation and distribution
Boundary Transportation of 85% (by weight) of purchased goods	Boundary Transportation of products sold by the Company
2017GHG Emissions (t CO ₂ e) 215,991	2017GHG Emissions (t CO ₂ e) 2,594
Waste generated in operations	Business travel
Boundary Transportation and disposal or treatment of waste.	Boundary Transportation of employees for business-related activities
2017GHG Emissions (t CO ₂ e) 872	2017GHG Emissions (t CO ₂ e) 521
Employee commuting	Downstream leased assets
Boundary Transportation of employees (in vehicles operated by the Company and employees)	Boundary Operation of assets owned by the Company
2017GHG Emissions (t CO ₂ e) 14,733	2017GHG Emissions (t CO ₂ e) There were no cases during the reporting period.
Investments	Capital goods
Boundary Operation of investments: Wavetek, Microelectronics Corporation, NexPower, Technology Corp., and HeJian Technology, (Suzhou) Co., Ltd., United Semiconductor (Xiamen) co. Ltd	Boundary The purchased capital goods included equipment and infrastructure for production.
2017GHG Emissions (t CO ₂ e) 506,564	2017GHG Emissions (t CO ₂ e) 463,374

3-2-3 Greenhouse Gas Reduction

Results of UMC carbon footprint and greenhouse gas inventory found that carbon emissions from manufacturing is the primary source of carbon footprint, and that the main sources of the process emission are fluorinated compounds (FCs) and electricity, which account for about 90% of UMC overall greenhouse gas emissions. Therefore, FCs and electricity reduction are UMC's priority.

UMC's Primary Sources of Greenhouse Gas Emissions

Greenhouse gases from electricity providers during the generation of electricity for the company's operations.



Greenhouse gas generated by the use of FCs during the company's manufacturing process.
CF₄, C₃F₈, C₅F₈, NF₃, C₂F₆, C₄F₈, SF₆, CHF₃ etc.

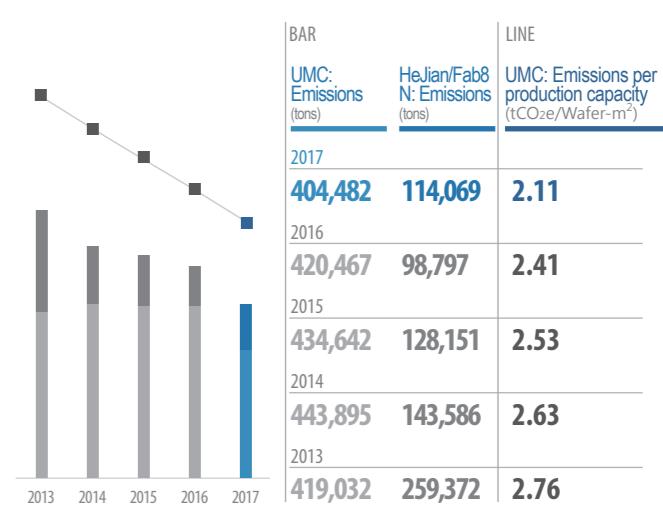
Fluorinated Greenhouse Gas Reduction

In addition to carbon reduction each year, UMC established the Fluorinated Greenhouse Gas Reduction Taskforce in 1999 to promote greenhouse gas reduction. Moreover, the company set greenhouse gas reduction goals for the various phases of the program, and currently, the reduction program is in Stage 3. UMC shall continue to implement FCs and Fluorinated GHG reduction projects. FCs reduction in 2017 reached 1,213,000 tons, which was a 47.6% reduction compared to 2010. Such results showed that UMC managed to achieve Phase 3 objectives ahead of schedule. UMC has already attained the reduction goal for 2020, which is 30% lower than 2010 levels, as stipulated by the World Semiconductor Council. At the current stage, international trends and national policy will both be taken into consideration in planning the new reduction goal for the future.

Reduction Plans and Objectives for Each Phase for Fluorinated GHG (FCs)

Year	Phase	Description	Status
1998	Phase 1	Comply with TSIA commitments	Achieved target
2010	Phase 2	UMC's voluntary reduction plan	Achieved target
2012	Phase 3	Surpass WSC reduction objectives	Goal attained successfully ahead of schedule
	New Objective	Planning	
	Long-term Goal	Compared to 2010, reduce unit fluorinated greenhouse gas emissions by 36% in 2020.	
	2017 Actual Reduction	47.6%	

Fluorinated Greenhouse Gas Emissions



Note 1: In 2017, the overall emissions per wafer area for UMC and its subsidiary HJTC fab (8N) was 2.36 t CO₂e/Wafer-m²

Note 2: In 2017, the total emissions of UMC's subsidiary USC (Fab 12X) was 2,302 t CO₂e; data has not been verified by a third party.



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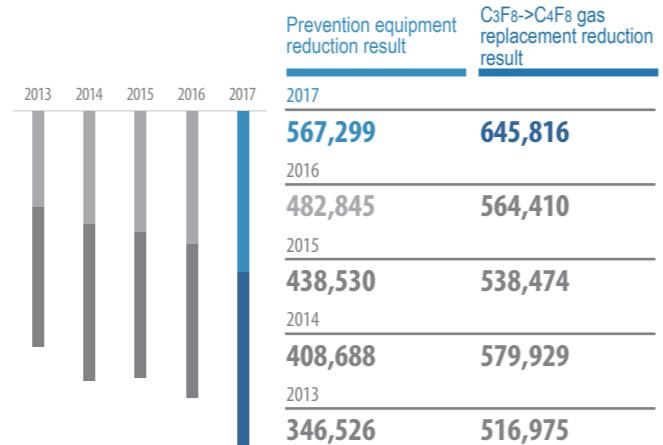
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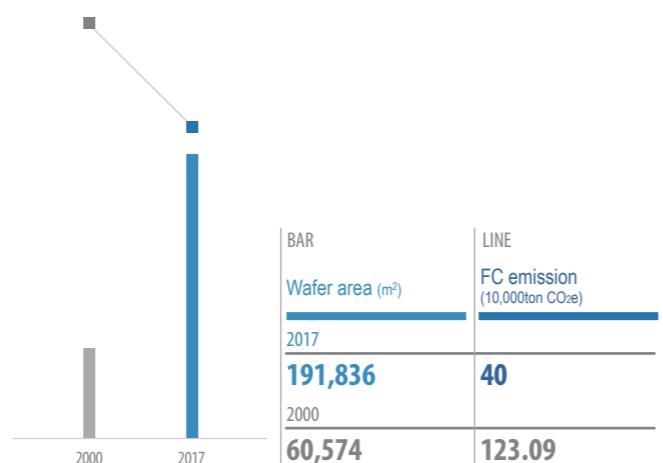
FCs Reduction Results



Note 1: The area to promote the emission preventive (reduction) equipment includes all fabs. The reduction efficiency was calculated based on the difference between greenhouse gas emissions before and after the treatment by the emission preventive (reduction) equipment.

Note 2: The area to promote C₃F₈/C₄F₈ gas replacement includes all 8" fabs. The reduction efficiency was calculated based on the difference of greenhouse gas warming potential and the difference of equipment utilization rate.

UMC's overall production capacity and FCs emission in 2000 and 2017



Production capacity increased by — 3.17 fold

FCs emission reduced by — 67%



In view of the new 12-inch wafer fab (Fab 12A and subsidiary's Fab 12X) set up by UMC after 2005, the entire fab's fluorinated greenhouse gas reduction rate can reach higher than

85%

Surpass the requirements of IEEE (Institute of Electrical and Electronics Engineers) planning standards

75%

Future Reduction Practice

- All new equipment shall be installed with a high performance local scrubber for N₂O and FC gases.
- All new CVD equipment in new facilities shall utilize NF₃ gases

Energy Management

Currently, to conserve energy, UMC is targeting electricity and natural gas, and promotes the implementation of energy management in its offices and public areas with promotional activities, education and training to cultivate a mindset and habit of energy conservation and greenhouse gas emission reduction among its employees.

Vision

Enhance energy efficiency to minimize impact on the earth as a result of energy use.



Organization

Through the CS Committee's company-wide carbon reduction goals and development plans, coordinate/integrate departmental energy saving and carbon reduction strategies and programs. Hold regular committee meetings to review the implementation outcome, and continue to introduce energy conservation technologies and implement energy efficiency improvement programs in relevant facilities.

Measures

Fab 8A introduced ISO 50001 management system standards with systematic procedures and PDCA-based continuous improvement approaches. This model was promoted in other fab sites as well.

The information above includes energy savings for fab site 8N but does not include fab site 12X that only started mass production in late 2016.

Goal

Electricity consumption reduction goal : A total of 10% reduction within 5 years from 2016 to 2020 (using 2015 as the base year)
Natural gas consumption reduction goal: A reduction of 2.87% in 2017 (using 2015 as the base year)

Results

Reduced electricity consumption by 2.13% in 2017 (using 2015 as the base year)
Natural gas reduction by 2.98% in 2017

Major Energy Conservation Measures in 2017

	Change online UPS to offline UPS		Illumination energy saving
	Implementing Fab 12A,12i,8C,8D,8E,8F,8N,8S		Implementing Fab 12A,12i ,8C,8D,8E,8N,8S
	Reduce machine emission		Compressed gas energy conservation
	Implementing Fab 12A,12i		Implementing Fab 12A,12i,8C,8D,8E,8F,8S
	Cold water system energy conservation		Process cooling water energy conservation
	Implementing Fab 12A,12i,8A,8C,8D,8F,8S		Implementing Fab 12A,8C,8D
	Production machine energy conservation		Energy saving measures for water treatment systems
	Implementing Fab 12A,12i,8A,8C,8D,8E,8F,8N,8S		Implementing Fab 12A,12i,8C,8D,8E,8F,8S
	Natural gas - Add high temperature heat pumps		Natural gas - VOC system energy saving
	Implementing Fab 12A		Implementing Fab 12A

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Total energy conservation in 2017



Note 1: CO₂ emissions are calculated using the electricity coefficient of 0.529 Kg CO₂e / kWh.

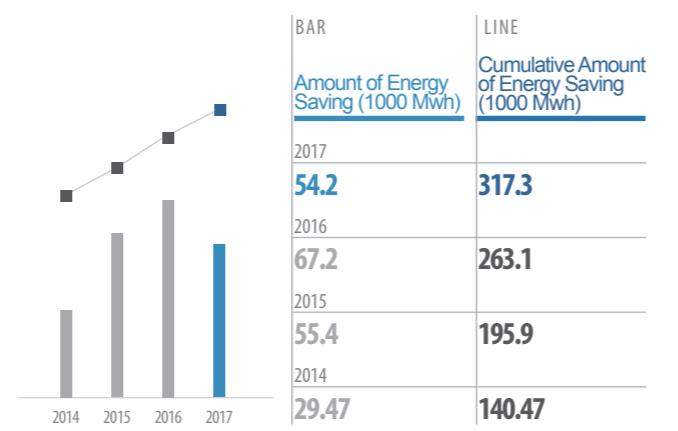
Note 2: The information above includes energy savings for fab site 8N but does not include fab sites that have yet to start mass production.

Note 3: For newly added improvements, performance was only calculated for 12 months.

Note 4: The gas conservation amount estimated by the energy conservation measure is a theoretical amount. The CO₂ 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.

Note 5: The gas carbon equivalent for Taiwan's fabs = 2.088 KgCO₂/M³

UMC's Historical Electricity Saving Performance Statistics

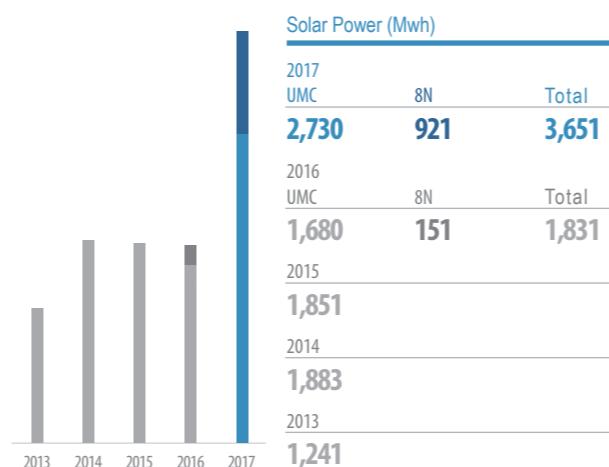


Promotion of Renewable Energy

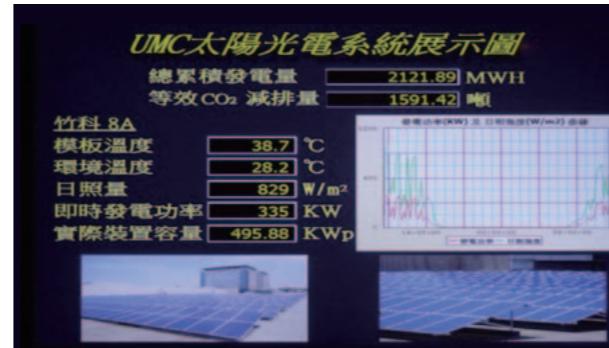
Aside from UMC's ongoing energy efficiency improvement efforts, it is also actively setting up renewable energy sources in the fab, and has listed solar energy systems as a new fab standard design and construction project. In 2017, UMC completed the set up of 511kWp, accumulating a total of over 3,305kWp in solar energy system capacity across the board, including overseas plants. The annual electricity generation capacity is approximately 2.8 million kWh. Currently, the device capacity is the highest in Taiwan's semiconductor industry, demonstrating the level of priority the company has given to green energy and the effort it makes towards supporting clean energy.

It is expected that the total installed capacity of the subsidiary company (Fab 12X) will reach 4,335kWp after 2020.

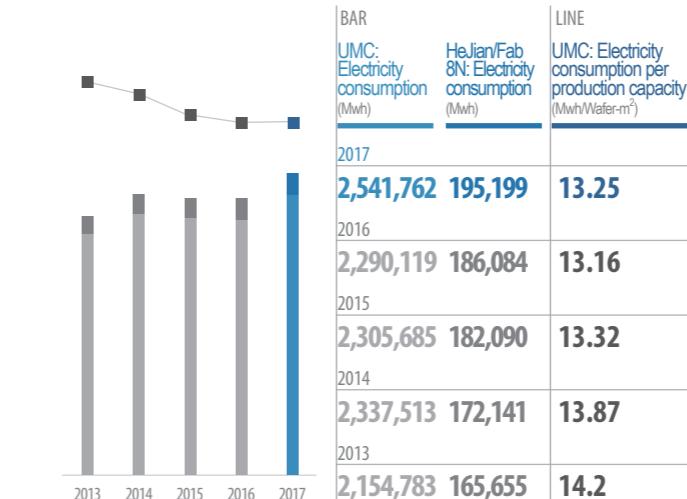
Solar Energy Output in Recent Years



Note 1: The solar energy system setup was completed in 2016 by subsidiary HeJian Technology Co., Ltd. (Fab 8N).



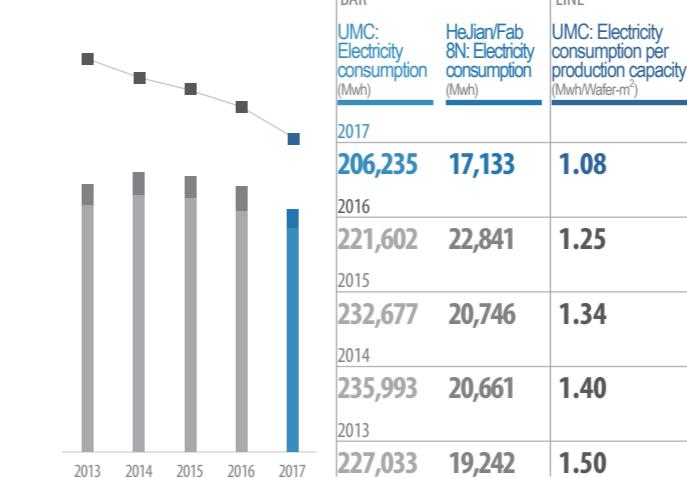
UMC's Yearly Statistics on Electricity Consumption



Note 1: In 2017, the overall energy intensity for UMC and its subsidiary HJTC (Fab 8N) was 12.48 Mwh/Wafer-m²

Note 2: UMC electricity consumption does not include UT and Fab 12X, which only started mass production in late 2016.

UMC Statistics on Natural Gas Consumption over the Years



Note 1: In 2017, the overall energy intensity for UMC and its subsidiary HJTC (Fab 8N) was 1.02 Mwh/Wafer-m²(The unit gas calorific conversion coefficient is calculated according to the calorific value provided by the local gas suppliers of each plant.)

UMC's Historical Gas Saving Performance Statistics



Energy Conservation Plans for 2018

Energy saving plans shall cover about 220 energy saving measures such as the complete introduction of equipment energy saving features, provision of inverters, replacing online uninterruptible power supplies (UPS) with offline UPS systems, and ice water system energy saving measures. Reduction goals for 2018 are 50,995 Mwh, which would be equivalent to carbon dioxide emission reductions of about 26,977 tons.

2018 Target
 Energy saving **50,995 Mwh** ————— **226,977 ton CO₂e**



UMC shall continue to promote heat recycling and energy saving projects for high temperature heat pumps,

2018 Target
 Nature gas saving **4,617 Mwh** ————— **908噸**

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3-3 Water Risk Management

Recent climate changes have led to severe fluctuations in precipitation with more frequent floods and droughts. External stakeholders are also increasingly concerned about issues related to water resources. To respond to complex water resource issues on a timely basis and effectively integrate prevention steps, consumption reduction, contingency response, and other management concepts, UMC has successfully completed water risk factor identification and response measures. The UMC Water Resource Management Policy and Commitment was announced in 2015 to serve as our highest guiding principles for water resource management.



How We Manage

- Introduce water risk management system
- Develop and utilize diverse water sources
- Use active management indicators to promote water conservation
- Cooperate with supply chains to reduce water footprint
- Provide open and transparent water information
- Widely promote water education

Purposes

Maximize water efficiency, increase ability of valuable downstream chains to withstand water risk, and promote the importance of water resources and conservation.

Goals and Targets

Implement the Green 2020 program, improving water efficiency and reducing water use by 10% in 2020.

Relevant Policies

UMC Climate Change Policy, Environmental Protection Policy

Applicable Entities:

- UMC
- HeJian Technology (Suzhou) Co., Ltd. and United Semiconductor (Xiamen) Co., Ltd., which are UMC subsidiaries selling and manufacturing integrated circuits

3-3-1 Water Risks and Opportunities

Short-term

Potential Risks

- The intensity and frequency of natural disasters caused by typhoons may prevent employees from going to work, may cause damage to fab facilities, and may disrupt energy and raw materials supply.
- Change of water source resulting in the change of water quality.

UMC Response

- Improve flood potential and risk assessments
- Improve AIG Insurance audit
- Promote Corporate Sustainable Operations Management System (was awarded ISO 22301 certification)
- Globalize fabs and supply chain
- Assess suppliers' water risk
- Water quality risk assessment was conducted.

Long-term

Potential Risks

- Water shortages and damage to plant facilities caused by rising average temperatures and sea levels.

UMC Response

- Reduce pressure of water demand by increasing water recovery and reuse
- Use limited water resources efficiently
- Evaluate and introduce new water sources
- R&D of water resource warning devices

Policy and Legal

Potential Risks

- Regulations and control for wastewater quality / water discharge quantity
- Water charges

UMC Response

- Participate in government, unions and association seminars to share practical experience and advice
- Implement wastewater source diversion to enhance quality of wastewater
- Continue to assess new wastewater treatment technology
- Upgrade production efficiency to reduce water consumption and improve water recovery

Technology/ Market

Potential Risks

Commitment for new technology investment

Consumers, customers, investors and other parties of interest require companies to provide green products and expand their influence through the supply chain to indirectly eliminate excessive water-consuming commodities.

UMC Response

- Promote analysis and certification of environmental impact on product lifecycle as well as promote source reduction. (UMC has passed water footprint certification and continues to promote water saving projects)

Reputation

Potential Risks

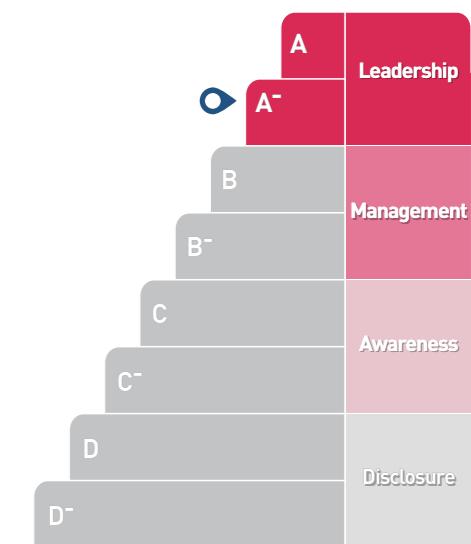
- Changes in customer preferences
- Bad reputation brings about negative feedback

UMC Response

- Will continue to proceed according to UMC's current direction for water risk response (No significant risk)

Water disclosure and communication

In 2017, UMC participated in the Water Disclosure Program of the international organization, CDP, for the first time, further publicizing the identification results of the abovementioned water risks and opportunities as well as management related information. At the same event, the company received the highest rating for corporate leadership in Taiwan, Level 4 Leadership (A-).



Water Risk Management Tool Development

With regard to the water resource issue, besides the continuous implementation of water saving measures, UMC has collaborated with the Department of Bioenvironmental Systems Engineering, National Taiwan University in 2015~2016 to develop the "Water Shortage Warning and Decision Support System for UMC's Fabs in Hsinchu Science Park and Southern Science Industrial Park." A seasonal (3 months) water shortage warning system was established to simulate the warning system used in the Water Resources Agency, MOEA. In addition, the seasonal broadcasting data from the Central Weather Bureau was incorporated into the system to offer water supply predictions. With this tool, UMC's fabs will know in advance about any possible water shortages. By combining with UMC's water shortage response measures, operation risk can be significantly reduced.

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3-3-2 Fab Water Source

UMC uses water risk assessment tools developed by the World Resources Institute (WRI), and cooperates with Taiwan's water resource distribution to identify the current proportion of fabs located on water scarce regions and further develop water risk management strategies.

UMC's Main Water Source for Each Fab

Water Scarcity Note

Hsinchu Science Park 8A,8D,8E,8F, 8S			
Water Source			
Baoshan Reservoir , Baoshan II Reservoir , Longen Dam			
Description			
In addition to the existing water supply, the Shimen Reservoir and Yonghe Mountain Reservoir provide support mechanisms. Each year before the dry season, the Water Resources Agency convenes meetings to discuss the coming water risk to minimize the risk of water shortage.			
China Subsidiary HJTC(8N)			
Water Source			
The main water sources for Suzhou's Taihu Lake are the Suixi in Tianmu Mountain in Zhejiang Province, and Jingxi in Yili Mountain in Jiangsu Province			
Description			
Taihu Lake has a water storage capacity of 2.72 billion tons, and is an abundant water source that provides stable water supply.			
China Subsidiary USC (12X)			
Water Source			
Jiulong River , Tingxi Reservoir			
Description			
The Jiulong River has a water volume of 446 cubic meters per second, and the Tingxi Reservoir has a storage capacity of 48.45 million cubic meters; these abundant water resources ensure a stable water supply.			
Singapore 12i			
Water Source			
Singapore Newater reclaimed water			
Description			
Newater reclaims and treats public waste water for reuse, and hence has a more stable source of water supply with lower risk.			
Tainan Science Park 12A			
Water Source			
Nanhua Dam , Zengwen Dam			
Description			
Water is mainly supplied by the Nanhua Reservoir. Between November and May of the following year is the annual dry season, and the Water Resources Agency regularly reviews risks and schedules water supplies when necessary.			

Note: The WRI (Water Resource Institute) Aqueduct Tool is used to assess water risk.
<http://www.wri.org/our-work/project/aqueduct/aqueduct-atlas>

3-3-3 Water Conservation During Manufacturing

UMC's first principle of water consumption is designing a water conservation process, followed by recovering water for reuse and implementing highly efficient water management. To effectively reduce water resource consumption, all three principles must be integrated. In addition to conserving water, the company also actively participates in the Science Park Administration's water management indicator formulation and annual manufacturer water conservation counseling and technology exchanges. To ensure a secure water supply, the company also participates in the Water Resources Agency's water shortage contingency measures for water source stabilization and eutrophication. Impacted by global climate change, UMC strives to promote energy conservation and carbon reduction activities, and includes them in its management policy. Hence water conservation and improvement activities are ongoing to provide further opportunities for company growth.

Percentage and Total Volume of Water Recycled and Reused



Water saving in UMC 2017 505,000 tons

(Accounting for 3.5% of municipal water usage in 2015)

Equivalent to saving benefits of NTD 12.62 million

2016 472,000 tons



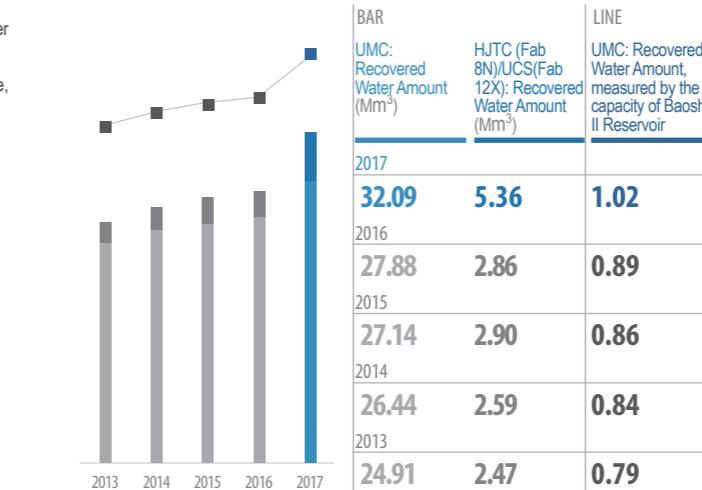
Water saving in HJTC (Fab8N) 2017 10,525 tons

(Accounting for 0.5% of municipal water usage in 2015)

Equivalent to saving benefits of RMB 36,800

As shown in the diagram below, in 2017, UMC company-wide recovered water totaled 32.09 million tons, which is equivalent to conserving 1.02 of Baoshan II Reservoir :

UMC and Its Subsidiaries HTJC/USC Water Conservation in the Last 5 Years.



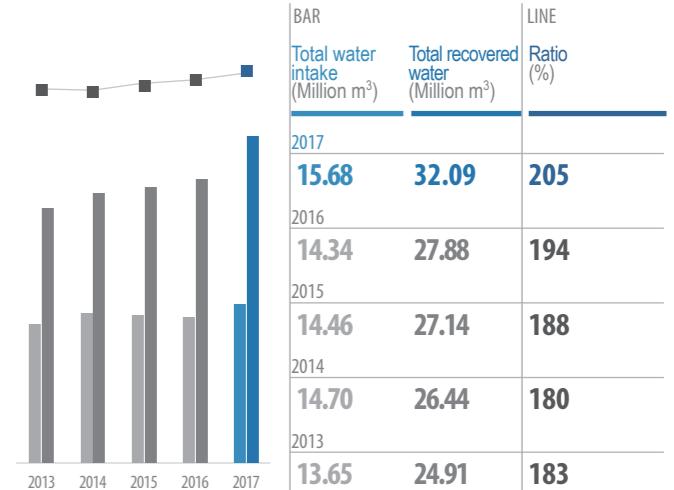
Note1: In 2017, total recycled water of UMC, including its subsidiary HJTC (8N) was equivalent to conserving 1.19 of Baoshan II Reservoir

Note2: In 2017, Fab 8N and Fab 12X overall recovered water amounted to 5.36 million tons, which was equivalent to 0.17 of Baoshan II Reservoir

Note3: Baoshan II Reservoir is the main water source for the Science Park. Its full water storage capacity is 31,471,800 tons. (Source: Ministry of Economic Affairs Water Resources Agency February 2018 Water Storage Report)

Due to its past promotion of water conservation, reduction and recycling measures, and its high recovery rate in the manufacturing process, UMC's current water recovery has exceeded the newly increased total water intake. Total water recovery and reuse could reach more than 200% of water intake.

Percentage of Water Recovery and Reuse to Total Water Intake.



Note1: Amount of recovered water is calculated using cumulative flow meter or floating flow meter.

Note2: Total water intake includes municipal water + rain water + condensate.

Municipal water: Water meter readings are recorded daily, and based on average monthly water usage, annual water amount is calculated.

Rain water/Condensate: Annual water amount is calculated using flow meters and estimates.

Note3: The information above does not include fab sites that have yet to start mass production.



Words from Co-President and CS Committee Chairman

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New Improvement Measures and Outcomes in 2017

Increase acid waste reclaim system (plant 2)	Implementing Fab:12A	Amount of Conserved Water (ton) 298,828
Low HF waste water reclaim system	Implementing Fab:8A	Amount of Conserved Water (ton) 46,088
Purify CMP reclaim system	Implementing Fab:8CD	Amount of Conserved Water (ton) 38,941
RO brine water reuse	Implementing Fab:12A	Amount of Conserved Water (ton) 30,591
LSR system modify PH analyst water	Implementing Fab:12A	Amount of Conserved Water (ton) 16,100
CMP reclaim water reuse to central scrubber	Implementing Fab:8S	Amount of Conserved Water (ton) 10,731
LSR system cation resin modify regeneration water	Implementing Fab:12A	Amount of Conserved Water (ton) 14,432
Stop washing of CS IPA Scrubber washing	Implementing Fab:8N	Amount of Conserved Water (ton) 10,525
ALK drain water reuse	Implementing Fab:8F	Amount of Conserved Water (ton) 10,073
reduce LSR system water consumption	Implementing Fab:12i	Amount of Conserved Water (ton) 5,520
Others		Amount of Conserved Water (ton) 33,746
Total		Amount of Conserved Water (ton) 515,503

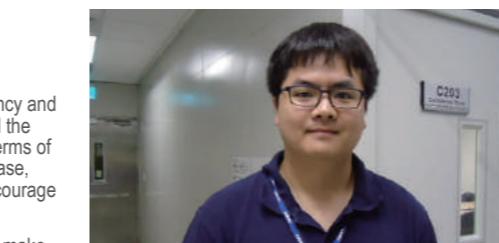
Note: Only 12 months of performance are included for the new improvement items. Only outcomes from 2017 are included in multi-year plans.

Employee Feedback

FOC Division / Wang Yin-chih

We are very honored that UMC's Fab 12A won the Ministry of Economic Affairs' 2017 title of manufacturer with excellence in water-saving. We are grateful to the MoEA Water Resources Agency and the members of the review committee for their recognition of UMC's water-conservation policy and the efforts of the 12A work team. UMC has always cherished water resources, working vigorously in terms of its water management. Although our production processes and capacities have continued to increase, our water consumption has in contrast been reduced. The recognition of this award will further encourage UMC's determination to continuously improve its water conservation.

UMC is committed to its mission of fulfilling its social corporate responsibilities and will continue to make efforts on the issue of water conservation as well as encourage others to make similar contributions. We are grateful to the fab's managers, technicians and employees for providing ideas and resources to maximize the recovery of water from production processes. We thank all our colleagues for their hard work and cooperation to achieve the implementation of the various water saving measures and reach our Green 2020 water-saving goal.

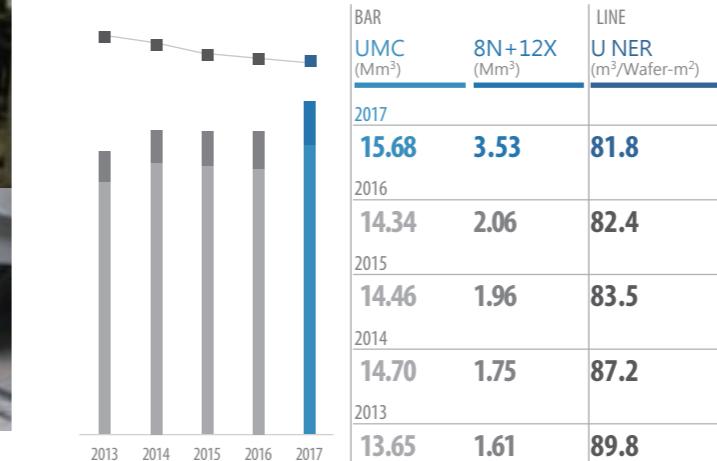


Total Water Intake

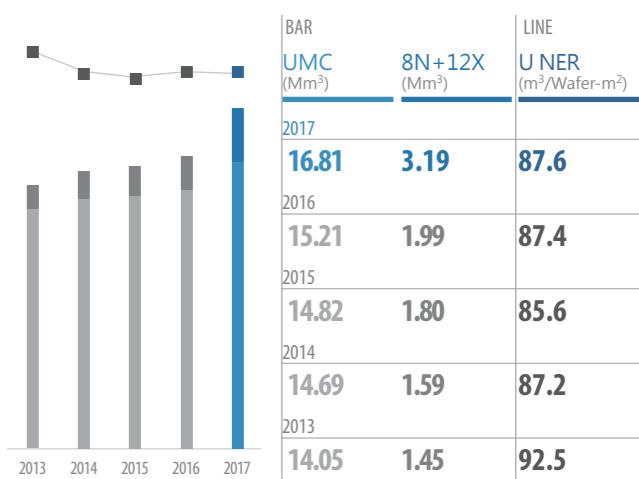
UMC strives to improve its water conservation and increase its water efficiency and value, and reduce the environmental impact on water sources, reduce water consumption replenishment, and use municipal water as the primary source, supplemented by rainwater and condensate.

In 2017, total water usage in UMC amounted to 15.68 million tons, which included public water, condensation water, and acquired rainwater.

UMC and Its Subsidiaries HJTC/USC Total Water Intake from Municipal Water, Condensate and Rainwater in the Last 5 Years.



UMC and Its Subsidiaries HJTC/USC Purified Water Consumption in the Last 5 Years.



Note 1: In 2017, the overall purified water consumption per wafer area for UMC and its subsidiaries HJTC (8N)/USC (12X) was 85.4 m³/Wafer-m²

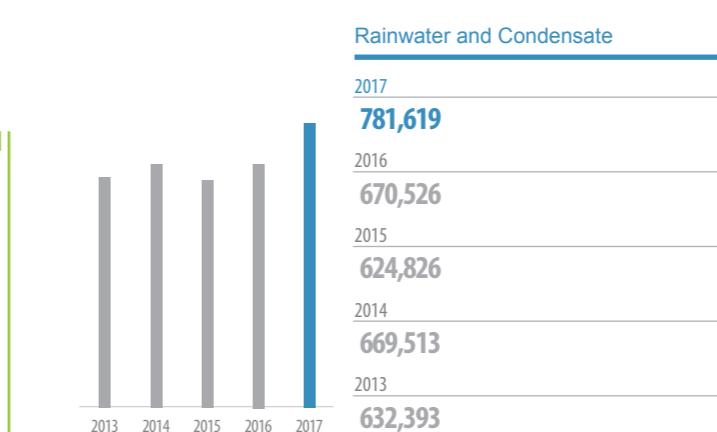


Increase alkaline waste reclaim system

Rainwater and Condensate

Rain and condensate are precious natural water sources, but are easily subjected to seasonal climate changes, and therefore account for only 5% of total water consumption. If efficiency can be improved, the environmental impact on water sources can be reduced.

UMC Rainwater and Condensate Recovery in the Last Five Years



Note: 12A second fab is a newly constructed fab. Its operation began in mid-2016

Despite the various operation schedules of UMC's fabs, the water recovery rate still outperformed the standard regulated by the Science Park

	Company-wide recovery rate	Manufacturing recovery rate
8A	74.9 %	81.9 %
8CD	76.9 %	85.0 %
8E	81.0 %	89.5 %
8F	80.8 %	87.6 %
8S	77.7 %	89.2 %
12A	76.5 %	85.7 %
12A second fab. ^(note)	78.4 %	84.2 %
12i	67.2 %	73.3 %
8N	61.6 %	58.6 %
12X	68.6 %	72.9 %

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Water Conservation Improvement for 2018

Water Conservation Measure	Planned Amount of Conserved Water (tons)
City water change to CMP reclaim water in Waste water area of scrubber	2,920
Change back wash water in LDI,LSR,AWR system	19,890
LDI system increase cation resin process	24,400
DIR35% RO brine water reuse to AWR system	21,900
Modify conductivity control of AWR SYSTEM	7,300
Sad filter unit back water reuse	9,855
Set up back gride sllurry system for water reuse	13,140

Note: Implementation of the 2018 plan will be done in Fab 12A.

Continuing improvements were enacted for potential water saving measures. However, the availability of new water saving measures continued to dwindle, which poses an increasingly difficult challenge for water conservation efforts. UMC therefore listed the following Phase 3 Water Conservation Challenge Objectives based upon 2015 levels: 2016 to 2020: Water usage per unit area to be reduced by 10%

Exchange and Counseling with Industry Peers

In addition to actively promoting water conservation within the company, UMC has also participated in the establishment of water conservation coaching in the Science Park annually since 2002. As of 2017, it has conducted a total of 181 cases and coached more than 80 companies, sharing the company's valuable experience in water conservation with industry peers to reduce the demand for water resources.



For example, in 2017, the potential quantity of water saved after coaching was 250,000 tons/year.

In 2016, UMC carried out water conservation coaching and tracked the performance of 10 companies, realizing savings of 590,000 tons of water.

3-3-4 Water Pollution Control

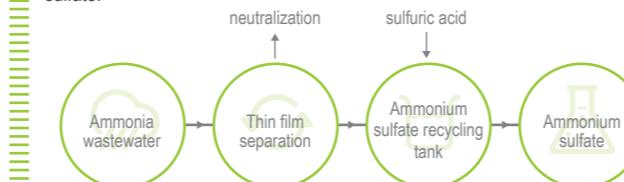
Among process reduction, waste diversion and categorization, the priority in UMC's water pollution control strategies are process source reduction, waste liquid diversion, followed by categorization. In its new fab areas, there are up to 27 categories of wastewater diversion, which are further divided into solvent-based and high or low flash point for resource recovery or incineration while inorganic acids are reused. For multiple re-use, wastewater is categorized according to characteristics to maximize water resource efficiency and simplify wastewater composition. Finally, wastewater is treated in the fab's wastewater treatment facilities according to the control standards of the Science Park Administration before being 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 park sewage complies with control regulations. In addition, the Science Park Administration conducts monthly unscheduled and random quality inspection of water discharged by the different companies to reaffirm the quality of discharged water.

Wastewater Treatment

To fulfill our corporate social responsibilities, UMC has continued to invest in the R&D of wastewater treatment technologies. In recent years, we introduced advanced ammonia nitrogen wastewater treatment techniques to reduce pollution burdens of water bodies.

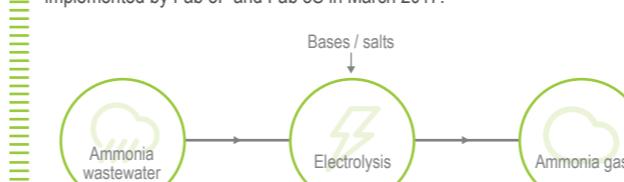
2014

STSP Fab 12A introduced thin film separation technologies and a processing system capable of converting ammonia nitrogen in wastewater into ammonium sulfate.



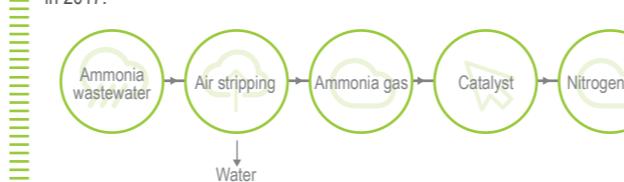
2015

UMC successfully developed the latest electrolytic technology capable of breaking down ammonia wastewater into nitrogen gas. The technology was implemented by Fab 8F and Fab 8S in March 2017.



2016

catalyst technology was implemented by UMC's new phase of Fab 12A for the treatment of ammonia wastewater. It was also implemented by USC (Fab 12X) in 2017.



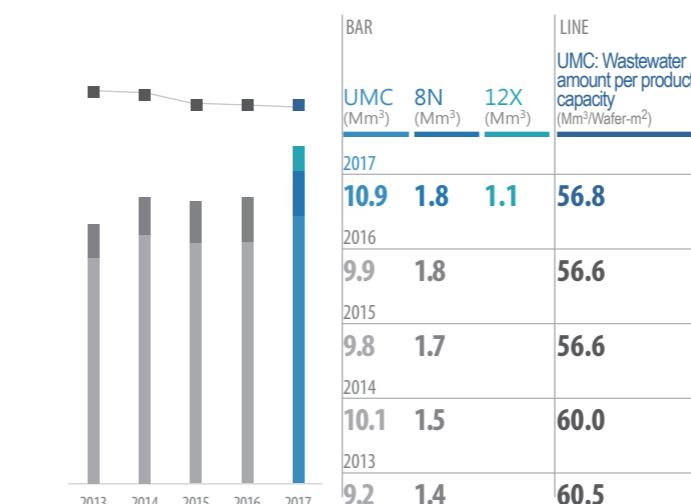
UMC and its subsidiaries HJTC/USC Wastewater Discharge

Fab Location / Factory	Discharge Amount (10,000 tons/day) ^{Note 1}	Treatment Department	Current Treatment Amount (10,000 tons/day) ^{Note 2}	Discharged into drainage area	Impact(%)
Hsinchu Science Park fabs (8A/8D/8E/8F/8S)	1.18	Hsinchu Science Park Administration sewage treatment plant	10.7	Ke-Ya River	11.0%
Tainan Science Park fabs (12A)	1.09	Tainan Science Park Administration sewage treatment plant	9.25	Yanshuei River	11.8%
Singapore fab (12i)	1.09	Public Utilities Board (PUB)	80	South China Sea	11.8% Industrial re-use
China Suzhou fab (8N)	0.49	Suzhou Industrial Park, Hua Yan Water Ltd.	90	Wusong River	0.54%
China Xiamen fab (12X)	0.30	Xiamen City, Xiang-an (Ma Xin) sewage treatment plant	5	Dongkeng Bay	6%

Note1:Hsinchu Science Park fabs , Tainan Science Park fabs : Water meter readings are recorded daily, and based on average monthly water usage, annual water consumption is calculated.
Singapore fab : Based on daily record & accumulation
China Suzhou fab : Water meter readings are recorded daily, and based on average monthly water usage, annual water consumption is calculated.
China Xiamen fab : Water meter readings are recorded daily, and based on average monthly water usage, annual water consumption is calculated.

Note2:Hsinchu Science Park fabs , Tainan Science Park fabs : Ministry of Science and Technology Statistics and Data Bank
Singapore fab : Based on PUB website information
China Suzhou fab : Hua Yan Water Ltd. sewage treatment plant data
China Xiamen fab : Xiamen City, Xiang-an (Ma Xin) sewage treatment plant

Wastewater and Unit Wastewater Discharge Amount



Note1: In 2017, the overall wastewater amount per wafer area for UMC and its subsidiaries HJTC (8N)/USC (12X) was 61.2 m³/Wafer-m²

Ammonia Wastewater Improvement

In responding to the addition of new wastewater pollutants, namely ammonia and Tetramethylammonium Hydroxide (TMAH), for regulation by the Science Industrial Park Administration Bureau, UMC from 2013 to 2015 has promoted the reduction of ammonia and source materials containing TMAH developer in Hsinchu and Tainan fab areas. In 2017, each fab continued to implement the target items of various projects. Based on the amount used in 2012, the reduction rate was more than 50%. UMC's fabs in Southern Science Industrial Park installed ammonia wastewater treatment system in 2015. As a result, the ammonia concentration in discharged water passed the sewage pollutant regulating standard of the Science Industrial Park.

Project Benefits

Economic Benefit
annual operating cost is reduced by about NT\$48 million in cost of nitrogen raw materials. After 2017, wastewater charges paid to the Science Park Administration can be reduced by about

NT\$ 180 million

Environmental Benefit
Through ammonia source reduction, ammonia concentration in the wastewater is reduced by

28% to 63%

Words from Co-President and CS Committee Chairman

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3-4 Waste Management

The problem of waste has become a heavy burden on the environment in recent years. It also poses a threat to the environmental hygiene of our daily lives, and it represents huge costs to enterprise, government, and society in general in terms of clean-up treatment. If not managed properly, as soon as there are costs to pay for damage arising from environmental pollution, the costs of recovery are even greater. To deal with issues of waste management issues, UMC has been vigorously planning implementation programs of various orientations in recent years which are progressively being promoted.



How We Manage

- Promotion of programs to raise resource productivity
- Introduction and development of environmentally friendly technologies, reinforcement of waste reduction at the source and pollution prevention capabilities
- Auditing and guidance of waste management companies

Purposes

- Promoting the recycling economy to maximize resource efficiency
- Reducing the impact and harm of production on the ecological environment

Goals and Targets

- Implementing the Green2020 project to reduce waste generation by 10%
- Maintaining zero environmental accidents and pollution

Relevant policies

Environmental Protection Policy

Applicable Entities:

- UMC
- HeJian Technology (Suzhou) Co., Ltd. and United Semiconductor (Xiamen) Co., Ltd., which are UMC subsidiaries selling and manufacturing integrated circuits
- Waste removal, treatment and recycling companies

3-4-1 Source Reduction

UMC's ultimate waste management goal is zero waste using the strategy of total waste reduction and waste-to-resource. By improving process technology, raw material source reduction and other source management measures, waste output is reduced to achieve waste reduction.

In 2017 UMC (not including the newly expanded Fab12A phase 5 plant) total waste output was **34,797** metric tons (not including routine office waste) waste output per unit production capacity is 188 kg/m² reduction of **8.4%** compared to 2016

If the newly expanded Fab12A phase 5 is included in the calculation, the total amount of waste generated by the Company in 2017 would be 39,994 metric tons, and the per unit production capacity of waste output would be 208 kg/m², representing an increase of 1.5% from 2016.

The new Fab12A phase 5 has not yet reached production scale as it is still in the pilot production stage, which results in higher per unit production capacity waste output.

In 2017 UMC (not including the newly expanded Fab12A phase 5) production of hazardous waste **18,929** metric tons per unit production capacity of hazardous waste output was 102 kg/m² representing a decrease of **17.1%** from 2016

If Fab12A phase 5 is included in the calculation, the total amount of hazardous waste generated by the Company in 2017 would be 23,141 metric tons, and the per unit production capacity of hazardous waste output would be 121 kg/m², representing a decrease of 2.2% from 2016.

With regard to waste reduction in the Green2020 Reduction Plan, the waste production volume per unit of all UMC's 8" fabs (including Fab8N) was 105.2 kg/m², which is a reduction of 15.1% compared with 2015 (123.9 kg/m²). The waste production volume per unit of all UMC's 12" fabs was 272.3 kg/m², which is a reduction of 7.8% compared with 2015 (295.2 kg/m²).

In 2017, UMC's reduction plans and measures resulted in a total waste reduction of 3,183 metric tons, as shown in the table below.

2017 Waste Reduction Measures and Performances

	Reduction (tons)
Waste reduction plan	
Reduction of waste dilute sulfuric acid (removing hydrogen peroxide from dilute sulfuric acid for our own re-utilization)	2,225
Reduction of waste solvents (through decreasing flow or lifetime extension)	413
Reduction of sulfuric acid (through lifetime extension or as an air pollution control equipment agent)	315
Reduction of calcium fluoride sludge (through hydrofluoric acid source reduction)	87
Reduction of copper sulfate (through decreasing the proportion of supplemental acid)	34
Other reduction measures (reduction of waste phosphoric acid, photoresist, BOE, ammonium sulfate, and so on)	109
Total amount of reduction	3,183

With regard to waste reduction in the Green2020 Reduction Plan, the waste production volume per unit of all UMC's 8" fabs (including Fab8N) was 105.2 kg/m², which is a reduction of 15.1% compared with 2015 (123.9 kg/m²). The waste production volume per unit of all UMC's 12" fabs was 272.3 kg/m², which is a reduction of 7.8% compared with 2015 (295.2 kg/m²).



Waste reduction measures expected to be promoted in 2018

Continuous reduction of NMP sources to reduce waste solvent output	
Promotion of volatile organic compound (VOC) revolving clean-up waste reduction, reducing waste solvent output	
Reduction of the water content of low concentration IPA and reduction of waste solvent output	
Reduction of the moisture content of effluent sludge and reduction of effluent sludge production	

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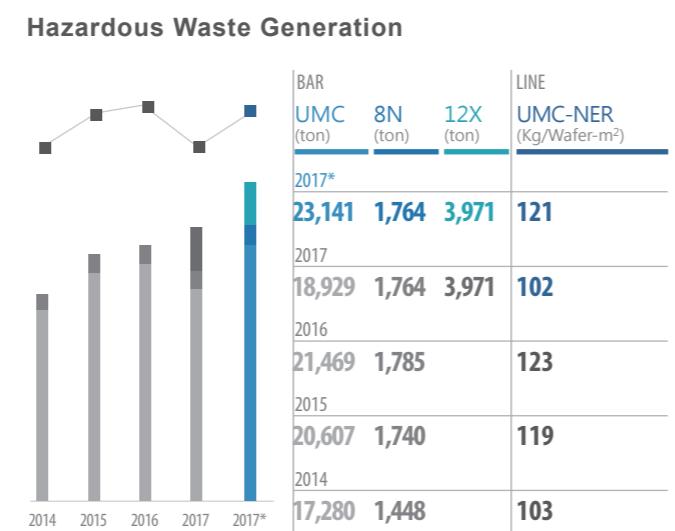
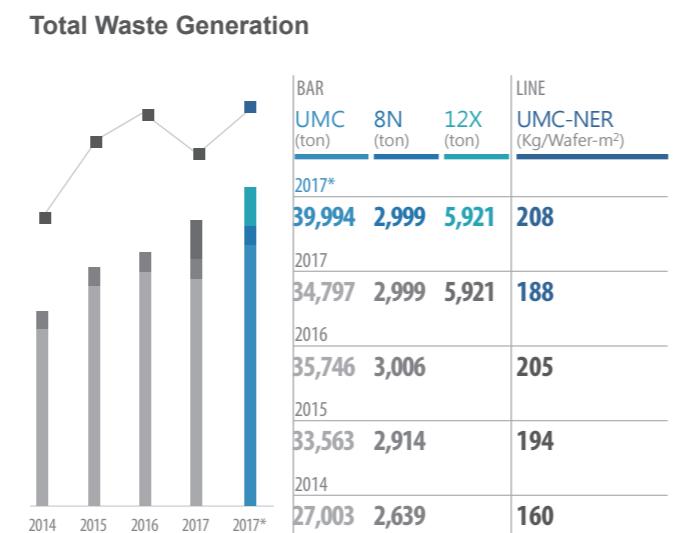
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3-4-2

Promotion of the Circular Economy

In addition to reducing waste from the manufacturing source, UMC continues to promote recycling and reuse in place of existing end-of-pipe control to turn waste into resources, subsequently creating three advantages:

- Waste reduction
- Waste disposal energy and cost reduction
- Creating a positive waste-to-resource ratio

Conversion of In-plant Resources

In 2017, UMC promoted the in-fab use of waste diluted sulfuric acid as ammonia-nitrogen wastewater treatment or air pollution prevention and control equipment agent, after the acid has had its hydrogen peroxide removed from it.

- Reduced our total production output of waste sulfuric acid by approximately 3,100 metric tons
- Reduced our purchases of industrial-grade sulfuric acid by approximately 3,400 metric tons
- Total economic benefit NT\$ 17.47 million

Conversion of Off-site Resources

Off-site waste recycled by UMC in 2017

- Waste recycled 35,998 metric tons
- Waste re-use 90%
- Hazardous waste reused 22,131 metric tons
- Hazardous waste re-use rate 96%
- Revenue from the recycling of renewable resources in 2017 (fabs in Taiwan) NT\$ 30 million

2017	Photo Mask	Solvent	Sulfuric Acid
List of major waste recycling resource in 2017	Collected by recyclers, cleaned to remove patterns, and renewed as photo masks or made into optical materials.	Converted to chemical grade raw material through distillation / extraction by chemical factories.	Collected by recyclers and diluted into industrial grade sulfuric acid, or re-made into poly aluminum chloride or sulfate.
Fluorescent Lamp	Recycling Category	Resin	Copper sulfate
Collected by recyclers for reusable fluorescent powder and metals.	Scrap paper, scrap aluminum, aluminum foil, plastic bottles and scrap plastics are collected by recyclers for re-use.	Collected by recyclers, classified and cleaned and used as second grade resin for ion exchange.	Collected by recycler and used electrolysis to recover copper, which is re-made into copper plates, copper sulfide or copper sulfate.
Receptacle	Wood	Calcium fluoride sludge	Phosphate
Cleaned by recyclers for re-use.	Recycled as raw material for wood products.	Supply to cement companies as cement additive. Collected by recyclers and made into artificial fluoride for use as solvent by steel mills.	Collected by recyclers and re-made into industrial grade phosphoric acid or biological nutrients.
Mixed Hardware	Lead Acid Battery	Waste solvent	Ammonium sulfate
Collected by recyclers to extract the heavy metals or recover other metals.	Collected by waste disposal vendors to recover raw lead and waste plastic materials.	Collected by the supplier to be remade into coating thinners or banana oil mixtures.	Collected by the supplier to be remade into industrial grade ammonium sulfate that could be used as welding flux, leather goods, electroplating solutions, and dyes.

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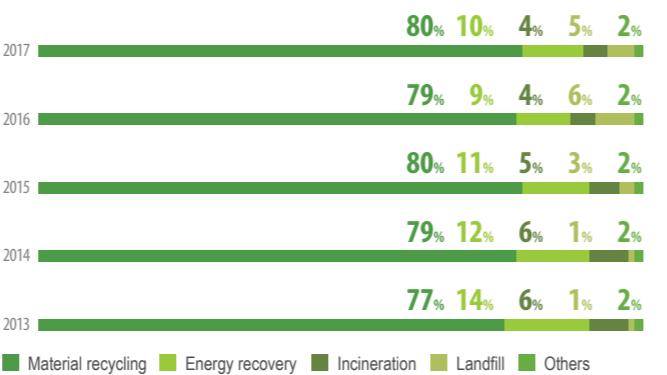
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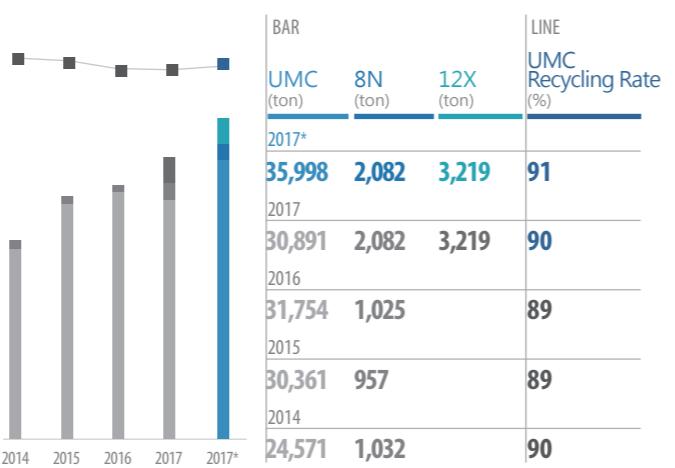
UMC Waste Recycling Trend



Note 1: Other waste recycling methods include solidification, overseas treatment and chemical treatment.

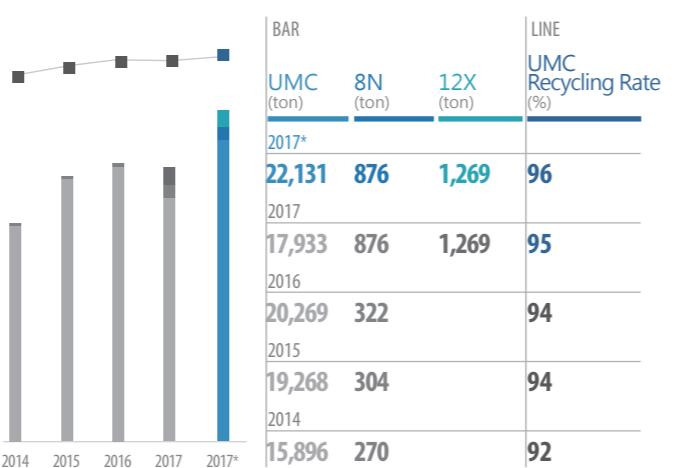
Note 2: Energy Recovery means that waste solvent was recycled as an auxiliary fuel.

Recycling Status



Note: In 2017, the overall recycling rate of UMC and its subsidiaries HJTC (Fab8N)/ USC(Fab12X) was 84%.

Amount recycled Recycling rate



Note: In 2017, the overall recycling rate of UMC and its subsidiaries HJTC (Fab8N)/ USC(Fab12X) was 84%.

3-4-3 Proper Waste Disposal

UMC conducts on-site audit of its waste cleanup/treatment/recycling vendors mainly 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 evaluation result, the company determines whether to maintain cooperation or increase the frequency of audits. The table below shows the results of the audit and subsequent follow-up:

In 2017, UMC audited a total of 51 waste disposal companies. All the suppliers were graded as "Excellent" or above.

Suppliers offering waste processing and recycling services were encouraged to retain proper records for the overall process for final accountability of waste processing and recycling procedures. These records could then be provided to source customers or government agencies to conduct effective inspection and prevent any case of intentional violations or environmental pollution. In 2016, UMC participated in the "High-Tech Industry Waste Cleaning Supplier Assessment Project" held by TSIA and TTLA and was responsible for evaluating 5 suppliers which involved waste solvent as well as waste sludge reutilization. The suppliers participating in the "High-Tech Industry Waste Cleaning Supplier Assessment Project" in 2016 were assessed and those suppliers with outstanding performance were announced on the Industry Association website. In addition, the results of the assessment were shared and the outstanding suppliers were awarded at the International Seminar of High-Tech Industry Environmental Protection & Sustainability Development held by Taiwan Semiconductor Industry Association (TSIA) on December 6, 2016.

In 2017, UMC signed the Self-regulation Convention on the Clean-up and Reuse of Waste in the High-tech Industry initiated by the Taiwan Semiconductor Industry Association. In the same year, we cooperated with the association to arrange a visit to UMC to verify that the waste management operations in our fabs were in compliance with the self-regulation convention.

Established the UMC Waste Removal and Transportation GPS virtual vehicle fleet monitoring system.

UMC has reinforced the management and control of commissioned waste disposal processes to ensure that waste is properly delivered to the relevant disposal or reuse organizations. We cooperated with a GPS system manufacturer to develop UMC's waste disposal and transportation GPS virtual vehicle fleet monitoring system. In 2017, priority was given to introducing clean-up and transportation vehicles dealing with waste of concern (including waste solvents, waste sulfuric acid, waste effluent sludge, waste phosphoric acid, copper sulfate, ammonium sulfate, waste containers, and so on) into the system to carry out monitoring and management of removal and transportation processes. The advantages of this system are as follows:

Outstanding: 90 points or more

- Maintain cooperation
- Audit once every 2 years

Excellent: 80-89 points

- Maintain cooperation
- Audit once every year

Satisfactory: 70-79 points

- Maintain cooperation (list as a substitute vendor)
- Audit once every year

Inadequate: 60-69 points

- List as under observation. Increase audit if improvement is made within given time; otherwise, terminate contract.
- Audit once every 6 months

Unsatisfactory: 60 points or less

- Replace immediately

1

100% monitoring of all removal and transportation trucks

replacement of traditional manual vehicle checks

2

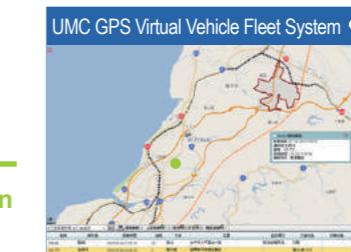
Real-time monitoring during removal and transportation, with immediate notification of abnormalities

superior to current regulatory GPS systems, in which the production end is only able to query tracking after the event

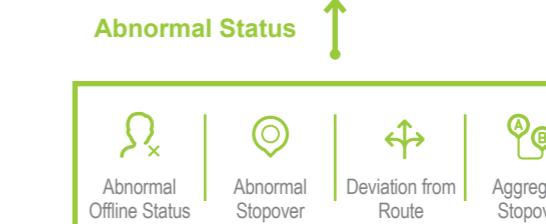
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Daily checking, so that when there are abnormalities the company is required to explain the reasons

this lets the waste management company know that the production source end is being monitored at any time and reduces the probability of illegal activities



System Notification



UMC

GPS Monitoring



Waste Disposal or Reuse Organization

100% Monitoring of Removal and Transportation of Waste

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3-5 Green Product

In addition to our dedication in providing core products with market competitiveness to meet our customers' demand, as a citizen of the Earth, UMC has also taken on the responsibility of developing green products with efforts in cherishing resources and protecting the environment starting from the source. In addition to reducing resource consumption and unnecessary pollution during the production process, we have gone one step further to acquire green factory certification to be a good green role model.



How We Manage

- In addition to complying with all applicable laws, regulations and standards, we have applied even higher standards for ourselves with the priority of replacing hazardous substances.
- We will promote green purchasing with proper management of hazardous substances within the production process starting from the source.
- Our product designs are heading towards slim and compact sizes to reduce material consumption, yet they also feature high performance and low power consumption.
- We will promote reduction of greenhouse gas emissions, saving of energy and resources, and reduction of waste generated during the production process.
- We will promote the recycling and reuse of raw materials and product packaging materials.

Purpose

Providing green products that are hazardous substance free with low environmental impact

Goals and Targets

Continuously promote the plan of hazardous substance replacement, energy reduction and environmental impact assessment.

Policies

Hazardous substance free policy , Environmental protection policy

Applicable Entities

- UMC
- Hejian Technology (Suzhou) Co., Ltd. and United Semiconductor (Xiamen) Co., Ltd., which are UMC subsidiaries selling and manufacturing integrated circuits

Green product considerations at each stage

Choice of raw materials or components
Implementation plan Use recycled materials, promote the reutilization of process raw materials
Implementation in 2017 <ul style="list-style-type: none"> Significant amount of reclaimed wafers were used. In 2017, 51.7% of the dummy wafers used were replaced by reclaimed wafers. In 2017, reutilization of slurry particle was promoted to recycle 1,682 tons of slurry particles.

Direct operations, production & manufacturing
Implementation plan Promote clean production, reduce the use of hazardous substances
Implementation in 2017 <ul style="list-style-type: none"> The Green 2020 Reduction Plan was promoted to reduce water consumption, electricity consumption and waste generation.(Please refer to the Clean Production Section for more details on performances and achievements) PFOA related material replacement program was fully implemented in 2017.

Distribution, storage and transportation
Implementation plan Reuse the package materials from raw materials and some products in order to reduce the demand for such materials and the generation of waste.
With regards to product delivery strategy, by considering the location of customers and the amount of products that can be transported by the available carriers, UMC adopts common-route delivery rather than frequent, small and un-routine delivery modes.
Implementation in 2017 In 2017, the recyclable package materials used reached 79,000 kgs.

Use phase - operation and servicing/maintenance
Implementation plan Develop environmentally friendly, low power consumption advanced process chips
Implementation in 2017 UMC applied its 28nm process to produce energy efficient and IoT application ICs. The 14nm process was adopted in 2017 for mass production.

End of life management
Implementation plan Maintain the uniformity of ICs and products

Implementation in 2017

UMC is a wafer foundry and not an end product manufacturing company. Wafers are mainly made of silicon material, which is homogeneous. Therefore, the material can be easily recycled and disposed of.

3-5-1 Hazardous Substance Management

Through the QC 080000 Hazardous Substance Management System, UMC ensures that its products not only comply with the EU list of controlled substances (such as the EU RoHS) and global chemical regulations and standards, but also meet customer needs. Several years ago, UMC established the inter-departmental Hazardous Substances Process Management committee (HSPM committee) to enhance the effectiveness of green product management.

Hazardous Substance Free Policy

By instilling employee awareness and ensuring control and technological upgrades in design and production, the company produces Hazardous Substances Free Control products that meet regulations and customer demands, thereby fulfilling its duty as a global citizen to protect the environment and human health and safety.

Hazardous Substance Free Goals

- No products were disposed of as a result of regulation violation or customer demand.
- Zero VOC and zero violation

UMC Response to Global Standards and Trends on Hazardous Substance Management

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

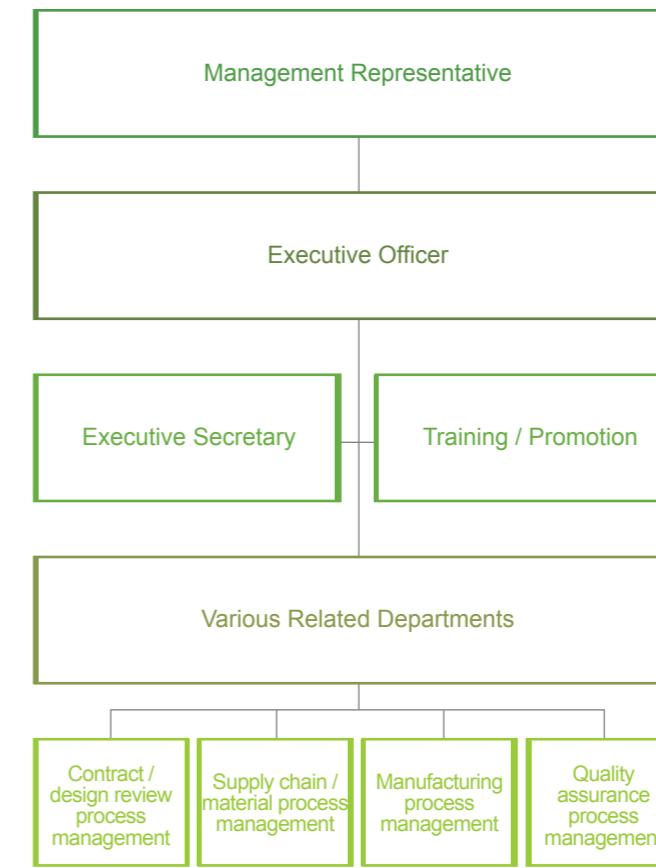
EU Waste of electrical and electronic equipment (WEEE)

- These regulations do not directly apply to UMC as UMC 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)

UMC led the industry to achieve the elimination of PFOS, PFOA and PFOA-related chemicals.

Hazardous Substances Process Management Committee Organizational Chart



UMC Hazardous Substances Management

	Constructed a system for evaluating raw materials
	Dedicated to green supply chain promotion
	About 400 controlled chemical substances listed
	Impartial third party laboratory regularly tests products for hazardous substance content
	The world's first foundry to achieved international QC 080000 IECQ HSPM certification
	Established a procedure for procuring green raw materials
	Hazardous Substances Process Management committee

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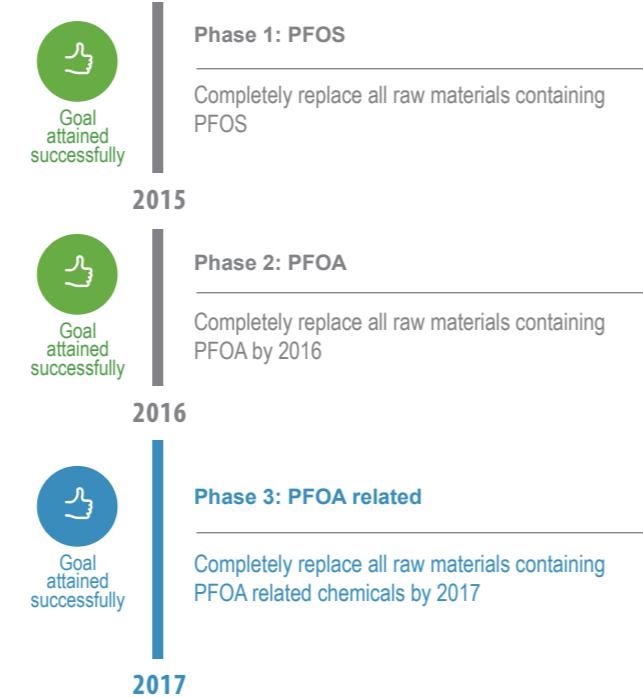
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Appendix



Hazardous substance replacement plan

Usage reduction project and objectives for PFOS, PFOA, and PFOA related chemicals



In response to domestic and international concerns regarding persistent organic pollutants (POPs) such as PFOS, PFOA, PFOA related, etc., an autonomous replacement plan was reached in December 2017. UMC led the industry to achieve PFOA-related free operations.

Why have PFOS / PFOA been restricted?

According to tests conducted by the US Environmental Protection Agency, PFOA can remain in the human body for up to four years, and animal experiments have confirmed that such compounds can cause cancer, and small amounts of perfluorocaprylic acid residues are also found in many American general populations. The compounds contained in PFOS are persistent in the surrounding environment and can easily accumulate in humans and animal tissues, causing poisoning and potential respiratory problems in the human body.

3-5-2 Product Environmental Impact Assessment

Since 2005, UMC has fully implemented LCA in all its fabs. Comprehensive cradle-to-gate (UMC shipment) inventoried items include energy, raw materials and environmental pollutant emissions. Using the Simapro software, results of the entire supply chain and manufacturing inventory are analyzed for environmental impact. Attention is kept on the environmental impact of the company's products, and improvements in management of the environmental management system are made accordingly. The results of 2017 UMC Environmental Impact Assessment include 11 indicators of carcinogen, respiratory organism, respiratory inorganic substance, climate change, radiation, ozone layer, ecotoxicity, acidification/eutrophication, land use, mines, and fossil fuel. Among them, there are 2 indicators in which the environmental impact at the production stage is greater than the raw material stage. This will serve as the reference for constant improvement of the environmental management system of our company.

Results of 2017 Environmental Impact Assessment (8-inch representative fab)

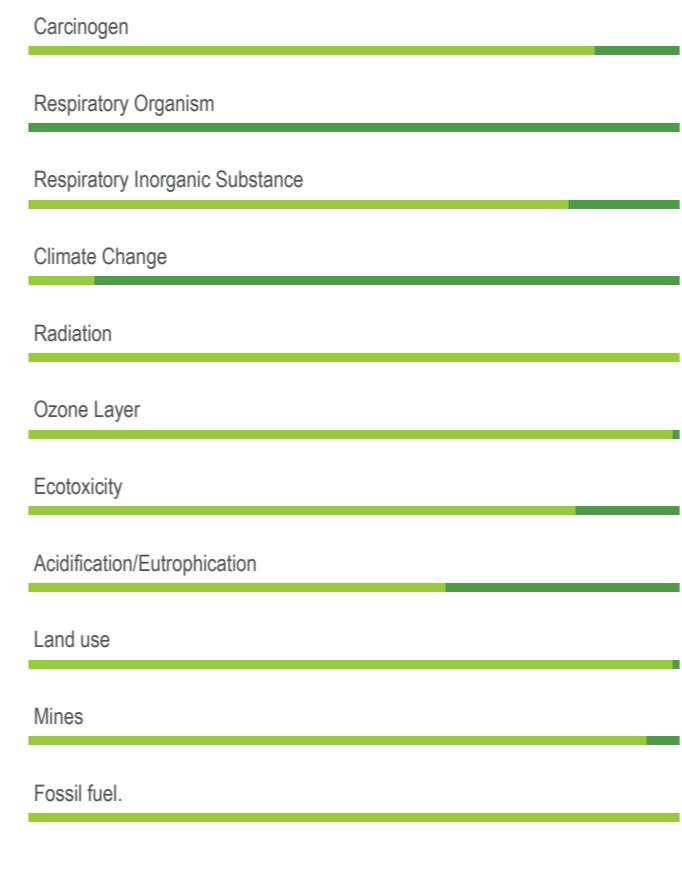
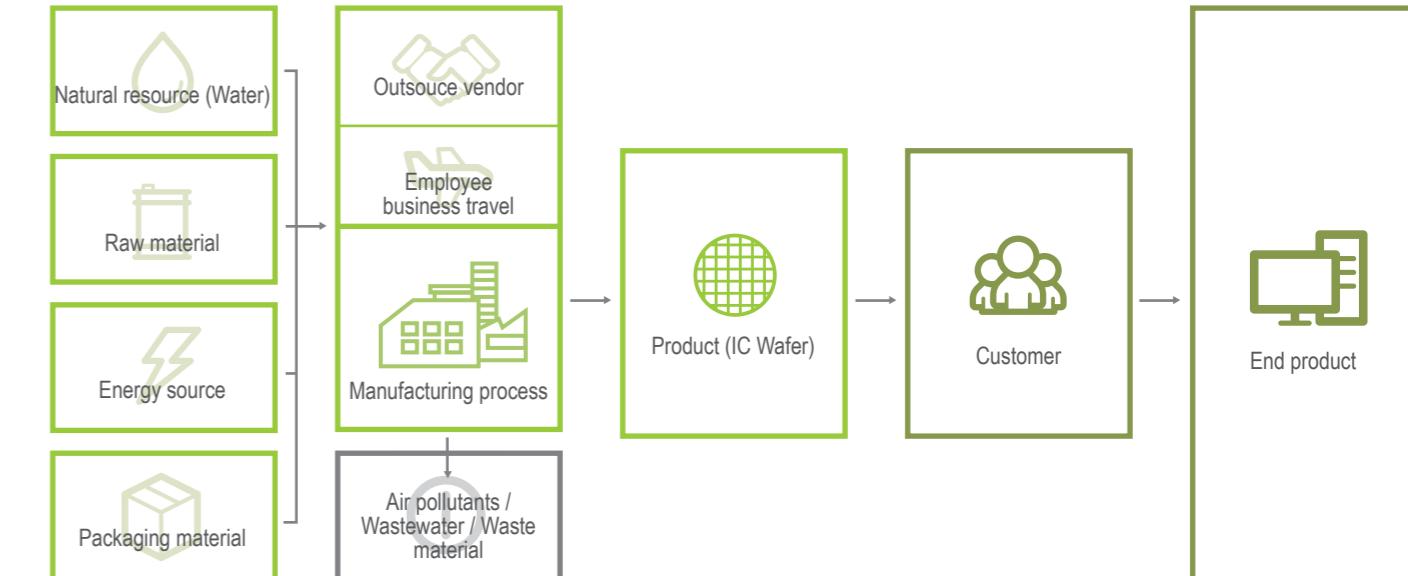


Diagram of Semiconductor Product Lifecycle Concept



Carbon Footprint

As an upstream industry, providing customers with quality environmentally friendly products that comply with environmental protection regulations has always been one of the most important UMC operational philosophies. UMC strives to implement a comprehensive carbon management plan. In addition to its internal greenhouse gas emissions inventory and verification, the company also promotes the carbon footprint inventory program.

2009

In 2009, delivered the world's first certified carbon footprint wafer product; completed Type III Product Environmental Labels and Declarations verification.

2011 - 2014

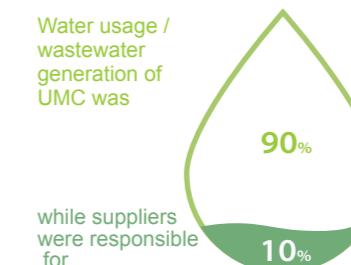
UMC participated in the EU Seventh Framework Programme (FP7) from 2011 to 2014 and worked with both private industries and academia to research and develop approaches and tools for a Simplified Life Cycle Assessment (SLCA) system, allowing our customers to quickly and conveniently predict product carbon footprints.

2017

In 2017, the carbon footprint was promoted according to the UMC LCA-to-go Project implementation content.

Water Footprint

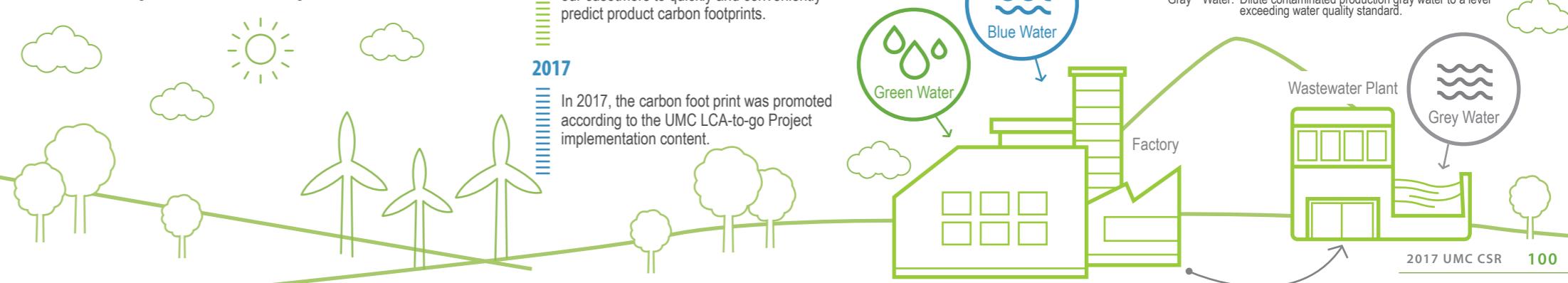
UMC recognized the importance of water as a natural resource very early on. Water resources are particularly important in Taiwan due to its mountainous topography, heavy rainfall along the mountain slopes, dense population, and extensive industrial and commercial developments. UMC complies with the Business Water Footprint Accounting standards developed by Water Footprint Network, an international NGO. In 2010, we completed business water footprint verification for our 8-inch and 12-inch wafer fabs and identified that water usage during direct processing was greater than that of the indirect supply chain. Blue water and gray water were the main sources of water used. In 2015, UMC began working with our suppliers to complete ISO 14046: Water Footprint Assessments of various products manufactured by UMC plants. In 2017 the water footprint inventory was launched throughout the company in accordance with the new standard, and third-party verification was implemented in the representative fab.



Future directives

- Continue to improve water usage efficiency (WUE) within the fabs, and reduce both water usage / wastewater generation to directly reduce water footprint of our products.
- Work with suppliers to improve overall WUE of the entire supply chain to achieve joint water conservation and protect our planet.

Green Water: Rain and condensates are water sources that can be directly used.
Blue Water: Surface or underground fresh water source
Gray Water: Dilute contaminated production gray water to a level exceeding water quality standard.



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Committee Chairman

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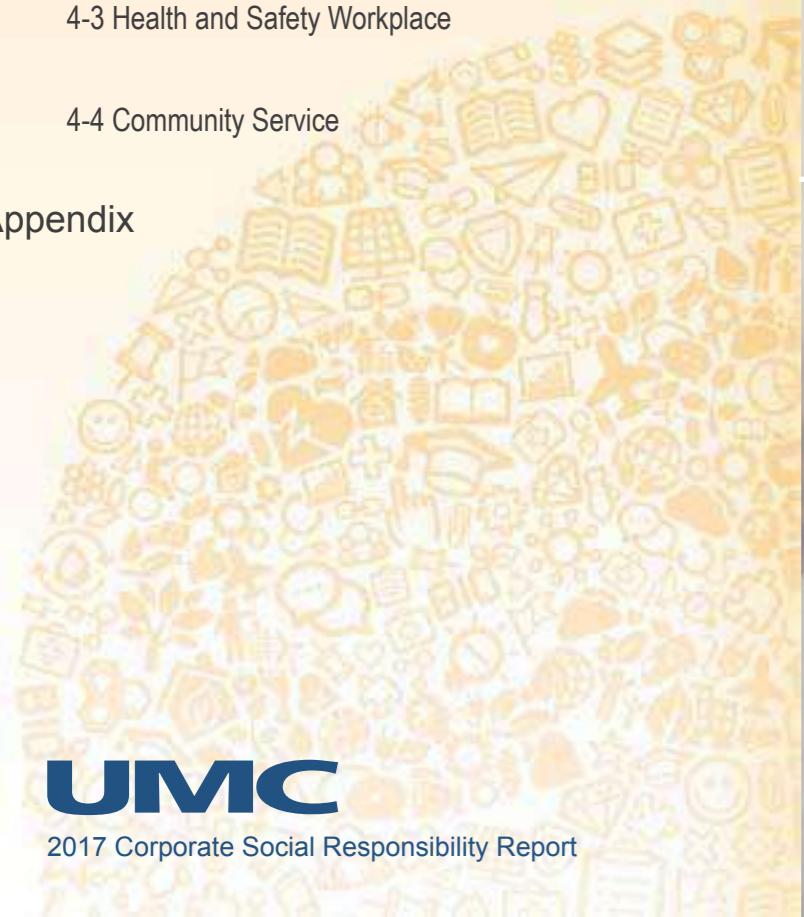
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Major Material Social Issues

There were three major categories of material social issues in 2017: (1) Occupational Safety and Health (2) Employment (3) Training and Education



Occupational Safety and Health



Employment



Training and Education

Indicator

Compliance for 2017

2018 Goal

Number of incidents company-wide

- 0 major or serious incidents.
- ≤ 8 minor incidents.(Including new fabs)

0 major and serious incidents
≤13 minor incidents.

Pass the OHSAS 18001 Management System Certification

- Pass annual certification.

Pass the annual OHSAS 18001 Management System Certification.

Indicator

Compliance for 2017

2018 Goal

Organizational identity and cohesion

- 85% achievement in employee identification and cohesion.

Implement corporate cohesion and identity.
87% achievement in employee identification and cohesion.

Strengthen diversity of communication mechanisms to ensure harmonious labor relations

- 100% achievement in communication.
 - Feedback closure rate for employee opinions: 100%.
- Annual targeted goal was reached.
Each health occupational index was implemented.
We were awarded the '2017 Global Views Magazine CSR Award' - Electronic Technology Group Model award and first prize for the Outstanding Project Happy Enterprise Group. Received the Excellence in Corporate Social Responsibility Award for 6 consecutive years from CommonWealth Magazine. Listed as DJSI index component for 10 consecutive years.

Maintaining an open and transparent communication channel to promote employer-employee harmony.
100% achievement in communication.
Feedback closure rate for employee opinions: 100%.

Ensure compliance with the spirit and standards of international human rights

- Full implementation of the Labor Standards Act and compliance with the EICC Code of Conduct to ensure adherence to the spirit of international human rights standards.
 - 100% achievement in EICC labor/code of conduct training.
 - <5 on the annual EICC labor / ethics risk index.
- Dedicated EICC organization has continued to support the spirit and conventions for human rights. Results of quarterly reviews showed zero incidents of ethical violations.
100% achievement in EICC labor/code of conduct training.
In 2017, the EICC labor / ethics risk index was less than 5.

Ensure compliance with the spirit and standards of international human rights.
100% achievement in RBA(EICC) labor/code of conduct training.
Promote RBA(EICC) spirit to subsidiaries.

Indicator

Compliance for 2017

2018 Goal

Training for professionals with potential

- Course training completion rate: 100%.
 - Subsequent action plan completion rate: 100%.
- Course training completion rate: 100%.
Subsequent action plan completion rate: 100%.

Course training completion rate: 100%.
Subsequent action plan completion rate: 100%.

Quality Improvement Team (QIT)

- Establish 138 QITs.

Establish 120 QITs.

Knowledge Management (KM)

- 90% achievement in reading penetration.
 - 70% achievement in writing penetration.
 - 18% achievement in three stars KM document *.
- Achieved 90% in reading penetration.
Achieved 72.5% in writing penetration.
Achieved 19.9% in three stars KM document *.

90% achievement in reading penetration.
72% achievement in writing penetration.
18% achievement in three stars KM document *.

Note 1: Three stars KM document: Refers to KM document with large contribution and approved for inter-department sharing.

Note 2: The various annual indicators are included in the company's and Corporate Sustainability Committee's KPI (Key Performance Indicator) and policy development, integrated with major company policies, and continually reviewed and improved.

4-1 Labor Rights

4-1-1 Human Rights

UMC supports and respects the standards of international labor rights, and in light of this spirit, has developed the UMC Code of Conduct. All employees are expected to comply with this code in their daily tasks and operations to ensure the sustainable growth and development of the Company. Subsidiaries, joint ventures, suppliers, customers and other entities with operational and development partnerships with UMC are expected to jointly fulfill their corporate social responsibilities and promote economic, social, environmental and ecological balance and sustainable development.

UMC Code of Conduct follows



International Labor Office Tripartite Declaration of Principles



The OECD Guidelines for Multinational Enterprises



UN Universal Declaration of Human Rights



The UN Global Compact



Electronic Industry Code of Conduct, EICC

EICC Committee

To ensure a safe working environment and the basic labor rights of supply chain enterprises in the global electronics industry, UMC established the EICC Committee in 2013 to address issues pertaining to labor, health and safety, environment, ethics and management systems. The EICC Committee defines the tasks, authority and responsibilities of its members, develops relevant policies and performance goals, follows up on implementation, and conducts regular assessments and reviews. The EICC Committee initiates annual review of internal systems to ensure compliance with the latest EICC guidelines and thorough implementation of the Code of Conduct for the electronics industry. Furthermore, through the EICC-ON official website, further risk assessments of Fabs are conducted to avoid potential risks.

The organization of UMC EICC Committee

EICC committee

The Committee Chair position is filled by the Director of the Human Resource Office

Director General

Position filled by the Department Manager of HR

Purchasing and Procurement Committee

Staff

Human Resource Committee

Customer-engineering and Service Committee

Note : Please refer to the ISO 14001 & OHSAS 18001 management systems and the UMC Environmental Safety and Health Management Committee operations for environment, health and safety.

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In addition to the internal self-inspection mechanism, UMC also accepts Validated Assessment Process (VAP) by a third party EICC commissioned by customers. Through the perspective of an external audit, further improvement for the management system can be identified. At the same time, UMC's spirit of compliance with the EICC can be conveyed to subsidiary groups to jointly protect human rights and ensure corporate social responsibility. UMC conducts annual EICC Compliance Survey and field audits for suppliers. Suppliers are required to comply with EICC standards on labor, health and safety, environment, ethics, management systems, and other measures. Instruction is offered on EICC concepts, and programs for a relevant management system are formulated. Furthermore, to enhance employee knowledge of EICC standards, UMC has incorporated EICC guidelines into the training courses for new employees. Online self-test training is also conducted annually for all employees, and as of 2017, training and relevant tests have been completed in Taiwan and Singapore. At the same time, UMC will promote the spirit of compliance with EICC to its subsidiaries, including HeJian and United Semi, review compliance and issue a statement, and focus on establishing further management plans to protect human rights and ensure corporate social responsibility.

EICC Committee Tasks and Implementation Outcome



UMC EICC Committee Tasks

- Promote EICC labor, business ethics and management system.
- Develop and approve policies and performance goals for labor, business ethics and management system.
- Ensure that labor, business ethics and management systems comply with local EICC regulations.
- Discuss and approve priorities for EICC labor, business ethics and management system implementation plans.
- Track and assist in implementation of EICC labor, business ethics and management system plans.
- Regularly assess and review EICC labor, business ethics and management system committee reports.



2017 EICC Implementation Outcome

- 100% of new staff completed the EICC labor / ethics training.
- 100% completion for annual labor EICC /ethics training.
- Number of cases of ethics non-violation in the quarterly reviews.
- No case of local government review as a result of human rights issues.
- Scored less than 5 on the annual EICC Labor / Ethics Risk Threat Index^{Note 1}
- EICC SAQ is conducted by each facility with low risk of 90 points above.
- Fab 12A and Fab 12i conducted EICC Validated Assessment Process (VAP) and audit reports are officially published on EICC-ON.

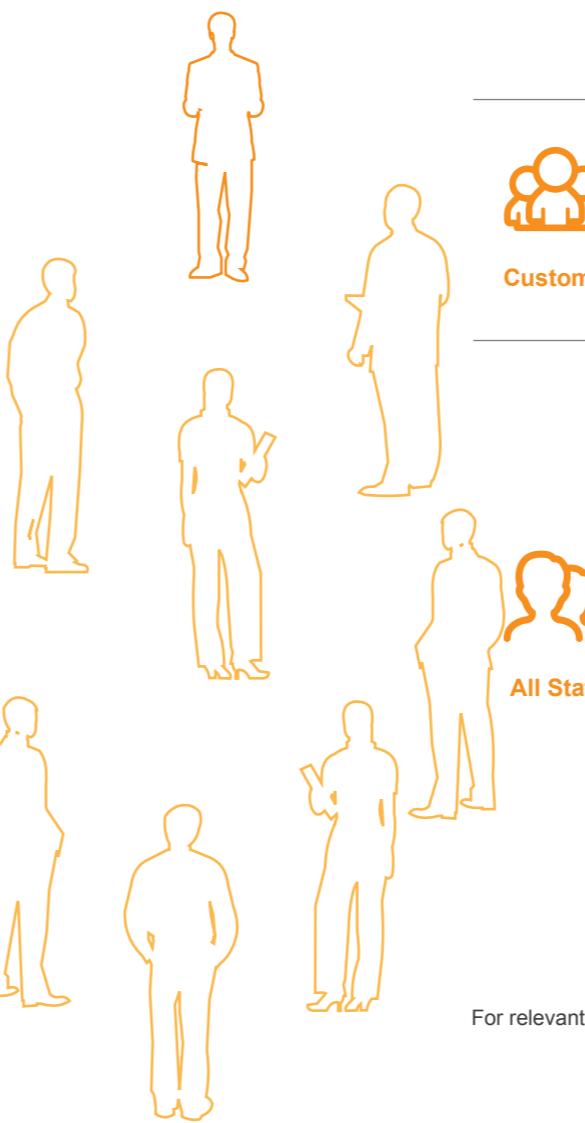
Note1: Safety Risk Threat Index = Self-Rating Outcome Level (1-5) x Self-assessment Possibility Level (1-5); Higher score on the index indicates higher risk.

Human Rights Promotion

UMC places great emphasis on promoting EICC labor and business ethics policies. Through the company employee handbook and regular employee compliance inspections, the core content of labor, ethics and integrity, child labor, labor relations, forced labor, working hours and non-discrimination principles are emphasized. To protect labor rights and ensure that each employee receives fair humane treatment and respect, the "Complaints and Disciplinary Measures for Workplace Sexual Harassment Prevention" is compiled to provide a complaint channel and safeguard the rights and interests of women employees. In 2017, 100% of employees received a total of 11,367 hours of training in human rights.

UMC's Focus in Core Human Rights Issues and Management

Impact Assessment	Core Issues	Management Mechanism
	Human Rights	Review and assess through quarterly labor-management meetings, quarterly corporation communication meetings and various appeal channels.
	Non-discrimination	UMC prohibits any overt or covert act of workplace sexual harassment and discrimination. Hiring, evaluation and promotion will not be based on race, gender, age, marital status, political affiliation or religious beliefs, and the same principles apply to cooperation with vendors.
	Forced Labor	The employer-employee contract is signed according to labor laws. The contract is based on the premise that the employer-employee relationship is mutually consensual, with no forced labor or illegal human trafficking, and opposition to slavery.
	Child Labor	Administer the EICC compliance survey to suppliers, and conduct field audits.
	Forced Labor	UMC policies clearly state that no child under the age of 16 may be hired, and any action that may result in the employment of a child is not permitted. UMC works with vendors who comply with the above principles.
	Privacy	UMC policies clearly states that it will not permit forced labor and illegal human trafficking, and opposes slavery. UMC works with vendors who comply with the above principles.
	Ethics and Integrity	UMC signs privacy contracts with its various vendors or customers to require mutual protection of confidential information. UMC has set up confidential information / data management measures, and customer information is handled by a responsible unit. In all employee contracts, both parties are required to sign a confidentiality agreement to avoid the potential of inappropriate disclosure.
	Labor Relations	Conduct risk assessment of regulations compliance and professional ethics through annual internal control self-assessment.
	Work Hours	The labor contract between each UMC employee and the Company is in compliance with local regulations. Comprehensive communication and effective problem resolution between employees and the Company are achieved through labor-management meetings, communication meetings and numerous communication channels.



For relevant information, please refer to the UMC Code of Conduct on the company website http://www.umc.com/English/CSR/c_4.asp

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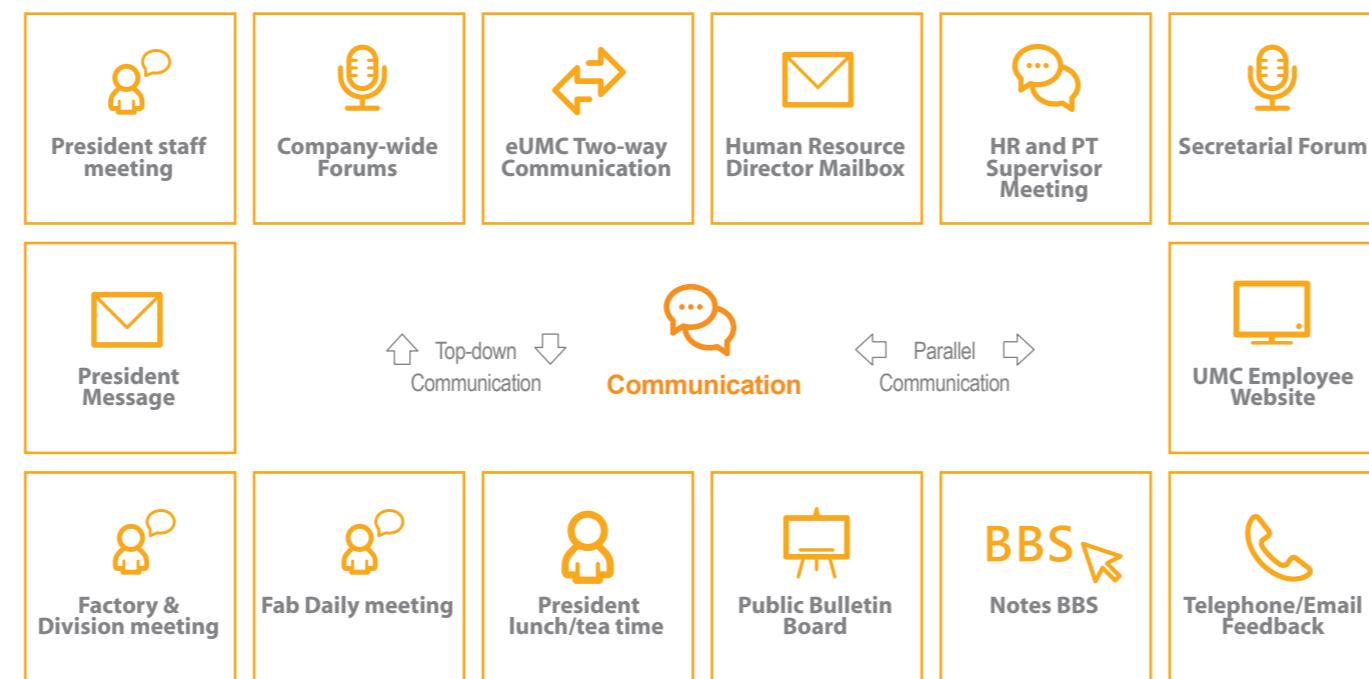


4-1-2 Employer-employee Communication

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, departmental meetings, conferences (management conferences and colleague conferences) as well as mail boxes were employed to achieve the goals of providing extensive communication channels to effectively solve any problem that may arise. The employees' rights to freedom of association shall be based upon those prescribed by local laws. UMC respects the right of employees to choose whether or not to exercise rights without intervention or interference. HeJian Technology Company (HJTC) also established a comprehensive and diverse selection of communication channels in order to respond immediately, properly and positively to employee requests.

Important UMC Communication and Complaint Channels:



Number and Frequency of Communication Channels

Taiwan

Fab and Departmental Communication Meetings

Share overall operational performance as well as developmental highlights of the plants and departments with all employees.

Note:Held every 6 months by each fab and department.

Quantity:69

Secretary Conference

The Human Resource (HR) department shall collect key topics and discuss them with the Secretariat. The Secretariat shall then discuss key issues of the meeting with fellow employees to achieve bidirectional communication.

Note:Hsinchu Science Park / Southern Taiwan Science Park Secretariat Conference (4 times each).

Quantity:8

Employer-employee meeting

The HR department shall delegate colleagues and employees familiar with relevant regulations to organize and assemble a multi-departmental and multi-functional inquiry team. The team shall follow-up on specified meeting topics and facilitate subsequent improvements for building harmonious employer-employee relationships.

Note:Once every quarter; held in 9 fabs.

Quantity:36

Welfare committee meeting

The employee welfare activities as well as the usage of welfare funds shall be described to the welfare committee member delegated by each plant / site in the meeting every quarter.

Note:Once per quarter.

Quantity:4

Taiwan/Singapore/China

Company-wide Forums

Interactive, videoconference for 6 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.

Note:Once every quarter. Implemented after the investor conference.

Quantity:4

China

Employee conference

Any problems encountered by the employee such as questions during work or challenges in the work place may be raised in the meeting. The supervisor or responsible owner shall provide an answer for the employee.

Note:Once every month.

Quantity:12

Union-employee conference

Communication and discussions with union members on employee welfare and employer-employee topics.

Note:Once every month.

Quantity:12

Newcomers forum

One month after new employees are hired, a Newcomers Forum is held by the General Manager to increase communication and interaction among new employees.

Note:Once every month.

Quantity:7

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, BBS message boards, IT information service mailbox, industrial safety mailbox, all kinds of forums, and UMC's website so that the various communication channels in the various operational bases can be integrated into a single platform for effective communication and promoting harmonious employer-employee relations. To protect the human rights of fellow employees, UMC also takes measures to protect the identity of employees who raised complaints or were affected by various issues to ensure the freedom and confidentiality of employees who submitted petitions. Among the various communication channels, the e-Suggestion feedback platform is most frequently used, and in 2017, 373 employee comments were received with 100% of the feedback responded to and resolved.

"UMCWe Website" is an external website (internet) platform freely accessible to employees. Through this interactive communication platform, families, prospective employees, integrated benefits, associations and participating businesses are linked to strengthen the interaction between the organization and employees.



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Employee Satisfaction Survey

Satisfaction surveys utilized by UMC can be largely divided into regular surveys, project-focused surveys, or targeted surveys designed for specific issues. The current satisfaction survey system employed by UMC is relatively diverse and targets different goals and objectives. Specialized satisfaction survey systems were employed to ensure that authentic responses from the employees could be collected to initiate effective improvements.

Category of Satisfaction Surveys

	Regular HR satisfaction surveys (once every year), health check-up satisfaction survey
	Project-focused Team cohesion project satisfaction survey, communication (and communication platform) satisfaction survey, and organizational climate surveys designed and implemented for targeted organizations.
	Specific events Event / topic-based surveys: Family Day, Parent-Child Day, and Art Season satisfaction surveys, training and development satisfaction surveys, and plant site affairs satisfaction surveys designed for various administrative and supporting services.

Collection and responses to various survey feedback will help management identify areas that require improvements in order to effectively resolve employee problems. HR satisfaction surveys were also used in project investigations that cover the aspects of employee hiring, remuneration and welfare, employee relations, plant site services and safety, HR services, training and development, logistics and commercial services. Semi-open questionnaires were used to collect survey responses from the entire employee population. Questionnaire items included quantified assessments as well as open-ended Q&A where employees can provide their own responses. Establishing a diverse selection of communication channels will help UMC to ensure the rights of employees to express their own opinions while ensuring the successful communication of internal feedback and opinions. Employees may also select their preferred mode of communication to express their views and ideas, thereby achieving the ultimate objective of communication.

Implementation of HR Satisfaction Survey



Comprehensive Appeal and Employee Support Systems and Channels

To achieve effective communication and resolution of issues between UMC and its fellow employees, UMC established the aforementioned communication platforms as well as the following channels and systems for employee appeals. Employees are allowed to independently decide whether or not to exercise employee rights prescribed by statutory regulations. UMC does not intervene or interfere with the employees' freedom of association.

Appeal systems and channels provided by UMC include:

- Appeal channels for employees of every rank and case
- Report of sexual harassment and unfair treatment: 31995
- CHO E-mail: (Send an email report directly to CHO)
csr@umc.com
- Employee relations 12885 helpline
- Fraud and ethics violation reporting:
whistleblower@umc.com
(This e-mail will automatically forward messages to ADT Division Director, HR Division Director, IPLA Director, and Audit Committee). External reporting hotline: 0800-024-399 (toll free number)
- Whistleblower hotlines: 03-5782258 Extension 31425
- Information Security and Confidentiality Protection complaints:
Infosec@umc.com

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 2017 to effectively communicate key topics on UMC businesses. The diverse and comprehensive selection of UMC's communication systems were used to effectively assess the employee's voice and handle employee issues. Although Taiwan's laws stipulated the rights of employees to freely organize themselves into unions, no requests to organize unions have been received by UMC as a result of the aforementioned measures. However, unions have been established in HJTC. Conferences, departmental meetings, and opinion mail boxes were also used as a means to communicate with fellow employees. UMC did not receive any formal charges related to labor affairs in 2017

Number of Grievances Received in 2017

Labor affairs	Human rights issues
The total number of grievances filed through the mechanism	
22	6
The number of grievances that were addressed	
22	6
The number of grievances that were reviewed	
11	5
The number of grievances that were officially undergoing judiciary proceedings	
0	0
The number of grievances that were resolved	
22	6

Scope of human rights: includes issues such as sexual harassment, illegal violations, and forced labor.
Scope of labor affairs: includes issues such as hourly wage & salary, occupational safety, educational training and promotion/benefits.

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4-2 Recruitment and Cultivation

In an age of rapidly evolving trends, competition in the technology industry has become unprecedentedly fierce. Recruiting and cultivating outstanding talent has become an important consideration in improving corporate competitiveness. UMC defines the competency bases of various occupational levels in accordance with its training and development models. At the same time, through the integration and application of Company resources, we make no distinction with respect to the gender of our employees but rather provide a comprehensive and diversified learning environment based on job category, thereby utilizing thoroughgoing and sound education and training to achieve the goal of recruiting and cultivating professional expertise.



How We Manage

- Provision of excellent working environments and competitive overall salaries and benefits
- Formulation of a complete education and training system and organization providing comprehensive and diverse learning environments
- Carrying out industry-academia cooperation programs and campus talent cultivation

Purposes

- Attracting, retaining, and motivating outstanding employees
- Carrying out a full range of course training that improves the skills and expertise of employees and dovetails with employee career planning
- Raising the quality and effectiveness of training, cultivating talent that meets the developmental needs of the organization, thereby ensuring the sustainable growth of the Company

Goals and Target

- 2018's Objectives
 - To implement intensive course programs aimed at improving customer response abilities as well as supervisor training development plans
 - The target course completion rate for third-level managerial expertise-related training is 80%, the target course completion rate for second-level managerial expertise-related training is 83%, and that courses related to the professional training of engineers is 100%
- 2020's Objectives: Professional expertise training and development that meets our organization's developmental needs, including relevant training in corporate culture and team spirit development.

Applicable Entities:

- UMC
- HeJian Technology (Suzhou) Co., Ltd. and United Semiconductor (Xiamen) Co., Ltd., which are UMC subsidiaries selling and manufacturing integrated circuits

4-2-1 Human Resource

Human Resource Distribution

	Type	Male		Female		Total
		No. of Persons	Percentage	No. of Persons	Percentage	
	Engineering staff	7641	80.3%	1872	19.7%	9513 50.6%
	Executive staff	1584	87.6%	224	12.4%	1808 9.6%
	Technicians	1215	17.5%	5728	82.5%	6943 36.9%
	Office staff	5	62.5%	3	37.5%	8 0.0%
	Managerial staff	103	18.9%	443	81.1%	546 2.9%
	Formal employees	10548	56.1%	8270	43.9%	18818 98.5%
	Contract or temporary staff	72	70.6%	30	29.4%	102 0.5%
	Dispatched staff	58	31.4%	127	68.6%	185 1.0%
	Taiwan	7972	56.6%	6105	43.4%	14077 74.8%
	Singapore	1017	62.2%	618	37.8%	1635 8.7%
	China	1559	50.2%	1547	49.8%	3106 16.5%
	Under 30	3208	54.3%	2696	45.7%	5904 31.4%
	30-50	6844	56.6%	5243	43.4%	12087 64.2%
	Above 50	496	60.0%	331	40.0%	827 4.4%

Note 1 : The categories of Job Category, Job Site and Age are formal employees, while the category of Type of employment includes the entire working population.

Note 2 : Ratio of male and female is calculated by the same type, while the total ratio is calculated by type.

By the end of 2017, UMC's headquarters in Taiwan had a total of 73 aboriginal employees. In terms of gender, 28.77% are males and 71.23% are females. In terms of age, 28.77% are under 30 years old, while 71.23% are 30-50 years old.

Formal Employee - Aborigines and Gender

	Type	Male		Female		Total
		No. of Persons	Percentage	No. of Persons	Percentage	
	Under 30	8	38.10%	13	61.90%	21 28.77%
	30-50	13	25.00%	39	75.00%	52 71.23%
	Total	21	28.77%	52	71.23%	73 100.00%

Words from Co-President and CS Committee Chairman

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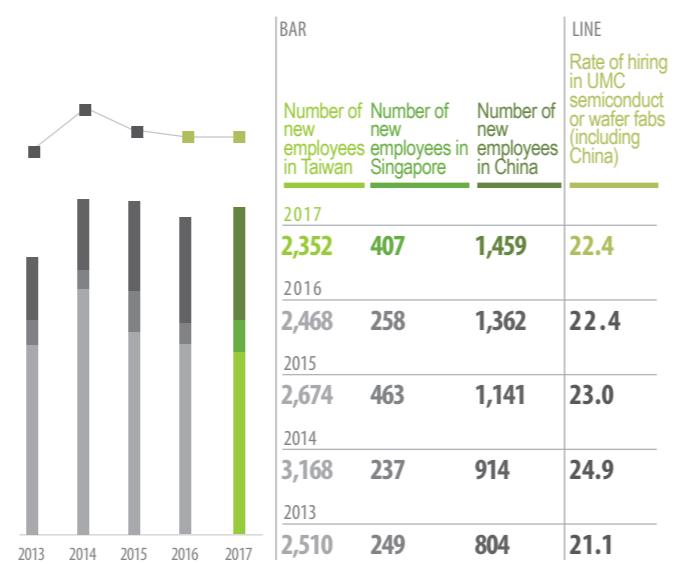
4-4 Community Service

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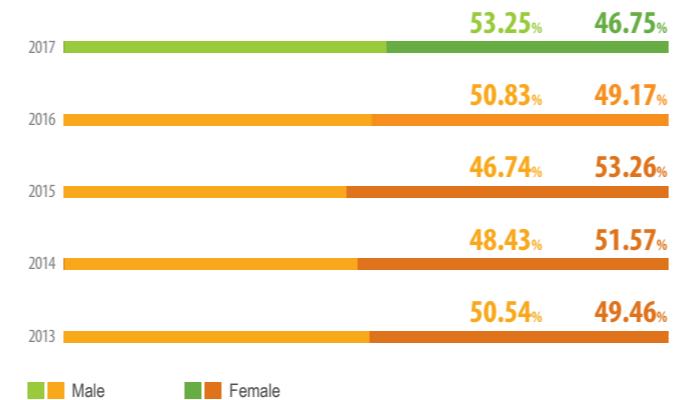


New Employees

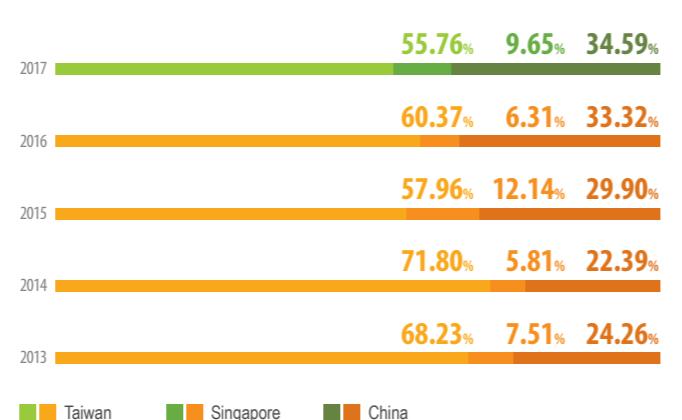
In 2017, the company hired a total of 4,218 new employees. The gender, region and age distributions are as shown below:



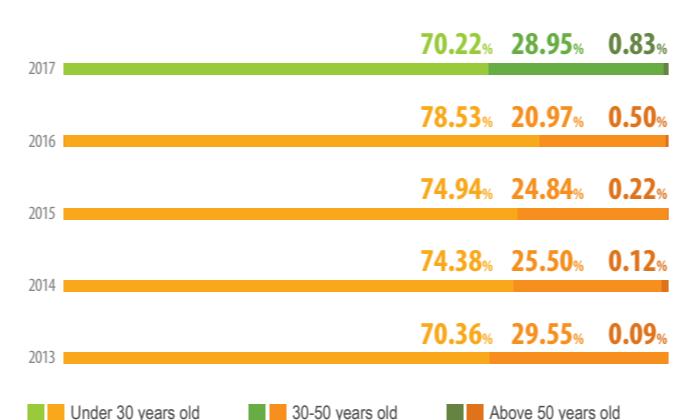
New Formal Employees—Gender



New Formal Employees—Region

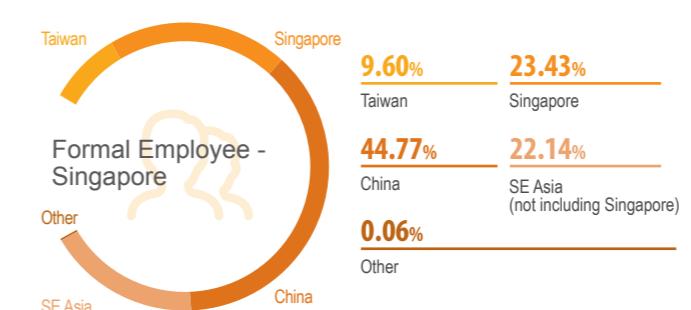
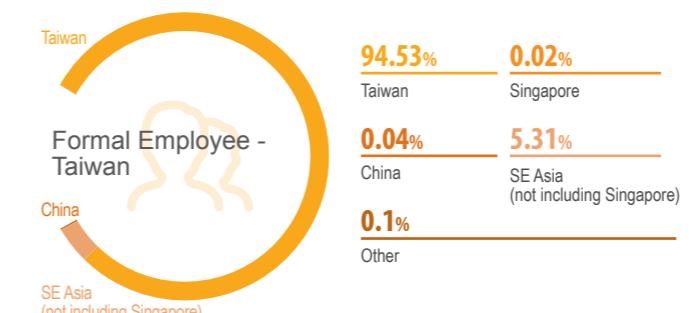


New Formal Employees—Age

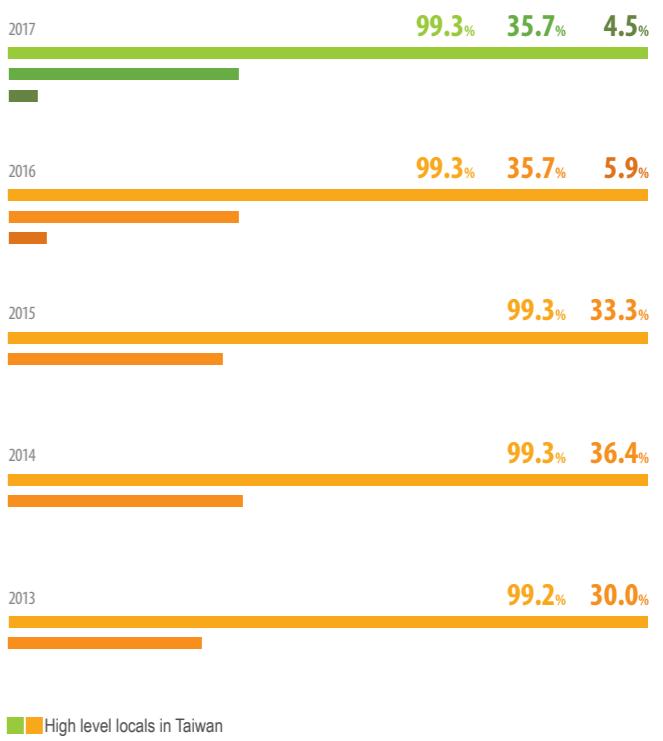


Local Employment

To fulfill social responsibility and create sufficient jobs for local residents, as of 2017, the staff at the UMC headquarters in Taiwan comprised of 94.5% local employees. Among these, 99.2% of the high level management were locally hired. Since Singapore is ethnically diverse, 23.4% of the employees and 35.7% of the high level management were locally hired, while in the semiconductor wafer fab in China, 92.9% of the staff and 4.5% of the high level management were locally hired.



Proportion of locally hired high level managers in 2013-2017

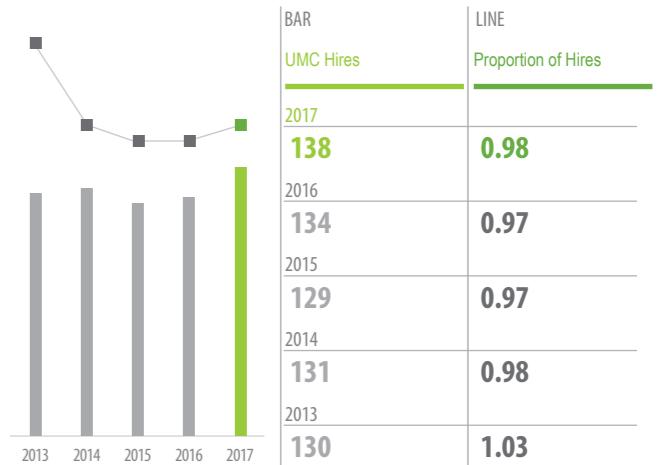


Note: High level directors are defined as Level 1 directors (including deputy directors) and above.
Note: Locally hired refers to employees who are nationals of the main operating location/region.

Employment of People with Disabilities

UMC's headquarters in Taiwan 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 2017, UMC headquarters in Taiwan employed a total of 138 employees with disabilities. In terms of Taiwan's hiring laws, the company continues to actively evaluate its internal job expansion and strives toward hiring people with disabilities.

UMC Disability Hiring



Words from Co-President and CS Committee Chairman

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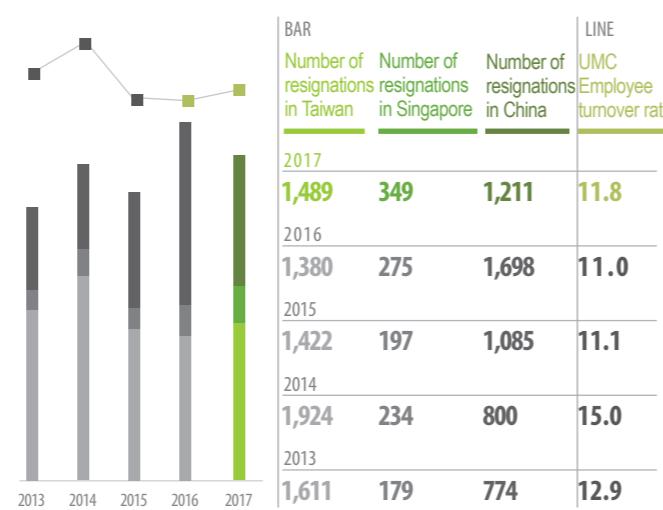
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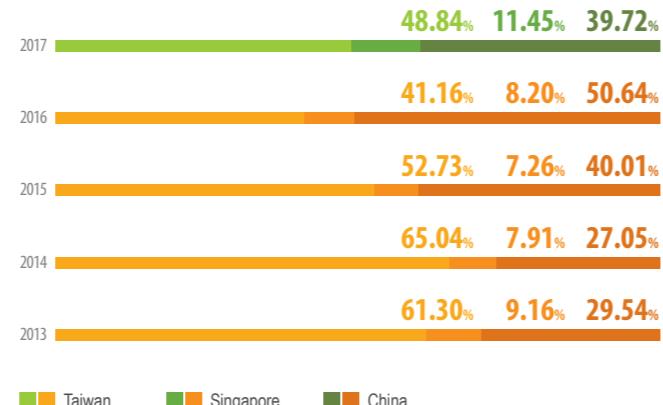
Employee Turnover Rate

In 2013, the HJTC semiconductor wafer fab in China was added as a subsidiary of UMC. In 2015, United Semiconductor in China was added as a subsidiary of UMC. From 2013-2017, the UMC employee turnover rate was 12.4% due to the higher turnover rate of direct labor in China (including a 17.2% turnover rate in the semiconductor wafer fab in China). When UMC employees apply for resignation, they are individually interviewed by their director and Human Resource Department to understand their reason(s) for resignation. In addition, through assessment of their individual expertise and offers of adjustment in work content, workplace location or internal transfer, attempts are made to retain employees. The UMC Human Resource Department also keeps regular contact with employees who have resigned, and opportunities are provided for those who wish to return to their employment.



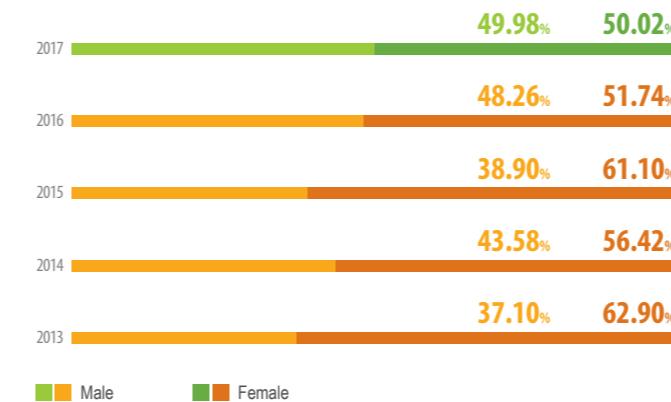
Note: Annual employee turnover rate refers to the total number of employees who resigned/total number of existing employees (Sum of employees at the end of each month/12).

Formal Employee Resignation—Region



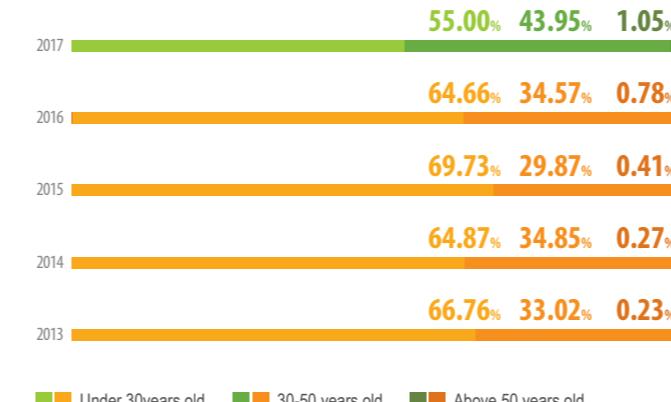
Taiwan Singapore China

Formal Employee Resignation—Gender



Male Female

Formal Employee Resignation—Age



Under 30 years old 30-50 years old Above 50 years old



4-2-2 Compensation and Benefits

UMC has always regarded its employees as an important asset, and hopes that by providing a competitive overall compensation and benefit package, excellent talents will be attracted to join the UMC team and work together to achieve operational goals and contribute to UMC profits.

Compensation and Benefit Policy

UMC employee compensations are based on educational level, performance and market values. Employees are not subjected to differential treatment because of gender, race, religion, political position or marital status. UMC employees worldwide enjoy the compensation and benefits which are in line with or superior than all applicable local laws and regulations which include minimum wage, overtime, social insurances, pension regulation and other mandatory benefits.

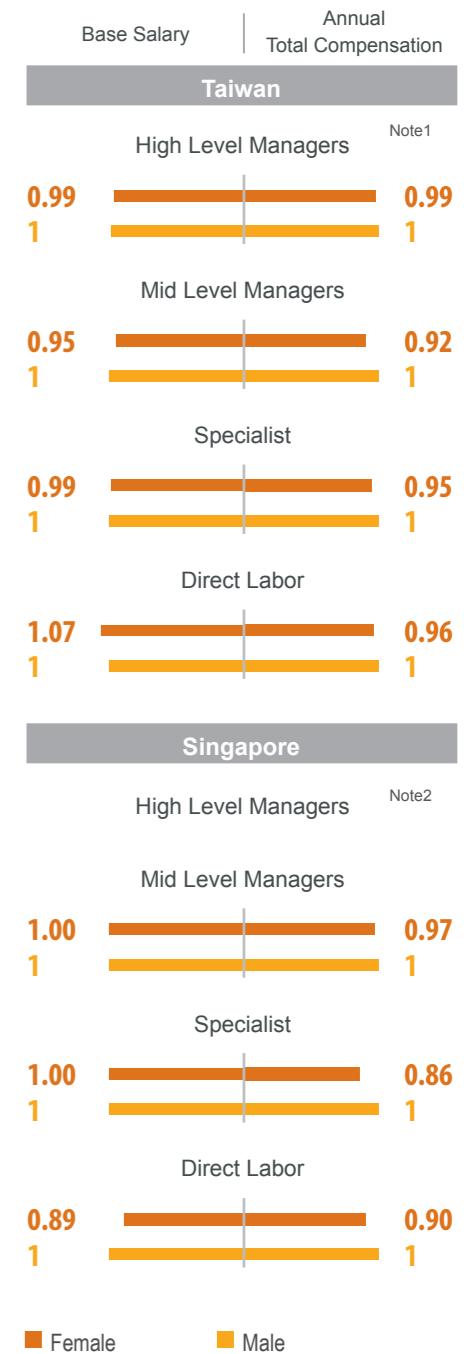
Performance-oriented remuneration system

To fulfill company operational plans, department and individual goals, and determine employee work performance for promotion, employee training development and payroll, the company conducts an annual company-wide evaluation (regardless of gender). The focus of the evaluation includes past and future work review and goals, and work attitude and competency improvements. Based on evaluation of current job responsibility, capability and values required for future career plans, employees and their directors share the commitment to prioritize key developments and jointly formulate development plans. Employees who performed poorly are guided through key improvement plans to enhance their effectiveness.

Performance Management Cycle

- Evaluate individual annual performance at year's end
 - Plan individual performance and development goals for the new year
 - Plan company operational strategies and projects for the next year
 - Communicate with employees
 - Evaluate personal performance for first half of the year
 - Directors provide feedback, guidance and evaluation
 - Employees review personal goal achievements, and seek feedback and guidance
-

Basic Salary and Annual total compensation for Male and Female Employees



Note 1: The data of high/mid-level managers and specialists are calculated on the basis of the engineer category.

Note 2: Currently, there are no high level female managers in Singapore.

Note 3: Direct Labor shall be calculated according to the number of technicians.

UMC offers salary adjustment, differentiated bonus / employee compensation system (Note) and stock remuneration (employee stock option certificate and treasury shares) based on individual performance, job responsibilities and future development potential to attract, keep and motivate outstanding employees. The Company also actively joins the remuneration surveys of well-known worldwide enterprises to ensure that the overall remuneration offered by UMC is competitive in the market.

Note: Please refer to the Company Constitution for the Employee Remuneration System

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Leave policy is Superior to the Labor Standards Acts

UMC offers a comprehensive and superior leave policy.



UMC employees in Taiwan enjoy additional flexible leave, and there are gentle reminders regularly to encourage employees to enjoy their leave to achieve a better work-life balance. Annual leave issued for contract employees are based upon the requirements of the Labor Standards Act. UMC encourages fellow employees to actively contribute towards public charity, and has established the UMC Science and Culture Foundation. Employees can make use of volunteer leave and participate in the company's charity activities during working hours. In 2017, the Taiwan Labor Standards Act was revised and the number of national holidays was reduced from 19 days to 12 days. However, UMC continues to offer an additional 7 days of flexible special holidays.



The law requires that those taking maternity leave are entitled half-pay if the employee's period of service is less than 6 months. However, UMC provides full-pay for these types of employees in order to better care for newly hired female employees.

2



To provide support to fellow employees, UMC offers funeral leave welfare that is superior to that prescribed by the Labor Standards Act. Colleagues whose great grandparents, great grandparents-in-law, or grandparents-in-law have passed away shall be given a funeral leave of 24 hours at full-pay.

3



UMC's overseas semiconductor fabs, such as the China subsidiary HJTC, are also provided with paid annual leave that is superior to those prescribed in the local Regulations of Paid Annual Leave of Employees. UMC Singapore provides newly hired employees with 14 days of leave in their first year which exceeds the minimum length of 7 days prescribed by the Singaporean government. Contract or temporary staff who have worked in UMC for 3 months shall also be entitled to these types of leave by the proportion of their length of services.

4

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 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 the 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 fellow employees chose to include their spouse and family members into UMC's group insurance to provide their family with an additional layer of protection. UMC also provides an on-site insurance company service office, allowing colleagues 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.

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. All regular employees in Taiwan participate 100% in relevant pension plans. Following the old pension system under the Labor Standards Law, the employer is required to deduct at least 2% of a worker's total monthly wage and set aside this amount as a reserve fund for said worker's pension payments. In addition, at the end of each year, a review of pension allocation will be conducted to estimate the amount of pension that will be paid by those eligible for retirement by December 31 of the following year to ensure that the balance of the special account is sufficient to pay. For the provision of post-retirement welfare and expenses, please refer to previous annual reports released by UMC.

The "Labor Pension Regulations", which came into effect on July 1, 2005, is a post-employment benefit plan that determines a defined contribution. According to the regulations, the company has to contribute a certain percentage of salary to an individual labor pension account. Employees may choose to continue using the former conditions under the Labor Standards Act to maintain previous pension seniority, or switch to the new pension system under the Labor Pension Act. For the provision of post-retirement welfare and expenses, please refer to previous annual reports released by UMC.

When employees apply for retirement, the company not only provides pension application service, but also awards a medal to show appreciation for their long term effort and contribution. In addition, they are also awarded "UMC Lifetime Membership," which offers a selection of healthful and interesting activities for retirement living.

In order to help retired or terminated employees find quality service resources, the company provides exit interviews to ensure they can receive appropriate care and are clear about the available service channels to obtain assistance smoothly. In addition, the company provides severance pay for dismissed employees in accordance with local laws and regulations, and related employment service channel information as well.

Parenting Leave

In 2017, a total of 472 female employees applied for maternity leave. Of these, 98.09% returned to their original positions after their leave while those who did not return voluntarily resigned to take care of family needs. In addition, 560 male employees applied for paternity leave in accordance to the Act of Gender Equality in Employment, and of these, 99.64% returned to their original positions after their leave.

According to the Act of Gender Equality in Employment, employees may apply for parenting leave without pay. When their contract expired in 2017, a total of 112 female employees returned to their positions, indicating a return rate of 71.34% after parental leave. 10 male employees returned to their positions, indicating a return rate of 66.67% after parental leave. The work situation of those who returned after parenting leave was observed, while those who did not return after their unpaid parenting leave expired had continuing family needs that required them to voluntarily resign. From 2016-2017, 88.89% of female employees and 85.71% of male employees that took unpaid parenting leave returned to work.

	2017 Application rate for maternity/paternity leave (A)
	Male 560
	Female 472
	Total 1,032
	2017 Return after maternity/paternity leave (B)
	Male 558
	Female 463
	Total 1,021
	2017 Return rate after maternity (B/A)
	Male 99.64%
	Female 98.09%
	Total 98.93%
	2017 total eligible number for parental leave
	Male 1,346
	Female 947
	Total 2,293
	2017 actual number of parental leave
	Male 17
	Female 197
	Total 214
	2017 application rate for parental leave (B/A)
	Male 1.26%
	Female 20.80%
	Total 9.33%
	2017 total number of employees ending annual parental leave contracts
	Male 15
	Female 157
	Total 172
	2017 total number returning from parental leave
	Male 10
	Female 112
	Total 122
	2017 return rate after parental leave (D/C)
	Male 66.67%
	Female 71.34%
	Total 70.93%
	2016 total number returning from parental leave
	Male 14
	Female 117
	Total 131
	2016 one year retention rate after return from parental leave (F)
	Male 12
	Female 104
	Total 116
	2016 number returning from parental leave and retention rate.
	Male 85.71%
	Female 88.89%
	Total 88.55%

Note : Parental leave is a labor right of the Taiwanese Act of Gender Equality in Employment. Employees in Singapore and China are not eligible for parental leave.

Words from Co-President and CS Committee Chairman

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4-2-3 Education and Training

UMC Comprehensive Learning Environment

In UMC, education and training is not limited to classroom instruction or promotion of training courses. Through the integration and use of company resources, employees are provided with a full learning environment.



Education and Training Committee

In order to earnestly implement the policies of education and training, UMC has established a company-wide "Education and Training Committee" composed of education and training officers from various departments to improve the quality of training for all employees of the company. 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 conferences to review training operations every quarter.

To encourage colleagues to serve as lecturers, the committee conducts selection activities of outstanding company-wide instructors each September. Through the improvement of the perfect system of the Education and Training Committee, we will implement the company's principles and talent training to achieve effective company training system compliance.

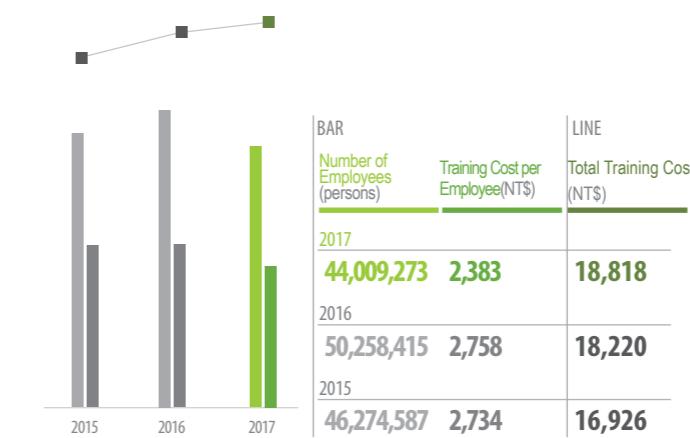
In terms of professional training, complete technical training curriculum is offered. For managerial training, different training programs are designed for different levels of directors. For language, language proficiency tests and courses are offered according to job descriptions and positions. In terms of departmental and inter-departmental On-the-Job Training (OJT), the Education and Training Committee's downward education and training orientation allows department directors and their employees to fully participate in the planning, implementation and learning assessment. Moreover, 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.

In 2017, UMC organized up to 9,625 training courses, with a total number of 462,893 training (persons) hours and 260,802 participants. The total cost of training was NT\$ 44,009,415, and satisfaction level with the various courses was more than 90%, gradually increasing with each year.

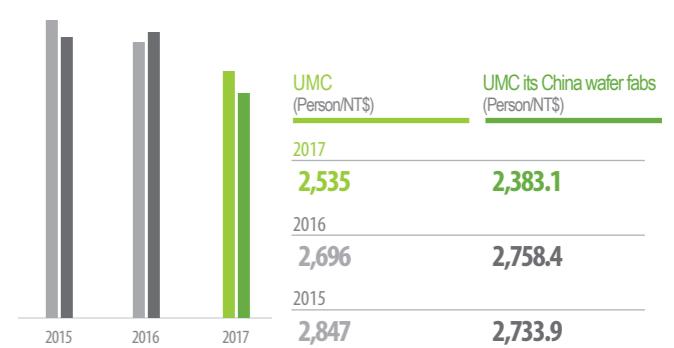
Course Satisfaction

Training Satisfaction (%)	Number of courses (Total Number)	Total number of participants (Total Number)	Overall Satisfaction (Average Value)	Satisfaction with Instructor (Average Value)	Satisfaction with teaching materials (Average Value)	Beneficial to work (Average Value)
2015	9,725	281,732	93.1	93.2	93.0	93.0
2016	9,920	272,098	93.3	93.3	93.2	93.5
2017	9,625	260,802	93.9	93.4	93.7	94.1

Average Employee Training Cost



Average Employee Training Expense



In terms of average education and training hours for the various job levels, comprehensive education and training are provided for different categories of job responsibilities and levels of employees.

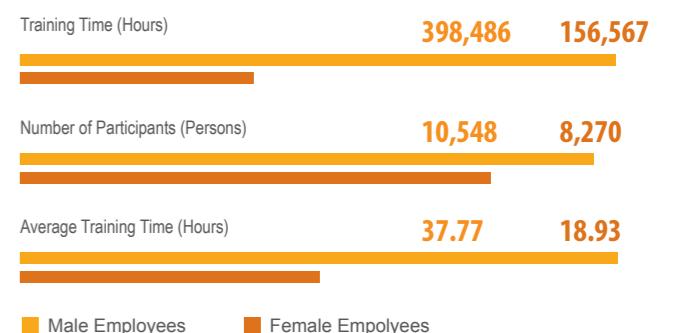
Average Training Hours for Various Job Levels

	Training Time (Hours)	Number of Participants (Persons)	Average training time (Hours)
Director Level	39,090	1,837	21.3
Indirect Labor (non-director level)	442,321	8,426	52.5
Direct Labor	85,773	7,004	12.3

Average Employee Training Hours



Average Gender Equality Training Time



For gender issues, UMC upholds the principles of gender equality and offers equal training opportunities with the purpose of providing professional training for each job grade and function. Most direct employees are women so their training would be largely focused upon technical courses such as machine operation. Hence, average training hours for female employees in UMC are slightly shorter than that of male employees.

Other types of courses for continuing personnel cultivation and training are based on company guidelines and operational plans.

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Management Competence Training -Development Plans for Supervisors of Various Levels.

In terms of personnel training and development, UMC defines the managerial competency required for the various levels of directors. Core and professional competencies are also defined for general employees so that they clearly understand the required core competencies for each level of job responsibility. In the curriculum framework for internal training, all corresponding developmental courses are designed according to the competency model. 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.

Furthermore, to fulfill the company's core values, the philosophy and spirit of "accountability" is thoroughly instilled. UMC first introduced the course titled "The 7 Habits of Highly Effective Managers" in 2011. In 2012, this course was further expanded to include "The 7 Habits of Highly Effective Employees." Course contents are constantly promoted and established so that the 7 Effective Habits have become a common language between UMC managers and employees. All supervisors and employees recruited in 2016 completed these courses in the 1st Quarter of 2017 in order to benefit from course-related data.

Leadership Development Web

News Flash

- CNN互動電子報：研發顯示古代美國人擁有深色肌膚
- Live互動電子報：和「光鮮力」有關的用語
- CNN互動電子報：SpaceX 的獵鷹重型火箭遭女航天大捷
- Live互動電子報：和「會議討論」有關的用語
- CNN互動電子報：空中巴士成功測試由自主「飛天車」

Competency Dictionary

Competency Dictionary

什么是「效能」？

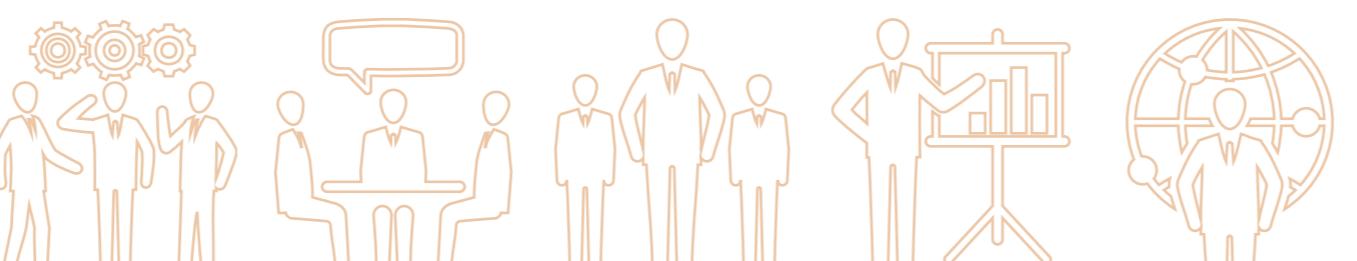
效能，是達成工作所需具備的知識、技術、動力及行為。

- 知識 / 技術：**所體知識，便是與工作或行業相關之專業知識或技術。
- 動力：**意指任職者必須喜歡該工作或行業之特性。
- 行為：**意指任職者所從事該工作或行業所必須表現的行為。

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想了解UMC各級主管應具備哪些職能嗎？(more)

Leadership Development Web



職能類型總表

類型	職能名稱
R Result	著重結果
O Others	與他人互動
I Individual	個人潛能
L Leadership	團隊領導技巧

Please click on the "check mark" button or the competency name to read more.

類型	職能名稱
O 建立互信關係	Building Trust
O 策略性顧客關係	Customer Orientation
O 策略性夥伴關係	Developing Strategic Relationships
I 駕動結果	Driving for Results
L 賽景領導	Selling the Vision
L 變革領導	Change Leadership
L 培育組織人才	Building Organizational Talent
L 領導團隊成功	Team Development
R 制定策略方向	Establishing Strategic Direction
R 企業家精神	Entrepreneurship
R 實踐決策能力	Operational Decision Making

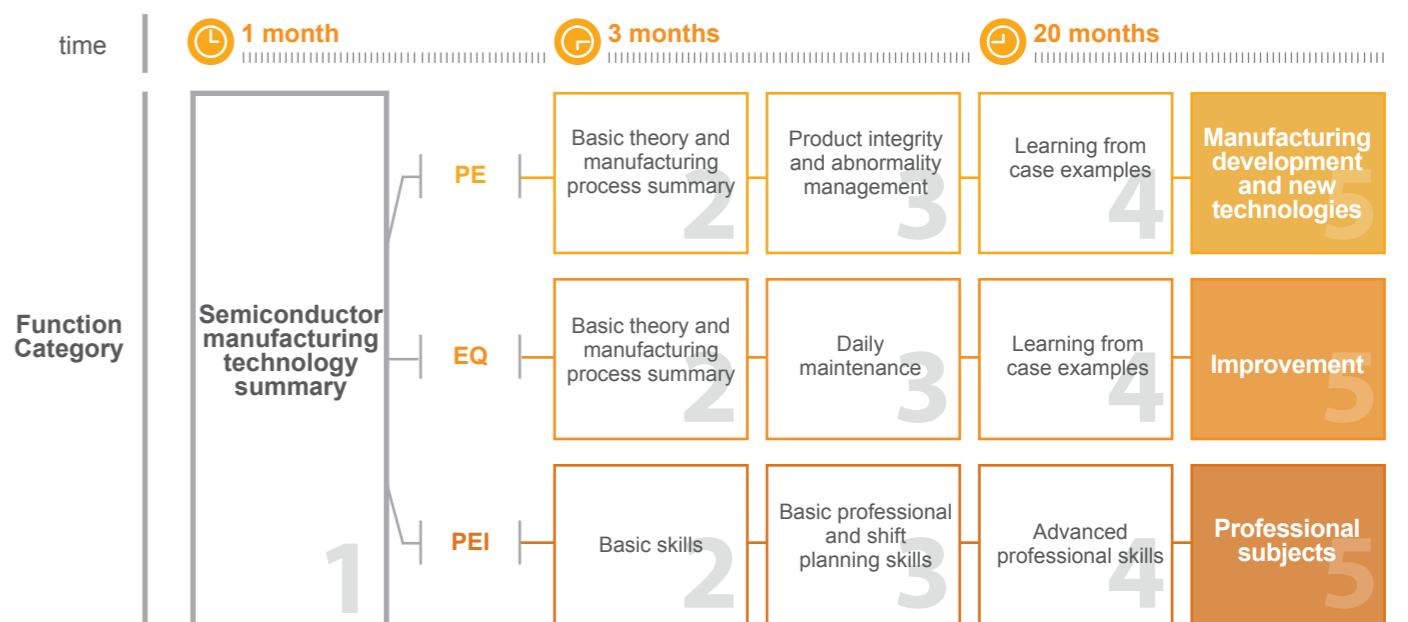
Summary of Competencies

2015-2017 completion rates for "The 7 Habits of Highly Effective Managers" and "The 7 Habits of Highly Effective Employees" courses



Technical Training for Engineers

UMC fully realizes that outstanding technicians are the key to enhancing advanced technology and sustaining a company's growth. Therefore, based on the professional needs and competency inventory of the various engineering departments, technical training curriculum are planned, and through a solid system of technical training, the overall professional standard of our engineers and quality of engineering manufacturing are enhanced. In 2012, the company developed the learning passport system to formulate a learning blueprint that is consistent with the developmental needs of the organization, and create a learning platform that is humanized and functional. To effectively track personnel development, the use of this system has been promoted and taught since 2013. Furthermore, based on the job needs of each employee, a learning map is charted, and through the training system's monitoring and statistical analysis, the required training course and hours for each employee is determined to create specific and effective training.



Skills Assessment System

By Department	Competent Item	Competent Level	Performance	
			Actual Score	Target Score
1	1	1		
2	2	2		
3	3	3		
4	4	4		
5	5	5		

Personal Learning Passport

Convenient e-Learning Platform

In addition to the various professional skills and management courses, UMC has set up an e-Learning platform to provide employees with a convenient and easy environment for spontaneous learning. Information channels allow for convenient lesson preview and review, and together with effective and diverse in-class learning, the cultivation of knowledge and skills is steady and in-depth, thereby sustaining learning interest and exploration of new knowledge.

Technology e-College

提供各項基礎技術訓練的專業技術課程，以及半導體製程相關實務之實習訓練。

Provide professional technology courses ranging from basic skills to advanced theories, including fundamental trainings of Semiconductor Process.

Learning Platform

新人e學院

技術e學院

語言e學院

考試中心

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Technical Skills Inventory

UMC is a world-class corporation, and in line with international trends, has established a basic and rigorous system for both qualitative and quantitative skills assessment. In terms of strengthening English ability, demand for quality manufacturing, and increasing the professional knowledge of engineers, both internal and external evaluations such as TOEIC English assessment, Technical Skill Inventory and Statistical Process Control (SPC) are used to effectively evaluate the required core competencies of employees and increase production quality to meet and satisfy various customer needs worldwide. For example, in the 3-6-9 SPC Principle, those who fail assessments are not allowed to operate machinery, and are affected in other matters such as promotion. In 2017, the Taiwan completion rate for the SPC training was 99%, and the completion rate for Singapore was also 99%.

Assessment System



Professional Skills Assessment

- 01.Category**
 - Categorize according to facility, manufacturing and product
- 02.Content**
 - Basic/Operations
 - Advanced/Learning from case examples
 - Connection with various tasks/Crisis management ability
- 03.Standard (Quarterly skills assessment)**
 - 7-10: Instructor
 - 5-6: Independent operation
 - 3-4: Completion of task through telephone instruction
 - 0-2: Continuing learning required
- 04.Method**
 - Oral and written tests

SPC Assessment

- | | | |
|--|---|---|
| within 3 months
courses (Knowledge)
New employees must complete SPC training courses within 3 months | within 6 months
Test (Knowledge)
New employees must complete the SPC written test within 6 months | within 9 months
practice (Application)
New employees must complete SPC practice within 9 months |
|--|---|---|



Training for Diverse Cultures

Since employees from different countries are employed, training courses have been provided using different languages to help employees quickly settle into the UMC culture and gain familiarity of corporate policy and systems.

Additionally, cultural descriptions and festivities are also regularly provided when celebrating traditional Chinese holidays to help foreign employees enjoy local festivities.

To improve linguistic skills of foreign employees, routine language courses are offered at UMC, along with regular language skills tests and bonus policies.

Introduction for Newly Hired Staff

To help newly hired employees quickly settle into UMC's environment, gain familiarity in corporate policy and regulations, and shorten learning time, senior personnel or supervisors are appointed as employee mentors when newly hired staff report to their posts. Training is given directly at the job posting to achieve effective on-the-job training (OJT). These instructions also cover routine activities and various specialized fields.

Corporate Culture Orientation Program for New Employees

To help new employees quickly integrate and shorten learning time, the learning organization particularly emphasizes new employee training to highlight the goals of



in education and training. In particular, "the involvement and support of department directors is the only way to motivate successful education and training." Each director is committed to enhancing the employment and development of new employees, and through the comprehensive UMC new employee training program supplemented by a mentor system, new employees quickly acquire professional skills and develop an appropriate work attitude. In addition to completing required courses, new employees also participate in the orientation program for new employees. The program integrates the organizational characteristic of team building, namely capability and agility. Classes pertaining to company vision, strategies and competitiveness are personally taught by high level executives, and workplace stress management and positive thinking courses are also provided to help new employees quickly integrate into the corporate culture.

In 2017, 24 sessions of the new employee orientation program were conducted, and a total of 1108 new employees completed training.

(The above figures refer to indirect labor in Taiwan, and include formal employees and dispatched staff.)



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4-2-4 Cultivating Prospective Talents

To fulfill the ideal of promoting semiconductor research and technical development, and strengthening UMC's global competitiveness by providing the corporation with a source of outstanding and quality talent, UMC is committed to maintaining forward-looking collegiate relationships. In 2017, UMC focused on 2 major orientations in its collegiate relationships: (1) Positioning outstanding R&D talents, and (2) In-depth development of talents from technical colleges. In addition, university-industry collaboration and prospective talent programs are two major directions of development.

UMC continued to strengthen business-education partnerships in 2017. In addition to existing practical programs for semiconductor technologies in key institutions, a Collaboration Project was also implemented to sponsor full-time instructors for the MS Degree Program and Credit Courses on Nano-Integrated Circuit Engineering offered by National Cheng Kung University (NCKU). Business-education partnerships were also restructured in 2017 to establish the UMC Industry-Academia Program. A series of brand image development activities such as paper discussions, career sharing, practical collaborations, and exhibits of semiconductor products were scheduled, with more than 3,000 individuals participating in paper discussions in 2017. These measures enhanced the academia's support and recognition of UMC and gave a comprehensive demonstration of a successful business-education partnership.

In terms of campus talent cultivation, the Prospective Talent Program (PTP) has been expanded to increase the cultivation of talent on campuses. Since 2013, a total of 3,402 candidates have been recruited, of which 1,480 are still in school.

Through a series of activities and courses, close interaction is maintained with prospective collegiate talent to promote their identification with UMC. By establishing a close relationship and pre-appointments, the program effectively connects UMC with target students. At the same time, the PTP also effectively markets the corporate image of UMC and exerts considerable influence on campuses and communities, thereby ensuring future R&D prospects for UMC in advance.



2017 PTP Awards Ceremony Group Photo

PTP Participation-Experience Sharing

Min-Hua Tsai

First of all, I would like to thank UMC (United Microelectronics Corporation) for giving me the chance to join this big family. The resources and opportunities offered by UMC have become the stepping stone to help me overcome challenges when I enter into workforce. Recalling back to the time when I was studying, I only had a vague image about semiconductor industry and did not have in-depth and comprehensive understanding about the entire semiconductor industry. However, through attending various seminars held by UMC's Prospective Talent Program (PTP), I had a better understanding about the scope of the industry and UMC's operation. In addition, by taking the summer intern program, I fully realized what I need to prepare either physically or mentally when I enter into workforce. Being a fresh graduate, you will definitely feel a little bit lost and uncomfortable. However, UMC's Prospective Talent Program not only gives me a head start for my work, but also helps me to find the direction for my career, allowing me to feel less nervous and uncomfortable. Therefore, I truly believe that PTP is a very good choice for those students who want to know more about the workplace in advance.



UMC Prospective Talent Program methods

Collegiate talent development programs

Exclusively designated for students, this program offers forums, internships and corporate mentoring to help students gain awareness and sensitivity toward the semiconductor industry. In addition, participation in UMC benefit events allows students to visit the fabs and provides opportunities to advance their understanding of UMC's global operations, corporate culture and a healthy workplace.



Domestic and overseas summer internship programs

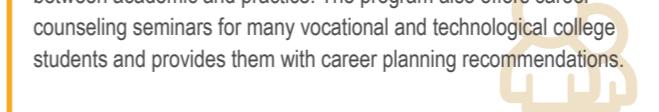
In 2017, a total of 21 interns were recruited. The program continues to select high-quality talent to intern at major departments in domestic and overseas UMC facilities. The interns are guided by designated instructors so that through actual practice and involvement in existing UMC projects, they can experience the workplace culture. At the same time, this program effectively allows for closer interaction between prospective collegiate talents and UMC teams, thereby enabling mutual learning and growth through these close exchanges.



Furthering vocational and technological universities - Industry-university collaboration for engineers

Guidance by Industry Experts

UMC collaborates with vocational and technological universities by providing lecturers to share their practical knowledge to reduce the gap between academic and practice. The program also offers career counseling seminars for many vocational and technological college students and provides them with career planning recommendations.



Visit by faculty and students from target departments

In 2017, about 915 faculty and students from target schools visited UMC so that students could gain an early understanding of the semiconductor industry work environment. Interaction and exchanges with employees also allow students to better understand the direction of their future learning and employability.



Collegiate career planning forum/instructor program

UMC has conducted career planning seminars and career coaching programs in its recent collaboration with key schools. Based on professional insight of future trends and career instructor's assessment of student characteristics and knowledge, career plans are recommended to help students find suitable career paths. With National Cheng Kung University as an example, 6 career coaching programs have already been implemented. Each batch has over 200 participants from the university and the program still continues to this day. In addition, practical resume writing advice is offered to help new graduates highlight and market themselves, and capture the attention of companies and executives.



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4-3 Health and Safety Workplace

4-3-1 Healthy Workplace

Comprehensive Health Care Program

UMC believes that healthy employees are an important cornerstone for the success of the company and pays close attention to the physical and mental health of its workers and their families. Its "Comprehensive Health Care Program" continued to broaden in 2017. During the same year, the company also launched the "Winning Step by Step Towards a Health Management Plan" to promote health and well-being in the workplace in the form of activities and measures that meet the needs of its employees. Moreover, these activities and measures create a high-quality workplace and foster a spirit of camaraderie among the workers. UMC continues to work towards making the work environment safe, protecting the health of its workers, and furthering work-life balance.

In addition to dedicated efforts in building a quality and engaging workplace, UMC also referenced the latest amendments to the Occupational Safety and Health Act to initiate a series of activities to promote and improve upon ergonomic factors, health protection for female workers, and overwork-related conditions to protect and support our fellow employees. Extensive planning and preventive surveys were carried out to assess employee requirements, physical health, and mental states from multiple perspectives. Efforts for promoting Healthy Workplace concepts were aimed at improving support and recognition from employees and external agencies as well as encouraging the recruitment and retention of skilled professionals to achieve the final goal of enhancing personal and corporate performance.



Stress-free Workplace: Focusing on Work Environment Safety

In 2017, UMC continued its efforts to build a safe and stress-free work environment and was planning and implementing a series of measures that were either compliant or superior to statutory regulations governing employee welfare, education, training, retirement, and other employer-employee issues. Management systems and safe environments were established to eliminate all risk factors in the work place to achieve the Safe UMC objective in a comprehensive manner.

Preventing Overwork

To achieve a LOHAS workplace and provide a well-proportioned work-life balance, UMC adopted the Occupational Safety and Health Act in 2015 by taking the initiative to identify and assess the issue of overwork. To prevent employee overwork, the labor contract between each UMC employee and the Company is in accordance with local laws and regulations. The contract stipulates that employee overtime must be voluntary, and the Company stipulates that excessive work hours are not permitted. In addition to prevention, UMC has set up an overwork improvement index to measure three dimensions of overwork, namely the employee health examination index, overwork survey and consultation, and comparison of employee health examination index with the previous year. In 2016, all plants showed an average overwork improvement rate of 85%, among which Fab8E, Fab8F, Fab8S showed an improvement rate of 100%.

Health Examination

A survey on overwork issues was initiated in 2016, and at the same time, relevant plans were discussed and developed with on-site physicians.

- Health guidance and follow-up management are arranged for those at risk for overwork.
- On-site physicians provide guidance and conduct health education.

Questionnaire

Based on the outcome of the overwork questionnaire, psychological stress questionnaire and other surveys, initiative is taken to address employee physical and mental health.

Control of Work Hours

- Automated leave management: Using the automated system, an effective alert mechanism was installed to control work hours and excessive overtime. Overtime alerts are set at a more stringent limit than required by existing regulations. When overtime hours approach the limit set by the Company, the alert mechanism is activated. A reminder is simultaneously sent to the supervisor and employee so that reasonable human resource and work arrangements can be made.
- Since 2010, monthly reminders are sent to employees who have unused vacation hours, and supervisors are urged to schedule leave for their subordinates.
- In 2016 and 2017, 7 days of special flexible vacation time are given beyond the requirements of the Labor Standards Act.

Soft Advocacy

- Advocated through labor-employee meetings, secretarial forums and other large scale meetings.
- Conducted a series of lectures on overwork, and incorporated it into annual key tasks.
- Provided exclusive supporting measures for UMC Recreation Center, UMC Institute Activity Center and LM dormitory.
- Organized activities such as trips, inter-factory fun, sports and massage services by visually impaired massage therapists.

Outcome Description

- 12,642 people from UMC's fabs in Hsinchu and Tainan Science Parks filled out the 2016 questionnaire. In 2017, there were 12,522 respondents.
- Lectures on healthy diet and general group health education in each department focused on prevention of hypertension and management of aberrant cases. For high-risk groups, case follow-ups and further health education were initiated, resulting in an improvement rate of 77%.

Measures for a Safe Workplace

Establish a culture of gender equality

Measures for gender equality are consistent with or exceed those stipulated by the Labor Standards Act. Positive actions are implemented for employee selection, hiring, education and leave.

Measures for nighttime job safety for female employees

Night time car service, parking lot escort, roadside assistance, emergency buttons, other emergency assistance, day and night time shuttle, 24-hour employee hotline, and night time emergency response mechanisms.

Assistance for pregnant women and special needs

Priority meal order, designated parking spaces, cleaning and disinfection notification, no night shift, child raising allowance (for both male and female employees), breastfeeding room, eligibility to pre-apply for maternity leave after 3 months of pregnancy.

Flexitime for work and vacation to balance work and family

- Work flextime, and employees of less than 1 year are offered special leave or vacation flextime.
- In accordance with the Act of Gender Equality in Employment, both female and male employees may apply for unpaid parental leave without duress.

Comprehensive mechanism for sexual harassment prevention

Reporting and Disciplinary Measures for Workplace Sexual Harassment, mechanism for investigating complaints, procedure for selecting team members, confidential complaint channel, education and training, and internal security service for providing assistance are established.

Note: UMC complies with government regulations such as the Labor Standards Act, Act of Gender Equality in Employment, and Sexual Harassment Prevention Act in its personnel policies, and also promotes related measures.

Healthy Workplace: Safeguarding Employee Physical and Mental Health

As a benchmark company, UMC shoulders the important responsibility of national science and technology development in a highly competitive and rapidly changing industrial environment. While pursuing profit, we also deeply believe that "only through the dedication of employees can UMC sustain development, and only happy and healthy employees can create UMC vitality." Therefore, in 2017 using "Winning Step by Step Towards a Health Management Plan" as the central theme, UMC implemented as many as 16 projects such as annual health promotion activities, special lectures, annual health examination, various health tests, stress management activities and counseling. Every quarter features different themes and advocacies, including maternal protection, self-directed weight loss, human factor prevention and overwork prevention to safeguard the health of all employees.

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2017 "Winning Step by Step Towards a Health Management Plan" health promotion activities: focus and major achievements

Q1 Maternal protection

Launched a series of maternal protection measures to assist female workers, including "Maternal Protection Assessment," "Motherhood Protection," and "Pregnancy Notification System," all of which help create a safe environment where women are treated with respect.

Participants from fabs in UMC Hsinchu and Tainan Science Parks: 146
Satisfaction rate: 95.7%

Q2 Self-directed weight loss

Provided information on the latest weight loss information and worked with company meal providers to launch light and healthy meals to reduce oil in food. Designed relevant health promotion activities for the three high-risk groups (hypertension, high blood sugar, and high cholesterol).

Participants: 30,407
Satisfaction rate: 93.5%

Q3 Human factor prevention

Promote repetitive tasks to support the prevention of musculoskeletal diseases and achieve simple human factor improvement.

Participants: 16,539
Satisfaction rate: 93.1%

Q4 Overwork Prevention

High-risk groups were screened based on the results of the employee questionnaire. Fab doctors conducted health education and case management sessions to prevent the risk of overwork and to guarantee the health of the workers.

Participants: 7,698
Satisfaction rate: 95.8%

(Employee Assistance Program · EAP)

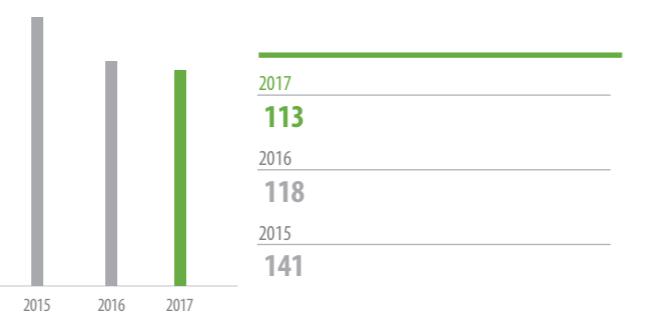
(1) Collaborated with Taiwan Lifeline International to provide employees with free counseling services.

In 2003, UMC introduced the "Employee Assistance Program" (EAP) to provide free counseling services to help employees relieve physical and psychological stress. Individual counseling and confidentiality mechanisms are provided to help employees resolve physical and psychological issues. Each employee has access to 6 free sessions per year, paid for by the company, and for those with special needs, additional assistance is provided by the company's professional counseling group. In 2013 – 2016, service was provided to 395 employees.

(2) Active prevention and outreach: Psychological education and training for the Employee Relations Department, Human Resource Service (Account) Department and supervisors.

- Established the Employee Relations Department and Human Resource Service (Account) Department.
- The Human Resource Department has established the Employee Relations Department and Employee Human Resource Service (Account) Department to actively reach out to employees and intervene in case of abnormal situations.
- [Employee Care Seed Training]: Continued to plan and organize education and training courses in "Employee Psychological Care-Assistance, Management and Practice for the Manager" to enhance the sensitivity of supervisors toward the psychological condition of employees.
- The company integrated a mechanism for employee care.
- In recent years, we have been diligently integrating and reconstructing the mechanism to help employees return to their job after recovering from physical or mental illness or injury. With cooperation between professionals and relevant departments, methods and supporting measures, employees are provided with a more worry-free workplace where they are given attentive care and necessary assistance.

Number of employees receiving assistance in 2013-2017



(3) Relaxation Platform

The Company's internal website has a support platform offering employees diverse channels for relieving stress and providing counseling and information, such as Call IN I Hear You, Hot Let's Talk, Reassurance e-Newsletter, Relaxation Shopping, and Discovery of the Heart.

From time to time, meditative articles, book and movie reviews, and essays are posted to help employees relax during their free time so that they can calmly deal with the challenges from work, interpersonal relationships, parenting and family life. In 2017 we continued to optimize the health center platform to provide employees with services such as activity registration, health information, relaxation corner, self-assessments and health activities.



Expanding Health Concept, Outreach to Employee Dependents.

UMC conducts annual health examinations, and offers check-up items that exceed government regulations. UMC also has a Health Self-Management Program that is tailored for employees. Professionals are designated to follow-up with employees with health abnormalities, including arranging for regular follow-ups appointments and providing health education information. Comprehensive records of employee health indicators are kept, and health examination results are categorized and managed for healthcare follow-up. To help employees manage their health history, the Company's eHR system was integrated in 2010 to construct an electronic health examination management platform and database where employees can assess their health examination results and compare their health history. The system also provides relevant health education materials for employees to learn to self-manage their health.



Employees who are special operations inspectors are assigned for case management and tracking. In addition, health promotion activities targeting common health abnormalities are organized to provide care and safeguard employee health. UMC also hires on-site doctors to provide health consulting services for employees. Preventive services such as special examinations and out-of-pocket vaccinations are also offered to help employees take initiative in creating a healthy lifestyle. Moreover, UMC also safeguards the health of employees' families and organizes annual health examinations and massage services for them. Such health care services for both employees and their household create the win-win situation of a harmonious society and family.

In 2017, the total number of employees who underwent company-wide annual medical examinations was 11,987, 499 of which were family members who participated in the physical examinations. Satisfaction rate for the 2017 annual medical examination was 97.1% ^(Note)

Note: Satisfaction rate was determined through a five-point scale questionnaire (very satisfied, satisfied, neither satisfied nor dissatisfied, dissatisfied, and very dissatisfied). It is calculated by dividing the number of people who checked satisfied or above by the total number of respondents.

Maternity Health Protection

UMC places great importance on motherly care and breastfeeding, and has implemented extensive measures to provide breastfeeding mothers with a safe and comfortable environment. Breast pumping rooms were also established in various fabs for female employees. In 2017, Fab8AB, Fab8E, Fab8F and UT fab sites were successfully rewarded with the Certificate of Excellence for Breast Pumping Rooms by the Public Health Bureau of Hsinchu City Government.



Injury and Illness Care

Employee physical and psychological well-being and those involved in traffic incidents are followed up by telephone and e-mail contacts from a nurse from the health center, and appointments with house doctors are arranged if necessary. Continuing care and psychological support is provided to help employees return to work as soon as possible, and psychological support is strengthened for unclosed cases from 2011–2014. In terms of return to work following physical or psychological injuries and illnesses, support mechanism and case management procedures are formulated, and with the assistance of house doctors and nurses, relevant department directors, and personnel and legal departments, recovery/work distribution is facilitated to return physically or psychologically disabled employees to the workplace.

Number of injury and illness cases and frequency of support provided in 2015-2017



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Establishing a Comprehensive Healthy Workplace

The UMC Health Center implemented a total of 21 health promotion projects in 2017. The total number of people served was 105,241, and the overall satisfaction rate was 95%. According to the number of people participating in the health promotion activities at health centers from 2015 to 2017, various activities such as the annual medical examination and massages by the visually impaired showed high participation levels, indicating that workers have more health awareness and are making it more of a priority. These efforts have also been widely acknowledged by the general public. In 2017, Global Views Monthly awarded UMC the Vision Model Award for the Electronics Group for UMC's CSR Survey as well as First Prize for the Happy Enterprise Group; CommonWealth Magazine also awarded UMC the Corporate Citizenship Award. Moreover, all UMC fabs obtained the "self-certified health promotion badge" from the Health Promotion Administration, Ministry of Health and Welfare. These recognitions represent UMC's efforts in creating a healthy workplace for everyone.

Dedication to Public Charity and Social Responsibility

UMC is also dedicated to charity activities, and introduced massage services provided by those with visual impairments in both Hsinchu Science Park (HSP) and Southern Taiwan Science Park (STSP). These services not only provide employment opportunities for the disabled, but also professional massage services to help ease discomfort and improve physical and mental health of fellow employees. UMC employees also support blood donation drives held multiple times every year, helping to save the lives of other people. In 2017, UMC organized a total of 12 blood drives which had more than 898 employee participants, collecting and donating about 1,400 bags of blood.

LOHAS Workplace: Emphasis on Work-Life Balance

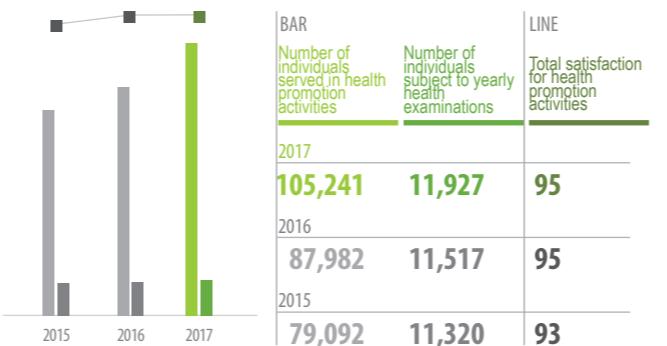
UMC believes that employees are its most important asset, and that having healthy and happy employees is key to high productivity in a corporation. In addition to providing a safe and healthy working environment, an employee oriented LOHAS workplace that integrates benefits, vitality and public service is created. Through a diversity of activities, creativity and vitality are nurtured in the work and lives of employees.

Site Events for Building Team Identities

UMC held a series of activities to celebrate its anniversary in 2017. The company launched the "Hug Health, Hug Love Ten Thousand Step Walkathon" and organized a shoe donation event. These activities are aimed at boosting employee morale and enhancing team spirit within the company.

It is hoped that positive competition between different fabsites will help build employee identity and cohesiveness, reduce opposition to new internal measures, and create high performing and effective teams.

Key Results of Health Promotion Activities from 2015 to 2017



Note 1: To provide complete coverage of the company's efforts in promoting a Healthy Workplace, the method for calculating the total number of individuals benefiting from health promotion activities in 2015 was changed to include all event participants. Scope of calculations does not include Feb 12.

Note 2: Number of individuals served in yearly health examinations only included general health examinations.



Snapshots of Ten Thousand Step Walkathon

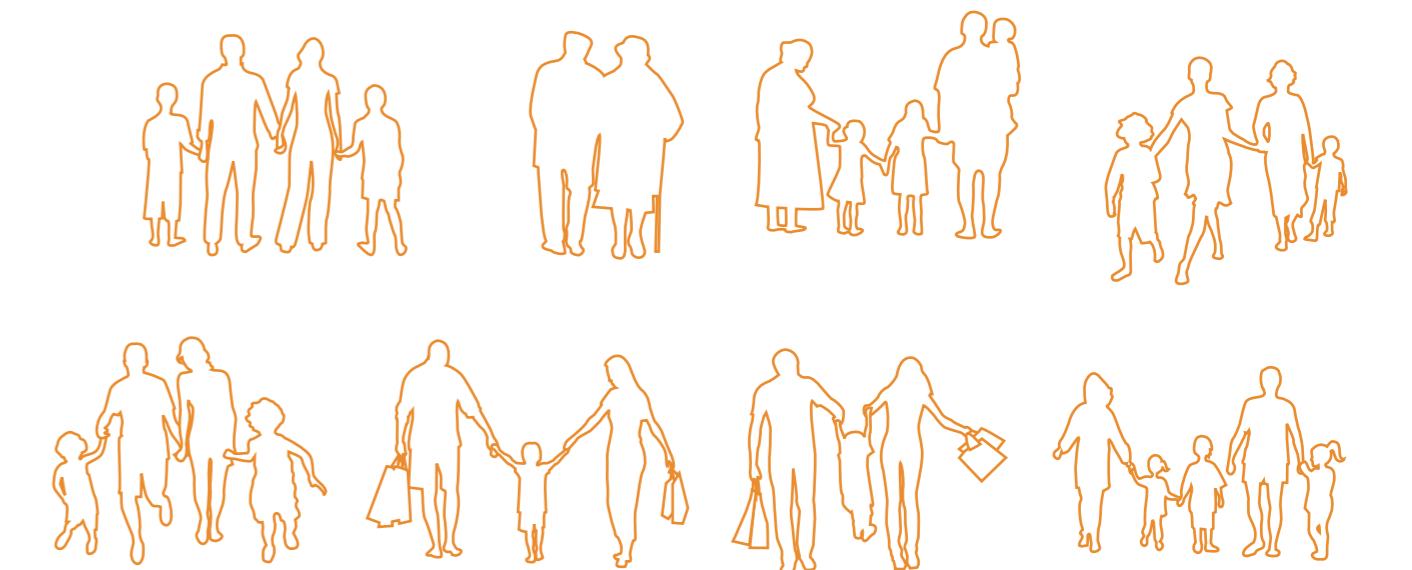
Family Cohesion

UMC emphasizes work-life balance, and in addition to focusing on employees, UMC also reaches out to their families. UMC arranges activities within specific themes which are appropriate for employees and their families to participate in. For example, the "Let's Move!" family day activity, complemented by the popular "Sports Movement" demonstration, combine various fun sports and backdrops. Planning family day activities effectively promotes team spirit and reinforces company recognition by family members. A monthly movie is selected by employees for family movie time where movies are shown in the fab after work, and art festivals are held that are open to employee families. UMC hopes to support employees as well as their families to relieve employee stress and ensure their physical and mental health. At the same time, employee families may also become involved with UMC, get to know UMC and continue to support the employees in their diligent contributions toward the company.



Snapshots of the UMC 2017 "Let's Move!" Family Day Activity

Employee Satisfaction



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Club Activities

Club Activities

- UMC clubs can generally be classified into 6 types, namely ball games, sports, public service, music and dance, arts, and business investment.
- Through the club assessment system, clubs with excellent performance receive subsidies for their operating expenses.



Social Group Photographs

2017 Performance

27 clubs (Taiwan) / 2 rounds of selection - a total of 15 excellent social groups will be provided with support in each round. / 2,180 club members (Note)

UMC recreational facilities and services (UMC Center/UMC Park/UMC Hill)

- Quality Recreation Center in Hsinchu for employees and their families.
- Dormitory in Tainan with integrated recreational facilities.
- Each site (8E, 8F, 8S, 12A) provides fitness equipment for employees.



5-star gym

Multi-purpose basketball and badminton court

2017 Performance

Recreation Center in Hsinchu : 0.17 million visitors in 2017 / The UMC recreation centers serve over 500 people per day.

UMC Ten Thousand Step Walkathon Activity

- Combining the public welfare and the promotion of the physical and mental health of employees

- 2017 Performance
- 2,200 people participated in the Ten Thousand Step Walkathon activity
 - 597 pairs of old shoes were donated

Diversity of Employee Activities

- Organized regular Easy Travel, Family Day, and Art Festival
- Let's Move theme-based family day event was held in 2017
- Routine screening and playing of popular movies every month

- 2017 Performance
- 210 people participated in the Easy Travel program
 - 8,200 people participated in UMC Family Day
 - 2,454 people participated in the Art Festival

Note 1: Does not include one-time or temporary club members

In terms of arts and culture activities, UMC's "2017 UMC Art Fest" is the company's most important arts and culture event of the year. From July through September, aside from inviting famous performing artists, authors, and bloggers to share their views in various seminars and workshops, the company also organizes talks about cinema appreciation, travel, smartphone photography, and hands-on activities. Employees are invited to experience life aesthetics and art. Moreover, UMC brings in large-scale artistic performances to expose employees to unique artistic perspectives. The company also teams up with noted publishers to organize art and literary exhibitions, encouraging its employees to experience diverse art forms and incorporate them in their daily lives. Not only does this enhance the quality of life, but it also achieves the ideal of "Work-Life Balance".

Events planned for 2017 were designed to highlight the core value of Customer (and Employee) Focus upheld by UMC. Activities were also based upon UMC Extreme Art organized in previous years. 2015 UMC Extreme Art included a total of 36 art events which were attended by about 3,709 individuals. The choice of activities were based upon recommendations from fellow employees and proved to be both enriching and well-received by the entire company.



4-3-2

Safe Work Environment

Any form of safety or health risk may result in serious economic and social losses for the company, compromising its competitiveness. Consequently, UMC aims for zero disaster and is committed to the company's steady development while making safety a priority.



How We Manage

- Meet or exceed the requirements of industry safety laws, aiming for zero disaster.
- Promote safety and health management system to ensure safety and health performance.
- Use advanced safety and health technologies to improve safety.
- Implement prevention management and auditing systems to ensure the safety of the work environment and operations.
- Make it a responsibility for personnel of all levels to prevent accidents.
- Conduct safety and health education and advocacy; encourage active participation in safety and health activities.

Purposes

To achieve the goals of zero disaster and zero damage.

Goal

By 2020, reduce the number of accidents by 67% compared to 2011.

Relevant Policy

Safety and Health Policy

Applicable Entities:

- UMC
- HeJian Technology (Suzhou) Co., Ltd. and United Semiconductor (Xiamen) Co., Ltd., which are UMC subsidiaries selling and manufacturing integrated circuits
- Contractors

Safety and Health Organization

UMC in Taiwan has a company-wide safety and health committee, chaired by the Associate Vice President. The Board comprises a total of 9 labor representatives elected from respective fabs, who account for 33% of the 27-member committee. Each fab also has its respective safety and health committee. In the Singapore fab, the safety and health committee is set up in accordance to local regulations, and in compliance with the law, its number of employee representatives is greater than the number of director representatives. Although China has no safety and health committee stipulation, the company's subsidiaries HJTC and USC have both established a safety and health committee that meets every quarter.

Tasks reviewed by UMC's company-wide Environmental Safety and Health Committee during each quarterly meeting are



Review of matters pertaining to company-wide environmental safety and health management.



Review appropriateness of environmental safety and health guidelines.



Promote relevant environmental safety and health outcomes in fabs.



In response to environmental safety and health trends, formulate key decisions.



Important changes in regulations and responses.

Safety and Health Policy

The Safety and Health Policy formulated by UMC's environmental, safety and health management representative shall be reviewed and approved during the company-wide management review meeting before final verification and approval by the Chairperson of the Board. Every employee in UMC shall then be notified about the policy, which will be disclosed to the general public through UMC's official website.

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Create a Corporate Culture of Work Safety for Everyone

Any safety and health risks could result in major economic or reputational loss for a company, and undermine its competitiveness. UMC builds its safety and health management on inherent safety, and actively establishes a corporate culture of mutual assistance to create "work safety for everyone". It is hoped that the result of safety and health management promotion can be reflected in the operating outcome.

Major implementations in 2017 include:

Established a Hazardous Chemicals Assessment and Grading Management System

Established a hazardous chemicals assessment and grading management system that uses scientific methods to comprehensively determine exposure level and classify risks. Adopted corresponding hierarchical management measures to effectively control worker exposure to chemical hazard risks in the workplace.



Safety Mindset 4.0

The company has launched the BBS (Behavior-Based Safety) cultural activity "Safety Mindset 4.0," setting a theme every quarter with the purpose of furthering employee safety awareness and understanding. In enhancing the company's BBS culture, FS/SR (Disabling Injury Frequency Rate/ Severity Rate) can be reduced.



High Risk Jobs and Occupational Disease Management

Statutory regulations in Taiwan, Mainland China, and Singapore were reviewed to identify high risk jobs and employees related to certain equipment and facilities operations.

According to legal mandates, high risk groups will undergo special physical examination for items including noise, ionization radiation, dust, organic solvents, and specific chemical substances. In 2017, indium and its compounds were added in accordance with the law and health management was conducted according to the health inspection grading system.

To create a healthier and more comfortable work place, comprehensive health risk classification and management systems would be used for early detection of high risk groups while simultaneously improving on work processes and subsequent healthcare measures.

An occupational health care system has been set up for groups that are unwell and suspected of having work-related health issues. This system includes on-site doctors in fabs, HR health center, risk management and environmental safety office, and other care groups which determine the real causes of the situation and propose improvement measures. As of the end of 2017, there have been a total 4 cases of concern (no additional cases between 2016 – 2017).

Employer-Employee Communication for Health Issues

Taiwan

According to the Occupational Safety and Health Act, Taiwan's occupational safety and health workers' representatives in Taiwan region are empowered to jointly elect labor representatives and, with the consent of the labor representatives of labor conferences and labor unions, participate in the quarterly safety committee meetings, revise safety and health codes of practice, conduct accident investigations, and carry out environmental monitoring of operations together with them, as well as make joint decisions on various safety and health issues.

Singapore

The Safety and Health Committee, which is composed of management personnel and employees in the Singapore plant area, has established the "Internal Safety Rules and Regulations" and continues to review them during the committee meetings.

China

The document of responsibility for "safe production, occupational health, fire protection, and environmental protection" was signed by all members of the Mainland China factory site. The safety and health issues accounted for 86% of the entire document. The Department of Occupational Safety and Environmental Protection will review the contents of the document of responsibility on an annual basis and invite all members to sign again.

Accident Management

UMC continued to reduce the number of industrial safety incidents. Its goal in 2017 was to reduce the number of accidents by 10% (compared to 2016). In order to effectively achieve the objectives of accident management, in addition to the prevention plan proposed by each factory at the beginning of the year, causes of accidents were analyzed dynamically at different points of time of the year and countermeasures were proposed. For example, a series of activities have been implemented, including the "Safety Performance Reward," "Accident Prevention Committee," "Repeat Accident Prevention," "Company Life-saving Safety Regulations Reinforcement," and "No Punishment ~ Discipline Enhancement." However, these initiatives have failed to achieve the annual goal of reducing the number of accident cases. Analyzing the categories of the 19 accidents that occurred in 2017, chemicals leaks: 8 cases, walking injuries: 6 cases, cuts: 2 cases, electrical components meltdown: 1 case, leaking water: 1 case, others: 1 case. Among these, there were two incidents involving splashing of sulfuric acid resulting in employee injury. In both cases, the company was penalized by the Hsinchu Science Park Bureau. After communicating with the competent authorities, appropriate institutional, systematic, and software/hardware engineering improvements targeting the relevant flaws have been implemented to prevent recurrence. In addition, the company will continue to propose countermeasures to prevent the recurrence of related types of accidents in 2018, including: in response to the dilemma of our current bottlenecks and high risk of accidents, the general manager stood up and said, "safety is a priority, and no safety means no production." Going forward, senior executives will be invited to sign on to the environmental safety and health policy and commitment, build consensus and demonstrate leadership. "Safety Mindset 4.0," the company's BBS cultural promotion, sets a theme every quarter with the purpose of furthering employee safety awareness and understanding. Moreover, the company has planned the "zero accident incentive (safety performance bonus)" to encourage employees to improve their own safety intentions / awareness / behavior, and then care for each other's safety, achieving the goal of zero accidents. In addition, the company has established a 10-year accident management target. The original plan for the number of accidents in 2020 was to reduce it by 85% from the 2011 figures. However, due to the inclusion of the 12-inch wafer fab in Southern Taiwan Science Park and Mainland China, the target has been adjusted to 67% from the 2011 figures, working towards the end goal of zero accidents.

Accident Cases from 2013 to 2017



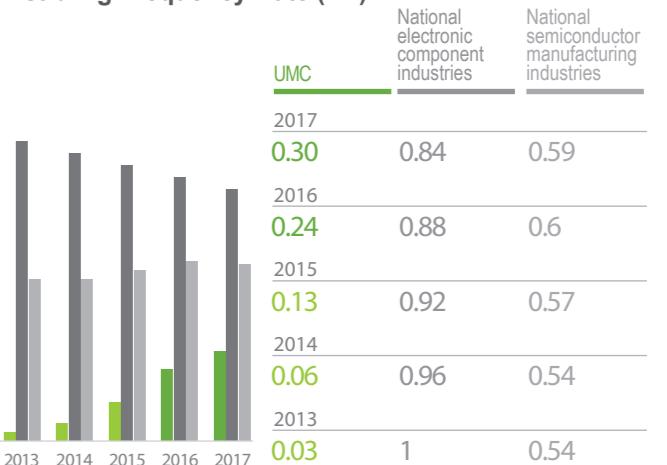
Note 1: the target number of accidents in 2018 is 13.

Note 2: UMC scores and classifies accidents according to injuries cause by people, production impact, financial loss and involvement of chemical substances, range of impact, fire, or problems due to employee behavior. Not all accidents result in human injury.

Occupational Disaster Management

In 2017, UMC's Disabling Frequency Rate (FR) was 0.30 and Severity Rate (SR) was 7, which are far below the average of the semiconductor industry (according to data provided by the Department of Statistics of the Ministry of Labor). UMC will continue to promote disaster reduction programs and move towards zero disasters.

Disabling Frequency Rate (FR)



Disabling Severity Rate (SR)



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	Male				Female				Total	
	UMC	Contractor	UMC	Contractor	UMC	Contractor	UMC	Contractor		
Taiwan				Singapore						
No. of people with disabling injuries	4	3	5	0	12	0	2	0	0	2
No. of lost days due to disability	82	104	139	0	325	0	44	0	0	44
No. of reportable injuries	8	5	6	0	19	0	2	0	0	2
No. of work related deaths	0	0	0	0	0	0	0	0	0	0
Occupational Disease Rate (ODR)	0	0	0	0	0	0	0	0	0	0
Total No. of Work Hours	25,507,581				3,620,000					
Injury Rate (IR)	0.063	0.039	0.047	81	0.149	0	0.110	0	0	0.110
Lost Day Rate (LDR)	0.643	0.815	1.090	0	2.548	0	2.431	0	0	2.431
Absenteeism	0.42%		1.37%	0	0.82%	1.17%		1.56%		1.33%

	Male				Female				Total	
	Subsidiary HJTC	Contractor	Subsidiary HJTC	Contractor	Subsidiary USC	Contractor	Subsidiary USC	Contractor		
China-HJTC				China-United Semiconductor						
No. of people with disabling injuries	0	0	0	0	0	0	0	1	0	1
No. of lost days due to disability	0	0	0	0	0	0	0	7	0	7
No. of reportable injuries	0	0	0	0	0	1	0	1	0	2
No. of work related deaths	0	0	0	0	0	0	0	0	0	0
Occupational Disease Rate (ODR)	0	0	0	0	0	0	0	0	0	0
Total No. of Work Hours	4,043,950				2,117,898					
Injury Rate (IR)	0	0	0	0	0	0.944	0	0.944	0	0.189
Lost Day Rate (LDR)	0	0	0	0	0	0	0	0.661	0	0.661
Absenteeism	1.09%		5.15%		3.51%	1.18%		1.77%		1.35%

Note: There were no third party illnesses, injuries, disabilities or deaths caused by UMC operations , HJTC operations , United Semiconductor operations.

Definition of Terms

Third party

Refers to non-employees or contracted personnel

Number of people with disabling injuries

Refers to the number of deaths, permanent disability, permanent total or partial disability or temporary 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 day of injury or the day when work is resumed. Includes 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.

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 major diagnosis by a physician.

Total number of work hours

Refers to the actual work hours of all workers in the current term.

FR

FR = Number of people with disabling injuries x1,000,000 / Total number of work hours [per million work hours].

SR

SR = Number of lost day due to disability x1,000,000 / Total number of work hours [per million work hours].

ODR

ODR = Total number of occupational diseases x200,000 / Total number of work hours [per 200,000 work hours].

IR

IR = Number of reportable injuries x200,000 / Total number of work hours [per 200,000 work hours].

LDR

LDR = Number of lost day due to disabling injuries x200,000 / Total number of work hours [per 200,000 work hours].

Absenteeism

Total hours of employee personal leave, occupation injury leave and sick leave /Total number of work hours.

Contractor Management

Contractor management is a very important part of safety and health management in UMC. Each cooperating vendor signs the "Environmental Safety and Health Contract" with the company, and is informed of matters such as the work environment, risk factors and safety and health regulations. In addition, existing safety and health management mechanisms such as incident reporting and investigation, inspections and work observation are also applicable to specific contractors. Through the company-wide monitoring mechanism, any unsafe practice or condition found on the part of a contractor is reported to the appropriate director or relevant personal through the various safety and health management mechanisms for systematic follow-up and improvement. To enhance the effectiveness and implementation of construction management, the company has a systematic construction permit application, and prior to any construction work within the fab, a construction permit must be obtained.

UMC requires all contractors to undergo the UMC Environmental Safety and Health Education and Training for Contractors to inform them of potential risks and regulations so that the contractors realize the company commitment to their lives and safety. Company overseers must also complete the Overseer Education and Training program to fully understand supervisory responsibilities, tasks and competency before assuming the position. In addition, to manage contractor entry into the fab and perform the various construction work within the fab, and also to prevent occupational disasters, a comprehensive contractor management standards is developed. The standards include environmental safety and health management regulations and instructions for contractors, regulations for operating in confined spaces, regulations for electrical safety, regulations for dismantling dangerous circuitry, and regulations for fire detection and isolation for follow-up training and requirement criteria.

UMC also established a new supplier assessment system and will assemble a professional evaluation team to implement Occupational Safety and Health (OSH) system assessments for new suppliers. Suppliers whose assessment results were less than ideal would be provided with case consultation and support from UMC to strengthen their OSH systems. OSH management standards of both UMC and the said supplier could also be aligned in future partnerships to achieve mutual benefits in improvements of OSH management and prevention of construction accidents. In 2017, UMC successfully provided consultation and inducted 3 new contractors to become UMC partners.

In order to effectively integrate construction management and access control, plans were made to introduce an access control integration system at Southern Taiwan Science Park plant in the second half of 2014 and begin operations in 2015, with the intention of a full roll-out in all Taiwan plants by 2017. All eligible contractors who have completed the "UMC contractor's environmental safety and health education and training" will be able to apply for a pass. This pass can be combined with a building permit application, which can be used to apply for access to the application area, greatly reducing the time and manpower required for ID exchange by security guards and contractors. Moreover, it effectively improves the efficiency of contractor access control, considering the existing construction management regulations.



Environmental Safety and Health Management for Contractors

Electrical safety	Environment safety and health instructions for contractors	Regulations for fire detection and isolation	Regulations for operating in confined spaces	Regulations for dismantling dangerous circuitry	Operating rules for interruption of fire protection system

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4-3-3 UMC Fire Brigade

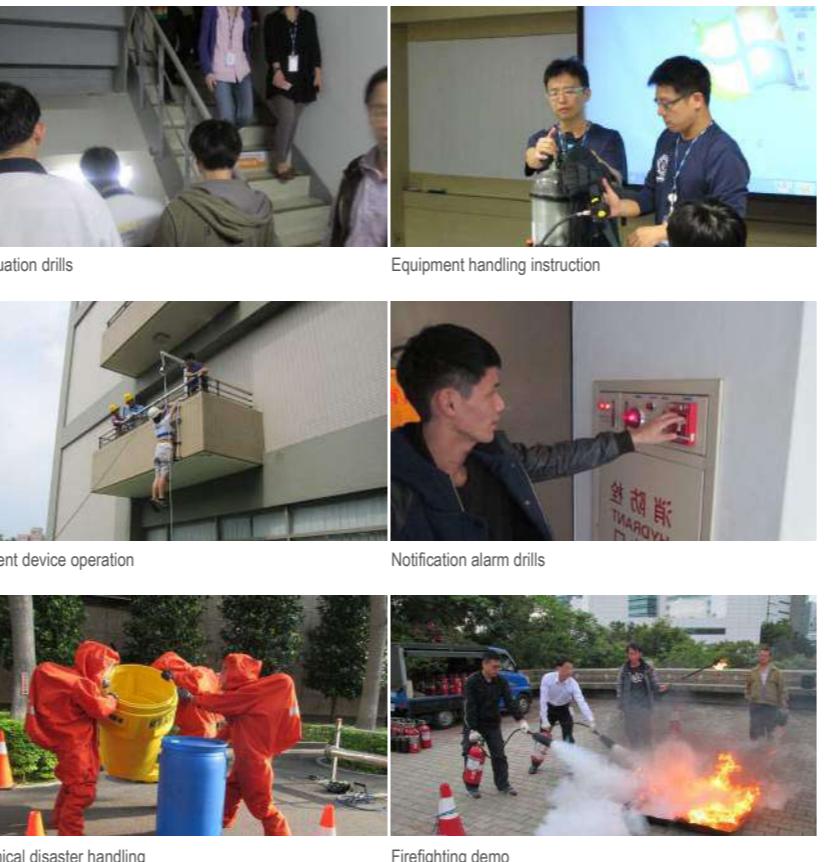
Semiconductor fabs often use a large variety of gases and chemicals while clean rooms tend to be large, enclosed spaces, leading to higher risk of fires. Fire prevention measures used in these facilities also differ from those traditionally employed. In April 1999, UMC established a high tech Fire Brigade under the Group Risk Management & Environmental, Safety and Health Division, making us the only electronics company with a dedicated fire brigade in Taiwan. The Southern Taiwan Science Park(STSP) Fire Brigade of UMC was officially founded in 2013, which is responsible for safeguarding and performing emergency rescues within the STSP plant sites. In 2017, we assisted our joint venture United Semiconductor (Xiamen) Co., Ltd to establish their fire brigade.

Fire fighters in the Brigade serve 2-year terms. The 2017 was the 19th year for the UMC fire brigade. Personnel composition included 13 full-time fire fighters and 93 members delegated to specific tasks. Most fire fighters and members of the brigade hold Master's degrees and are skilled in semiconductor processes, making the UMC Fire Brigade the best educated firefighting team in Taiwan. We have trained hundreds of fire fighters who still work at UMC and still contribute their skills in emergency response.



Professional Skill Training

Professional firefighting training: Training themes focus on basic orientation training for new recruits which would then be followed by strategy and tactical training. Every new member must undergo professional disaster relief training and examination which would include professional disaster rescue for simulated fires and response skills to oxidation disasters. In order to improve and maintain firefighting skills and professional competencies of Brigade members, practical training and exercises were carried out regularly every month in order to improve disaster response abilities. During their term in the UMC Fire Brigade, members will participate in both organizational and external rescue missions.



4-4 Community Service

4-4-1 Community Service Participation

"People orientation, co-existence with the environment and shared social prosperity" are the most important elements of UMC's vision in sustainability policies. UMC upholds the spirit of social co-prosperity and shall contribute its fair share towards social development. Under the leadership of UMC Science and Culture Foundation, more and more employees have started to take notice of the importance of community services, and have begun to take an active role in volunteer activities which initiated positive development within UMC. Our growing positive influence would help external agencies recognize UMC while providing assistance to more of those who need help, generating a growing positive feedback cycle that expands from within.

LBG Model

To effectively quantify the benefits brought about by community services, UMC referred to the community investment assessment system established by London Benchmark Group (LBG). Investment time, cost, material donations, and management expenses were carefully recorded to evaluate the positive benefits brought about by these investments. Outputs of community services include reductions in cost, 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.

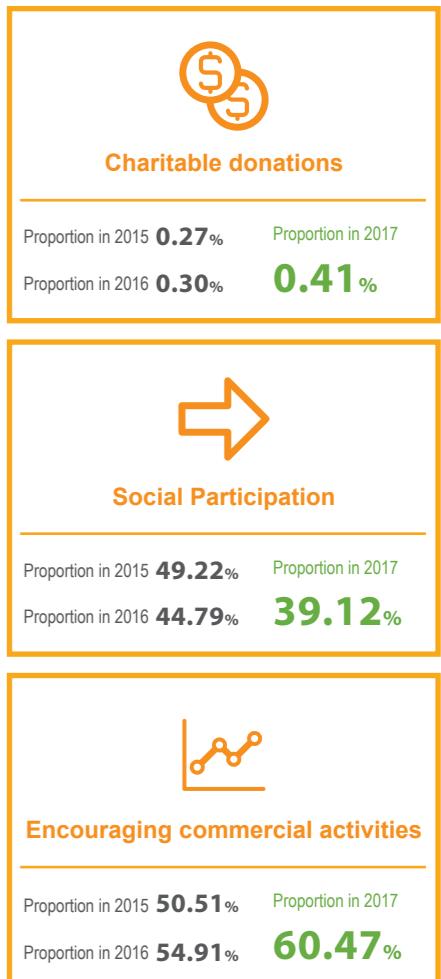
Category and Sums of Community Service Investments from 2015 to 2017

	2015	2016	2017
Cash donations			
34,435,555 (0.29%)	34,594,654 (0.32%)	42,155,366 (0.43%)	
Time contributions			
4,172,045 (0.04%)	3,143,182 (0.03%)	3,146,761 (0.03%)	
Material donations			
11,808,406,852 (99.41%)	10,854,665,619 (99.34%)	9,675,046,872 (99.16%)	
Management costs			
31,879,268 (0.27%)	33,899,867 (0.31%)	36,526,968 (0.37%)	
Total			
11,878,893,720	10,926,303,321	9,756,875,967	

Unit: NT\$



Proportion of Community Service Investments from 2015 to 2017



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In addition to the Spreading the Seeds of Hope Project that was initiated in 2005, UMC also mobilized other agencies such as the UMC Science and Culture Foundation, UMC LOHAS Education Foundation, UMC Fire Brigade, and employee societies and clubs in 2017, using their different skills to target and identify the best means of investing in community services. In 2017, UMC employees provided a total of 9,230 volunteer hours. Charitable donations and the number of beneficiaries also grew significantly and the latter grew to over 26,443 individuals. These results demonstrate continued growth of human resources and kindness of UMC volunteers offering services to the needy throughout Taiwan.

UMC Community Service Participation and Number of Beneficiaries

	2017	More than NT\$44 million
	2016	More than NT\$36 million
	2015	More than NT\$36 million
	2017	More than 27,161 people
	2016	More than 16,142 people
	2015	More than 25,416 people
	2017	More than 9,230 hours
	2016	More than 9,220 hours
	2015	More than 12,241 hours

Note1: This table only includes projects carried out by the Science and Culture Foundation, UMC LOHAS Education Foundation, and societies and clubs as well as employee donations.
Note 2: Includes volunteer leave and holiday service hours.

UMC Community Service Department

The UMC Science and Culture Foundation and the UMC LOHAS Education Foundation are UMC's two major foundations. In addition, UMC has also instituted the UMC Fire Brigade. All social involvement and actions are mutually supporting, forming the major force behind UMC's social citizenship in caring for the disadvantaged. Through the integration of UMC resources, employees contribute diligently to society to create a more secure and warmer community.

In 2017, more and more societies and clubs in UMC took the initiative to be a part of community services, including musical groups such as Music Lover, Guitar Club, and Ukulele Club, sports clubs such as the Running Club and Tai Chi Club, and service clubs such as the Energy Conservation Club. The efforts of these groups are growing to become a positive and significant force in promoting community services.



Three Major Social Welfare Groups in UMC



UMC Science and Culture Foundation

Since 1996



UMC LOHAS Education Foundation

Since 2009



UMC Fire Brigade

Since 1999

- Develop education for the disadvantaged - " Spreading the Seeds of Hope Project "
- Life education - " Love Storyteller Club"
- Parent Child Education - sponsorship for Whatever Makes Sense for Voice of IC Teacher Hung Lan



Seeds of Hope
Educational Assistance for Children from Disadvantaged Families



Seeds of Life Education
Promoting Life Education



Seeds of Read
National Reading Movement



Seeds of Green Energy
Promoting environmental education and cultivating green energy technology talents



Seeds of Semiconductor Knowledge
Cultivating High Technology Talents in Taiwan

Implementation

After-school counseling , Reading class , Ethics class , Long-term care , Organizing festivals and events

Results in 2017

- 718 service hours at the UMC Afterschool Center, National University of Tainan
- Sponsored the Nantou Karate Association
- Served 136 disadvantaged children

Effects

- Volunteers would help provide children with correct perspectives to prevent delinquency, using quality education to bring them out of their impoverished background.
- Sponsorship is provided to Nantou Karate Association to train karate students, helping underprivileged students to regain confidence and become aware of their strengths.

Implementation

Assembling Life Education Volunteer Team , Regular visits to remote villages and juvenile delinquents

Results in 2017

- Organized 3sessions of Mobile Theater and caretaking activities at the House of Miracles.
- Sponsored the Whatever Makes Sense show provided by Voice of IC Dr. Hung Lan.
- Provided a total of 14 Ukulele community service performances by the Ukulele Society.
- Counseling sessions per month for Chengjiheng high school,a total of 24 times.

Effects

- Made regular visits to youths living in remote villages to convey the message of positive life education in order to help them realize the truth meaning of the living and the purpose of life.
- Interacting with youths living in the House of Miracle to build a correct system of values.

Implementation

Reading seminars , Reading promotion

Results in 2017

- Organized 4 reading seminar courses to train storytelling volunteers.
- Storytelling volunteers visited remote villages and support school children there.
- Sponsored newspaper reading education of Mandarin Daily News for schools that lack resources.
- Organized 24 reading events in remote elementary schools to benefit a total of 500 schoolchildren.

Effects

- School children appreciating the fun of learning through various activities.

Implementation

Implementing environmental conservation activities

Results in 2017

- Invested in the UMC Eco-Echo Conservation Project.
- Organized seminars and green market events to promote the concepts of earth friendliness
- In 2016, started the Green Award program with Global Views Monthly;the program will continueannually.

Effects

- Improve awareness for the importance of environmental protection amongst fellow employees and students, and promote the concept of environmental protection to more individuals so that it becomes the responsibility and way of life of every individual.

Implementation

Industry-academia classes for the semiconductor industry , Creative R&D projects , Other business-education partnerships , Campus Cultivation Project

Results in 2017

- Industry-academia classes for the semiconductor industry jointly run by the company and 3 universities.
- Initiated multiple R&D projects in multiple universities and secured relevant patents.
- Opened industry-academia classes attended by a total of 320 students.

Effects

- Cultivated future talent in the semiconductor industry so that young students could achieve in-depth understanding of semiconductor-related knowledge and technology during theirschool years.

Cultivation and Training of Professionals with Management Potential

In addition to supporting training efforts for high tech professionals, UMC is also leading the way in supporting professionals with management potential. The UMC Business Management Thesis Award was established in 2010 and started offering monetary donations 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. In 2017, a sum of NT\$ 3 million was invested into the award.

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4-4-2 Promotion of UMC Volunteer Culture

Volunteer Services

While focusing upon business growth, UMC is also actively contributing towards community work and social participation. To encourage fellow employees to participate in community service, employees are allowed to apply for official leave and partake in various volunteer services. Under the guidance of the UMC Science and Culture Foundation, the spirit of voluntarism in UMC has begun to spread beyond volunteer teams to include the entire employee population. In 2017, our community service clubs provided a total of 129 outreach activities to disadvantaged groups. Active donations and participation in community services by UMC employees demonstrate their initiative, kindness, and selfless contributions as well as the importance that UMC places upon building a volunteer culture.

To provide employees with greater freedom, UMC not only encouraged employees to participate in various community work and social activities, but also employed comprehensive social group assessment systems to encourage company societies to engage in charity work as well. Societies that attained excellent results were provided with additional funding to support both social group activities as well as community participation.

During annual scheduling of events, social groups would be invited to provide support according to the nature and purpose of the event. Many activities were made possible through the assistance and participation of social group members, and these measures help create an inseparable link among community work, corporate-wide event planning and social groups to encourage employees to engage in social work.

The following provides details of the events performed by various societies within UMC:

Services provided by various societies in 2017

Services		Candlelight Club		Sessions held 77
		Volunteer services	Beneficiaries	
		<ul style="list-style-type: none"> Offering companionship at the House of Miracles Services in remote villages Initiating love charity drives Charity sales activities jointly held with the foundation 		<ul style="list-style-type: none"> Underprivileged students Underprivileged senior citizens Environmental protection
		Energy Conservation Service Team		Sessions held 30
		Volunteer services	Beneficiaries	
		<ul style="list-style-type: none"> To assist social welfare agencies with energy conservation and carbon reduction. 		<ul style="list-style-type: none"> Underprivileged students
Music groups		Ukelele Club		Sessions held 14
		Volunteer services	Beneficiaries	
		<ul style="list-style-type: none"> Services for children living in remote areas Ukulele instructions for children living in remote areas Charity performances 		<ul style="list-style-type: none"> Underprivileged students
Sports clubs		Music Lover Club		Sessions held 5
		Volunteer services	Beneficiaries	
		<ul style="list-style-type: none"> Supporting community work organized by the foundation Engage in community work through music 		<ul style="list-style-type: none"> Underprivileged students
Partners		Tai Chi Club		Sessions held 1
		Volunteer services	Beneficiaries	
		<ul style="list-style-type: none"> Donation and care activities at a senior home center 		<ul style="list-style-type: none"> Underprivileged senior citizens
		Running Club		Sessions held 2
		Volunteer services	Beneficiaries	
		<ul style="list-style-type: none"> Charity run volunteers Marathon supply volunteers 		<ul style="list-style-type: none"> Local residents

Pao Shih Elementary School, HsinHsing Elementary School, Ta Tu Elementary School, Nan He Elementary School, St. Theresa Opportunity Center, Hsinchu Blind Welfare Association, World Vision, Homeless Foundation, St. Joseph Social Welfare Foundation and Shih Guang Educational and Nursing Institution, etc.

4-4-3 UMC Science and Culture Foundation

The UMC Science and Culture Foundation continues to promote community service, and currently, its focus is on long-term educational assistance. Promoting the "Spreading the Seeds of Hope Program," the Foundation funds the company's collaboration with universities in Hsinchu and Tainan. The universities provide classrooms and employ part-time instructors to provide free remedial tutoring to students who are economically disadvantaged.

In 2013, in response to the diversified learning needs of the newly instituted 12 year education policy, the Foundation integrated with community resources to establish the "UMC Sacred Heart Learning Center" in Hsinchu. To date, more than 40 professionals comprising of teachers and students from National Tsing Hua University and National Chiao Tung University, engineers from the Hsinchu Science Park and professionals from various disciplines have joined the tutoring and volunteer team. In addition to supporting the existing remedial tutoring, they also help students develop a positive learning attitude and appropriate values.

Since 2013, the Foundation has supported Tainan remedial classes with the National University of Tainan. Efforts have been further expanded to include elementary schools in remote villages in order to provide services for underprivileged children living there. Teaching development projects with National University of Tainan have been initiated to help train more teachers capable of providing teaching services for underprivileged children living in remote locations.

Other community services by the Foundation are listed below:

Spreading the Seeds of Hope

The "Spreading the Seeds of Hope—Educational Assistance for Children from Disadvantaged Families" program was launched during UMC's 25th Anniversary Celebration to commit corporate resources to improve the education of school children from disadvantaged families. The program offers tutoring to school children from disadvantaged families in Hsinchu and Tainan.

Outcome

Provided a total of 718 hours of remedial classes to 150 students in 2017.

UMC Love storyteller club

After the 2009 Typhoon Morakot Disaster, UMC sent 600 people to help clean up disaster areas in Pingtung. In the days following the disaster, employees formed the "UMC Love Storyteller Club" to harness their strength, and gave musical performances in Pingtung, Hsinchu, Tainan and other areas.

Outcome

Gave 57 performances in 9 years. Through the performances, life education messages were delivered to a total audience of more than 18,000 people.

UMC Drum Club

In July 2013, UMC's former CEO Yen mobilized employees in Hsinchu and Southern Taiwan to form the Drum Club to reciprocate society through the theme of "Make Friends Through Drums, Move Through Love". In addition, the personal involvement of the CEO helped motivate a spirit of volunteerism.

Outcome

A total of 35 moving charity performances were given to 24,000 audiences in the last 2 years.

Storytelling volunteers

Encouraged employees to become storytellers and lead reading activities in Bao Shih elementary school in Hsinchu County. Through a diversity of themes and mediums, extra-curricular cultural materials are used to motivate reading in children.

Outcome

A total of 24 sessions were conducted, totaling about 500 participants

Letter Writing Volunteers

The Children and Families Fund adopted school children on behalf of the Foundation. In addition, employees volunteered to write letters to the adopted children to reach out and give encouragement. Such a simple friendship links the chain of love and hope.

Outcome

A total of 110 children were adopted through Children and Families Fund.

IC Voice—"Be Reasonable" program by Teacher Hong Lan

UMC sponsors the IC Voice radio program, "Be Reasonable" by Teacher Hong Lan to promote correct educational perspectives.

Outcome

The sponsored program is in its 9th year since its beginning in 2009.

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4-4-4 Serving the Community with Core Professional Skills

In 2017, UMC Fire Brigade cooperated with the local fire department to conduct rescue operations during Luren Precisioncompany's fire incident in the Hsinchu Science Park. We worked jointly with disaster relief agencies in the public sector to provide professional assistance and advice so that disasters could be handled smoothly to minimize property loss and environmental impact.

We were also invited by different government departments to participate in large-scale drills in Hsinchu and Tainan to gain training experience and teach participating members advanced response skills when responding to toxic chemical disasters and industrial fires. In addition, UMC Fire Brigade coordinated with the UMC Culture and Education Foundation to conduct safety education in elementary schools to instill a sense of disaster prevention into the community's consciousness and practices. The brigade also worked with the company's energy conservation and safety teams to conduct fire safety consultation and inspection.

Community Fire Education

Provided fire safety education to elementary school students

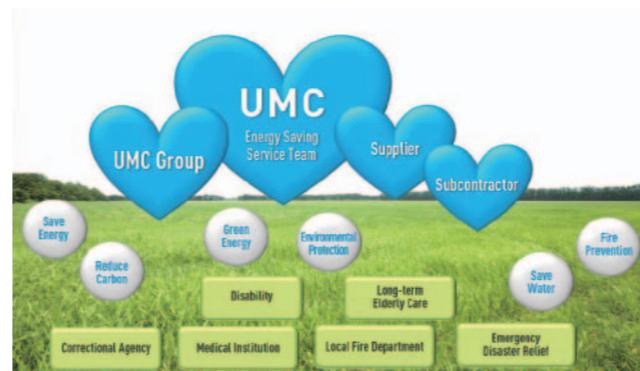


Disaster Support and Rescue

Assisted with accident response and rescue in Hsinchu /Tainan Science Parks and their nearby communities.



The "Energy Saving Service Team" was established in 2016. With the parent company as the core platform, UMC works together with the "value chain" (subsidiaries, vendors, and subcontractors). As of 2017, it has provided assistance to dozens of social welfare organizations for the disadvantaged, hoping to make them sustainable for a better society and to help these organizations conserve energy and reduce carbon emissions. The services include energy conservation and safety counseling, technical information on energy resources and engineering improvement so that disadvantaged populations may also enjoy living a life of energy conservation and carbon reduction.



UMC Energy Saving Service Team Solutions to Issues



United Nations Sustainable Development Goals (SDGs)



Educational Quality

Assisted with improving teaching environment and educational quality.



Good Health and Well-being

Provided fire prevention and home safety counseling, promoted care quality.



Clean Water and Sanitation

- Provided water management technology to improve water conservation and water sanitation.
- Assisted with maintenance to improve environmental comfort and health.



Affordable and Clean Energy

- Provided energy-saving technology to improve the efficiency of resource use.
- Integrated the resources of the Group to provide green energy technology (solar energy, LED).



The Paris Agreement

Help mitigate climate change

Shared energy-saving experience, and introduced green energy environmental technology to help welfare institutions reduce energy consumption and greenhouse gas emissions.

Assist with adaptation to climate change

Exchanged energy-saving knowledge to increase resource management capability. Assisted with improving engineering hardware or energy management tools to enhance adaptability to environmental changes.

Domestic Assessment for Aging, Disability, and Hearing Impaired

Improve the work quality of social welfare providers

Provided energy-saving counseling to welfare institutions to promote sustainable operations so that the money saved may be used for workplace improvement and service capability of the workers.

Improve the living environment of care recipients

Provided infrastructure counseling and improvement (water, electricity, fire prevention) to improve the living environment of care recipients and ensure fire safety.



Helped St. Joseph Social Welfare Foundation install LED lighting



Participated in the Thanksgiving Press Conference organized by the St. Joseph Social Welfare Foundation



Assisted the St. Joseph's Children's Home in safe energy consumption

Public Benefit Assessment

Looking at the contributions made by the volunteers of the energy conservation team throughout 2016 – 2017 in terms of manpower, time, and infrastructure, UMC estimates that the overall economic value generated in the society and the environment reached NT\$9 million, while CO₂ emissions were reduced by approximately 356 tons.

Implementation Results of the UMC Energy Conservation Team

Investment

Labor Cost	603,500 NT\$
Construction Cost	1,755,881 NT\$
Total	2,359,381 NT\$

Output

Economic benefit	9,065,169 NT\$
Environmental and social benefits	-356 Tons of CO ₂
Total	9,065,169 NT\$

Statistical Scope: Service Involvement and Output of the Energy Conservation Service Team from 2016 to 2017

Labor cost: Cost of volunteer participation (NT\$500 / hour).

Construction cost: Cost of improving hardware.

Economic benefit: Cost of energy saved in operations.

Words from Co-President and CS Committee Chairman

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AppendixI:Joint Ventures and Subsidiaries

The ventures of the company and its affiliated enterprises include wafer manufacturing, electronics, optoelectronics industry, investment, insurance and trading industries. In 2017, over 95% of revenue was generated by UMC's integrated semiconductor manufacturing operations, and the remainder generated by the new business department for research and manufacturing of solar energy and new generation light-emitting diodes.

This report is based on the results of the differentiation between each of Chapter One's substantive sustainability topics, and provides the following separate descriptions based on the category of the subsidiary company and the nature of its industry.

- The two sales and production projects of HeJian Technology and United Semi are both integrated circuit manufacturing and sales subsidiaries of UMC, and their relevant information is disclosed together with information on UMC in each chapter.
- The two manufacturing category subsidiary companies of Wavetek and NexPower have promoted management of various sustainable issues in accordance with the UMC Code of Conduct. In 2017, there were no significant fines for violating relevant laws and regulations for either company, nor was there any forced labor, human rights complaints, incidents of corruption, or monopolistic practices. Please refer to the following websites for relevant environmental management system certification promotion circumstances.
Wavetek: <http://www.wtkmicro.com/cht.cc/about/profile.asp>, NexPower: <https://www.nexpw.com/?culture=en-US>
- For information on the economic performance and financial affairs of each subsidiary and for information on other subsidiaries, please refer to the relevant information on affiliated enterprise organizations on page 130 of our 2017 Annual Report.
Reference URL: http://www.umc.com/chinese/investors/Reports/2010-present_report.asp

Appendix II: GRI Content Index

Organizational profile

Disclosures	Location	Page number/or URL	Note/Omission	External Assurance
102-1 Name of the organization	About UMC	p05		●
102-2 Activities, brands, products, and services	About UMC	p05		●
102-3 Location of headquarters	About UMC	p05		●
102-4 Location of operations	About UMC	p05		●
102-5 Ownership and legal form	About UMC	p05		●
102-6 Markets served	About UMC	p05		●
102-7 Scale of the organization	About UMC 2-2-Business Performance	p05 p37	For more information, please refer to the 2017 Annual Report (page 130).	●
102-8 Information on employees and other workers	4-2-1 Human Resource	p111		●
102-9 Supply chain	2-5 Sustainable Supply Chain Management	p49		●
102-10 Significant changes to the organization and its supply chain	2-5 Sustainable Supply Chain Management	p49	No significant changes occurred during the reporting period.	●
102-11 Precautionary Principle or approach	2-1-4 Internal Audit 2-4 Risk and Crisis Management	p28 p45		●
102-12 External initiatives	3-2 Carbon Asset Management 2-5 Sustainable Supply Chain Management 4-1-1 Human Rights	p73 p49 p104		●
102-13 Membership of associations	About UMC	p05		●

Strategy

Disclosures	Location	Page number/or URL	Note/Omission	External Assurance
102-14 Statement from senior decision-maker	Words from Co-President and CS Committee Chairman	p01		●
102-15 Key impacts, risks, and opportunities	1-2 Communication with Stakeholders 2-2-2 Business Performance 2-4 Risk and Crisis Management 3-2 Carbon Asset Management 3-3 Water Risk Management	p13 p37 p45 p73 p83		●

Ethics and integrity

Disclosures	Location	Page number/or URL	Note/Omission	External Assurance
102-16 Values, principles, standards, and norms of behavior	2-1-5 Code of Ethics and Anti-Corruption	p29		●
102-17 Mechanisms for advice and concerns about ethics	2-1-5 Code of Ethics and Anti-Corruption	p29		●

Governance

Disclosures	Location	Page number/or URL	Note/Omission	External Assurance
102-18 Governance structure	1-1 Sustainable Development Strategy and Organization 2-1-1 Board of Directors	p09 p24		●
102-19 Delegating authority	1-1 Sustainable Development Strategy and Organization	p09		●
102-20 Executive-level responsibility for economic, environmental, and social topics	1-1 Sustainable Development Strategy and Organization	p09		●
102-21 Consulting stakeholders on economic, environmental, and social topics	1-1 Sustainable Development Strategy and Organization	p09		●
102-22 Composition of the highest governance body and its committees	2-1-1 Board of Directors	p24		●
102-23 Chair of the highest governance body	2-1-1 Board of Directors	p24		●
102-24 Nominating and selecting the highest governance body	2-1-1 Board of Directors	p24		●
102-25 Conflicts of interest	2-1-1 Board of Directors	p24		●
102-26 Role of highest governance body in setting purpose, values, and strategy*	1-1 Sustainable Development Strategy and Organization	p09		●
102-27 Collective knowledge of highest governance body	2-1 Company Governance	p23		●
102-28 Evaluating the highest governance body's performance	1-1 Sustainable Development Strategy and Organization 2-1 Company Governance	p09 p23		●
102-29 Identifying and managing economic, environmental, and social impacts	1-1 Sustainable Development Strategy and Organization	p09		●
102-30 Effectiveness of risk management processes	1-1 Sustainable Development Strategy and Organization	p09		●
102-31 Review of economic, environmental, and social topics	1-1 Sustainable Development Strategy and Organization	p09		●
102-32 Highest governance body's role in sustainability reporting	1-1 Sustainable Development Strategy and Organization	p09		●
102-33 Communicating critical concerns	About This Report	p02		●
102-34 Nature and total number of critical concerns	1-1 Sustainable Development Strategy and Organization	p09		●
102-35 Remuneration policies	2-1-2 UMC Functional Committee	p26		●
102-36 Process for determining remuneration	2-1-2 UMC Functional Committee	p26		●
102-37 Stakeholders' involvement in remuneration	2-1-2 UMC Functional Committee 4-2-2 Compensation and Benefits	p26 p116		●
102-38 Annual total compensation ratio	2-1-2 UMC Functional Committee	p26		●
102-39 Percentage increase in annual total compensation ratio	2-1-2 UMC Functional Committee	p26		●

Stakeholder engagement

Disclosures	Location	Page number/or URL	Note/Omission	External Assurance
102-40 List of stakeholder groups	1-2 Communication with Stakeholders	p13		●
102-41 Collective bargaining agreements	4-1 Labor Rights	p104	No employee labor unions were formed before the end of the reporting period. No employee to sign a collective agreement.	●
102-42 Identifying and selecting stakeholders	1-2 Communication with Stakeholders	p13		●
102-43 Approach to stakeholder engagement	1-2 Communication with Stakeholders	p13		●
102-44 Key topics and concerns raised	1-2 Communication with Stakeholders	p13		●

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Reporting practice					
Disclosures	Location	Page number/or URL	Note/Omission	External Assurance	
102-45 Entities included in the consolidated financial statements	About UMC Appendix I: Joint Ventures and Subsidiaries	p05 p147		●	
102-46 Defining report content and topic Boundaries	1-2 Communication with Stakeholders	p13		●	
102-47 List of material topics	1-2 Communication with Stakeholders	p13		●	
102-48 Restatements of information		None		●	
102-49 Changes in reporting	About This Report	p02		●	
102-50 Reporting period	About This Report	p02		●	
102-51 Date of most recent report	About This Report	p02		●	
102-52 Reporting cycle	About This Report	p02		●	
102-53 Contact point for questions regarding the report	About This Report	p02		●	
102-54 Claims of reporting in accordance with the GRI Standards	About This Report	p02		●	
102-55 GRI content index	Appendix II: GRI Content Index	p147	Appendix: Assurance Statement	●	
102-56 External assurance	About This Report	p02		●	
201 Economic Performance (Major Topic)					
Management Approach (p15/33)	Location	Page number/or URL	Note/Omission	External Assurance	
201-1 Direct economic value generated and distributed	2-2-2 Business Performance 4-2-2 Compensation and Benefits	p37 p116	For more information, please refer to the 2017 Annual Report (page 143).	●	
201-2 Financial implications and other risks and opportunities due to climate change	3-2 Carbon Asset Management	p73		●	
201-3 Defined benefit plan obligations and other retirement plans	4-2-2 Compensation and Benefits	p116		●	
201-4 Financial assistance received from government			For more information, please refer to the 2017 Annual Report (pages 237).	●	
204 Procurement Practices (Major Topic)					
Management Approach (p15/49)	Location	Page number/or URL	Note/Omission	External Assurance	
204-1 Proportion of spending on local suppliers	2-5 Sustainable Supply Chain Management	p49		●	
205 Anti-corruption (Major Topic)					
Management Approach (p15/29)	Location	Page number/or URL	Note/Omission	External Assurance	
205-1 Operations assessed for risks related to corruption	2-1-5 Code of Ethics and Anti-Corruption 4-1-1 Human Rights	p29 p104		●	
205-2 Communication and training about anti-corruption policies and procedures	2-1-5 Code of Ethics and Anti-Corruption 4-1-1 Human Rights	p29 p104		●	
205-3 Confirmed incidents of corruption and actions taken	2-1-5 Code of Ethics and Anti-Corruption	p29		●	
302 Energy (Major Topic)					
Management Approach (p15/73/97)	Location	Page number/or URL	Note/Omission	External Assurance	
302-1 Energy consumption within the organization	3-2-2 Greenhouse Gas Inventory	p76		●	
302-2 Energy consumption outside of the organization	3-2-2 Greenhouse Gas Inventory	p76		●	
302-3 Energy intensity	3-2-3 Greenhouse Gas Reduction and Energy Management	p77		●	
302-4 Reduction of energy consumption	3-2-3 Greenhouse Gas Reduction and Energy Management	p77		●	
302 Energy (Major Topic)					
Management Approach (p15/73/97)	Location	Page number/or URL	Note/Omission	External Assurance	
302-5 Reductions in energy requirements of products and services	2-2-3 Investment to Enhance Competitiveness 3-2-3 Greenhouse Gas Reduction and Energy Management 3-5 Green Product	p38 p77 p97		●	
303 Water (Major Topic)					
Management Approach (p15/83)	Location	Page number/or URL	Note/Omission	External Assurance	
303-1 Water withdrawal by source	3-3-2 Factory Water Source	p85		●	
303-2 Water sources significantly affected by withdrawal of water	3-3-2 Factory Water Source	p85		●	
303-3 Water recycled and reused	3-3-3 Water Conservation During Manufacturing	p86		●	
305 Emissions (Major Topic)					
Management Approach (p15/65/73)	Location	Page number/or URL	Note/Omission	External Assurance	
305-1 Direct (Scope 1) GHG emissions	3-2-2 Greenhouse Gas Inventory	p76		●	
305-2 Energy indirect (Scope 2) GHG emissions	3-2-2 Greenhouse Gas Inventory	p76		●	
305-3 Other indirect (Scope 3) GHG emissions	3-2-2 Greenhouse Gas Inventory	p76		●	
305-4 GHG emissions intensity	3-2-2 Greenhouse Gas Inventory	p76		●	
305-5 Reduction of GHG emissions	3-2-2 Greenhouse Gas Inventory	p76		●	
305-6 Emissions of ozone-depleting substances (ODS)	3-1-3 Air Pollution Control	p68		●	
305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	3-1-3 Air Pollution Control	p68		●	
306 Effluents and Waste (Major Topic)					
Management Approach (p15/83/91)	Location	Page number/or URL	Note/Omission	External Assurance	
306-1 Water discharge by quality and destination	3-3-4 Water Pollution Control	p89		●	
306-2 Waste by type and disposal method	3-4 Waste Management	p91		●	
306-3 Significant spills			No spills occurred during the reporting period.		
306-4 Transport of hazardous waste	3-4 Waste Management	p91		●	
306-5 Water bodies affected by water discharges and/or runoff	3-3-4 Water Pollution Control	p89		●	
307 Environmental Compliance (Major Topic)					
Management Approach (p15/31/65)	Location	Page number/or URL	Note/Omission	External Assurance	
307-1 Non-compliance with environmental laws and regulations	2-1-6 Legal Compliance	p31	No non-compliance with environmental laws and regulations occurred during the reporting period.	●	
308 Supplier Environmental Assessment (Major Topic)					
Management Approach (p15/49)	Location	Page number/or URL	Note/Omission	External Assurance	
308-1 New suppliers that were screened using environmental criteria	2-5 Sustainable Supply Chain Management	p49 p49		●	
308-2 Negative environmental impacts in the supply chain and actions taken	2-5 Sustainable Supply Chain Management			●	
401 Employment (Major Topic)					
Management Approach (p15/111)	Location	Page number/or URL	Note/Omission	External Assurance	
401-1 New employee hires and employee turnover	4-2-1 Human Resource	p111		●	

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401 Employment (Major Topic)				
Management Approach (p15/111)	Location	Page number/or URL	Note/Omission	External Assurance
401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	4-2-2 Compensation and Benefits	p116		●
401-3 Parental leave	4-2-2 Compensation and Benefits	p116		●
403 Occupational Health and Safety (Major Topic)				
Management Approach (p15/134)	Location	Page number/or URL	Note/Omission	External Assurance
403-1 Workers representation in formal joint management-worker health and safety committees	4-3-2 Safe Work Environment	p134		●
403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	4-3-2 Safe Work Environment	p134		●
403-3 Workers with high incidence or high risk of diseases related to their occupation	4-3-2 Safe Work Environment	p134		●
403-4 Health and safety topics covered in formal agreements with trade unions	4-3-2 Safe Work Environment	p134		●
404 Training and Education (Major Topic)				
Management Approach (p15/111)	Location	Page number/or URL	Note/Omission	External Assurance
404-1 Average hours of training per year per employee	4-2-3 Education and Training	p119		●
404-2 Programs for upgrading employee skills and transition assistance programs	4-2-3 Education and Training	p119		●
404-3 Percentage of employees receiving regular performance and career development reviews	4-2-3 Education and Training	p119		●
414 Supplier Social Assessment (Major Topic)				
Management Approach (p15/49)	Location	Page number/or URL	Note/Omission	External Assurance
414-1 New suppliers that were screened using social criteria	2-5 Sustainable Supply Chain Management	p49		●
414-2 Negative social impacts in the supply chain and actions taken	2-5 Sustainable Supply Chain Management	p49		●
418 Customer Privacy (Major Topic)				
Disclosures(p15/41)	Location	Page number/or URL	Note/Omission	External Assurance
418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	2-3-1 Protecting Customer Assets	p42	There were no cases during the reporting period.	●
419 Socioeconomic Compliance (Major Topic)				
Management Approach (p15/31)	Location	Page number/or URL	Note/Omission	External Assurance
419-1 Non-compliance with laws and regulations in the social and economic area	2-1-6 Legal Compliance	p31		●
Others : Innovation Management (Major Topic)				
Management Approach (p15/33)	Location	Page number/or URL	Note/Omission	External Assurance
Innovative new products and technologies	2-2 Innovation Management	p33		●
202 Market Presence (Secondary Topic)				
Topic-specific disclosures	Location	Page number/or URL	Note/Omission	External Assurance
202-1 Ratios of standard entry level wage by gender compared to local minimum wage	4-2-2 Compensation and Benefits	p116		●
202 Market Presence (Secondary Topic)				
Topic-specific disclosures	Location	Page number/or URL	Note/Omission	External Assurance
202-2 Proportion of senior management hired from the local community	4-2-1 Human Resource	p111		●
402 Labor/Management Relations (Secondary Topic)				
Topic-specific disclosures	Location	Page number/or URL	Note/Omission	External Assurance
402-1 Minimum notice periods regarding operational changes	4-1 Labor Rights 4-1-1 Human Rights	p104 p104		●
405 Diversity and Equal Opportunity (Secondary Topic)				
Topic-specific disclosures	Location	Page number/or URL	Note/Omission	External Assurance
405-1 Diversity of governance bodies and employees	4-2-1 Human Resource	p111		●
405-2 Ratio of basic salary and remuneration of women to men	4-2-2 Compensation and Benefits	p106		●
406 Non-discrimination (Secondary Topic)				
Topic-specific disclosures	Location	Page number/or URL	Note/Omission	External Assurance
406-1 Incidents of discrimination and corrective actions taken	4-1-1 Human Rights	p104	None for discriminatory incidents.	●
407 Freedom of Association and Collective Bargaining (Secondary Topic)				
Topic-specific disclosures	Location	Page number/or URL	Note/Omission	External Assurance
407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	4-1-1 Human Rights	p104		●
408 Child Labor (Secondary Topic)				
Topic-specific disclosures	Location	Page number/or URL	Note/Omission	External Assurance
408-1 Operations and suppliers at significant risk for incidents of child labor	4-1-1 Human Rights	p104		●
409 Forced or Compulsory Labor (Secondary Topic)				
Topic-specific disclosures	Location	Page number/or URL	Note/Omission	External Assurance
409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	4-1-1 Human Rights	p104		●
412 Human Rights Assessment (Secondary Topic)				
Topic-specific disclosures	Location	Page number/or URL	Note/Omission	External Assurance
412-1 Operations that have been subject to human rights reviews or impact assessments	4-1-1 Human Rights	p104		●
412-2 Employee training on human rights policies or procedures	4-1-1 Human Rights	p104		●
412-3 Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening			No significant investment agreements and contracts were signed during the reporting period.	
413 Local Communities (Secondary Topic)				
Topic-specific disclosures	Location	Page number/or URL	Note/Omission	External Assurance
413-1 Operations with local community engagement, impact assessments, and development programs	3-1-4 Promoting the "Green" concept 4-4 Community Service	p69 p140		●
413-2 Operations with significant actual and potential negative impacts on local communities	3-1-4 Promoting the "Green" concept 4-4 Community Service	p69 p140		●

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416 Customer Health and Safety (Secondary Topic)				
Topic-specific disclosures	Location	Page number/or URL	Note/Omission	External Assurance
416-1 Assessment of the health and safety impacts of product and service categories	3-5-1 Hazardous Substance Management	p98		●
416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	2-1-6 Legal Compliance	p31	No non-compliance with laws and regulations occurred during the reporting period.	●
Others: Customer Service (Secondary Topic)				
Topic-specific disclosures	Location	Page number/or URL	Note/Omission	External Assurance
Improving Service Quality and Customer Satisfaction	2-3 Customer Service	p41		●
Others: Environmental Management (Secondary Topic)				
Topic-specific disclosures	Location	Page number/or URL	Note/Omission	External Assurance
Environmental management system progress and outcome	3-1 Clean Production	p65		●
Others: Chemical Use (Secondary Topic)				
Topic-specific disclosures	Location	Page number/or URL	Note/Omission	External Assurance
Hazardous substance management and reduction outcome	3-5-1 Hazardous Substance Management	p98		●
Others: Employee Communication (Secondary Topic)				
Topic-specific disclosures	Location	Page number/or URL	Note/Omission	External Assurance
Employee communication, support and solidarity	4-1-2 Employer-employee Communication	p107		●

	Core Subjects and Issues	Related CSR Report Section	Page(s)
Labor practices	Employment and employment relationships Conditions of work and social protection Social dialogue Health and safety at work Human development and training in the workplace	4-2 Recruitment and Cultivation 4-1 Human Rights 4-3 Healthy and Safe Workplace 1-2 Communication with the Stakeholders 4-1-2 Employer-employee Communication 4-3-1 Healthy Workplace 4-3-2 Safe Work Environment 4-2-3 Education and Training	p111 p104 p127 p13 p107 p127 p134 p119
The environment	Prevention of pollution Sustainable resource use Climate change mitigation and adaptation Protection of the environment, biodiversity and restoration of natural habitats	3-1 Clean Production 3-2-3 Greenhouse Gas Reduction and Energy Management 3-3-4 Water Pollution Control 3-4 Waste Management 3-1 Clean Production 3-2-3 Greenhouse Gas Reduction and Energy Management 3-3-3 Water Conservation During Manufacturing 3-4-2 Promotion of the Circular Economy 3-2 Carbon Asset Management 3-3 Water Risk Management 3-1-4 Promoting the Green Concept	p65 p77 p89 p95 p65 p77 p86 p93 p73 p83 p69
Fair operating practices	Anti-corruption Responsible political involvement Fair competition Promoting social responsibility in the value chain Respect for property rights	2-1-5 Code of Ethics and Anti-Corruption UMC did not provide any political donations in the reporting year. 4-1-1 Human Rights 2-5 Sustainable Supply Chain Management 2-1-6 Legal Compliance	p29 p29 p104 p49 p31
Consumer issues	Fair marketing, factual and unbiased information and fair contractual practices Protecting consumers' health and safety Sustainable consumption Consumer service, support, and complaint and dispute resolution Consumer data protection and privacy Access to essential services Education and awareness	2-1 Corporate Governance 3-5 Green Product 2-5 Sustainable Supply Chain Management 2-5-3 Conflict Minerals Management 2-3 Customer Service 2-3 Customer Service 2-3 Customer Service 2-3 Customer Service	p23 p97 p49 p59 p41 p41 p41
Community involvement and development	Community involvement Education and culture Employment creation and skills development Technology development and access Wealth and income creation Health Social investment	4-4 Community Service 4-2-4 Cultivating Prospective Talents 4-4-1 Community Service Participation 2-2 Innovation Management 4-2 Recruitment and Cultivation 4-2-4 Cultivating Prospective Talents 2-2 Innovation Management 4-4 Community Service 4-4 Community Service 4-4-2 Promotion of UMC Volunteer Culture 4-4 Community Service	p140 p125 p140 p33 p111 p125 p33 p140 p140 p143 p140

Appendix III: ISO 26000 Index

	Core Subjects and Issues	Related CSR Report Section	Page(s)
Organizational governance	Decision-making processes and structures	Sustainable Development Strategy and Organization 2-1 Corporate Governance	p09 p23
Human rights	Due diligence Human rights risk situations Avoidance of complicity Resolving grievances Discrimination and vulnerable groups Civil and political rights Economic, social and cultural rights Fundamental principles and rights at work	2-5 Sustainable Supply Chain Management 4-1-1 Human Rights 2-5 Sustainable Supply Chain Management 4-1-1 Human Rights 2-1 Corporate Governance 4-1-1 Human Rights 2-1-5 Code of Ethics and Anti-Corruption 4-1-1 Human Rights 4-1-2 Employer-employee Communication 4-1-1 Human Rights 4-4 Community Service 4-1 Labor Rights	p49 p104 p49 p104 p23 p104 p29 p104 p107 p104 p104 p140 p140 p140

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Category	10 Principles	Related CSR Report Section	Page(s)	Category	10 Principles	Related CSR Report Section	Page(s)
Human Rights	Businesses should support and respect the protection of internationally proclaimed human rights. Make sure that they are not complicit in human rights abuses.	4-1 Labor Rights 2-5 Sustainable Supply Chain Management 4-1 Labor Rights	p104 p49 p104	Environment	Businesses should support a precautionary approach to environmental challenges. Undertake initiatives to promote greater environmental responsibility.	3 Environmentally Friendly Management 3 Environmentally Friendly Management	p61 p61
Labor	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining. The elimination of all forms of forced and compulsory labor. The effective abolition of child labor. The elimination of discrimination in respect of employment and occupation.	4-1 Labor Rights 4-1 Labor Rights 4-1 Labor Rights 4-1 Labor Rights	p104 p104 p104 p104	Encourage the development and diffusion of environmentally friendly technologies.	2-2 Innovation Management 3-5 Green Product	p33 p97	
Anti-Corruption	Businesses should work against corruption in all its forms, including extortion and bribery.				2-1-5 Code of Ethics and Anti-Corruption		p29

Appendix V: Assurance Statement

SGS ASSURANCE STATEMENT

SGS TAIWAN LTD.'S REPORT ON SUSTAINABILITY ACTIVITIES IN THE UNITED MICROELECTRONICS CORPORATION'S CORPORATE SOCIAL RESPONSIBLE REPORT FOR 2017

NATURE AND SCOPE OF THE ASSURANCE/VERIFICATION
SGS Taiwan Ltd. (hereinafter referred to as SGS) was commissioned by UNITED MICROELECTRONICS CORPORATION (hereinafter referred to as UMC) to conduct an independent assurance of the Corporate Social Responsibility Report for 2017 (hereinafter referred to as CSR Report). The scope of the assurance, based on the SGS Sustainability Report Assurance methodology, included the text, and data in accompanying tables, contained in this report.

The information in the UMC's CSR Report of 2017 and its presentation are the responsibility of the management of UMC. SGS has not been involved in the preparation of any of the material included in UMC's CSR Report of 2017.

Our responsibility is to express an opinion on the text, data, graphs and statements within the scope of verification with the intention to inform all UMC's stakeholders.

The SGS protocols are based upon internationally recognized guidance, including the Principles contained within the Global Reporting Initiative Sustainability Reporting Standards (GRI Standards) 101: Foundation 2016 for accuracy and reliability and the guidance on levels of assurance contained within the AA1000 series of standards and guidance for Assurance Providers.

This report has been assured using our protocols for:

- evaluation of content veracity at a high level of scrutiny for UMC and moderate level of scrutiny for subsidiaries, joint ventures, and applicable aspect boundaries outside of the organization covered by this report;
- AA1000 Assurance Standard (2008) Type 2 evaluation of the report content and supporting management systems against the AA1000 Accountability Principles (2008); and
- evaluation of the report against the Global Reporting Initiative Sustainability Reporting Standards (2016)

The assurance comprised a combination of pre-assurance research, interviews with relevant employees, superintendents, CS committee members and the senior management in Taiwan; documentation and record review and validation with external bodies and/or stakeholders where relevant. Financial data drawn directly from independently audited financial accounts has not been checked back to source as part of this assurance process.

STATEMENT OF INDEPENDENCE AND COMPETENCE
The SGS Group of companies is the world leader in inspection, testing and verification, operating in more than 140 countries and providing services including management systems and service certification; quality, environmental, social and ethical auditing and training; environmental, social and sustainability report assurance. SGS affirm our independence from UMC, being free from bias and conflicts of interest with the organisation, its subsidiaries and stakeholders.

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The assurance team was assembled based on their knowledge, experience and qualifications for this assignment, and comprised auditors registered with ISO 26000, ISO 10212, ISO 50001, SA8000, EICC, QMS, EMS, SMS, GPMS, CFP, WFP, GHG Verification and GHG Validation Lead Auditors and experience on the SRA Assurance service provisions.

VERIFICATION/ASSURANCE OPINION
On the basis of the methodology described and the verification work performed, we are satisfied that the information and data contained within UMC's CSR Report of 2017 verified is accurate, reliable and provides a fair and balanced representation of UMC sustainability activities in 01/01/2017 to 12/31/2017.

The assurance team is of the opinion that the Report can be used by the Reporting Organisation's Stakeholders. We believe that the organisation has chosen an appropriate level of assurance for this stage in their reporting. In our opinion, the contents of the report meet the requirements of GRI Standards in accordance with Comprehensive Option and AA1000 Assurance Standard (2008) Type 2, High level assurance.

AA1000 ACCOUNTABILITY PRINCIPLES (2008) CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

Inclusivity
UMC has demonstrated a good commitment to stakeholder inclusivity and stakeholder engagement. A variety of engagement efforts such as survey and communication to employees, customers, investors, suppliers, CSR experts, and other stakeholders are implemented to underpin the organization's understanding of stakeholder concerns. For future reporting, UMC may proactively consider having more direct two-ways involvement of stakeholders during future engagement.

Materiality
UMC has established effective processes for determining issues that are material to the business. Formal review has identified stakeholders and those issues that are material to each group and the report addresses these at an appropriate level to reflect their importance and priority to these stakeholders.

Responsiveness
The report includes coverage given to stakeholder engagement and channels for stakeholder feedback.

GLOBAL REPORTING INITIATIVE REPORTING STANDARDS (2016) CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

The report, UMC's CSR Report of 2017, is adequately in line with the GRI Standards in accordance with Comprehensive Option. The material aspects and their boundaries within and outside of the organization are properly defined in accordance with GRI's Reporting Principles for Defining Report Content. Disclosures of identified material aspects and boundaries, and stakeholder engagement, GRI 102-40 to GRI 102-47, are correctly located in content index and report. Methods for identifying direct input from stakeholders aiming to understand the full picture of UMC's significant external impacts on the economy, environment, and society are encouraged. For future reporting, it is recommended to have more descriptions of UMC's criteria used for nominating and selecting highest governance body members.

Signed:
For and on behalf of SGS Taiwan Ltd.

David Huang, Director
Taipei, Taiwan
24 May, 2018
WWW.SGS.COM

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Corporate Social Responsibility Report:<http://www.umc.com/English/CSR/b.asp>