

# UMC

Corporate Sustainability Report

United  
for  
Excellence

**2013**  
Corporate Sustainability Report  
**CS REPORT**



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## CEO Message

To all our friends who care about UMC sustainability:

In 2013, the global economy was still influenced by factors such as unresolved European debt issues, the US government's QE reduction, and China's economic slowdown. However, UMC still grew at a steady pace and continued to improve in various aspects, such as corporate governance, environmental protection, human rights, charity, etc., to achieve sustainable development. These efforts have proved fruitful as UMC was listed as a Dow Jones Sustainability Index (DJSI) stock component for its sixth consecutive year in 2013. This achievement once again demonstrates that UMC's sustainable performance has gained international recognition on par with other leading global corporations.

With regard to Corporate Governance, we established a capital expenditure budgeting committee in 2013 to complement the existing compensation and audit committees to form a continuous, effective supervisory mechanism. Through positive interaction and checks and balances between the Board of Directors and management team, information transparency is enhanced and shareholders' rights and interests are protected, while company efficiency is improved.

As for industrial safety & environmental protection, through long-term efforts and innovation, UMC continuously demonstrates its excellence leadership. In 2013, UMC became the only semiconductor manufacturer to obtain cleaner production certification for all its local manufacturing facilities. UMC was also the first Taiwanese company to be listed as a Climate Performance Leadership Index (CPLI) component by Carbon Disclosure Project (CDP), and was also the first foundry to receive ISO 22301 certification for its business continuity management system. Moreover, UMC completed Taiwan's first EPA-accredited carbon credit trade.

UMC has always placed great emphasis on human rights and charity. We prioritize employee working rights and talent cultivation, with special attention to work-life balance, labor-management communications, and professional training enhancement. Besides that, we encourage managers to lead employees to participate in charity activities altogether. We believe that devotion is self-actualization, which brings good will and is positive for team building.

*Do-zen Yen*

CEO and CS Committee Chairman

UMC is not only sustainable, but eco-friendly. Starting in 2014, we have extended our environmental protection activities from industry to eco-conservation. We kick-offed our ecosystem conservation project on Earth Day by appropriating carbon credit trade gains toward environmental conservation work, demonstrating our commitment to pursue a sustainable environment and starting the new eco-conservation era for UMC.



## Reporting Principles

In order to achieve sustainable development, the company must balance three elements: economic, environmental, social. Starting from 2013, UMC replaced the annual corporate social responsibility report with the corporate sustainability report. This report is the first corporate sustainability report issued by UMC, and also the fourteenth public non-financial sustainability report. Through this report, UMC presents its ideas and achievements in sustainable development and discloses its progress on corporate social responsibility in an accountable, transparent and sustainable way.

### ► Scope

The information revealed in this report covers UMC's performance and data surrounding environmental protection, corporate governance and social participation during the period from January 1, 2013 to December 31, 2013, and major events through March 31, 2014. The scope of this report covers information from UMC company headquarters, manufacturing sites in Taiwan, Singapore and some parts of information from the subsidiary Hejian fab in China.

### ► Reporting Guidelines and Principles

The structure and contents of this report reflect UMC's visions on corporate sustainability and the interests of its stakeholders. The report is aligned with the Global Reporting Initiative (GRI) G3.1 Sustainability Reporting Guidelines and follows the AA1000 standards to assure that UMC complies with the principles of inclusivity, materiality and responsiveness. Financial data in the financial report is certified by the CPA. For GHG inventory and reduction data, please refer to chapter 3.

### ► Report Assurance

In April, 2014, SGS Taiwan Ltd. verified that the report conforms to GRI G3.1 application level A+ and AA1000 Assurance Standard type II high level of assurance. An assurance statement is attached in the appendix of this report.

### ► Report Publication

2013 CS Report issue: June 2014

2014 CS Report issue: June 2015

This paperless report is published on UMC's website to demonstrate our company's support of the environment.

### ► Your Feedback

If you have any suggestions or comments regarding our CS report, please send them along with your contact information to:

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## 2013 Sustainability Performance

### Important achievements in 2013

<p>UMC Selected as a DJSI Global Component for Sixth Consecutive Year</p> 	<p>First Taiwan company to win the 7th National Industrial Safety &amp; Health Award.</p> 	<p>Ranked 6th in Common Wealth Magazine's Corporate Citizenship Award among large-scale enterprises, which evaluates over 2,000 companies from various categories in Taiwan.</p> 	<p>First Taiwan foundry to acquire AEO certification.</p> <p><b>AEO</b></p>	<p>AltoBeam and UMC successfully demonstrated the DVB-T2/T/C/S2/S demodulator.</p> 
<p>First Taiwanese company listed on CDP's Climate Performance Leadership Index (CPLI). Received Taiwan's CSR award for excellence in sustainability.</p> 	<p>Synopsys and UMC collaborated to accelerate development of UMC's 14-nm FinFET process.</p> 	<p>Joined IBM chip alliance for 10nm process development.</p> 	<p>Expanded global service network with Korea office.</p> 	<p>Received Six Sigma Quality Award from IML.</p> 
<p>Kilopass and UMC collaborated for advanced 28 nm IP.</p> 	<p>Established its Specialty Technology Center of Excellence in Singapore.</p> 	<p>Formed the 8th UMC Fire Brigade.</p> 	<p>Announced resource and energy productivity improvement goals.</p> 	<p>First foundry to receive ISO 22301 BCM certification.</p> 
<p>Spanion and UMC announced joint technology development and licensing agreement.</p> 	<p>Received 2012 Best Supplier Award from Lantiq.</p> 	<p>STATS ChipPAC and UMC unveiled world's first 3D IC developed under an open ecosystem model.</p> 	<p>Faraday and UMC delivered 300 million gate 40nm customer SoC.</p> 	<p>Introduced thick plated copper process for monolithic PMIC applications.</p> 

### Sustainability Awards

#### Dow Jones Sustainability Indices (DJSI)

Selected as a DJSI global component for the sixth consecutive year.  
Selected as a DJSI Emerging Markets indices.



#### Dow Jones Sustainability Indices (DJSI)

Received RobecoSAM's silver class sustainability award.



#### Taiwan Corporate Sustainability Award

Received the Taiwan Institute for Sustainable Energy's Corporate Social Responsibility (CSR) award for excellence in sustainability.  
for excellence in climate leaders.  
for excellence in social harmony.



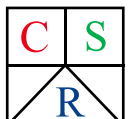
#### Carbon Disclosure Project (CDP)

Achieved a disclosure score of 91 in the Carbon Disclosure Project (CDP).  
Achieved grade A performance band in the Carbon Disclosure Project (CDP).



#### Commonwealth CSR Award

Received the "Corporate Citizenship Award" from Common Wealth Magazine



## ► 2013 Sustainable Performance

### Economic Performance

#### Profitability

6.16% ROE (return on equity) 6.16%  
An increase of 100% compared to 2012.

1.01 EPS (earnings per share) 1.01  
An increase of 100% compared to 2012.



#### Operational Performance

82.3% capacity utilization. 82.3%  
82.1% capacity utilization target reached.

109.38 billion NTD 1093.8  
109.38 billion NT dollars revenue generation.  
An increase of 3.2% compared to 2012.



### Environmental Performance

#### Climate and Energy Management

1.57% reduction of electricity. 1.57%  
1% reduction target reached.  
34,499 Mwh of electricity reduced.  
93 million NT dollars cost saving.

32% reduction of normalized FCs emission. 32%  
10.8% reduction target reached.  
23 million NT dollars cost saving.

1<sup>st</sup> 1<sup>st</sup>  
1st EPA-accredited carbon credit trade in Taiwan.

2,873 thousand tons of carbon credit. 287.3  
UMC received greenhouse gases early reduction credits  
from 2000 to 2011.



#### Innovation and Development of Advanced Technologies

10,450 patents owned. 10,450  
232 domestic and foreign patents obtained.

100% 100%  
100% increase in production capacity for 28nm and below processes.

1<sup>st</sup> 1<sup>st</sup>  
1st 3D IC developed under an open ecosystem  
model.



#### Operation Management

1<sup>st</sup> 1<sup>st</sup>  
1st foundry to receive ISO 22301 BCM certification.

1<sup>st</sup> 1<sup>st</sup>  
1st Taiwan foundry to acquire AEO certification.



#### Supply Chain Management

2100 suppliers 2100  
2100 suppliers and UMC committed to jointly  
work towards a sustainable society.



#### Water Resource Management

4% reduction of water. 4%  
2% reduction target reached.  
518,739 tons of water reduced.  
13 million NT dollars cost saving.

24.91 million tons water recycling 24.91  
equivalent to conserving 0.79 of Pao-Shan Second Reservoir's water  
storage capacity.

110 tons ammonia nitrogen reduction. 110  
13% ammonia & 5.5% developer solution reduction target reached.  
163 million NT dollars cost saving.



#### Waste Management

5% reduction of waste. 5%  
3.5% reduction target reached.  
1,198 tons of waste reduced.  
4 million NT dollars cost saving.

90% waste recycling. 90%  
4.5 million NT dollars revenue generation.



#### Environmental Management

100% 100%  
100% fabs in Taiwan passed "Clean Environment Certification".  
All fabs passed ISO 14001, ISO 14064 and QC080000 certification.

11<sup>th</sup> consecutive year selected as Enterprises  
Environmental Award of the Republic of China.



## Social Performance

### Training & Development

92.9%  
Overall Satisfaction of training  
279,326 participants attended 9,050 classes in 2013. The overall satisfaction rate was 92.9%. The satisfaction rate regarding the lecturer and materials was 92.8%

96.3%  
7 Habits of Highly Effective People (Manager) Completion Rate

94.3%  
The 7 Habits of Highly Effective People Completion Rate  
In order to enhance the business core values, especially accountability, UMC has been conducting the "7 Habits of Highly Effective Managers" class since 2011. It is now a common language in UMC, from the top managers to the basic level employees. The "7 Habits of Highly Effective Managers" class teaches the concept of "team-accountability" to UMC managers and "self-accountability" to UMC staff



### Social Participation

85%  
Volunteer(employee) Service Hour increase 85%  
The volunteer service hour in 2013 is 8,528 hours, and it was 4,609 hours in 2012.



### Occupational Safety and Health Protection

0  
major occupational accidents  
The disabling frequency rate (FR) and the disabling severity rate (SR) were 0.06 and 1.61 respectively in 2013, and both were far below the average rate in Taiwan semiconductor industries..

1<sup>st</sup>  
corporation to wins the National Industrial Safety & Health Award twice.



### Welfare

100%  
Certificated  
All sites obtain "DOH Bureau of Health Promotion Independent Certification Mark" because of promoting a non-smoking workplace and healthy activities in every site.

1<sup>st</sup>  
Welfare Mobile APP  
UMC is the first corporation to provide employees' welfare information by mobile, using a new APP platform.

100%  
Healthy Workplace completion Rate  
Provide a work-life balance and a healthy workplace for employees.

95.3%  
Satisfaction of Healthy Activities



### Labor-Management Communication

0  
Labor-Management controversy  
Build a strong relation between company management and employees by positive communication.

100%  
Communication Meetings Completion Rate  
138 communication meetings in 2013, including 4 corporate forums, 84 on-site consultation meetings, 8 secretary forums, 36 labor-management meetings and 6 employee welfare committee conferences.

100%  
eSuggestion Completion Rate

<5  
EICC Labor and Ethics risk  
EICC labor/ethics risk incidents were below 5 in 2013.

89.4%  
Organizational Commitment  
2013 Organizational Commitment 89.4%

71.1%  
Return Rate from unpaid parental leave



## About UMC

### ► Company Profile

UMC is a leading global semiconductor foundry that provides advanced technology and manufacturing for applications spanning every major sector of the IC industry. UMC's robust foundry solutions allow chip designers to leverage the company's leading-edge processes as well as specialty technologies to increase our customers' competitiveness.

Name	United Microelectronics Corporation (UMC)
Founded	May 1980
Headquarter	No.3, Li-Hsin 2nd Road, Hsinchu Science Park, Hsinchu, Taiwan, R.O.C.
Total Capital	NTD 260 billion
Number of Employees	More than 16,000 people worldwide
Major Business	Full-service semiconductor wafer foundry
Current Products and Services	UMC provides a variety of services to fit customer needs, including advanced process technology, silicon intellectual property (IP), IC design support, design verification, mask tooling, wafer fabrication and testing

### ► Firm Taiwan Roots, Global Presence

UMC plays an important role in Taiwan's semiconductor industry, being Taiwan's first IC manufacturing company and the first semiconductor company to list on Taiwan's stock exchange (1985). UMC's innovative employee incentive programs include Taiwan's first Employee Stock Ownership program, recognized as the main catalyst for the rapid and successful development of Taiwan's electronics industry.

UMC currently employs over 16,000 people worldwide, in Taiwan, Japan, China, Singapore, Korea, Europe and the United States to service the needs of our global customers. UMC remains committed to providing customers with world leading processes and comprehensive foundry solutions to enable customers to continue to build competitive advantages in a rapidly changing industry.





## Fab operations Taiwan, Singapore and China



### Fab 6A

Process: 3.5um - 0.45um  
Design Capacity: 50,000 wafers/month  
Wafer Size: 6"  
Location: Hsin-Chu, Taiwan



### Fab 8D

Process: 0.13um - 90nm  
Design Capacity: 32,000 wafers/month  
Wafer Size: 8"  
Location: Hsin-Chu, Taiwan



### Fab 8S

Process: 0.18 - 0.11um  
Design Capacity: 25,000 wafers/month  
Wafer Size: 8"  
Location: Hsin-Chu, Taiwan



### Fab 8N

Process: 0.5um - 0.13um  
Design Capacity: 50,000 wafers/month  
Wafer Size: 8"  
Location: Suzhou, China



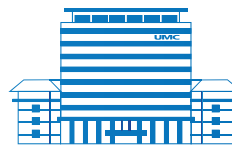
### Fab 8AB

Process: 0.5um - 0.25um  
Design Capacity: 70,000 wafers/month  
Wafer Size: 8"  
Location: Hsin-Chu, Taiwan



### Fab 8E

Process: 0.5um - 0.18um  
Design Capacity: 35,000 wafers/month  
Wafer Size: 8"  
Location: Hsin-Chu, Taiwan



### Fab 12A (12-inch Fab)

Process: 0.18 - 28nm  
Design Capacity: 55,000 wafers/month  
Wafer Size: 12"  
Location: Tainan, Taiwan



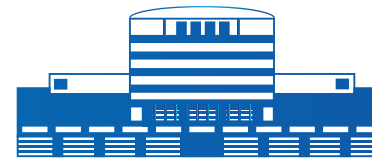
### Fab 8C

Process: 0.35um - 0.11um  
Design Capacity: 29,000 wafers/month  
Wafer Size: 8"  
Location: Hsin-Chu, Taiwan



### Fab 8F

Process: 0.18 - 0.11um  
Design Capacity: 32,000 wafers/month  
Wafer Size: 8"  
Location: Hsin-Chu, Taiwan



### Fab 12i (12-inch Fab)

Process: 0.13um - 40nm  
Design Capacity: 45,000 wafers/month  
Wafer Size: 12"  
Location: Singapore

## Company History

- 1980 /05 UMC established
- 1985 /07 Became the First IC Company to list on the Taiwan Stock Exchange
- 1995 /07 Transformed into a pure-play wafer foundry
- /09 200mm fab began production
- 1999 /11 Construction of 300mm fab began in Tainan Science Park
- 2000 /03 Shipped first foundry chips using copper process
- /09 Made its debut on the New York Stock Exchange
- /12 Announced plan to establish advanced 300 mm foundry (UMCi) in Singapore
- 2004 /05 90-nanometer full qualification and volume production
- /12 Fully acquired its subsidiary UMCi and renamed into Fab 12i
- 2006 /06 Became first IC Company to achieve QC080000 IECQ HSPM qualification for all fabs
- 2007 /01 Expanded advanced technology complex in Tainan Science Park
- 2008 /09 Named as a Global Index Component for Dow Jones Sustainability Indexes
- 2009 /12 Fully acquired Japan subsidiary UMCJ
- 2010 /05 Celebrated 30th anniversary
- 2011 /11 Shipment of 45/40nm wafers exceeded 90,000
- 2012 /05 Held groundbreaking ceremony for Fab 12A Phase 5 & 6
- 2013 /03 Acquired Hejian Fab based in Suzhou, China
- /12 Designated Singapore Fab 12i as Specialty Technology Center of Excellence

## Leadership



**Stan Hung**  
Chairman



**Shih-Wei Sun**  
Vice Chairman

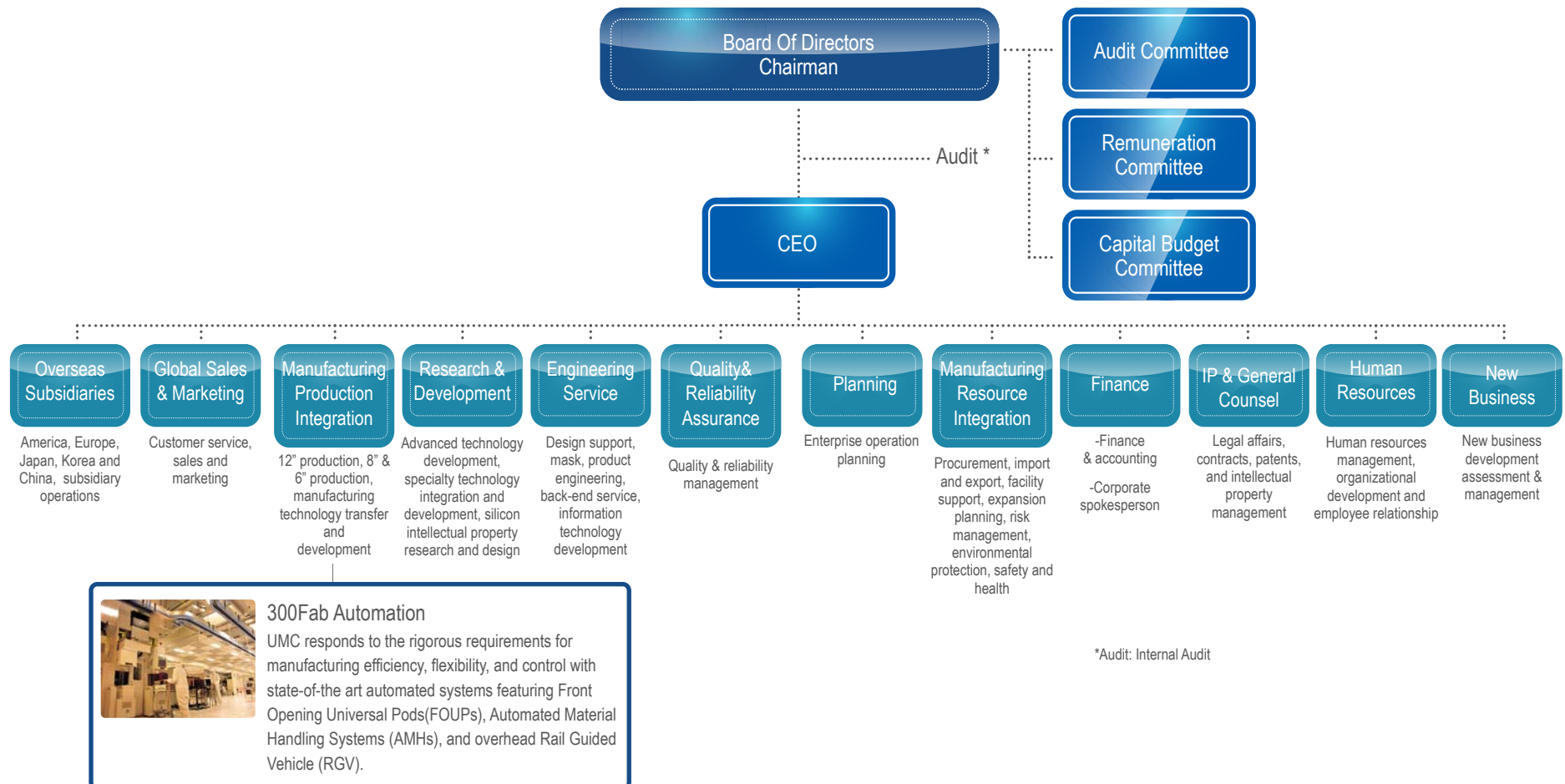


**Po Wen Yen**  
Chief Executive Officer



**Peter Courture**  
Senior Vice President, and  
General Counsel

## Organization Chart



## Memberships in associations

Group/organization/association	Membership	Project or committee participation
Business Council for Sustainable Development of Taiwan (BCSD)	●	
Taiwan Semiconductor Industry Association (TSIA)	●	●
Association of Industries in Science Parks (ASIP)	●	●
Taiwan Electrical and Electronic Manufacturers' Association (TEEMA)	●	
Chinese Professional Management Association (CPMA)	●	
Semiconductor Equipment and Materials International (SEMI Taiwan)		●
Global Semiconductor Alliance (GSA)	●	●

## Core Values



## Sustainable development strategy

### ► Sustainable Commitment

UMC has been promoting social responsibility based on the three concepts of “caring for employees, the environment and the general public” to realize the vision “To advance the global eco-friendly movement by enhancing the value chain through people orientation, environmental co-existence and social responsibility”. Thus, the mission of UMC is defined as “To achieve sustainable growth while supporting our customers through green innovation and corporate responsibility”.

#### VISION

To advance the global eco-friendly movement by enhancing the value chain through people orientation, environmental co-existence and social responsibility.

#### MISSION

To achieve sustainable growth while supporting our customers through green innovation and corporate responsibility

### ► Sustainable Policies

Corporate sustainable development covers three areas that support and influence each other economic, environmental and social conduct development. UMC hopes to achieve long-term sustainable development through the implementation of long-term planning and strategies.

The policies of UMC have been formulated based on the belief of pursuing sustainable corporate development, building long-term partnerships with customers and the society, fulfilling corporate social responsibility, and maintaining advanced standards in safety and hygiene. UMC also endorses and respects International Labor Office Tripartite Declaration of Principles, the OECD Guidelines for Multinational Enterprises, UN Universal Declaration of Human Rights and acts in accordance with the Electronic Industry Code of Conduct (EICC) and the UN Global Compact, covering aspects such as human rights, employee treatment, work environment safety, anti-corruption and environmental protection. UMC seeks mutual enhancement in both corporate and social competitiveness and hopes to influence the society towards building a global eco-friendly environment.

#### ● Corporate Core Competitiveness and Corporate Social Responsibility equally emphasized

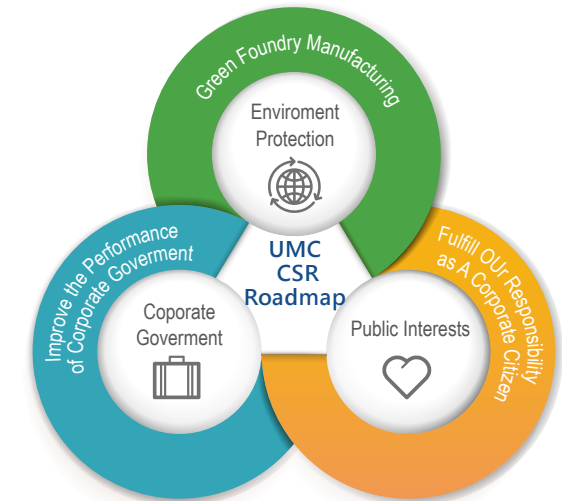
Based on the four competitive advantages of “Independent R&D capability”, “Excellent manufacturing capability”, “Capable employees” and “Sound financial structure”, as well as the five business cultures of “customer orientation”, “integrity”, “innovation”, “accountability” and “efficiency” that have 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:

Economic : Continue to improve corporate governance

Environment : Dedicate itself to manufacturing green wafers

Social : Fulfill corporate social responsibilities

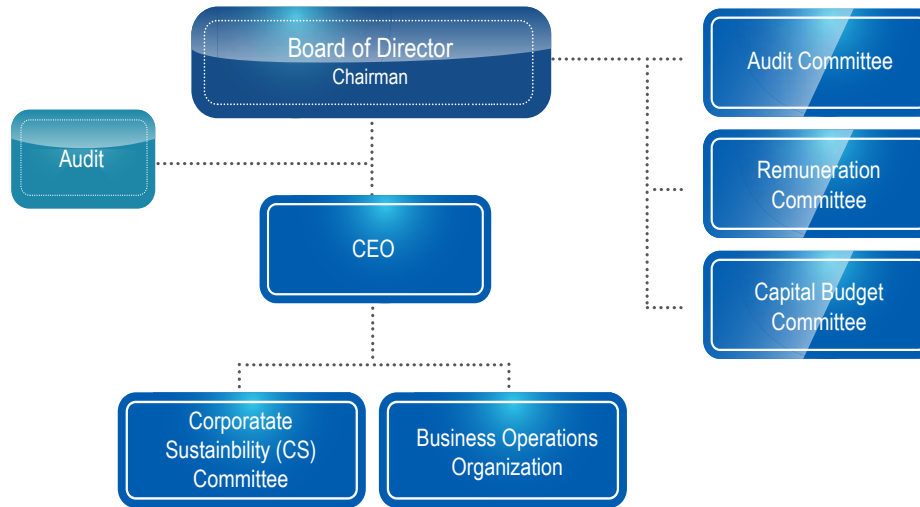


### ► Sustainable Organization

The structure of UMC’s sustainable organization, consists of the board of directors headed by the chairman. The board directs the “Business Operations Organization” and “Corporate Sustainability (CS) Committee”, both of which are headed by the CEO. The execution of sustainable policies is carried out from the top-down, and an audit committee oversees the execution. The “Audit Committee”, “Remuneration Committee” and “Capital Budget Committee” enhance the capabilities of the board and strengthens corporate governance. “Business 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.



## Organization and operations of the CS Committee



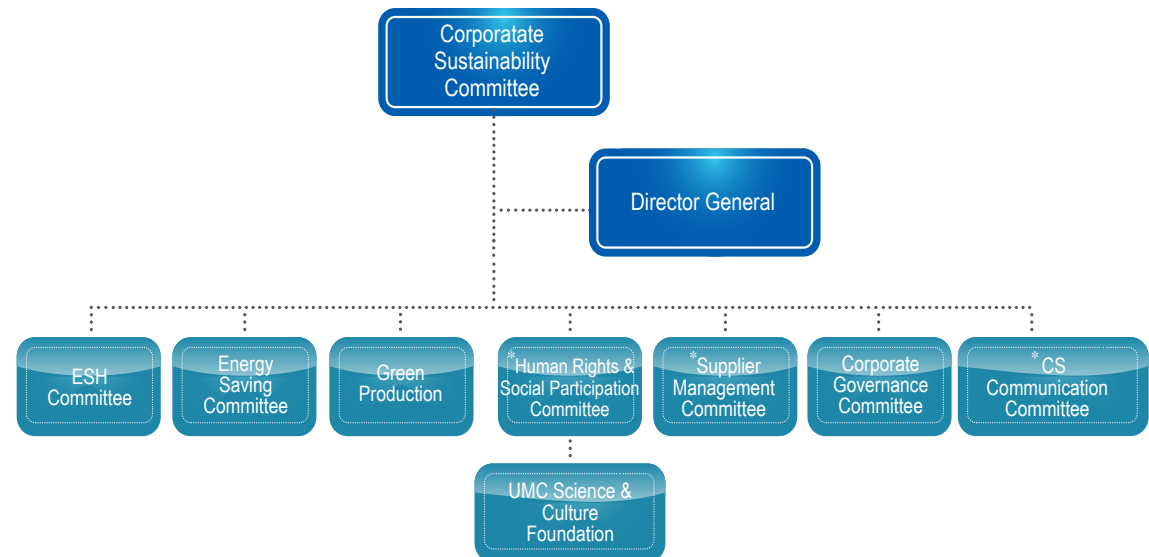
## Business Operations Organization vs. CS Committee

- 01 The CEO (one of the board members) acts as chairman in the CS Committee.
- 02 Six high ranking officials including the CFO and CHO represent core members.
- 03 First-level officials represent the chief secretaries of various committees.

## Organization and Functions

As the committee of highest importance in charge of UMC's corporate social responsibility, the CS committee coordinates all affairs relevant to CSR and sustainable development. The chairman and the committee members regularly review the performance and progress of all sub-committees.

There are seven sub-committees under the CS committee: Corporate Governance, ESH (Environment, Safety & Health), Energy Saving, Green Production, Human Rights & Social Participation, Supplier Management and CS Communication committees.



To meet the operational needs of the organization, the Supplier Management Sub-Committee and the CS Communication Sub-Committee were established. The Social Participation Sub-Committee was changed to the Human Rights & Social Participation Sub-Committee in 2013.

## Functions of the various committees

### The Corporate Governance Sub-Committee

This sub-committee's purpose is responsible for completing and practicing corporate governance-related tasks such as internal control systems and regulations, and also to coordinate related regulations and systems regarding corporate governance. They practice UMC's core values, uphold shareholders' rights and implement information transparency and internal control.



### The Human Rights & Social Participation Sub-Committee

To protect employees' fundamental rights in conjunction with the UMC Science and Culture Foundation, this sub-committee sponsors and participates in numerous community activities related to technology development, education, academic research, childcare, environmental protection, culture, art, public interest, and sports.



### The Supplier Management Sub-Committee

To establish a protective environment and emphasize 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.



### The ESH Sub-Committee

ESH coordinates company-wide tasks relating to environmental protection, safety and health management. They also establish environmental performance indexes and manage projects related to waste reduction, resource recycling and greenhouse gas reduction. In addition, this sub-committee undergoes several activities in green manufacturing and supply chain management by working with the Green Production subcommittee.



### The Energy Saving Sub-Committee

This sub-committee cooperates externally with government agency teams in Hsinchu Science Park for water, electricity and gas efforts. Internally, they promote, supervise and implement activities in water conservation and energy saving.



### The Green Production Sub-Committee

The Green Production sub-committee manages all related tasks in green manufacturing and green products. These include maintaining and managing the QC080000 IECQ HSPM hazardous substance management system, conserving materials, and implementing hazardous substance substitution programs.



### The CS Communication Sub-Committee

The purpose of this committee is to actively promote and publicize the company's continuing achievements and activities in CS for maximum public visibility. The committee consists of both Corporate Communications and CS members



## The mode of operations and management



## Management Mechanism of the CS Committee

Management Committee	Content
Review Twice a year	Review the organization of all committees
Participants Chairman+committee members+director general+secretaries	Track the operations of all committees Define goals and plans and review execution performance
All committees	Content
Review Each quarter	Discuss and make action plans
Participants Secretaries+committee members	Track the execution
Key CS projects	Content
Review Each month	Set KPI to quantitatively measure indicator management
Participants The committee in charge	Track and review the project management system Track the progress and report the result to the management committee

# 1

## Communication with Stakeholders



**7** major stakeholders

Identifying stakeholders

Dependency, Responsibility, Influence, and Tension are the key dimensions according to the "AA1000 Stakeholder Engagement Standard".



**565** questionnaires  
Identifying stakeholders' concerns



**11** team members  
**Analysis of materiality issues**



**10** material issues

UMC sorts the materiality issues by analyzing stakeholders' concerns and business impact.



**24**  
**sustainability issues**

Collecting sustainability issues

UMC collects sustainability issues based on GRI G3.1 Guidelines, ISO 26000 Standard, UN Global Compact Initiative and Dow Jones Sustainability Index assessment contents.



**Discussion and Review**

UMC's CS committee members discuss and review the priority of sustainability issues.

## 1-1 Communication with Stakeholders

In the past 14 years, UMC has disclosed its efforts in corporate governance, environmental protection and social responsibility through non-financial reports (Environmental, Corporate Social Responsibility and Corporate Sustainability reports). In order to communicate with stakeholders effectively, UMC pays attention to stakeholders' concerns and carries out materiality analysis to decide the contents of our 2013 CS Report. The steps including (1) Identifying stakeholders (2) Collecting sustainability issues (3) Identifying stakeholders' concerns (4) Analysis of materiality issues (5) Sorting of materiality issues (6) Discussion and review.

### Major Stakeholders



### Materiality Analysis Procedures

1	Identifying stakeholders	Dependency, Responsibility, Influence, and Tension are the key dimensions according to the "AA1000 Stakeholder Engagement Standard".	7 stakeholders
2	Collecting sustainability issues	UMC collects sustainability issues based on GRI G3.1 Guidelines, ISO 26000 Standard, UN Global Compact Initiative and Dow Jones Sustainability Index assessment contents.	24 sustainability issues
3	Identifying stakeholders' concerns	UMC surveys stakeholders' concerns to understand their demand for sustainability information.	565 questionnaires
4	Analysis of materiality issues	CS committee members analyze the business impact of issues.	11 team members
5	Sorting of materiality issues	UMC sorts the materiality issues by analyzing stakeholders' concerns and business impact.	10 material issues
6	Discussion and review	UMC's CS committee members discuss and review the priority of sustainability issues.	10 material issues



## The Results of Materiality Analysis Corporate Sustainability and Planning

Topic	Issues of Concern <sup>Note1</sup>	Business Impact <sup>Note2</sup>	Results	Priority
Sustainability strategy	8.66	3.97	34.36	1
Communication with the stakeholders	7.34	3.57	26.19	12
Operational performance	8.56	3.73	31.90	2
Corporate governance	7.94	3.77	29.96	6
Innovation management	8.22	3.14	25.85	15
Customer Service	8.23	3.32	27.33	8
Risk management	8.30	3.61	30.00	5
Supply chain management	7.55	3.28	24.75	20
Regulatory compliance	8.05	3.82	30.75	4
Environmental protection expenditure	7.88	2.65	20.86	23
Fair Trading (Antitrust)	7.10	2.61	18.53	24

## The Results of Materiality Analysis Sustainable Development - Environment

Topic	Issues of Concern <sup>Note1</sup>	Business Impact <sup>Note2</sup>	Results	Priority
Environmental management	8.52	3.67	31.26	3
Greenhouse gas emissions	8.02	3.35	26.87	10
Use of energy resources	8.06	3.24	26.11	13
Use of water resources	7.91	3.15	24.91	19
Ecological conservation	8.22	2.89	23.80	21
Product management	7.93	3.19	25.31	18
Use of chemicals	8.06	3.17	25.54	17


## The Results of Materiality Analysis Sustainable Development – Society

Topic	Issues of Concern <sup>Note1</sup>	Business Impact <sup>Note2</sup>	Results	Priority
Compensation	7.54	3.60	27.17	9
Training & Development	7.73	3.35	25.90	14
Labor-Management Relation	7.50	3.55	26.60	11
Human Rights	7.60	3.07	23.32	22
Occupational safety and health	8.22	3.53	29.04	7
Social participation	7.89	3.24	25.57	16

Note1: Stakeholders scored each concern issue. (Score weight from 10 points to 2 points.)

Note2: CS committee members scored the business impact. (Score weight from 5 points to 2 points)

## Top Ten Materiality Issues

 <b>Sustainability strategy</b> Chapters in the Report Sustainable Commitment p12	 <b>Operational performance</b> Chapters in the Report 2013 Sustainability Performance p 5	 <b>Environmental management</b> Chapters in the Report 3-1 Green Factory p 44	 <b>Regulatory compliance</b> Chapters in the Report Legal Compliance p 25	 <b>Risk management</b> Chapters in the Report 2-4 Risk and Crisis Management p 34
 <b>Corporate governance</b> Chapters in the Report 2-1 Corporate Governance p 22	 <b>Occupational safety and health</b> Chapters in the Report 4-3 Healthy and Safe Workplace p 92	 <b>Customer Service</b> Chapters in the Report 2-3 Customer Service p 32	 <b>Compensation</b> Chapters in the Report 4-2 Talent Attraction, Retention and Development p 82	 <b>Greenhouse gas emissions</b> Chapters in the Report 3-2 Climate and Energy Management p 55

1

Communication  
with Stakeholders

### 1-1-1 Stakeholder Communication

Identification and Methods of Communication for Issues of the Stakeholders' Concern. The top three issues of each type of stakeholder and methods of communication are identified as follows:

<p><b>Employees</b></p> <p><b>Major Issues of Concern</b> Compensation Training &amp; Development Operational Performance</p>	<p><b>Methods of Communication</b></p> <p>Communication Meetings</p> <p>Various Communication Channels on eUMC portal</p> <p>UMCWe website and UMC Corporate Sustainability Report</p> <p>Satisfaction Survey for employee welfare, Service, HR service and employee organizational commitment</p>	<p><b>2013 Results</b></p> <p>Keep benchmarking compensation information and enhance competitiveness of compensation.</p> <p>Provide a welfare mobile App named UMC ilceCream for employees and their family.</p> <p>Enhance Healthy Workplace Project in practice and keep promoting Healthy Workplace activities and related certification.</p> <p>Provide a welfare mobile App named UMC ilceCream for employees and their family.</p> <p>To promote 'Thousand-Eyed Angel' safety activity.</p> <p>Enhance Healthy Workplace Project in practice and keep promoting Healthy Workplace activities and related certification.</p> <p>New Employee Camp and Learning Passport</p> <p>7-habits Training completion rate for managers and employees. Completion rate is 94.3% to 96.3%.</p> <p>Enhance competency training and provide development project for key talents.</p> <p>Strengthen operational strategy and mission communication. Held 138 communication meetings in 2014.</p> <p>Establish EICC committee</p>
<p><b>Customers</b></p> <p><b>Major Issues of Concern</b> Customer service Supply chain management Compliance with laws and regulations</p>	<p><b>Methods of Communication</b></p> <p>Online service platform: MyUMC</p> <p>Regular meetings and discussions</p> <p>Response to questionnaire</p> <p>Voice of Customer (VOC) real time online complaint system</p> <p>Monitoring of customer satisfaction</p>	<p><b>2013 Results</b></p> <p>Provided customer service and enhanced customer satisfaction. Established ISO 22301 management system.</p> <p>Integrated TPC service provides customers with a package level solution to increase PMIC chip efficiency.</p> <p>Established its Specialty Technology Center of Excellence in Singapore to help customers offer products which benefit from the increasing connectivity of everyday devices.</p>
<p><b>Investors</b></p> <p><b>Major Issues of Concern</b> Sustainability strategy Operational performance Risk management</p>	<p><b>Methods of Communication</b></p> <p>Shareholders :</p> <p>Annual shareholders meeting Quarterly investor conference Annual financial report</p> <p>Institutional shareholders :</p> <p>Quarterly results of operations in Taiwan and abroad Seminars held by investment agencies in Taiwan and abroad</p>	<p><b>2013 Results</b></p> <p>Held annual shareholders' meeting and investor conferences.</p> <p>Established financial audio (with presentation) information on website. <a href="http://www.umc.com/English/investors/e.asp">http://www.umc.com/English/investors/e.asp</a></p>
<p><b>Suppliers</b></p> <p><b>Major Issues of Concern</b> Sustainability strategy Operational performance Innovation management</p>	<p><b>Methods of Communication</b></p> <p>Review report or meetings</p> <p>Illustration for the environmental safety and health management and CSR approaches</p> <p>Engage in cooperation with suppliers regarding environmental safety and health and CSR</p>	<p><b>2013 Results</b></p> <p>Established Supplier Management Sub-Committee to develop long-term partnerships with vendors.</p> <p>Implemented AEO (Authorized Economic Operator) certification program to address international logistic trends, satisfy customer requirements for supply chain security.</p> <p>Established E-SA supplier communication platform.</p> <p>Promoted supplier BCM management.</p> <p>Promoted the Code of Conduct for supplier's employees.</p>

<b>Contractors</b>  <b>Major Issues of Concern</b> Compliance with laws and regulations Occupational safety and health Customer service	<b>Methods of Communication</b>  Sign "Guidelines for Environmental Safety and Health Contractors" Hold monthly contractor negotiation meetings Selection and audit management	<b>2013 Results</b>  Held "The Excellent Vendors of Waste Disposal Praise & ESH Policy Training Course." Held safety and health trainings courses for contractors.
<b>Local communities</b>  <b>Major Issues of Concern</b> Ecological conservation Use of chemicals Environmental management	<b>Methods of Communication</b>  Communicate with the pertinent unit involved and the community residents Take part in resident meetings on a regular basis Visit neighborhood magistrate and residents on important holidays Invite community residents to participate in "Family Day" each year	<b>2013 Results</b>  Announced "Resource and Energy Productivity Improvement Plan" to promote environmental protection living concepts. Held "2013 UMC Here Comes the Duck" Family Day Activity Promoted chemical substance management and reduction plans. 128 chemical evaluations were completed in 2013. Discussion and planning environmental conservation activities with "The Society Of Wilderness, Taiwan".
<b>Government agencies</b>  <b>Major Issues of Concern</b> Occupational safety and health Ecological conservation Environmental management	<b>Methods of Communication</b>  Take part in the public hearings and seminars held by competent authorities Take part in the operations of the Hsinchu Science Park and the SPA	<b>2013 Results</b>  Shared the experience of safety and health management in the National Industrial Safety & Health ceremony. Participated in Clean Development and Carbon Management Alliance established by Environmental Protection Administration, R.O.C. to build partnerships between government and private sectors, promote industry actions to reduce carbon, and encourage related experience sharing among industries. Provided industry experiences and recommendations to the government for drafting "Greenhouse Gas Reduction Law", "Resource Recycling Law" and "Toxic Chemicals Management Law".
<b>Civic groups and communities</b>  <b>Major Issues of Concern</b> Social participation Occupational safety and health Environmental management	<b>Methods of Communication</b>  Participation in community activities Participation in external associations	<b>2013 Results</b>  Form U-Drum Club and Love Storyteller Club to provide service for students from disadvantage families. Provide 216 volunteer activities for students from disadvantage families from remote areas. Held Eco- trips to introduce plant species in the botanical garden. Collaborated to research on FCs gas reduction methodology in semiconductors with ITRI and TSIA member companies.
<b>The media</b>  <b>Major Issues of Concern</b> Operational performance Corporate governance Sustainability strategy	<b>Methods of Communication</b>  Press conferences Press releases	<b>2013 Results</b>  Hold press conferences and published press releases. <a href="http://www.umc.com/English/news/Press_Releases/2013/2013.asp">http://www.umc.com/English/news/Press_Releases/2013/2013.asp</a> Established CS Communication Sub-Committee to promote and publicize the company's continuing achievements and activities.
<b>Business partners</b>  <b>Major Issues of Concern</b> Sustainability strategy Risk management Customer service	<b>Methods of Communication</b>  Meetings and discussions	<b>2013 Results</b>  Provided UMC's business continuity management instructions for 41 enterprises' reference. Comprehensively updated UMC official website information.

# 2

## Sustainable Development -Economic Growth

### 2-1 Corporate Governance

- Board of Directors
- Functional Committees
- Shareholder Activism
- Internal Audit
- Code of conduct and Anti-Corruption
- Legal Compliance

### 2-2 Innovation Management

- Realization of Sustainable Development
- Corporate Social Responsibility and Sustainability in Practice
- Operational Performance
- Investment to Enhance Competitiveness in 2013
- Operational Objectives in 2014

### 2-3 Risk and Crisis Management

- Enhance Service Quality and Customer Satisfaction
- Improving Customer Satisfaction

### 2-4 Risk and Crisis Management

- Management of Financial Risks and Operational Risks
- Business Continuity Management
- Hazard Risk Management

### 2-5 Sustainable Supply Chain Management

- Strategies and Goals for Sustainable Supply Chain Management
- Sustainable Supply Chain Management
- Sustainable Supplier Assessment
- Sustainable Supplier Risk
- Education and Training for Suppliers
- Sustainable Supply and Authorized Economic Operator Certification
- Conflict Minerals Management
- Strategic High-Tech Commodities Control Operations



Received 2012 Best Supplier Award from Lantiq.



95%

Enhance supply chain management through supplier business continuity risk assessment.



96.8%

The Board of Directors average attendance rate reached



UMC was ranked A+ in the Information Disclosure and Transparency Rankings by Securities & Futures Institute for its 2012 disclosure.



UMC was the first and the only company in Taiwan to apply both a nominating system and an e-voting to elect all the directors.

At the 2013 UMC AGM, the percentage of e-voting shares to outstanding shares was 31.8%, and the percentage of e-voting shares to attendance shares was 40.8%.



232

Obtained a total of 232 domestic and foreign patents in 2013.

Including 195 patents in U.S., 23 patents in ROC and 14 patents in China. Currently, UMC owns 10,450 patents,

## 2-1 Corporate Governance

UMC's corporate governance framework is based on Taiwan's Company Act, Securities and Exchange Act, and other related laws and regulations. Moreover, UMC refers to corporate governance practices in order to establish an effective corporate governance framework.

UMC advocates an effective corporate governance framework to protect the rights and interests of shareholders, strengthen the powers of the Board of Directors, fulfill the function of the Audit Committee, respect the rights and interests of stakeholders, and enhance information transparency. Operating with ethical corporate management is a best practice principle that helps fulfill UMC's social responsibility. UMC also expects to realize sustainable management and improve business performance through a comprehensive management system.

The operations of UMC's Board of Directors, Audit Committee, Compensation Committee, and Capital Budget Committee are in accordance with the regulations of "Convention Rules for Meetings of Board of Directors", "Audit Committee Charter", "Compensation Committee Charter", and "Capital Budget Committee Charter".

The Corporate Sustainability Committee has reported the performance to the Audit Committee on a regular basis since 2013.

To create a convenient access point for investors and stakeholders to obtain UMC's corporate governance information, in 2013 UMC disclosed the related information in the annual report and posted, the Corporate Governance self- assessment report on the Taiwan Stock Exchange website.

(<http://newmops.twse.com.tw/mops/web/t100sb10> , company code 2303)

The UMC Corporate Governance Policy, Articles of Incorporation of UMC, Convention Rules for Meetings of Board of Directors , Audit Committee Charter, Compensation Committee Charter, Capital Budget Committee Charter, Organization and Operation of Internal Audit, Code of Ethics for Directors and Officers, Employee Code of Conduct, Related-party Transaction Procedures and Internal Significant Information Processing Procedures can be found on the company website ([http://www.umc.com/english/investors/Corp\\_gov.asp](http://www.umc.com/english/investors/Corp_gov.asp)).

### Executive Summary

#### Strengthen Corporate Governance Structure

##### ● 2013 Achievements

The Corporate Sustainability Committee has regularly reported to the Audit Committee on the performance since 2013.

Sustained response to adopting of the IFRS, amending the related internal control system.

##### ● 2014 Future Targets

The Corporate Sustainability Committee regularly reports to the Audit Committee on the performance.

#### Protect the Rights and Interests of Shareholders, Strengthen the Powers of the Board of Directors

##### ● 2013 Achievements

The video content of the quarterly investor conference will be disclosed 2 hours ahead of the beginning of next stock trading day.

The operations of UMC's Board of Directors, Audit Committee, Compensation Committee and Capital Budget Committee are in accordance with the regulations of "Convention Rules for Meetings of Board of Directors", "Audit Committee Charter", "Compensation Committee Charter" and "Capital Budget Committee Charter".

##### ● 2014 Future Targets

Capital Budget Committee reviews of the Company's capital expenditure budget, with the intention to strengthen corporate long-term strategy, financial planning and business performance.

#### Enhance Information Transparency

##### ● 2013 Achievements

Declaring the self- assessment report of Corporate Governance on the Taiwan Stock Exchange website.

##### ● 2014 Future Targets

Declaring the updated self- assessment report of Corporate Governance on the Taiwan Stock Exchange website.

### 2-1-1 Board of Directors

UMC's Board of Directors consists of 9 directors possessing professional backgrounds and experience in business, laws, finance, accounting or other fields of expertise. They are accountable for the company's operation and supervision. The newly elected board in 2012 included 4 independent directors and 1 individual director. Currently, the non-executives directors have reached 2/3 of the Board.

UMC board meetings were held 7 times in 2013, the average attendance rate reached 96.8%. The percentage of total directors' compensation to EAIT was 0.37% in 2013.

the non-executives directors  
have reached

2/3



The percentage of total  
directors' compensation to EAIT was

0.37%



the average attendance rate reached

96.8%

96.8



## A list of the board members

Chairman  
Stan Hung 翁

Attendance rate 100 %

Chief Strategy Officer

Director  
Wen-Yang Chen 陳

Attendance rate 100 %

Member of Capital Budget Committee

Independent Director  
Chung-Laung Liu 劉

Attendance rate 100 %

Member of Audit Committee, Remuneration Committee and Capital Budget Committee

Director  
Shih-Wei Sun 孫

Attendance rate 85.71 %

Vice President

Director  
Ting-Yu Lin 林

Attendance rate 100 %

Member of Capital Budget Committee

Independent Director  
Paul S.C. Hsu 許

Attendance rate 85.71%

Member and financial expert of Audit Committee, Member of Remuneration Committee and Capital Budget Committee

Director  
Po-Wen Yen 嚴

Attendance rate 100 %

Chief Executive Officer

Independent Director  
Chun-Yen Chang 張

Attendance rate 100 %

Chairperson of Audit Committee, Remuneration Committee and Capital Budget Committee

Independent Director  
Cheng-Li Huang 黃

Attendance rate 85.71%

Member and financial expert of Audit Committee, Member of Remuneration Committee and Capital Budget Committee

## 2-1-2 Functional Committees

### Functional Committees Function

#### Audit Committee

The Audit Committee assists the Board of Directors in performing its supervision functions. It is also responsible for tasks defined by the Company Act, Securities and Exchange Act and other relevant regulations. Since UMC is listed on the NYSE, it also has to comply with U.S. regulations regarding foreign issuers. The UMC Audit Committee consists of 4 independent directors, two of whom are financial experts. The Committee operates in accordance with the UMC Audit Committee Charter. ([http://www.umc.com/English/pdf/Audit\\_Committee\\_Charter\\_Eng.pdf](http://www.umc.com/English/pdf/Audit_Committee_Charter_Eng.pdf)) Meetings are convened when necessary according to the members' authority and responsibility and should be held at least 4 times a year.

#### Compensation Committee \$

The UMC Compensation Committee is established in accordance with "Regulations Governing the Appointment and Exercise of Powers by the Remuneration Committee of a Company Whose Stock is Listed on the Stock Exchange or Traded Over the Counter". The committee evaluates and oversees the compensation of board members and the executives, with a view to strengthening corporate governance and risk management, while special consideration is given to inspiring and retaining talent. The committee consists of 4 independent directors and meetings are convened at least twice a year.

#### Capital Budget Committee

The Capital Budget Committee shall comprise of members from the Company's independent directors and non-executive directors. The Committee's goal includes review of the Company's capital expenditure budget, with the intent to strengthen long-term corporate strategy, financial planning and business performance.

#### Information Disclosure Monitoring Committee

In view of the requirements of Sarbanes-Oxley Act by the SEC regarding a company's information disclosure, UMC established the Information Disclosure Monitoring Committee comprised by division directors of the company. It is expected that through rigorous information collection and subsequent treatment, UMC is able to provide accurate information to the competent authorities in due course, so as to fulfill its responsibilities and duties on information disclosure.

## Functional Committees 2013 Achievement

### Audit Committee

In 2013, a total of 6 meetings were convened. The members establish a good communication channel with the internal auditors, the certified accountants, and the company employees.



### Compensation Committee

The meeting was convened in June, August and December 2013, and all of the 4 independent directors attended the meeting.



### Capital Budget Committee

UMC comprised the Capital Budget Committee on October 2013. Committee meetings were held 2 times and NT\$29,926 million of capital expenditure budget was approved by the Committee in 2013.



### Information Disclosure Monitoring Committee

In 2013, UMC was ranked A<sup>+</sup> in the Information Disclosure and Transparency Rankings by Securities & Futures Institute for its 2012 disclosure.



## 2-1-3 Shareholder Activism



To apply both a nominating system and an e-voting to elect all the directors

In the director re-election of 2012, UMC was the first and the only company in Taiwan to apply both a nominating system and an e-voting to elect all the directors. UMC fulfilled all local regulations and global trend for corporate governance to achieve a corporate governance milestone in Taiwan.

E-voting, as an option to exercise shareholder voting rights from 2012 UMC AGM, provided shareholders who couldn't attend the meeting a way to vote for issues and to elect directors via internet, so that shareholders could participate in the decision-making process for major company issues from any place of the world. Through e-voting, QFIIs could exercise their voting rights directly, minimizing the trouble of having custodian banks acting as agents for attendance at the AGM and improving their will to vote.

At the 2013 UMC AGM, the percentage of e-voting shares to outstanding shares was 31.8%, and the percentage of e-voting shares to attendance shares was 40.8%.

Besides that, voting-by-poll was applied in 2012 UMC AGM for all the approval items and discussion items, to fulfill the essence of corporate governance through full discussion and expression of opinions for both sides, no matter what how much weight was held through stock. Voting-by-poll also made the decision-making process of the company traceable and more transparent.

## 2-1-4 Internal Audit

UMC establishes the Internal Audit, which reports directly to the Board of Directors. Its main purpose, duties and responsibilities are as follows

### Main Purpose

- Examine and evaluate the effectiveness of the internal control system
- Evaluate the efficiency and effects of the business operation
- Ensure the reliability of the financial reports and the compliance of relevant regulations
- Offer suggestions for improvement to ensure the effective execution of all internal control tasks

### Duties and Responsibilities

- Conduct annual audit per the regulations of Taiwan's relevant authorities, or conduct unscheduled audits if high risk is perceived.
- Produce audit reports and keep track of subsequent improvement progress
- Revise internal control systems, audit guidelines and annual internal control self-assessment guidelines on a regular basis
- Communicate with independent directors and report to the Audit Committee and the Board of Directors

Since UMC is listed on the NYSE, it has to comply with the U.S. regulations regarding foreign issuers. Since 2006, it has been complying with the SOX 404 Act and accepted audit from certified accountants. As of today, the certified accountants have all issued unqualified reports regarding UMC's design of internal control and the effectiveness of the execution.

For more information please visit the company website:  
[http://www.umc.com/chinese/pdf/audit\\_c.pdf](http://www.umc.com/chinese/pdf/audit_c.pdf)

## 2-1-5 Code of conduct and Anti-Corruption

Based on the principle of integrity, the “Directors and Executives Code of Conduct” as well as “Employee Code of Conduct” were established for all directors, executives and employees to follow. In addition, in order to strengthen UMC’s core value of honesty and integrity, the “Corporate Governance Committee” was established to enhance corporate governance and the risk control mechanism. This is the foundation for UMC’s sustainable operations. More information can be obtained on pages 129-131 from the 2013 UMC Annual Report and the company website:

[http://www.umc.com/chinese/investors/corp\\_gov.asp](http://www.umc.com/chinese/investors/corp_gov.asp)

### ► Employee Code of Conduct Training Course

Through practical training and online self-examinations, all UMC staff are encouraged to practice the code of conduct in the workplace. The Employee Code of Conduct training course is compulsory for new employees and includes the following six points:

#### Employee Code of Conduct Training Course



In 2013, employees in Taiwan and Singapore have all completed the training and passed relevant tests

## ► Annual Declaration of Interests

According to Employee Code of Conduct, UMC will request employees of designated departments to make an annual declaration of interests in order to maintain operational efficiency and avoid conflict of interest. The function managers of every department must confirm and review the annual declaration of interests. All employees from designated departments completed the annual declaration of interests in 2013.

### ► Restrictions on Employment of Relatives' survey

In order to maintain a fair and equitable operating environment and operational efficiency, a survey on the employment of relatives is conducted regularly. The survey, results of each department are provided to division directors for reference.

## 2-1-6 Legal Compliance

UMC's customers are located throughout the world, and branch offices are in several countries. In order to ensure that the company complies with the laws and regulations in various countries, the management team has paid attention to the change of government policy or laws, especially those that might cause significant business or financial impact.

UMC and its employees are required to comply with the relevant laws and regulations in business. The Company arranges relevant legal compliance training programs for employees to become familiar with the latest laws and regulations. Through training, employees can meet the company's legal compliance commitment.

Paying attention to the change of government policy or laws, especially those that might cause significant business or financial impact



UMC and its employees are required to comply with the relevant laws and regulations in business.



Arranging relevant legal compliance training programs for employees to become familiar with the latest laws and regulations.



Update the latest laws and regulations in time.



## The content of the training program

Online Course	The course includes online classes and tests. Employees can train themselves to strengthen their knowledge on laws and regulations. Employees' understanding of laws and regulations can be examined by online tests (e-check). Related online courses or tests include: Fair Trade Act (Antitrust law), Export controls, etc.
Lecture Course	Lecture courses on government policies and laws include anti-trust law, insider trading, confidential information protection, high-tech export controls, intellectual property protection, personal information protection, etc.
Professional Workshop	Workshop conducted by outside legal professionals and experts. Inform employees of the latest legal development and information. Employees can also take the opportunity to exchange opinions with outside professionals and experts.
External Course	External training courses for legal staff to learn the new laws and comply with new regulations.

UMC employees can obtain relevant training information and materials from the company's internal website. Through message updates, internal reviews and, standard operating procedures, the company can meet legal requirements in a timely manner.

## Major legal practice and compliance

### Strategic High-Tech Commodities Export Control



To ensure that UMC export controls can fulfill international requirements, UMC reviewed internal operations and took appropriate actions at a very early stage. In 2010, UMC introduced "Internal Control Program" (hereinafter refers as ICP) into both Taiwan and Singapore operations. The company asked customers to provide all necessary information for a series of self-checks from customer initial price inquiry, order processing and product shipping. The company has an integrated export control procedure and each department in the company has definite rules to follow. UMC's Singapore branch has gotten STS TIER 3 (Strategic Trade Scheme, TIER 3) & STP (Secure Trade Partnership) certificates from the Singaporean government in February, 2011. UMC received ICP certificate in December, 2012 from Bureau of Foreign Trade, Ministry of Taiwan Economic Affairs. The government certificates allowed 26 customers to enjoy the convenience and benefit of accelerated export examination.

### Intellectual Property Protection



Facing increasing competition, UMC has significantly strengthened patent protection in key technologies. Patent quantity has significantly increased. UMC received 232 worldwide patents in year 2013, including 195 patents in the US, 23 patents in Taiwan, and 14 patents in China. So far, UMC has received 10,450 patents in total, which can provide thorough and powerful protection for UMC technologies and intellectual properties.

### International Financial Reporting Standards



According to "The Promotion Structure of Taiwan's Enterprises Adopting International Accounting Standards" issued by Financial Supervisory Commission (hereinafter referred to as FSC), the company has prepared financial reports in accordance with the preparation Standards of Securities Issuer's Financial Statements and FSC accredited International Financial reporting Standards, International Accounting Standards, interpretation and interpretation bulletin from January 1, 2013.

### Personal Information Protection



In response to the new "Personal Information Protection Act" in Taiwan, UMC checks all personal data held by the company, and established an appropriate storage and safe-guard mechanism to prevent personal data from theft, tampering, damage, loss or leakage. Through employee education and training, the fundamental knowledge of law has been strengthened. Employees are informed that different positions have different access to personal data, their data storage limits, and the alert and notification mechanism. The employee also allows the company to use their personal information.

### Insider Trading



As a public company, UMC instituted "Policies and Procedures for Refraining from Insider Trading" and continuously enforced the policy and commitment against insider trading. Dedicated personnel provide monthly notice to all board members and executives regarding the dates to refrain from stock trading in the following two months.

### Conflict Minerals



United States Securities and Exchange Commission announced a final rule of "The Disclosure Requirement of the Use of Conflict Minerals" on August 22, 2012, from Section 1502 of "Financial Reform and Consumer Protection Act", enacted on January 6, 2010. UMC must meet all requirements since it is an ADR listed company. The UMC adopted a series of measures to assure that there are no conflict minerals in the company's supply chain. UMC conducted investigation on 10 suppliers in year 2012, and 22 suppliers in year 2013, and confirmed that these suppliers did not supply any materials or components containing conflict minerals.

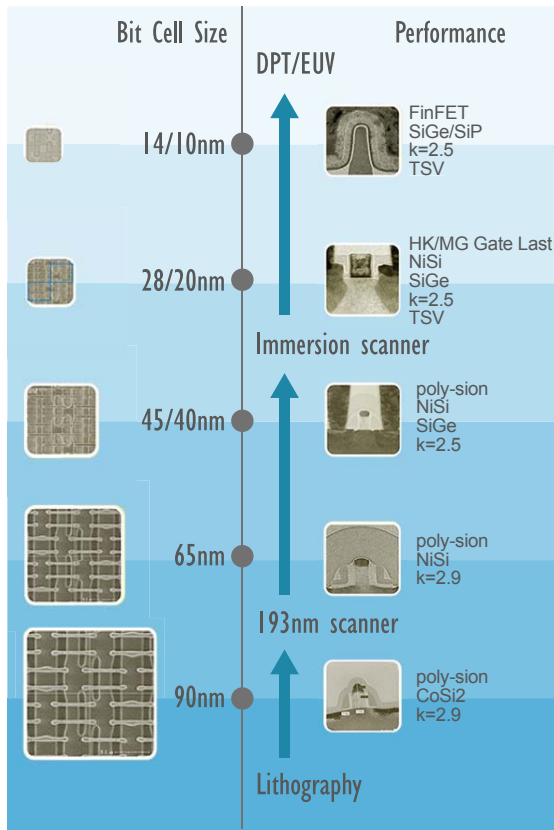
## 2-2 Innovation Management

### 2-2-1 Realization of Sustainable Development

#### ► Product and Technology Innovation

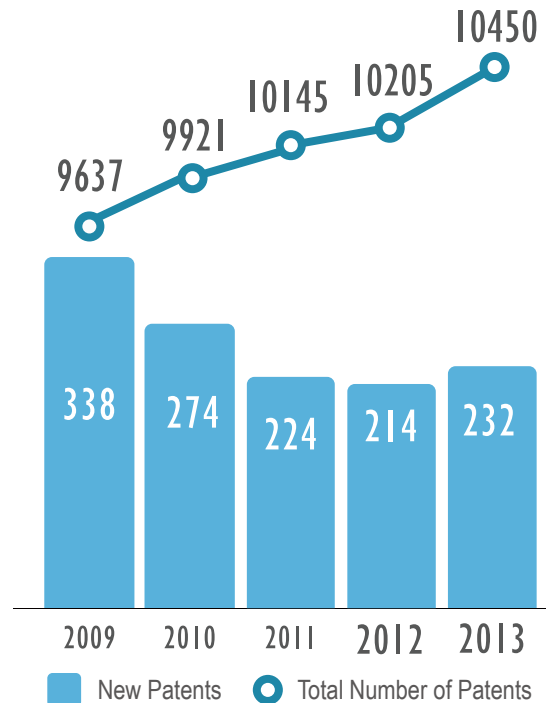
UMC's R&D commitment to advanced technology development is based on our "United for Excellence" approach to deliver timely service, support, and manufacturing that is aligned with customer roadmaps and market trends.

#### Continuous Innovation and Advanced Technology Development



Faced with increasingly fierce technological competition, UMC has improved its roadmap for key technology patents and has steadily increased the number. In 2013, UMC obtained a total of 232 domestic and foreign patents, including 195 patents in U.S., 23 patents in ROC and 14 patents in China. Currently, UMC owns 10,450 patents, which provide complete and powerful protection to intellectual property. To remain competitive, UMC also increased the quality and quantity of key technology patent applications. UMC continues to strengthen customer service and competitive advantages to create profits for the company and other enterprises.

#### New Patents/ Total Number of Patents



#### Milestones in Product and Technology Development since 2009

##### 2009

40nm logic technology ready for production.  
Presented a unique 'hybrid' high-k/metal-gate (HK/MG) technology approach for 28nm.

##### 2010

Produced FPGA chip for customers on UMC's high performance 40nm process and achieved full production qualification.

##### 2011

Successfully produced MEMS (Micro-Electro-Mechanical Systems) sensor chip and entered mass production.

65nm SONOS flash memory technology: successfully produced working customer silicon and entered the SONOS market.

##### 2012

Successfully produced 65-nanometer (FSI-CIS) and (BSI-CIS), and entered mass production and trial production

First to combine 12V high-voltage solutions embedded flash (eFlash) process.

55nm high-voltage (HV) process used to power smartphone panels, an industry first.

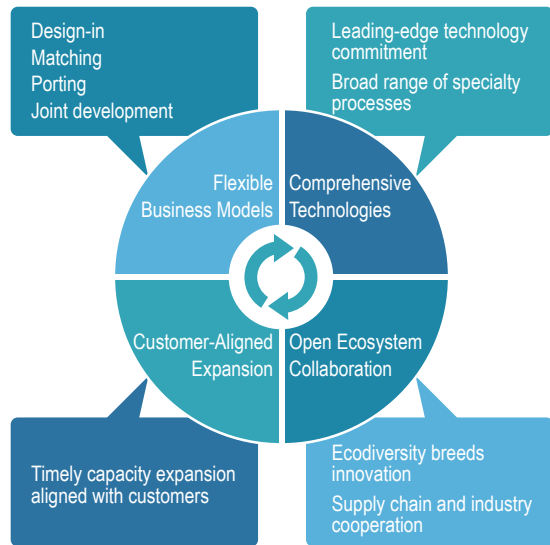
##### 2013

Successfully developed 28nm poly-SiON technology and passed customers' production qualification.

Successfully produced 40-nm (eCT eFlash) chip for customers.



## A Winning Foundry Approach



## 2013 Innovative Operation

Acquired Hejian Fab based in Suzhou, China.



Expanded 12-inch advanced process capacity, increased capacity utilization rate and improved profit.

12"

Enhanced flexibility for converting advanced production capacity to accommodate changes in demand and reduce operating risk



## 2-2-2 Corporate Social Responsibility and Sustainability in Practice

### Ten Major Features

- 1 The first semiconductor company to promote CSR committee and CSR vision.
- 2 Sound financial structure and corporate governance.
- 3 Engaging in green industry and creating a low-carbon sustainable future.
- 4 Taking the lead to publish climate change policy and actively setting up reduction goals.
- 5 The first in the industry to conduct carbon/water footprint verification and enter a full-spectrum green product era.
- 6 Collaborating with low-carbon partners and sharing the responsibility of carbon reduction with the supply chain.
- 7 Cooperating with EU to eliminate green trade barriers.
- 8 The only full-time specialized fire brigade to ensure safety in the factory and community.
- 9 Creating a happy and healthy working environment for employees.
- 10 Cultivating elementary school-education with the "Spreading the Seeds of Hope" foundation.

## Important Milestones

### 2008 – 2009

CSR Report passed third-party verification of GRI A+  
Strengthened the board of directors: increased independent directors from three to four, added one external individual director, and established an audit committee  
Completed the first carbon footprint verification for IC wafers  
Completed the EPD

### 2010

Published Climate Change Policy and 333 reduction plans  
Completed carbon footprint/water footprint verification of 12 inch wafers

### 2011

Established a compensation committee  
Promoted the plan of carbon partners supply chain

### 2012

Achieved UMC's 2010-2013 carbon reduction goals  
Received the "Green Factory Label" by Ministry of Economic Affairs (Fab 12A/ Fab 8A)  
Fab12A P3&P4 obtained LEED-NC (Leadership in Energy and Environmental Design – New Construction) Gold certification from the U.S. Green Building Council

### 2013

Became Taiwan's first foundry to acquire AEO (Authorized Economic Operator) certification  
Announced resource and energy productivity improvement goals  
First foundry to receive ISO 22301 BCM certification



## 2-2-3 Operational Performance

The European debt crisis affected UMC's business. UMC continues to offer comprehensive foundry solutions with the commitment to develop advanced technologies.

### The Key Performance Indicators in 2013

KPI	Target	The actual situation	Achievement rate
Capacity utilization	81.2%	82.3%	100.2%
KPI	Target	The actual situation	Achievement rate
Percentage of revenue for products 65nm and below	52.9%	51.8%	97.9%

### Advanced Processes Continue Growth

40nm and below products account for 20% of total production capacity. **20%**

The production capacity of 28nm and below processes increased by 100%. **100%**



## Profitability

Return on assets	2012	2.43%	2013	4.76%
Return on equity	2012	3.01%	2013	6.16%
Ratio of income before tax to paid-in capit	2012	6.36%	2013	11.54%
Profit margin before tax	2012	5.83%	2013	11.55%
Earnings per share	2012	0.49 NT\$	2013	1.01 NT\$

Notes : (1)The above data is based on TIFRSs.  
(2)The data is from the parent company only.

Operating revenue	NTD\$ 10 million
2009	8,862
2010	12,043
2011	10,588
2012	10,600
2013	10,938

Total assets	NTD\$ 10 million
2009	25,189
2010	26,336
2011	25,829
2012	26,618
2013	27,917

Income tax expense	NTD\$ 10 million
2009	59
2010	149
2011	76
2012	206
2013	202

Total shareholders' equity	NTD\$ 10 million
2009	21,360
2010	21,934
2011	20,774
2012	20,196
2013	20,812

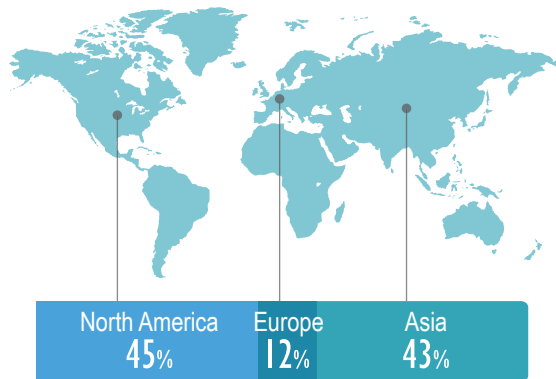
Net operating revenue	NTD\$ 10 million
2009	333
2010	2,263
2011	1,014
2012	916
2013	583

Notes : (1)The 2009~2011 financial data is based on ROC financial accounting standards.  
(2)The 2012~2013 financial data is based on TIFRSs.  
(3)The data is from the parent company only.

## ► Marketing and Sales

UMC's technologies and services have proven themselves by contributing to the success of its customers, many of whom are major players in the global IC industry. Currently, the majority of the Company's customers are located in North America and Asia, and sales in these two areas account for 45% and 43% of total sales respectively, with Europe following with 12%. UMC will enhance its partnerships with world-class customers around the globe by continuing to develop customers' high-end products to ensure UMC's steady growth for the mid and long term.

### Export Sales Ratio in 2013



## ► Negative Factors Relating to UMC's Sustainable Development

Due to the expectation of growth in demand for semiconductor products, the world's major semiconductor manufacturers have increased capital expenditures to expand production capacity; this could have a negative impact on the balance between market supply and demand.

## ► Positive Factors Relating to UMC's Sustainable Development

IDMs are increasing wafer production outsourcing, helping to expand the wafer foundry market.

UMC seeks to foster strategic alliances with international companies and acquire long-term and stable orders.

UMC's 28nm and 40nm advanced processes are already in mass production. Further breakthroughs in 28nm manufacturing will further strengthen UMC's long-term competitiveness.

For more information, please refer to the UMC's 2013 Annual Report page 81.

## ► Response Strategies

### Control expenditure:

Improve production efficiency to effectively reduce operating costs, cautiously expand advanced 40nm and 28nm process capacity, and strengthen UMC's competitive advantage by enhancing the proportion of advanced manufacturing processes and specialty process portfolio.

### Strategies against new competitors:

Continue to strengthen the development of advanced manufacturing processes, maintain UMC's existing advantages of stable, high yields and comprehensive services, and create differentiation between itself and new competitors.

### Provide the most advanced, optimized manufacturing process service:

Assist customers in achieving the goals of lowest cost, high performance and low power consumption for their products.

### Strengthen marketing efficiency and client service mechanisms:

Continuously enhance client satisfaction and strengthen partnerships with customers.

### Prudent investment plan:

All investment plans have been through full assessment and consideration of different stages of advanced process maturity and customer capacity requirements.



## 2-2-4 Investment to Enhance Competitiveness in 2013

UMC's R&D commitment to advanced technology development is based on a Customer-Driven Foundry Solutions approach to deliver timely service, support, and manufacturing that is aligned with customer roadmaps and market trends. UMC continued expansion with the hiring of a large number of R&D experts and R&D investment.

### Items \ Amount \ Description

#### Cutting-edge process technology R&D

Approximately  
NTD\$ **11.78** billion

R&D of 28nm, 14nm and 10 nm processes.

R&D of TSV process

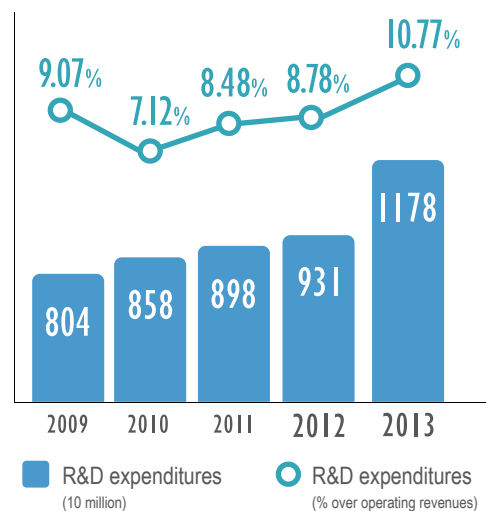
R&D of other cutting-edge processes

#### Expand advanced process capacity

Approximately  
NTD\$ **32** billion

New plant expansion, and introduce advanced technology & production equipment and processes.

## R&D expenditures



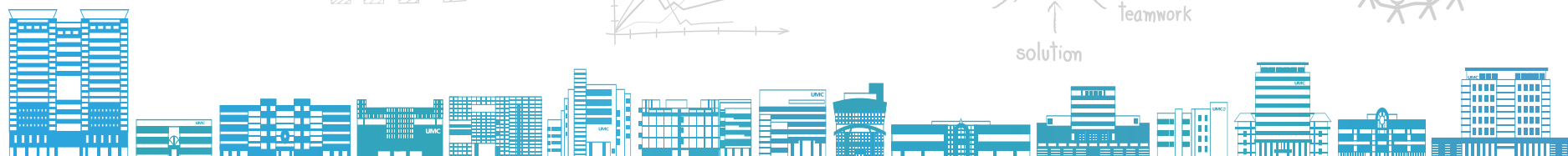
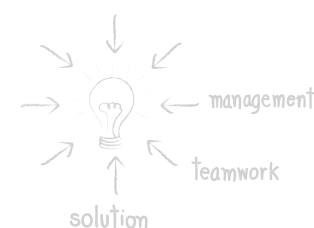
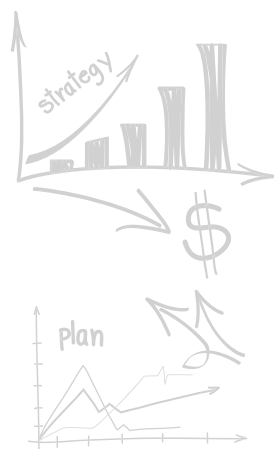
Notes : (1)The 2009~2011 data is based on ROC financial accounting standards.  
(2)The 2012~2013 data is based on TIFRSs.  
(3)The data is parent company only.

## 2-2-5 Operational Objectives in 2014

To vigorously invest in advanced process technologies and closely collaborate with leading customers to provide sufficient capacity.



To improve the flexibility of advanced process capacity, in order to quickly respond to changes in demand and reduce operational risks.



## 2-3 Customer Service

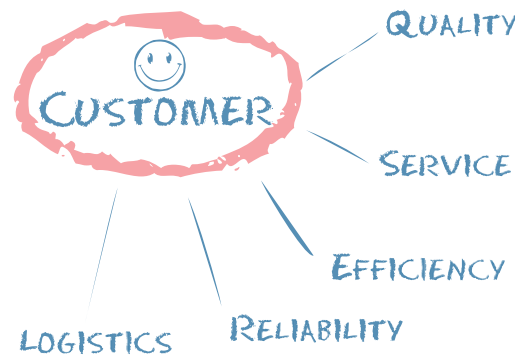
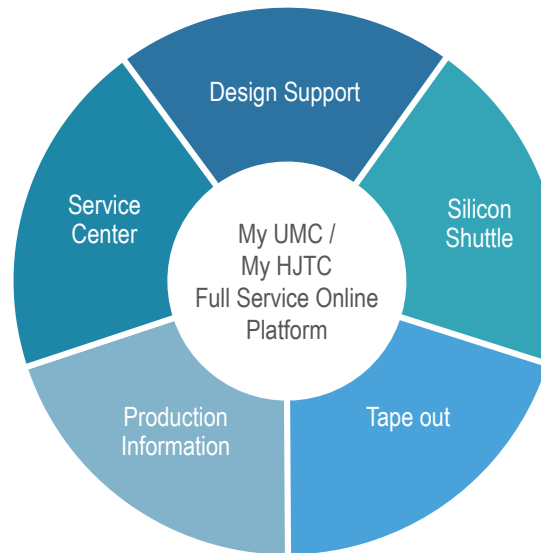
UMC is a leading semiconductor foundry that provides advanced process technology and manufacturing, covering all major IC industry applications. UMC strives to satisfy customer' demands, offering professional service based on customer needs. We think from our customers' point of view, act upon their requirements, and provide comprehensive services to fully satisfy our customers and achieve sustainable development.

### 2-3-1 Enhance Service Quality and Customer Satisfaction

Since its establishment, UMC has prioritized customer satisfaction as its long-term goal, which builds UMC's core values of being customer centric. We put customer needs as our top priority when offering services and products, and provide comprehensive solutions to satisfy customer demands. UMC has built an online service platform, My UMC and My HJTC (for the fab in China), to provide complete and real-time supply chain information, including manufacturing progress for customer wafers, search of shipment date, product quality data, and engineering analysis capability.

It has also developed an online complaint platform, Voice of Customer (VOC), allowing customers to submit requests, opinions, or suggestions for UMC's services or products. A dedicated team will distribute, handle and reply to customers' inquiries. Customers can check the handling progress online. For UMC, VOC is a great tool that transforms customers' need into concrete action, helping to continuously enhance service quality and competitiveness in order to meet our final goal of customer satisfaction.

### Full Service Online Platform



### MyUMC/MyHJTC Online complaint platform, Voice of Customer (VOC)

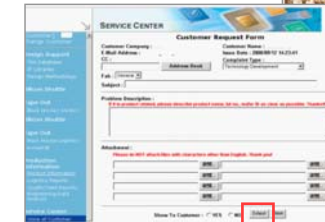
Step 1  
MyUMC Log in



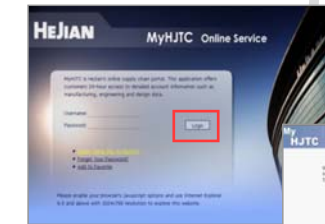
Step 2  
Index



Step 3  
Customer Request form



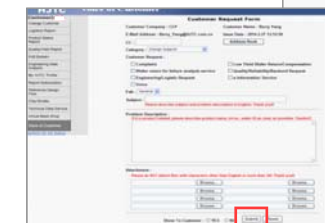
Step 1  
MyHJTC Log in



Step 2  
Index



Step 3  
Customer Request form



## 2-3-2 Improving Customer Satisfaction

UMC receives customers' satisfaction feedback through annual, biannual or seasonal scorecards. UMC identifies areas of improvement from this feedback and offers immediate and effective improvement to continuously enhance customer satisfaction.

Through this customer scorecard program, UMC understands customers' needs and satisfaction levels. This timely information helps UMC to obtain more immediate feedback on customers' requirements. UMC communicates with customers through meetings in order to proper reply to customers' needs. Product quality and timely delivery are listed as important items for internal performance evaluation. This helps UMC to further improve its customer satisfaction and achieve win-win results.

From the scorecard results, we continuously enhance our efforts to improve customer satisfaction. Furthermore, UMC's performance and contribution is recognized by customers, with UMC being awarded Best Supplier from customers year after year. For example, UMC received the "Best Supplier Award" from Lantiq for the in consecutive years for 2012 and 2013. Dominik Bilo, COO of Lantiq, said, "UMC is an extremely valuable partner for our fabless strategy and is producing a large portion of our wafer demand. Their high-tech expertise and mature processes are very important to secure the basis for flawless products. I anticipate a continued fruitful relationship with them as we continue to pursue new collaborative activities."

Those awards demonstrate not only customers' appreciation of UMC's service and quality but also the good relationship based on interaction and cooperation.

## Customer Satisfaction Level



## Awards from Customers Year after Year





## 2-4 Risk and Crisis Management

### 2-4-1 Management of Financial Risks and Operational Risks

After analyzing the impact on financial report performance, the following financial risks had been identified by UMC.

#### Liquidity Risk

**Contents** Extensive capital need is a requirement in the semiconductor industry. Liquidity risk could occur if the company is unable to keep a sufficient cash position to meet short term financial demands.

**Risk strategy** For an operation contingency plan, UMC maintains cash and cash equivalents of no less than 3 times of monthly turnover at all times to meet operating needs in any situation. Besides that, UMC maintains dedicated banking facilities equal to its monthly turnover to ensure liquidity requirements.

#### Currency and Interest Rate Risk

**Contents** The revenue and capital expenditure semiconductor companies area mainly denominated in non-NTD currencies; their value could be impacted by fluctuation of foreign exchange rates. The huge position of assets and liabilities of those companies' industry would cause significant differences between actual financial performance and budget. Currency and interest rate risk is the potential risk of loss from fluctuating foreign exchange rates and interest rate.

**Risk strategy** UMC performs natural hedge strategy to keep a balanced position of assets and liabilities in foreign currencies to reduce currency risk, and optimized the duration of liabilities and the structure of fixed/floating interest rates to reduce interest rate risk.

#### Credit Risk

**Contents** This risk could materialize if customers aren't able to fulfill contract obligations due to worsening financial conditions or other factors.

**Risk strategy** UMC deployed a dedicated credit department, based on the Guideline of Credit Management and financial and business condition of customers, to manage customer credit lines.

#### Property and Business Interruption Risk

**Contents** A company faces risk and loss from property damage or business interruption caused by natural catastrophe or accidents.

**Risk strategy** UMC entered insurance policies for property damage and business interruption to transfer risks from natural perils and man-made disasters. The target of insurance planning is to balance the risk management expenses, insurance premium and self-retained capacity, and to optimize the allocation of risk management resources under the consideration of Total Costs of Risks.

### 2-4-2 Business Continuity Management

#### Business Continuity Policy

1

UMC strives to provide the most competitive wafer foundry services while constantly pursuing co-development partnerships with customers. To provide customers with diversified, quality and uninterrupted foundry manufacturing service is the highest principle of the Company's business continuity management.

UMC will carry out BCM organizational operations, conduct operational impact analysis and risk assessment, and initiate its BC strategy and objective accordingly as the operating environment changes. Necessary resources are then invested for implementation, review and constant improvement.

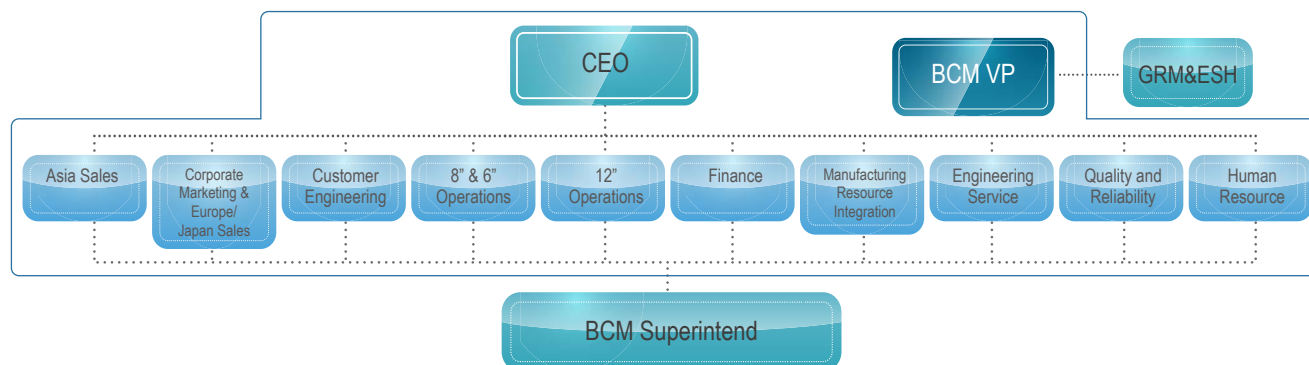
2

3

When disasters or events impacting operations occur, UMC will follow its BC strategy and invest in resources to maintain and restore operations to the highest possible level. During incidents, the Company will also maintain open communication with customers and stakeholders and strive for their best interests.

UMC recognizes that sustainable business operations have to provide its valued customers and important stakeholders with uninterrupted services. To maintain customer satisfaction in terms of variety, quality and continuity is the biggest objective of the company's business continuity management.

#### Business Continuity Management Organization



In addition to developing site level-business continuity plan, UMC implements the business continuity management system following ISO 22301 to ensure the highest possible operating level and further protect the interests of customers and stakeholders during a disaster.

In 2013, UMC, a leading global semiconductor foundry, received ISO 22301 certification for the business continuity management system and became the first foundry worldwide to achieve ISO 22301 certification.

#### Business Continuity Management System Performance Evaluation

##### Performance in 2013



No extremely serious safety accident occurred.

Abnormal events in facilities decreased by 41%.

Conducted a material shortage exercise to verify the reliability of business continuity plan.

##### Target in 2014

Enhance supply chain management through supplier business continuity risk assessment.



## 2-4-3 Hazard Risk Management

### ► Objective of Hazard Risk Management

As a global manufacturing leader, UMC is well aware of the numerous natural and man-made disasters that may affect or impact its operations and employees. UMC's approach to hazard risk management is based on precautionary measures. To reach HPR (Highly Protected Risk, the top safety standard for semiconductor industry), UMC follows strict engineering safety procedures, enforces safety codes and standards, and detailed industry safety guidelines.



**Fire Safety**

UMC adopts international standards from Factory Mutual Insurance Company, FM, Underwriters Laboratories Inc., UL, National Fire Protection Association, NFPA and Semiconductor Equipment and Materials International, SEMI in property protection, equipment safety, risk control and evaluation. UMC has established its own corporate safety guidelines to further enhance these safety standards.



**Earthquake Precautions**

UMC has been proactive in establishing best-in-class risk management procedures, and has engaged the services of EQE International Inc. and Vibration Engineering Consultants, internationally renowned engineering consulting firms, to evaluate and reduce the impact of seismic activity on buildings, facility equipment, piping and process tools.



**Equipment Safety**

UMC follows SEMI-S2 to establish new equipment review procedures and corporate safety guidelines. 『UMC Equipment ESH Purchasing Specifications』 was first introduced to the company's Taiwan and Singapore fabs. To effectively control equipment safety, a specification review is conducted before purchasing the equipment and another check is conducted during equipment installation.

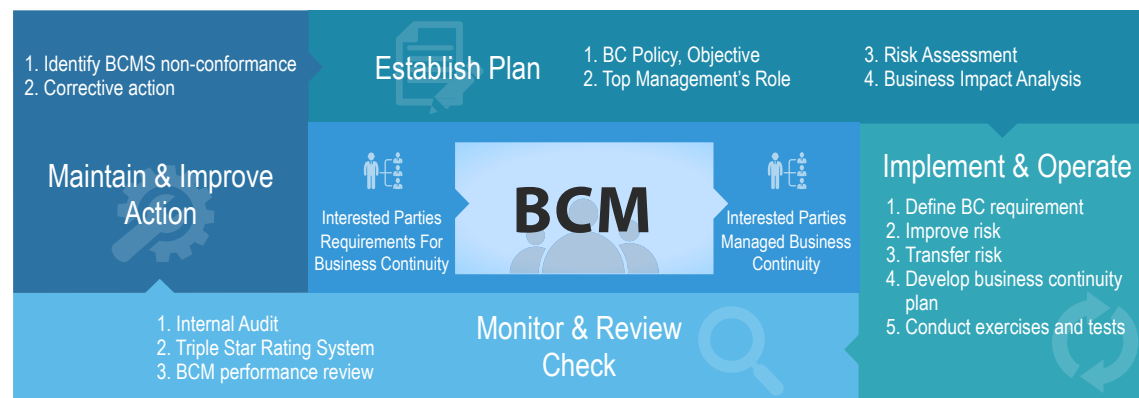
### ► Triple-Star Rating system

The Triple-Star Rating system, including 20 items in Human Element and Physical Protection, was introduced to UMC in 1998. Three stars is the highest grade for each item. We have adopted the Triple Star Audit Program from AIG, a global leader in risk management and insurance since 1999. UMC used to receive low ratings on 15 items. However, after concerted efforts and gradual improvement, now all new fabs have received three stars ratings in all of the 20 items from the first assessment. The cleanroom ratings of Fab 8A, Fab 8C and Fab 8E has been upgraded from one star to two stars by improving exhaust ventilation system. In addition, we were awarded “Outstanding Performance Award” in Risk Management again in 2013 by AIG Insurance as a result of our outstanding risk management program. UMC's achievements are illustrated in the chart below:



Notes : (1)The rating system does not include UMC Fab 6A and HJTC. Loss control audit in HJTC is conducted by Marsh insurance broker annually.  
(2)The rating of clean room in Fab 8A, Fab 8C and Fab 8E has been upgraded from one star to two stars by improving exhaust ventilation system.

### ► Continual Improvement of Business Continuity Management System



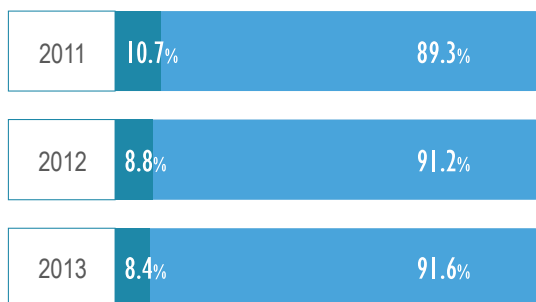
## 2-5 Sustainable Supply Chain Management

UMC stresses the importance of sustainable supply, and has set up a new subcommittee called "supply chain management" under the CSR committee. The subcommittee appoints a team, devises annual plans and checks the progress made each quarter. They regularly track the progress of projects, and actively solve supply chain problems and control potential risks to the upstream supply chain

### 2-5-1 Strategies and Goals for Sustainable Supply Chain Management

Taiwanese enterprises played a key role in the global supply chain. Corporate Social Responsibility is the key to business continuity, and UMC faces the international community's high expectations and review standards. To promote local economic development and corporate social responsibility, UMC has been purchasing raw materials and spare parts, masks and other items from domestic suppliers for the past 3 years. Over 90% of UMC's purchasing orders are from local suppliers.

#### Ratio of domestic purchase in raw material / consumer parts/ spare parts and mask



■ Foreign ■ Domestic

Corporate social responsibility and environmental protection has been gradually extended to the whole supply chain. UMC faces such challenges and also sees opportunities. UMC asks suppliers to join its effort to promote corporate social responsibility, as we consider them as business partners. In addition to quality and on-time delivery, UMC's requirements of them include environmental protection commitment, occupational safety and human rights, climate change, conflict mineral avoidance, and water footprint tracing.

Since 2008, UMC has been promoting "UMC's supply chain corporate social responsibility manifesto." This declaration has been distributed and signed by all suppliers.

#### UMC's CSR Declaration

- 1 Caring for employees, protecting the environment and striving for the public's best interest
- 2 Honoring labor rights and building a quality working environment
- 3 Developing green manufacturing processes, green products, and green supply-chain
- 4 Caring for the low-income group, protecting the environment, and being responsible corporate citizens
- 5 Helping up-stream and down-stream suppliers improve their green technologies and create sustainable business opportunities

Suppliers are important partners for UMC's business growth. UMC recognizes the importance of supply chain participation in the promotion of corporate social responsibility. In addition to quality and on-time delivery, suppliers must meet the following supply chain management goals.

#### Supply Chain Management Goals

Conforming to relevant environmental regulations and recognizing the importance of promoting corporate social responsibility.



Following equitable policies and human rights, suppliers should avoid using raw materials from areas known to violate human rights and ensure UMC's raw materials are conflict free.



Following the electronics industry code of conduct (EICC) and other related International initiatives including Labour Organization principles, the OECD guidelines for multinational enterprises, the United Nations, the Universal Declaration of human rights and the United Nations "Global Compact", UMC suppliers need to have a system to monitor the above issues.



## 2-5-2 Sustainable Supply Chain Management

### ► Total Supply Chain Management

UMC has a comprehensive supplier management system, based on the following four categories.



## ► Selection Criteria Management for Sustainable Business

UMC requests new suppliers through the following criteria: Quality, Finance, Cost, Environmental, Labor and Human rights

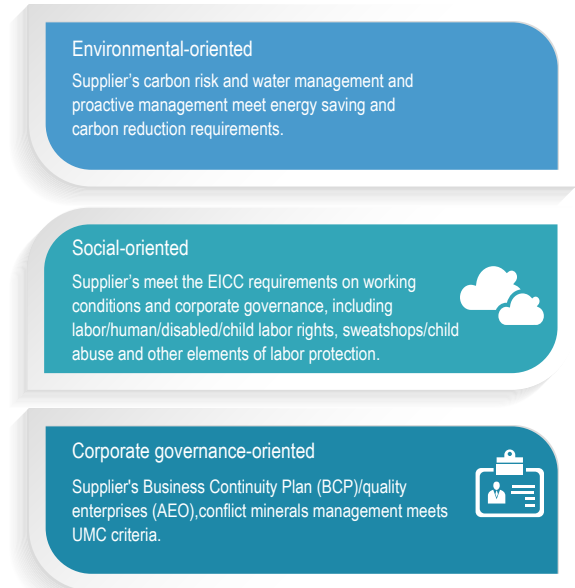


## 2-5-3 Sustainable Supplier Assessment

Annual vendor assessment is based on Q (Quality), C (Cost/Financial), D (Delivery), S (Service), S (Sustainability). We focus on environment-oriented (Environmental), social-oriented (Social), and corporate governance-oriented (Governmental)/requirements suppliers for business sustainability.

Hazardous substance management is a major assessment. If suppliers are certified for environmental or hazardous substance management, such as ISO14001, TS16949 or QC080000, extra bonus will be added for the assessments. For suppliers that score lower, the company will reduce purchasing or disqualify them.

### Category of Sustainable Supplier Assessment Project



UMC's chairman asked all suppliers to sign "the Code of Conduct for suppliers' employees" in 2013. At present, over 2,100 UMC suppliers agreed to sign the terms. This project will also implement new supplier selection criteria. If suppliers violates these terms, the company will reduce purchasing or disqualify them.

UMC submitted questionnaires to major suppliers (those which purchasing amounts reaching 90%, including 55 suppliers) to investigate the three dimensions for economic/environmental/social in 2012. Investigation results showed that a total of 52 suppliers achieved a "satisfactory rating", but three suppliers faced low scores in the economic, environmental, and social aspects. UMC conducted audits in September 2013 for these three suppliers and coached them in November 2013. UMC has expanded its range to investigate major suppliers (those which purchasing amounts reaching 95%, including 57 suppliers) in 2014, and will perform assessment, audits and coaching for low scoring supplier if needed.

UMC released sustainable supplier assessment results in 2013, and those with QCDSS scores of less than 80 were required to undergo audits and coaching. The five categories assessed include raw materials, indirect materials, spare parts, supplies and equipment (total 157 suppliers). Among indirect materials/equipment, two suppliers need to continue their improvement, resulting in a >97.5% satisfactory appraisal rating.

The 2013 surveyed 17 suppliers of high risk materials. After counseling, three of them reduced their risk level from medium to low for 49 high-risk materials.

## Supplier Assessment and Classification Guidance

Management Scope	All kinds of production-related raw material suppliers	
Management unit	Supplier Management Committee	
Management practices	Collect supplier performance for relevant units each quarter Regular supplier questionnaire Annual key supplier site assessment or invite them for situational briefing	
Assessment project	Sustainability Index Quality indicators Price index	Delivery targets Service indicators


## Sustainable Supplier Evaluation: Classifications and Response Action

Scores <b>Good</b> Rating <b>90 - 100</b> Proposed increase in purchases.	Scores <b>Satisfactory</b> Rating <b>80 - 89</b> Maintained current status, but required suppliers to continue strengthening management mechanisms.
Scores <b>Needing Improvement</b> Rating <b>70 - 79</b> Supplier scored lower than 80 that year, requiring auditing and mentoring to improve.  Appraisal scores for two consecutive years of 70~79 are to be discussed in the SMC and purchase ratio reviewed.	Scores <b>Significant Deficiency</b> Rating <b>70 ↓</b> Supplier scored less than 70 that year. Auditing and improvements required.  If evaluation score was less than 70 for two consecutive years, SMC will consider cancelling order status and qualified vendor status or other relevant measures.

## 2-5-4 Sustainable Supplier Risk

UMC has learned from the experience of 2011's Thailand floods as well as Japan's earthquake, tsunami and nuclear disaster and their significant impact to global financial markets, suppliers and material sourcing. UMC manages this type of risk through rich geographic diversification of suppliers to limit the impact from extreme weather or major natural disasters. UMC's supply chain manufacturers undergo risk assessment through a supplier sustainability rating method. Time of delivery, quality, financial status, operational and other risk assessment factors are considered as an important part of UMC's procurement strategy. UMC's annual silicon wafer, quartz components, gas, chemicals, and raw material suppliers such as mask, parts, and cleaning vendors completed sustainable risk surveys, audits and ratings. These suppliers account for over 95% of UMC's total purchase amount. This demonstrates our commitment to work closely with partners to promote a sustainable supply chain and enhance the value of the business relationship.

Experience Sharing

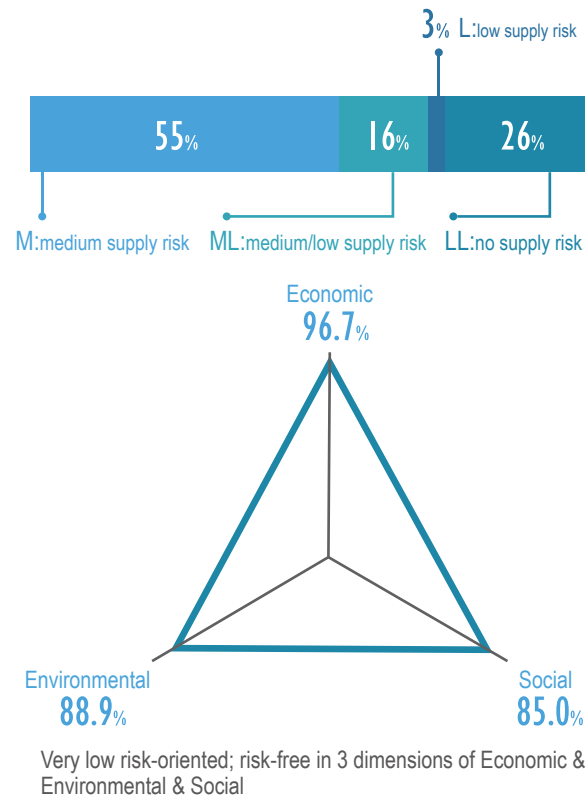


**Kazuo Sakauchi**  
 Shin-Etsu Handotai Taiwan Co., Ltd  
 Senior Sales Director

Shin-ETSU Handotai has advanced technologies to fulfill customer demand, whether they are in the process development stage or mass production. Shin-ETSU Handotai has many manufacturing bases in Asia, North America and Europe with sustainable management in several different countries in order to maintain operations (Business Continuity Management). Shin-ETSU Handotai will continue its full support for UMC to create a win-win situation.



In 2013, to establish a supplier production risk indicators, UMC conducted BCP review of major suppliers (23) in five high-risk materials categories to work together to reduce supply risk. ESH, QA and HR departments collected information from suppliers to complete the sustainability audit check sheet and administer grading standards by 5 supply risk levels: (H) - high supply risk; (M) - medium supply risk; (ML) - medium/low supply risk; (L) - low supply risk; (LL) - no supply risk. By establishing evaluation supplier risk indicators based on the latest trends, UMC reduced the risk level on 49 high-risk materials to medium and low risk.



## UMC Supplier Risk Management Practices



## Disaster Damage Feedback System for the Supply Chain

災害受損狀況廠商回報系統		匯出Excel						
Material		回覆時間	Affect the Goods Supply	Company name	Material Category	Contury Name (Vendor Location)	Disaster Area(Country)	Disaste Area(County)
Equipment								
IEB		2013/12/31 下午 05:33:33	N	SEN	S	Japan	Japan	Japan
通知記錄								
Failure EMail		2013/11/11 上午 11:50:43	N	KDK	G	Japan	Japan	群馬
System Setup								
Vendor								
依ID		2013/11/10 下午 12:10:06	N	SEN	S	Japan	Japan	South Ibaragi
依建立人員		2013/11/04 上午 09:15:22	N	KDK	G	Taiwan	Taiwan	桃園
依修改人員		2013/11/01 下午 04:33:36	N	Hitachi High-Technologies Taiwan Corporation	S	Taiwan	Taiwan	花蓮
依Cat1		2013/11/01 下午 04:23:43	N	冠成科技	C	Taiwan	Taiwan	新竹
Group		2013/11/01 下午 04:23:43	N	冠成科技	C	Taiwan	Taiwan	新竹

## Earthquake disaster risk control



### 2-5-5 Education and Training for Suppliers

UMC believes that suppliers in the green supply chain management system occupy a very important position, so periodic training courses are organized with suppliers through the company's supply chain management system to promote green policies and practices. Cooperation with suppliers to achieve mutual green goals create a win-win situation.

### 2-5-6 Sustainable Supply and Authorized Economic Operator Certification

The Ministry of Finance and the United States signed a mutual recognition agreement in November last year, which will be extended this year to Singapore, Israel and other countries through an interaction certification (MRA). High quality enterprise safety certification system (Authorized Economic Operator) for imports is a clear international trend, and will become a prerequisite for international trade. As a global semiconductor foundry, UMC has obliged by global counter-terrorism trends and maintaining the security of its cargo. In February 2013, UMC held a kick-off conference to officially declare for AEO import status, and in May immediately applied with Taipei Customs Department AEO qualification was approved in July for factory field validation, manufacturing, and import/export, making UMC the first wafer foundry in Taiwan to acquire AEO certification. This milestone serves as a symbol that the company is committed to building a win-win relationship with customers to provide more convenient and safe delivery of services and enhance export competitiveness in international trade. UMC will continue to implement AEO certification criteria and maximize efforts to comprehensively deepen supply chain security.

### 2-5-7 Conflict Minerals Management

On conflict minerals management, in 2009 UMC began investigating relevant suppliers to ensure a conflict mineral-free supply chain. Suppliers signed a provision of guarantee that their products were not manufactured using conflict minerals. Investigations so far have revealed no products manufactured using conflict minerals. Based on US Securities and Exchange Commission's August 22, 2012 announcement "Financial Reform and Consumer Law (Dodd-Frank Wall Street Reform and Consumer Protection Act)," the final application, Section 1502, they investigated 10 suppliers in 2012 and surveyed 22 suppliers in 2013, UMC also investigated 42 of our suppliers to verify that there are no conflicts metals in UMC's supply chain. In addition, based on the latest EICC form (2.03a) customers EICC questionnaire replies, in 2013 128 copies were replied using the EICC statistical form (included v2.0/v2.01/v2.02/v2.03/v2.03a).

#### UMC Conflict Minerals Management Measures:

To establish the company's (including subsidiaries) internal investigations and investigative mechanisms to suppliers.

To establish annual survey SOP and control operations.

To establish and collate survey data and stores them on a database.

To follow U.S SEC final rule, though not a mandatory requirement, shall keep the relevant survey data as recommended to serve as proof of compliance with regulations with respect to the required due diligence and corroboration

To require vendors to provide transparent and available information to company data for evaluation of their trading conditions.

Number of suppliers had been investigated for Conflict Material Issue

2012

10

2013

22



Experience Sharing



Gavin Chung

OS/IEB/Warehouse Manager

UMC successfully achieved AEO (Authorized Economic Operator) certification in August 2013 for their operations in both Hsinchu and Tainan. The key success factors are commitment and support from top management and a well-organized team working together. We understand that supply chain security has become a trend with international logistics. Taiwan Customs AEO certification not only promotes enterprise by actively expanding mutual recognition with other countries to gain timely cargo customs clearance and enhance logistics competitiveness, but can also provide more secure delivery of customer goods to build customer trust.





## 2-5-8 Strategic High-Tech Commodities Control Operations

**ICP**  
JULY 2012  
TW/SG  
synchronized  
imports ICP

Under trade law section 13th of the International Trade Bureau in the Ministry of Economy, 83 announced "strategic high-tech commodities export-import management approach" of strategic goods "without permission shall not be exported."

The Trade Bureau also announced in August 2012, "export control system within enterprises" to encourage exports to build internal control program(ICP).

UMC certified its ICP program in 2012, showing that our export control system is in line with international and Government export control regulations. The ICP program simplifies the complexity of high-tech products export licensing to allow more streamlined shipping. Through rigorous system management, ICP also minimizes the risk of misuse or illegal export of products. Regardless of the company or our customers, the time-saving benefits are significant. The company synchronized imports with Taiwan and Singapore through ICP on July 27, 2010. On February 11, 2011, the Singapore subsidiary was certified STP TIER3 by the Government. On December 25 2012, Taiwan's Ministry of Economy and Board of Foreign Trade certified UMC with "internal export control system". The company adopted the following from (customer request) started (order processing) (shipping), do a series of tests and screening on their own, to control the enterprise's overall export process, and providing internal departments with clear regulatory steps to follow (SOP process).

UMC completed the ten identified rules in accordance with ICP composition requirements (seven management projects and three screening requirements) which exports a control list screening system. It is the industry's first automatic screening system from the Bureau of Foreign Trade with the EU regulatory entities covered by the scope of the list in order to achieve a higher standard of control. In addition to the system on their own initiative, a systematic classification of the goods management and screening clients is used, and regularly takes the following series of management measures



Education  
and Training

Related export business staff should receive at least one annual export control training courses through UMC's e-Check system, or start training courses to understand the content and evolution of export regulations. Training courses enable employees to further familiarize

themselves with export license application specifications and regulations and the penalties for violation.



Internal Audit

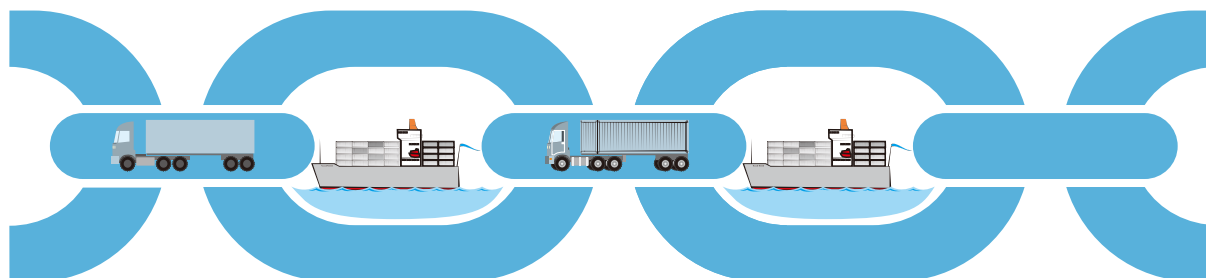
Audits should be conducted at least once a year; the relevant departments of the Company shall regularly perform internal audits. Every year on January 31, the annual internal audit report should be submitted.



Submitted in  
Statements

Submit the clearance of the permit with customs export transaction details and data aggregation tables to the Trade Bureau every six months.

Currently 26 customers have used these benefits .  
(Taiwan: 23 , Singapore: 9 )



# 3

## Sustainable Development Environment

### 3-1 Green Factory

- Green Factory and Green Building
- 369\* Energy and Resource Productivity Improvement Plan
- Clean Production
- Environmental Accounting

### 3-2 Climate and Energy Management

- Climate Change Policy and Low-Carbon Commitment
- Climate Governance Organization
- Climate Challenges and Opportunities
- Climate Change Mitigation Measures
- Carbon Disclosure and Communication
- Carbon Assets and Trading
- Energy Management

### 3-3 Water Risk Management

- Fab Water Resource
- Water Quality Risk Management
- Water Pollution Prevent
- Water-Saving Process
- Reduction of TMAH in Developer Solution and Ammonia Nitrogen

### 3-4 Green Product

- Hazardous Substances Restrictions and Management
- Life Cycle Assessment
- Carbon Footprint
- Water Footprint
- LCA to Go Project

### 3-5 Green Concept

- 2013 Environmental Protection Month



Climate and  
Energy  
Management

**1.57 %**

reduction of electricity.  
1% reduction target  
reached.  
**34,499 Mwh of  
electricity reduction.**  
**93 million NT dollars  
cost saving.**



Waste  
Management

**5 %**

reduction of waste.  
3.5% reduction  
target reached.  
**1,198 tons of waste  
reduction.**  
**4 million NT dollars  
cost saving.**



Water  
Resource  
Management

**24.91** million tons  
water recycling.  
(equivalent to conserving  
**0.79 of Pao-Shan  
Second Reservoir's  
water storage capacity.)**



Environmental  
Management

**100 %**

**fabs in Taiwan  
passed "Clean  
Environment  
Certification".**  
**All fabs passed ISO  
14001, ISO 14064  
and QC080000  
certification.**



Waste  
Management

**90 %**

waste recycling.  
**4.5 million NT dollars  
revenue generation.**

## Major Environmental Material Issues

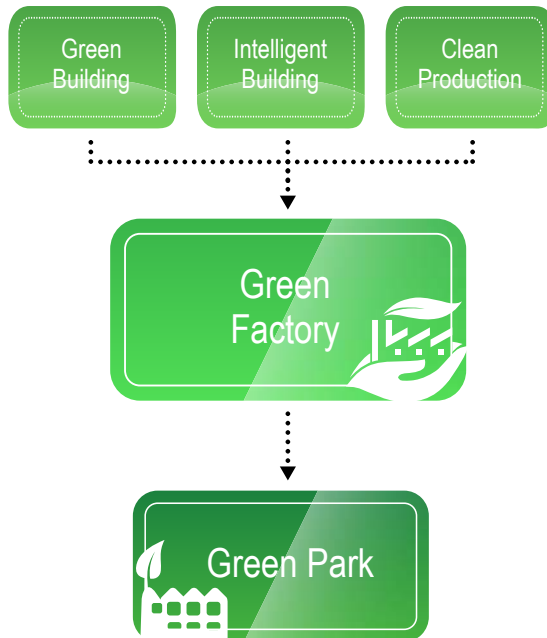
Material Issues	Key Performance Indicators	2013 Objectives	2013 Outcomes	2014 Objectives
Environmental Management	Regulatory compliance	Zero environment-related violations or penalties.	● Operations in all UMC facilities are compliant with applicable environmental regulations. UMC had no environment-related violations or penalties.	Zero environmental related violations or penalties.
	Environmental management system third-party certification	All plants passed ISO14001, ISO14064 and QC080000 annual certifications.	● All plants passed ISO14001, ISO14064 and QC080000 annual certifications.	To implement in overseas subsidiary's fab.
	Green production	All plants in Taiwan passed the Cleaner Production Assessment Method Evaluation conducted by the Industrial Development Bureau (IDB) of the Ministry of Economic Affairs (MOE).	● All plants in Taiwan passed the certification.	To implement in overseas subsidiary's fab.
	Sustainable supplier management	To complete over 45 audits.	● 48 audits of 48 vendors completed.	To complete over 45 audits.
	Hazardous Substances Restrictions and Management	Substitution of PFOS	○ 99% replacement of PFOS. The remaining part of the process is expected to be finished in 2014, when all inventory is consumed.	To complete substitution of PFOS
Greenhouse Gas Emissions	Normalized FCs emission	10.8% reduction of Normalized FCs emission	● 32% reduction of Normalized FCs emission	To further reduce Normalized FCs emission by 1%
	Electricity consumption	1% reduction of electricity consumption	● 1.57% reduction of electricity consumption	To further reduce electricity consumption by 1.5%
	Natural gas consumption	4.23% reduction of natural gas consumption	● 5.64% reduction of natural gas consumption	To further reduce nature gas consumption by 3.99%
	Carbon Footprint Management System	Develop and implement a web-based sSLCA tool	● LCA to go Project executed. Low-carbon web-based simple life cycle assessment tools completed.	To host 3 promotional activities and 2 supplier training sessions
Use of energy resources	Water consumption	2% reduction of water consumption	● 4% reduction of water consumption	To further reduce water consumption by 1.5%
	Waste generation	3.5% reduction of waste generation	● 5% reduction of waste generation	To further reduce waste generation by 2%

### 3-1 Green Factory

#### 3-1-1 Green Factory and Green Building

##### ► The Vision of Green Factory

For the purpose of environmental coexistence and global sustainable development, UMC joined the "Green Factory Promotion Association" in 2010 and is working with experts from industry, government, and academia to build a green building and green factory-clean production evaluation system, aiming to establish "Green Factory Standards" in Taiwan with expectations to achieve the long-term goal of "Green Park".



#### Steps to Promote Green Building

2008

**Practice** Introduced green building concepts into new fab designs.

2009

**Certification** Completed LEED-NC registration for UMC Fab 12A P3&4.

2010

**Practice** UMC joined the "Green Factory Promotion Association" in 2010 and is working with experts from industry, government, and academia to build a green building and green factory-clean production evaluation system, aiming to establish "Green Factory Standards" in Taiwan with expectations to achieve the long-term goal of "Green Park".

2011

**Practice** UMC and "Green Factory Promotion Association" provided a new bill for the EEWB Green Building Assessment System, and recommended modifications for Green Factory and cleaner production (CP).

**Certification** Fab 12A P3&P4 obtained EEWB gold certification from TAIWAN ARCHITECTURE & BUILDING CENTER.

2012

**Certification** Fab 12A P3&P4 obtained LEED-NC (Leadership in Energy and Environmental Design – New Construction) Gold certification from the U.S. Green Building Council

Fab 8A passed the EEWB green building certification.

Fab 12A P3&4 and Fab 8A obtained Green factory label from the Industrial Development Bureau, Ministry of Economic Affairs.

2013

**Certification** Fab 12A P5&6 obtained EEWB Diamond Certification Candidate label

#### Certification



Green Factory Label

FAB12A P3/4 FAB8A



(EEWB) Green Building Label

FAB12A P3/4 FAB8A



(EEWB) Green Building Label

FAB12A P5/6



LEED Gold Certification

FAB12A P3/4

## ► Green Building

UMC started evaluating the concept of Green Building in 2007. In 2008, Green Building certification programs were formally adopted for Fab 12A P3&P4's new construction. On Earth Day 2010, UMC published "Climate Change Policy" and "333 Carbon Reduction" targets, and received Taiwan's 2010 Environmental Hero Award. Due to growing environmental awareness, UMC aims to promote green building certification for new plants. This program can help reduce energy consumption and waste production. (Waste gas, waste water and solid waste).

From our past experience in energy conservation and hiring external experts, we modified the original design to meet LEED codes for U.S. green building council and EEWD green building criteria in Taiwan. Fab 12A P3&P4 obtained both green building certification in 2011 and 2012. Aside from green building design for new factories, we also continue green transformation for existing factories.

For the original Fab 8A facility, which has been in operation for more than 17 years, we still put forth efforts to innovate, import new technologies, develop internal technologies and self-administer environmental protection and energy saving. Fab 8A was certified by the EEWH in 2012 as the first 8" wafer fab to receive this in Taiwan.

## Green Building Design

### Ecological, Green, Water-retaining Design



Applied surrounding forest landscaping to decrease impact on habitat migration.  
Created ecological ponds for the purpose of both flood detention and rain water reclamation.

Inter-lock brick type pavement was applied. Used permeable sloping design for unexcavated areas.

Replaced conventional AC pavement design for all internal access points to improve rain water retention capability.

### Energy-saving Air Conditioning Design



Adopt VAV air conditioning systems in all offices

Applied free-cooling control mode during the winter season

A comprehensive heat pump design has been introduced across the board as a boiler auxiliary to retrieve cooling loads back to the central chilled plant for water-return. These have contributed greatly to annual natural gas conservation.

### Energy-saving Lighting Design



Fab 12A P3&P4 introduced energy-saving fluorescent lamps with low-loss electronic ballast and metal halide lamps to improve lighting controllability. These have made huge contributions to annual energy conservation with the same designed

illumination.

This year was the first time that LEDs for fab cleanrooms were being assessed to see if production conditions would remain unaffected with the reduced lighting.

### Local Renewable Energy Design



Fab 8AB & 12A have installed solar photovoltaic systems. In 2013, Fab 8AB's electricity generation from the PV system was 594,880kWh. Fab 12A's electricity generation from the PV system was 610,890kWh, bringing the total generated electricity from the PV systems to 1,205,770kWh.

An ecological protection area of about 30 hectares in the Southern Taiwan Science Park was established near UMC's new plant. UMC designed the new plant following the green building, green plants and smart building principles. In building the plant, UMC's biodiversity and green designs are much higher than the levels required by law, which demonstrate UMC's commitment to ecological protection.

## UMC's Green Building Characteristics



### Biological Diversity

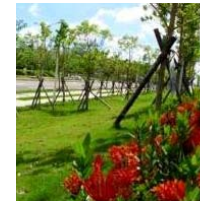


**Ecological Green Net:**  
Creating a continuous green zone around the plant, increasing bio-migration, foraging area or opportunity.

**Small biological habitat:**  
Creating a green reservoir with porous revetments, mixed forests, shrub area, to meet the needs of different organisms.

**Plant diversity:** Choosing native plants to attract birds and butterflies, and creating a diverse biological habitat.

### Greenness



**Ecological restoration layer:**  
Creating a mixed layer of plants by using plants of different heights.

**Plant spacing:**  
Planting large trees on the road side and giving the trees sufficient space to grow.

**Three-dimensional green space:**  
Increasing the soil layer above the basement of the OB Building to increase the 3-D green space for plant growth.



### 3-1-2 369+ Energy and Resource Productivity Improvement Plan

The environment is one of the most important issues of stakeholders. To further improve resources, energy productivity and reduce greenhouse gas emissions, UMC announced its Resource and Energy Productivity Improvement Plan on April 22nd, 2013.

#### 369+ Energy and Resource Productivity Improvement plan

3	⚡	Electricity consumption 2013-2015 Base Year 2012	Project Goals -3%
6	💧	Water consumption 2013-2015 Base Year 2012	Project Goals -6%
9	🗑️	Waste generation 2013-2015 Base Year 2012	Project Goals -9%
+	☁️ FCs	FCs emission (Note) 2013-2020 Base Year 2010	Project Goals -36%

Note: UMC's FC reduction target is to surpass World Semiconductor Council's FC reduction target by 2020.

### 2013 Achievements

3	⚡	Electricity consumption Project Goals 1% Base Year 2012	Achievements 1.57% 34,499 Mwh of electricity reduced
		Reduction Measures Increased energy efficiency improved air conditioning systems Improved lighting systems	
6	💧	Water consumption Project Goals 2% Base Year 2012	Achievements 4% 518,739 tons of water reduced
		Reduction Measures Expanded wastewater recycling Reduced water consumption of production machines Expanded condensation water recycling	
9	🗑️	Waste generation Project Goals 3.5% Base Year 2012	Achievements 5% 1,198 tons of waste reduced
		Reduction Measures Installed sludge dryer Reduced sulfate usage Reduced waste solvent	
+	☁️ FCs	FCs emission per unit area Project Goals 10.8% Base Year 2010	Achievements 32% 32% reduction of normalized FCs emission
		Reduction Measures Installed high efficiency FC abatement in new tools Optimized process conditions	



CEO and members of UMC's CS Committee announced UMC's 369+ Energy and Resource Productivity Improvement Plan on April 22nd, 2013.

### 3-1-3 Clean Production

#### Clean Production in UMC

##### Process

UMC continued research and development of low hazard raw materials with less waste production processes and efficient production equipment, to reduce the risk factors in the production process and harmful intermediate products and reduce the quantity and toxicity of the waste, to maximize resource use.

##### Production

UMC takes into consideration the impact of products on the environment for as far as visibly possible given UMC's upstream position in the supply chain. Because UMC is a B2B enterprise, we do incorporate energy saving design and waste reduction into our operation and supplier requirements, but cannot control if the end products of our customers (and their customers) are recycled or not. UMC does collect suppliers' CFP information for inventory of UMC's CFP to provide downstream customers (end-products companies) a reference of the product life cycle so they may minimize resource and energy consumption. Through substance hazard control measures, green procurement management and voluntary greenhouse gas reduction, we believe we have achieved green production for green products.





## Management System and Certificates



**ISO 22301**

Business Continuity  
Management System

Awarded by SGS

Coverage : Headquarters  
and Fab 12A



**ISO 14001**

Environment  
Management System

Awarded by DNV

Coverage : UMC

Certificate  
of  
Green Partner

**SONY**

Sony Green Partner

Awarded by Sony

Coverage : UMC



**EPD** Production

Environmental  
Production Declaration

Awarded by DNV

Coverage : Fab 12A &  
Fab 8A



Occupation, Health and  
Safety Management

Awarded by DNV

Coverage : UMC



**ISO 9001**

Quality Management  
System

Awarded by DQS-UL

Coverage : UMC



Carbon Footprint  
Verification on Integrated  
Circuit Wafers

Awarded by DNV

Coverage : Fab 12A &  
Fab 8A



Water Footprint  
Verification on Integrated  
Circuit Wafers

Awarded by DNV

Coverage : Fab 12A  
& Fab 8A 、 Fab 8C 、  
Fab 8D



**ISO / TS 16949**

Quality Management  
System

Awarded by DQS-UL

Coverage : UMC



**IECQ HSPM  
QC 080000**

Green Production related  
Certificates

Awarded by DQS-UL

Coverage : UMC



**ISO 14064-1**

ISO 14064-1  
Greenhouse Gases  
Emissions Verification

Awarded by BSI, DNV

Coverage : UMC

## Material Resources Management

UMC aggressively promotes cleaner production and adopts state-of-the-art technology to facilitate sustainable operation and development. UMC first selects its target from raw materials that produce major waste by referring to international trends and government-controlled chemicals. Related departments will then conduct small-scale experiments to evaluate technology feasibility while reducing this target in conformance with the company's cost-down policy and internal benchmark method. If it proves to be feasible, the reduction method will be applied in each fab.

### Management

Controlled by the Green Production subcommittee within UMC's CS committee.

With a raw material management e-system and regular analysis of optimum consumption by dedicated units and personnel, UMC ensures the rational procurement and utilization of material resources.

For key raw materials, UMC analyzes the correlation of production capacity and waste output with material consumption, and also implements various material usage reduction projects. Through optimizing production processes, workflow improvement and target management, UMC can reduce consumption from the source.

3

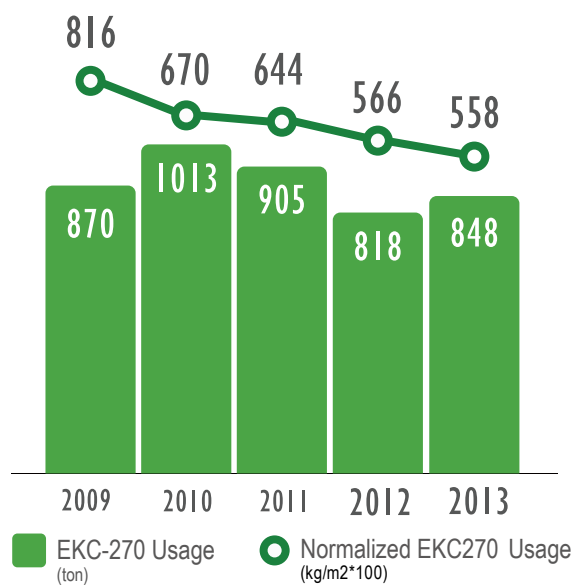
Sustainable  
Development -  
Environment

### UMCs Raw Materials Usage Reduction Result in 2013

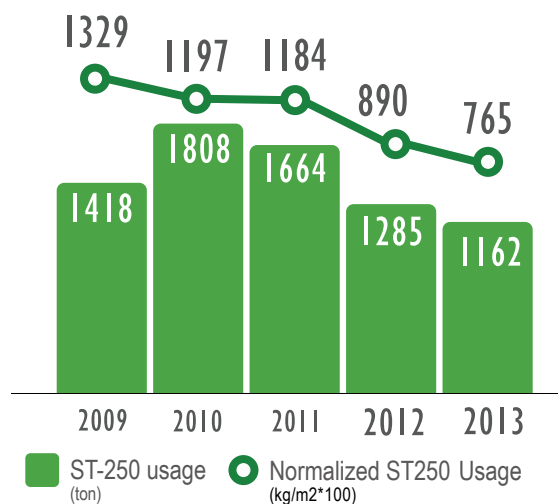
EKC-270 (clean application)  
8A/8C/8D/8E/8F/8S  
Normalized EKC usage is down 1.5% compared to 2012. **-1.5%**

ST-250 (photoresist)  
8D/12A/12i  
Normalized ST-250 usage is down 14% compared to 2012. **-14%**

### EKC-270 Usage



### ST-250 Usage



### Other Major Raw Materials Usage

HF Usage		ton
2009	<div></div>	899
2010	<div></div>	1,161
2011	<div></div>	1,176
2012	<div></div>	1,249
2013	<div></div>	1,348

H <sub>2</sub> O <sub>2</sub> Usage		ton
2009	<div></div>	1,870
2010	<div></div>	2,444
2011	<div></div>	2,542
2012	<div></div>	2,904
2013	<div></div>	3,450

H <sub>2</sub> SO <sub>4</sub> Usage		ton
2009	<div></div>	6,541
2010	<div></div>	8,570
2011	<div></div>	9,780
2012	<div></div>	10,754
2013	<div></div>	11,400

NaOH Usage		ton
2009	<div></div>	5,127
2010	<div></div>	6,410
2011	<div></div>	7,550
2012	<div></div>	9,725
2013	<div></div>	9,524

Note : Total raw materials consumption increased from 2009 to 2013 due to production increase.

## ► Waste Management

### ● Waste Reduction

Zero waste is the ultimate goal of waste management in UMC. UMC reduces total waste by improving process technologies and managing the source of raw materials.

The total waste generated by UMC in 2013 is 24,155 metric tons, not including daily garbage from the office, and the unit production waste was 159 kg / m<sup>2</sup>, a 4.5 % decrease compared to 2012. The hazardous waste was 14,687 metric tons and the unit production hazardous waste was 97 kg / m<sup>2</sup>, a 1.1% decrease compared to 2012. UMC reduced 1,198 tons of waste, or a 5% reduction, in 2013, which achieved the goal of a 3.5% reduction in 2013.

### ► The Strategies to Promote Waste Reduction in 2014

Use the waste sulfuric acid as a wastewater treatment component to reduce the amount of waste sulfuric acid produced.



Promote the high concentration recycling of hydrogen fluoride wastewater to reduce the amount of sludge.



Prolong the time of chemicals usage to reduce the amount of chemical waste liquid.



Promote the reduction of ammonia to reduce the amount of ammonium sulfate waste liquid.



### ► 2013 Waste Reduction Strategy and Benefit

Waste Reduction Item in 2013	6A	8A	8C	8D	8E	8F	8S	12A	12i	The Amount of Reduction (tons)
Sludge reduction	●	●			●		●	●		777
Waste solvent reduction		●	●	●	●	●	●	●		159
Waste sulfuric acid reduction		●		●	●	●	●			107
UPS battery reduction	●	●	●	●	●	●	●			97
Parts lifetime extension		●		●	●	●			●	25
Clean water of VOC abatement system reduction	●				●		●			12
Photo Resist reduction		●	●	●	●	●	●		●	11
Wood pallet recycling	●		●	●	●	●	●			9
Coffee residues and fallen leaves compost	●			●	●		●			2
Total										1198

### ► The Hazardous Waste Generated by UMC



Note : The hazardous waste NER (94 kg/wafer-m<sup>2</sup>) in 2013 includes UMC and subsidiary (HeJian Technology Co., Ltd.).

### ► The Total Waste Generated by UMC



Note : The total waste NER (157 kg/wafer-m<sup>2</sup>) in 2013 includes UMC and subsidiary (HeJian Technology Co., Ltd.).

## UMC Waste Reduction Target and Achievement

	Target	Actual
2013	3.5%	5%
2014	7%	
2015	9%	

Note1 : The baseline for the waste reduction plan is the total waste produced in 2012.

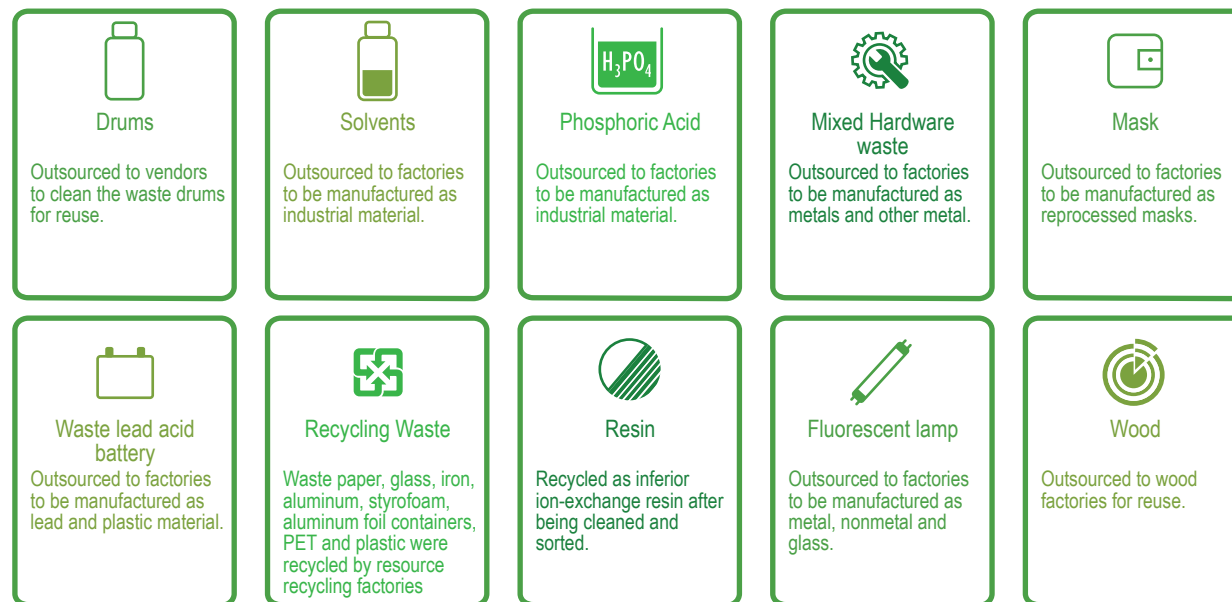
### ● From Waste to Resources

In addition to the waste reduction of processes, UMC continues to replace the existing end-of-pipe waste treatment with recycling and reuse of waste. Transforming garbage into useful resources can obtain three benefits, such as waste reduction, the reduction of energy and waste treatment cost, and the benefits of waste-to-resource

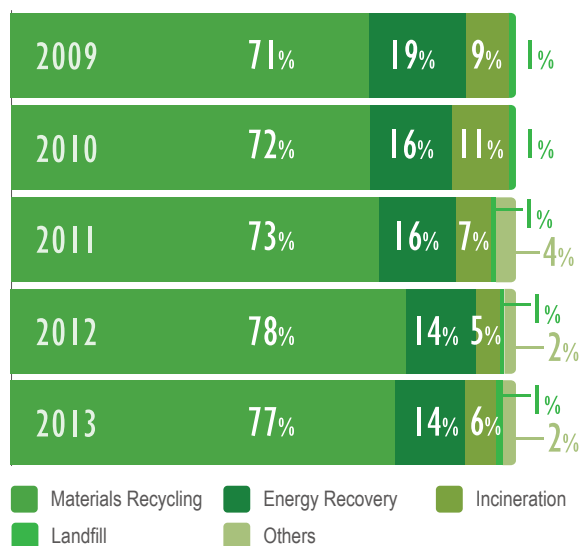
The amount of UMC recycled waste in 2013 was 21,836 metric tons and the percentage of waste recycling exceeded 90 % for more than two years. The amount of hazardous recycled waste is 13,082 metric tons and the percentage of hazardous waste recycling is up to 89%. The waste-to-resource revenue in Taiwan factories in 2013 is about forty-five million NT dollars.

In the future, UMC will continue to cooperate with waste companies and raw material suppliers to develop new methods and items for waste recycling.

## ► Waste Recycling and Reuse List in 2013



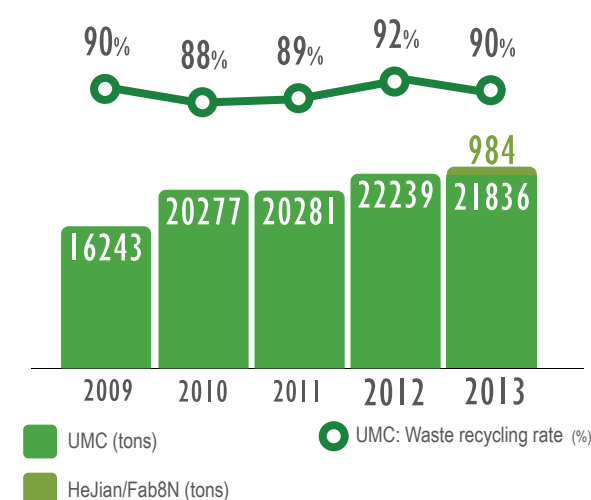
## UMC Waste Recycling Rates



Notes : (1) Other waste recycling methods include solidification, overseas treatment and chemical treatment.

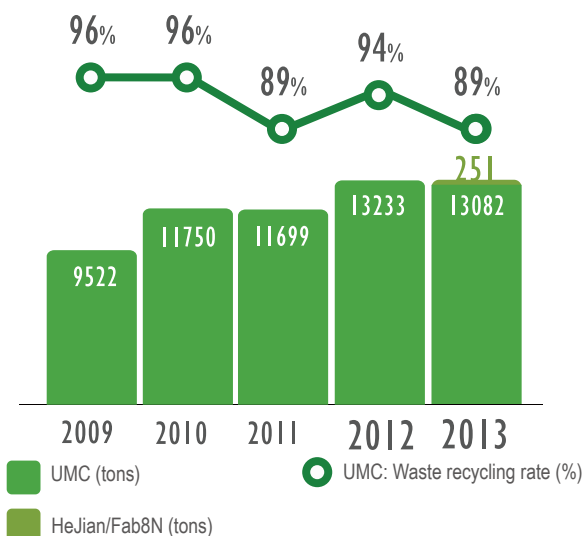
(2) Energy Recovery means that waste solvent was recycled as an auxiliary fuel.

## UMC Waste Recycling Rates



Note : The percentage of recycled waste (86%) in 2013 includes UMC and subsidiary (HeJian Technology Co., Ltd.).

## The Amount of Hazardous Recycled Waste



Note : The percentage of hazardous recycled waste (84%) in 2013 includes UMC and subsidiary (HeJian Technology Co., Ltd.,)

### Experience Sharing



H B Lu  
Factory Director

Fab12A is UMC's most advanced fab. It houses an R&D department and two fabs. It is responsible for producing high-end solutions and developing industry-leading processes. Waste reduction often begins with raw material reduction, which is difficult for a fab still committed to R&D. We find raw materials that generate the most waste and develop related measures to reduce waste production. Once verified, the measures are adopted in the fab immediately. In addition, we hold inter-departmental competitions to encourage and reward waste reduction proposals. In 2013, we successfully reduced 636.7 tons of waste and cut total waste by 6.2%.

Fab 12A will continue to improve waste reduction measures to achieve the 9% total waste reduction target for 2015 set by our 369+ Energy and Resource Productivity Improvement Plan. We are the most advanced fab at UMC, and we also strive to be the greenest.

## Reused Reusable items in UMC's Taiwan Fabs

Recycling Items	Description	Fabs
Waste resource	Waste paper, glass, iron, aluminum, Styrofoam, Aseptic Pack, plastic bottle, plastics sent to recycler for reuse.	All fabs in Taiwan
Wood	Recycled to produce wooden products	All fabs in Taiwan
CaF <sub>2</sub> added soil	Reused as cement additives for cement plant	All fabs in Taiwan
Waste sulfuric acid	Recycled as industrial diluted sulfuric acid or remanufactured as copper sulfate.	Fabs 8A / 8C / 8D / 8E / 8F / 8S / 12A
Waste solvent	Outsourced to factories to be alternative fuel for incinerator	All fabs in Taiwan
Activated carbon	Outsourced to a supplier to recycle waste activated carbon	All fabs in Taiwan
Waste chemical drums	Outsourced to vendors to clean the waste drums for reuse or recycled as plastic material	All fabs in Taiwan
EBR	Outsourced to factories to be manufactured as industrial material	All fabs in Taiwan
Waste phosphoric acid	Outsourced to factories to be manufactured as industrial material	Fabs 8A / 8C / 8D / 8E / 8F / 8S / 12A
IPA	Outsourced to factories to be manufactured as industrial material	Fabs 6A / 8A / 8C / 8D / 8E / 12A
NMP	Outsourced to factories to be manufactured as industrial material	Fabs 6A / 8A / 8C / 8D/8E / 12A
Waste ion-exchange Resin	Recycled as inferior ion-exchange resin after being cleaned and sorted	All fabs in Taiwan
Residue slurry	Recycled as silica sol material	Fabs 8A / 8C / 8D / 8E/8F / 8S
Waste solvent from photo process	Outsourced to factories to be manufactured as paint thinner or banana oil (During testing plan)	Fabs 8A / 8C / 8D / 8E / Fab 8F
CuSO <sub>4</sub>	Outsourced to factories to be electrolyzed as copper	Fabs 8D/12A
Waste hydrofluoric acid	Outsourced to factories to be recycled as sodium fluorosilicate	Fabs 12A
Waste mask	Outsourced to factories to be manufactured as reprocessed masks	Fabs 8A / 8C / 8D / 8E / 8F / 8S
Waste lead-acid battery	Outsourced to factories to be manufactured as lead	All fabs in Taiwan
Mixed Hardware Waste	Outsourced to factories to be manufactured as metals	All fabs in Taiwan
Waste glass bottles	Outsourced to vendors to clean, crush, and recycle waste bottles as glass	All fabs in Taiwan
Fluorescent lamp	Outsourced to vendors to clean, crush, and recycle waste bottles as glass	All fabs in Taiwan
Waste mercury lamp	Outsourced to factories to be manufactured as mercury	All fabs in Taiwan



## ● Excellent Contractor Training



To praise the excellent vendors of waste disposal

Policy Training Course," in recognition of excellent vendors. The special program rewarded the top three vendors out of 57 that were evaluated.

The top 3 are:

- (1) Hua-Cun Environmental Company
- (2) Tong-Yi Co., Ltd.
- (3) Wing-Sun Resources Regeneration Technology Ltd.



Professor Nan-Min Wu of Yuanpei University spoke about 「Waste Regulations & the Rule of Recycling Examination」

We also invited the professor Nan-Min Wu of Yuanpei University to speak about 「Waste Regulations & the Rule of Recycling Examination」, and 「ESH policy of UMC」. UMC

also provided waste regulation information and UMC's ESH policy to waste disposal vendors.

## ● Packaging Recycling and Reduction

UMC uses materials for shipping that fully comply with the heavy metal requirements within the EU's PPW (Packaging and Packaging Waste) Directive. UMC ensures that its packaging materials are all verified at third-party laboratories by raw materials suppliers and minimize environmental impact, such as using recyclable materials, cartons, and non-chlorine bleaches.

In addition, as UMC is not an end product supplier and hence typically reuses raw material packaging and used product packaging, after obtaining clients' agreement, to reduce packaging consumption and waste generation.

## ► Air Pollution Control

The UMC air pollution control strategy is to first reduce exhaust and then use high efficiency abatement equipment to treat the exhaust to meet the Air Pollution Code before discharging it into the environment. UMC's air emission sampling results have always complied with the Air Pollution Code standards.

UMC classifies process exhaust into 4 different types : acid exhaust 、alkaline exhaust 、solvent exhaust and general exhaust.

### Acid 、alkaline exhaust treatment



The treat equipment of acid and alkaline exhaust.

1st stage treatment: exhaust containing toxic 、flammable and perfluorinated compounds will first be treated by local scrubber equipment.

2nd stage treatment: exhaust will then be treated by central scrubber (wet type) system before being discharged.

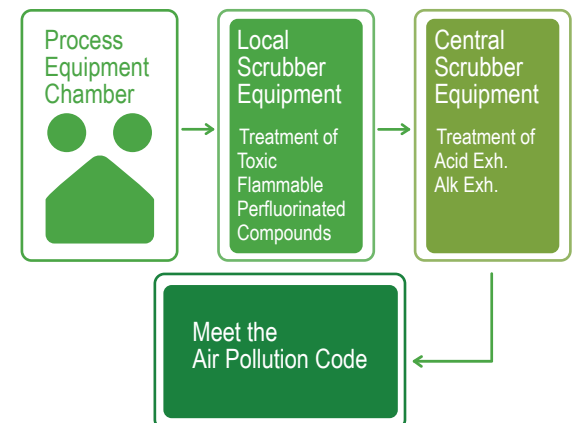
### Solvent exhaust



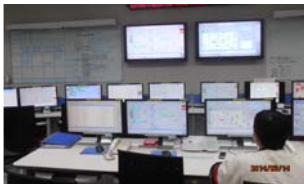
The treat equipment of VOC exhaust.

Solvent exhaust is treated by VOC abatement equipment (consists of Honeycomb Zeolite Rotary Concentrator System & Thermal Oxidizer Burner System) before it is discharged.

## The Air Pollution Control Process







24-hour personnel in Control Room

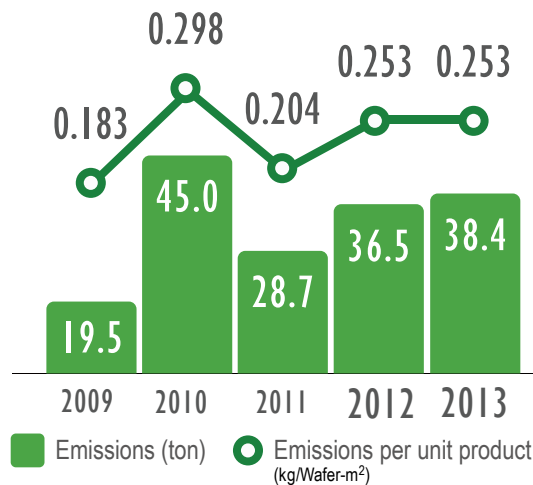
The set up of UMC's air pollution treatment equipment is always N+1. In case of abatement equipment failure, the standby unit can be turned on

immediately to support the exhaust treatment operation. In addition, the abatement equipment is connected to the emergency power supply and would be able to operate in case of emergency. The system provides a 365 days/year and 24 hrs/day uninterrupted operation, and advanced monitoring system. The air pollution treatment equipment complied with 『Taiwan TSIA's Air Pollution & Emission standards』 and 『Stationary Pollution Source Air Pollutant Emissions Standards』. Each UMC fab has 24-hour personnel in the Control Room to monitor the operation of the abatement treatment system. In case of any system abnormality, the personnel will take immediate action, report the status, and ensure that the air emission quality always meets air pollution code requirements.

### ► Annual THC emission and reduction

The treatment efficiency of Volatile Organic Compounds was 94.81 %, higher than the government's required level of 90%. Total emissions of THC in 2013 were 38.4 ton/year. Total reductions of THC in 2013 reached 483.92 tons/year. The company uses natural gas and a small amount of diesel. Estimated NOx emissions were about 70,000 Kg; SOx emissions were less than 200Kg in 2013.

### ■ Volatile Organic Compounds Emissions



### ■ NOx usage in 2010~2013

NOx Usage		ton
2010	<div></div>	45
2011	<div></div>	69
2012	<div></div>	73
2013	<div></div>	66

### ■ SOx usage in 2010~2013

SOx Usage		ton
2010	<div></div>	46
2011	<div></div>	170
2012	<div></div>	68
2013	<div></div>	37

Notes : Due to the use of large amounts of diesel fuel in the annual maintenance in 2011, SOx emissions were higher.

### ► Toxic Chemical Management

In addition to meeting regulatory requirements, UMC focuses on risk assessment and prevention of chemical substances management.



Chemical  
Substances  
Management

Reviewed all hazardous properties of new chemical substances by the electronic management system. 128 evaluations were completed in 2013.



Emergency  
Response Ability

Enhanced colleagues' emergency response abilities by participating in disaster drill and training. 17,701 participants were trained in 2013.

Received Awards from Environmental Protection Administration, R.O.C. in 2013



Toxic Chemical Substances Management Award



United Defense Management Contribution Award

### 3-1-4 Environmental Accounting

UMC implemented its environmental accounting system in 2001 and became the first high-tech corporation to use such a comprehensive accounting method. UMC's environmental accounting system is based on the classification system from Japan's Ministry of the Environment.

In addition to an environmental finance system, UMC established a financial information system for safety and health. The UMC environmental accounting system combines current accounting systems and uses pattern comparison and an internal coding method to calculate UMC's invested costs and expenditures on environmental protection. This helps UMC conduct overall environmental benefit evaluations and decision-making analyses.

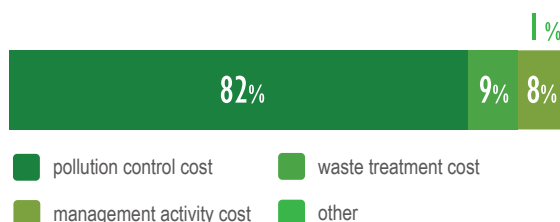
#### ► ESH Investment

UMC's ESH expenditure reflects its determination to protect the environment, people's safety and health. The ESH expenditure is managed through the Environmental Accounting system, which records and analyzes ESH expenditure every month. The environmental accounting data is also analyzed and summarized at the end of the year to help the planning of next year's investment proposal.

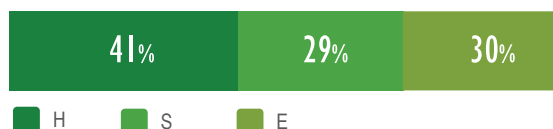
#### 2013 ESH Investment

Items	Amount(billion)	Accounting for the total expenditure of company%
ESH Expenditure (Including expense cost and capital cost)	40.87	4%
ESH Capital Expenditure	15.17	4.8%
Environmental Protection Expenditure	7.62	1.1%
Environmental Capital Expenditures	6.53	2.1%

#### Environmental Protection Expenditure Ratio in 2013



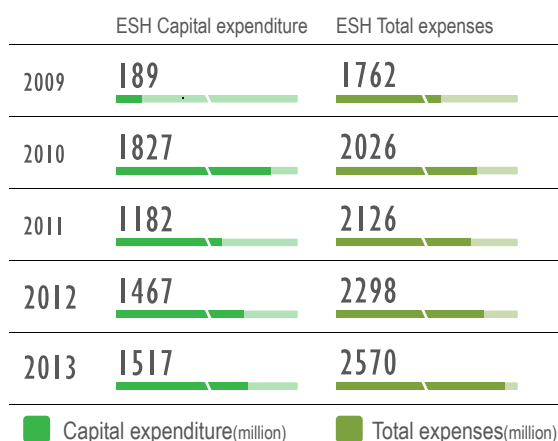
#### ESH Expense Ratio (E: Environment; S: Safety; H: Health)



#### ESH capital and expense cost ratio



#### ESH Expense Chart



#### UMC's Environmental expenditures (Thousands in NTD.)

Direct Cost of Reducing Environmental Impact	Capital expenditure	652,945
Pollution prevention programs such as air, waste water, soil, and ground water prevention	Total expenses	625,297
Global environmental protection costs, including cost of climate change mitigation		3,571
Cost related to enhancing resource efficiency		1,192
Cost of factory waste removal, treatment, recycle, and reuse		65,444
Indirect Cost of Reducing Environmental Impact		
Mangement costs including: Environmental protection training programs for employees	Total expenses	6
Implementation and verifaciton of UMC's management system		1,957
Cost of environmental monitoring		3,261
Staff cost related to environmental protection programs		57,807
Other Environmental Costs		
Relevant costs with Supplier/clients, including environmental costs	Total expenses	196
R&D costs, including costs to research on ways to reduce/control environmental impact		2,388
Costs of social movements, including sponsorships for environmental organizations and environmental awareness promotional activities		888
Damages and loss, including fines for environmental violations and litigation expenses		0
Capital expenditure Subtotal		652,945
Total expenses Subtotal		762,007
Total		1,414,953

## 3-2 Climate and Energy Management

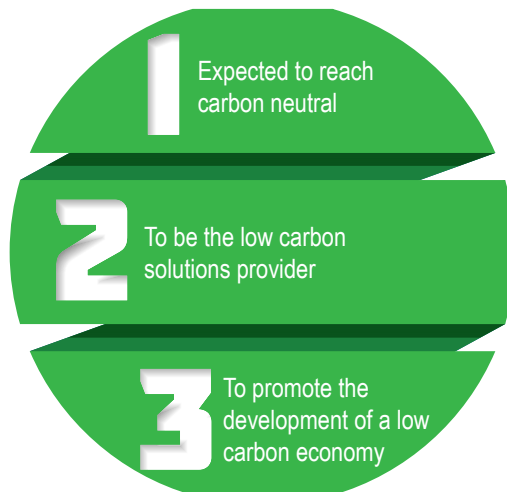
### 3-2-1 Climate Change Policy and Low-Carbon Commitment

As a member of the global community and a semiconductor industry leader, UMC has embraced measures to reverse global climate change.

UMC established its Climate Change Policy, Low-Carbon Commitment and GHG emission reduction goals as the company's environmental protection guidelines.

UMC actively follows its policies to expand various environmental protection measures and plans. These plans are launched by the Corporate Sustainability Committee and approved by the CEO, who serves as chairman of UMC's CS Committee.

#### UMC Climate Change Policy



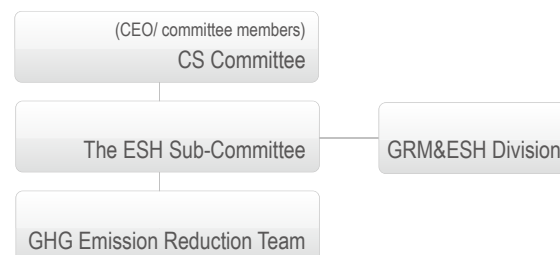
#### UMC Low-Carbon Commitment



### 3-2-2 Climate Governance Organization

UMC has a dedicated department (GRM&ESH) to collect, identify and assess various kinds of climate change issues. UMC's Corporate Sustainability Committee is the unit with the direct responsibility for climate change issues. The CS Committee is led personally by UMC's CEO P.W. Yen. The ESH Sub-Committee reports the effectiveness of the company's efforts in the semi-annual CS Committee meeting.

#### Climate Governance Organization Chart



### 3-2-3 Climate Challenges and Opportunities

Global warming has caused polar ice to melt, resulting in rising sea levels. Moreover, ocean currents and rainfall patterns have been altered, increasing the frequency and intensity of floods, droughts and storms. Climate changes resulting from global warming have had a direct or indirect impact on the ecosystem.

For the welfare of mankind, actions against global warming caused by human factors must take place immediately. UMC has been responding aggressively towards the potential impact on business operations caused by climate related natural disasters, while also preparing for increasingly stringent carbon emission controls and regulations.

#### UMC Climate Challenges and Opportunities

##### Regulations

###### Risk factor

- Greenhouse gas emissions permit and reporting, cap and trade schemes.
- Fuel/energy taxes, air pollution fee.

###### Response

- Lower carbon emission voluntarily.  
(UMC has received 2,873 thousand tons carbon credits from EPA)

###### Risk factor

- Product labeling.

###### Response

- Continue to execute greenhouse gas emissions and product carbon footprint inventory.

##### Climate related disaster

###### Risk factor

- Labor interruption, plant damage and utilities interruption.
- Raw material shortage and shipping delays.

###### Response

- Adopting the Triple Star Audit Program from AIG.
- Promoting business continuity management system.  
(UMC has received ISO 22301 BCM certification)
- Factories and supply chain globalization.

###### Risk factor

- Water shortage during the dry season.

###### Response

- Expanding water recycling and reuse to lower the demand of water.
- Implementing effective water-saving measures.

##### Other climate-related issues

###### Risk factor

- Less eco-friendly products will be eliminated because of changing consumer demands.

###### Response

- Promoting the product life-cycle analysis and certification.  
(UMC has passed the 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.)
- Invest in green technology industry.  
(Green Energy Investment is maintained at NT\$ 6 billion.)

### 3-2-4 Climate Change Mitigation Measures

#### ► Greenhouse Gases Emission Inventory

UMC has established a greenhouse gas emission inventory system following the requirements of ISO 14064-1 and the Greenhouse Gas Protocol. The GHG emission amount of all UMC fabs has been inventoried to keep GHG emissions in check and verify reduction results. At this stage, although UMC not subject to regulatory controls, UMC has set voluntary greenhouse gas reduction targets and reviews them annually.

UMC's facilities in Taiwan have passed ISO14064-1 third party verification of GHG emission amounts from 2000 to 2013. Singapore's Fab12i also passed the verification in 2011 and voluntary annual verification. UMC's subsidiary (HeJian Technology Co., Ltd.) conducted greenhouse gas emissions inventory in 2013 and will align with UMC to execute voluntary annual verification.

Scope 1  
Direct GHG Emissions and Per Unit Emission (NER) Chart



Notes : (1) The total NER (5.75 tCO<sub>2</sub>e/wafer-m<sup>2</sup>) in 2013 includes UMC and subsidiary (HeJian Technology Co., Ltd./ Fab8N)  
(2) The calculation of UMC's FC emissions from production adopts the Tier2b semiconductor calculation formula.  
(3) The calculation of Fab8N's FC emissions from production adopts the Tier2a semiconductor calculation formula.  
(4) The Data of Fab8N has not been verified by third party.

### Scope and Method of the Greenhouse Gas Inventory

#### Scope 1 Direct GHG emissions

##### Scope

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.

##### Implementation Method

Quantitative and qualitative assessment

#### Scope 2 Energy indirect GHG emissions

##### Scope

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

##### Implementation Method

Quantitative and qualitative assessment

#### Scope 3 Other indirect GHG emissions

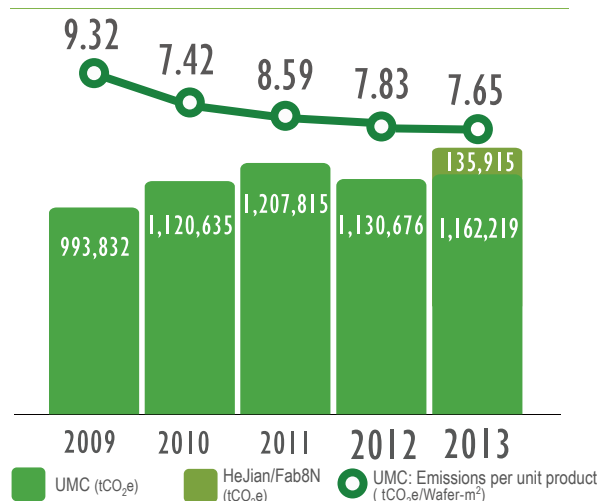
##### Scope

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 (e.g., emissions from air travel).

##### Implementation Method

Focus on qualitative assessment

Scope 2  
Indirect GHG Emissions and Per Unit Emission (NER) Chart



Notes : (1) The total NER (7.69 tCO<sub>2</sub>e/wafer-m<sup>2</sup>) in 2013 includes UMC and subsidiary (HeJian Technology Co., Ltd./ Fab8N)  
(2) We adopt the latest electricity CO<sub>2</sub> emission coefficient to calculate Scope 2 GHG Emission. (UMC's facilities in Taiwan: 0.532 KgCO<sub>2</sub>e/KWH, UMC's facilities in Singapore: 0.5716 KgCO<sub>2</sub>e/KWH, Fab8N in China: 0.81 KgCO<sub>2</sub>e/KWH)  
(3) The Data of Fab8N has not been verified by third party.

Scope 3  
Other Indirect GHG Emissions

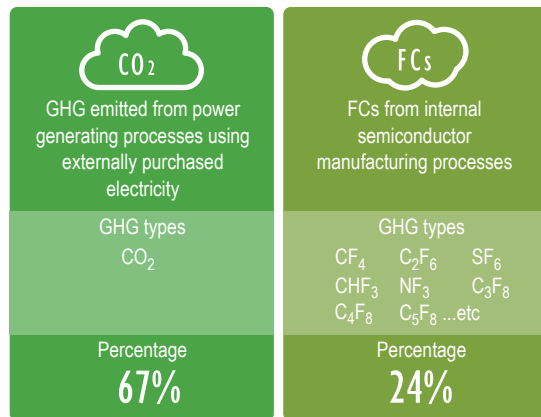
In addition to qualitative inventory of emission sources, we also record the carbon footprint to estimate the greenhouse gas emissions of the following emission sources.

Purchased Goods and Services	260000	tCO <sub>2</sub> e
Fuel-and Energy-Related Activities Not Included in Scope 1 or Scope 2	6700	tCO <sub>2</sub> e
Upstream Leased Assets	14000	tCO <sub>2</sub> e
Waste Generated in Operations	1200	tCO <sub>2</sub> e
Business Travel	800	tCO <sub>2</sub> e

## ► Greenhouse Gas Reduction

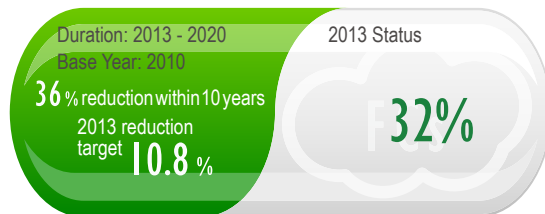
According to the product carbon footprint and greenhouse gas emission inventory results, the major contributor of UMC's product carbon footprint is manufacturing, with the major sources being electricity and FCs gas. UMC has thus formulated plans to reduce electricity consumption and FCs emissions in order to reduce carbon footprint.

### ■ UMC's Main Emission of Greenhouse Gases.



## ► FCs Reduction Plan

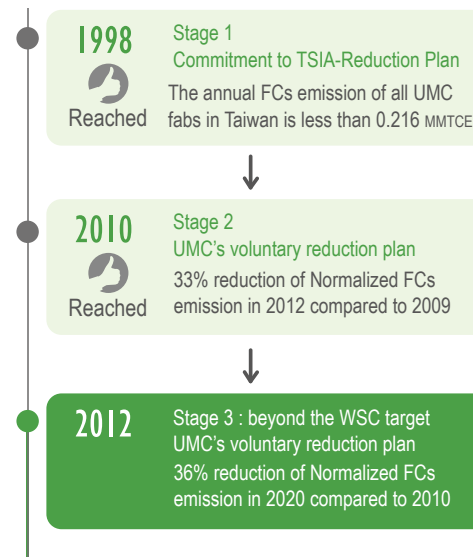
### ■ 2013 Reduction Target and Status



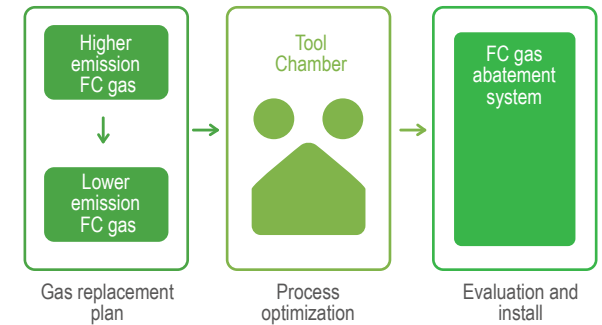
In addition to promoting energy saving annually, UMC established its "FC Emissions Reduction Team" in 1999 to implement its FC reduction plan. UMC also set stages of greenhouse gas reduction objectives. Currently, UMC will continue to promote its FCs fluorinated greenhouse gas reduction plan. Our goal is to reduce FC emissions by 32% in 2013 compared to 2010, far exceeding the 30% reduction level by 2020 set by the World Semiconductor Council (compared to 2010).

UMC's FC Emission Reduction Team considered technology, costs and benefits to choose the raw material replacement method and successfully concluded that all factories should replace C3F8/C2F6 with C4F8 reduction measures. The cumulative FCs reductions are 4.5 million tons from 2009 to 2013. The reduction rate was 67% in 2013.

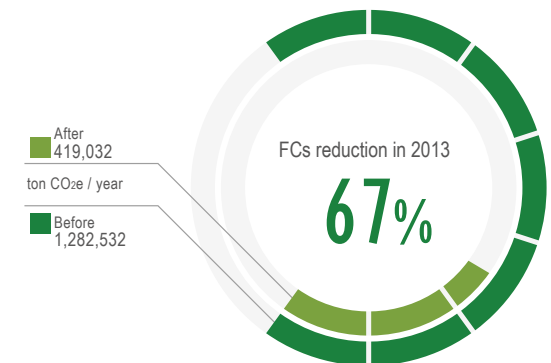
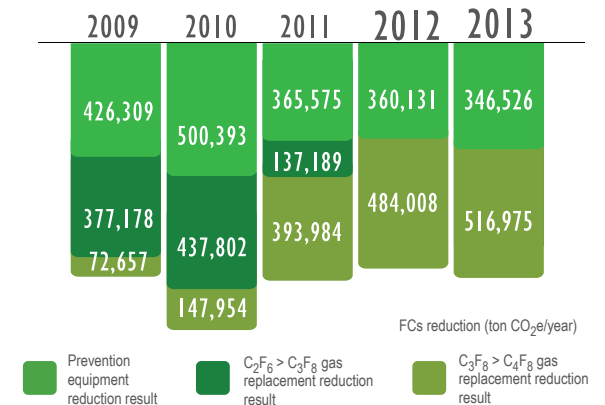
### ■ UMC's long-term reduction plan



### ■ UMC's reduction System



### ■ FCs reduction results





### 3-2-5 Carbon Disclosure and Communication

To address the issue of carbon disclosure, UMC has placed management of carbon emissions, carbon disclosure and communication as its key priorities. UMC has participated in CDP since 2006 with improvements every year. The foundry's score of 91A in 2013 was the highest among all participating Taiwanese companies.



UMC strives to maintain effective carbon communication and exchange domestically and internationally through various methods.

<b>Conferences</b> UMC held its "2013 Taiwan-EU Green Innovation Forum on Smart LCA". UMC participated in LCA to go meetings in Spain and England. UMC published LCA to go research results and participated in the seminars in United States.	<b>WSC (World's Semiconductor Council)</b> UMC participates in the WSC biannual meetings on behalf of TSIA.
<b>TSIA (Taiwan's Semiconductor Industry Association)</b> UMC participated in the "greenhouse gases early reduction project" with TSIA and made an application of 150,000 tons of carbon reduction credits in 2013.	<b>Government Agencies</b> UMC has submitted GHG reduction plans and implemented results for the reference and statistical analysis for the government. UMC participated in the Low Carbon Enterprise Competition held by Science Park Administration (SPA) and received the "Outstanding Award."
<b>Carbon Disclosure and Communication</b> UMC has participated in CDP since 2006 The foundry's score of 91A in 2013 was the highest among all participating Taiwanese companies.	<b>Annual Report/ Website/ Questionnaire</b> Relevant information disclosed in the annual CS report and summarized in UMC's annual financial statements. Relevant information disclosed on UMC's website. UMC provided GHG emissions, management, and carbon footprint information for customers that required these. Carbon management evaluation of suppliers.



### 3-2-6 Carbon Assets and Trading

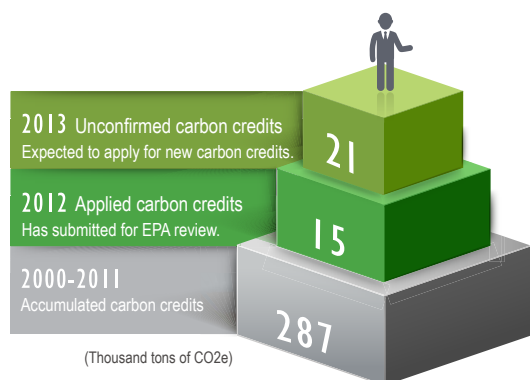
#### ► Carbon Assets

UMC has long exchanged and discussed GHG emission methods with Taiwan Semiconductor Industry Association member companies. We also participate in various government promoted reduction policies. The EPA announced "greenhouse gases early reduction project and trade-in allowance principles" and "semiconductor industry greenhouse gas emission intensity announcement" in 2010 and 2011 respectively. UMC commissioned a third-party agency to verify greenhouse gas emission reduction results over the past years and also cooperated with TSIA member companies to research FCs gas reduction methodology in semiconductors."

In 2012, UMC, ITRI and TSIA member companies' cooperation for research on FCs gas reduction methodology in semiconductors passed verification agencies assessment, and. And UMC has submitted to EPA for reviewing in 2013. After the reduction methodology is be reviewed and approved by the Government, UMC will be offset accordingly and can apply for quota reductions.

In 2013, UMC also received 2,873 thousand tons of carbon credits from EPA and applied 15 thousand tons of carbon credits.

#### UMC's Carbon Credits



#### ► Carbon Trading

UMC and Dragon Steel Corporation (DSC) executed of a contract to trade two million tons of carbon dioxide equivalent (tCO2e) units. This contract was reviewed and approved on January 22, 2014 by Taiwan's Environmental Protection Administration (EPA) as the first carbon trading contract ever passed by the EPA, marking a significant milestone in Taiwan's carbon trading market. The gain from this carbon credit trade will all be appropriated to enforce environmental protection and promote the sustainable development of the environment."

### 3-2-7 Energy Management

Reducing energy consumption is one of the key sustainable management issues for UMC. Currently, we focus on electricity and natural gas reduction. On the other hand, UMC also promotes energy saving programs in the office and public areas through activities and training to enhance employees' ideas and habits in energy saving and greenhouse gas reduction.

#### ► Electricity Reduction Objective - UMC's 369+ Energy and Resource Productivity Improvement plan

3	⚡	Electricity consumption 2013-2015 Base Year 2012	Project Goals 3 Years -3%
6	💧	Water consumption 2013-2015 Base Year 2012	Project Goals 3 Years -6%
9	🗑️	Waste generation 2013-2015 Base Year 2012	Project Goals 3 Years -9%
+	☁️	FCs emission 2013-2020 Base Year 2010	Project Goals 10 Years -36%

#### Electricity Reduction Objective - 2013 Target and Achievements

⚡	Electricity consumption 2013 Targets	-1%	2013 Achievements -1.57%
💧	Water consumption 2013 Targets	-2%	2013 Achievements -4%
🗑️	Waste generation 2013 Targets	-3.5%	2013 Achievements -5%
☁️	FCs emission 2013 Targets	-10.8%	2013 Achievements -32%

## ► Electricity Reduction

In energy management, UMC Energy Conservation Committee created a company-wide energy savings plan and target for Energy Efficiency and CO<sub>2</sub> reduction, and coordinated and integrated individual department programs and strategies. They also conduct regular review meetings to track effort's effectiveness, while continuously introducing different advanced, energy efficient technologies and carrying out energy efficiency improvement plans for related facilities. Their activities achieved remarkable success.

For 2013's energy conservation plan, a total of 9 major electrical energy saving measures were effectively implemented, accounted for 34,499Mwh of electrical power consumption (Electrical Power reduce 1.57% w.r.t 2012), equivalent to 18,353 tons of CO<sub>2</sub> emission. In addition, another key energy conservation effort is the implementation of renewable energy sources. Currently, both Fabs 8A & 12A in Taiwan have installed a solar energy system, each with a generation capacity of 500kWp when running in full operation. On top of this, UMC-SG Fab 12i will begin generating electricity through its 450kWp capacity solar energy system in February 2014.

For 2014's energy conservation plan, UMC has set annual targets for electrical energy reduction of 20,800Mwh, which results in an estimated 11,066 ton reduction in CO<sub>2</sub> emissions. UMC has set a challenge target of 1.5% reduction in electricity consumption (w.r.t 2012 Overall Electrical Power consumption, 1% reduction yearly).

UMC will continue look for different energy saving measures and plans. Of the 250 energy saving proposals, example include: energy efficient production tools, replacing Cleanroom T8 fluorescent lights with LED tubes, conversion of online Uninterruptable Power System (UPS) to offline UPS, fab tool exhaust reduction, chilled water conservation, etc.

## 2013 Electrical Power Conservation Measures

2013 Power Power Conservation Measures	6A	8A	8C	8D	8E	8F	8S	12A	12i	8N
Fab Gownroom and Truss replaced lighting to LED	●	●	●	●	●	●	●	●	●	●
Online UPS system change to Offline UPS system		●	●	●	●	●	●			
Diesel UPS system shutdown solution								●	●	●
UPS reduced		●	●	●	●	●				
Tools Exhaust reduced	●	●	●	●	●	●	●	●	●	●
CDA System reduced	●		●	●	●	●	●	●	●	●
HVAC system power consumption		●	●	●	●	●	●	●		●
PCW power consumption		●	●	●	●	●		●	●	●
Tools power consumption	●	●	●	●	●	●	●			●
Power savings of <b>34,499Mwh</b> , and reduced <b>18,353 Tons</b> of CO <sub>2</sub>										


## 2014 Electrical Power Conservation Measures

Fab lighting replace to LED




6A,8A,8C,8D, 8E,8F,8S,12A, 12i,8N

Online UPS system change to Offline UPS system



6A,8A,8C,8D,8E, 8F,12A,8N

Tools Exhaust reduction




6A,8A,8C,8D, 8E,8F,8S,12A, 12i

Tools power consumption



8A,8C,8D,8E,8F, 8S,12A, 12i,8N

HVAC system power consumption



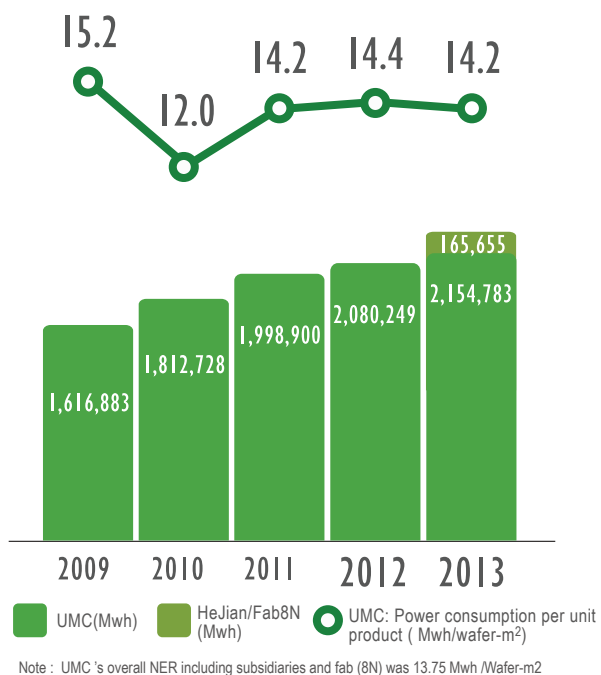
6A,8A,8C,8D,8E, 8F,8S,12A,12i,8N

⚡ ↓ CO<sub>2</sub>

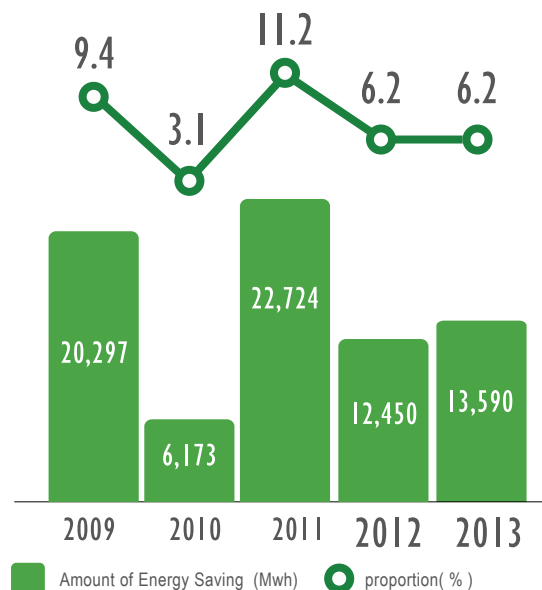
Power saving of **20,800Mwh**, and reduced **11,066 Tons** of CO<sub>2</sub>

Note: Energy-saving measures to save electricity are based on theoretical calculations.CO2 emission value is based on the CO2 emission code of Taiwan Power Company = 0.532kgCO<sub>2</sub>/kwh

### Electrical Power Consumption and Per Unit Consumption (NER) Chart



### The Result of Energy Saving



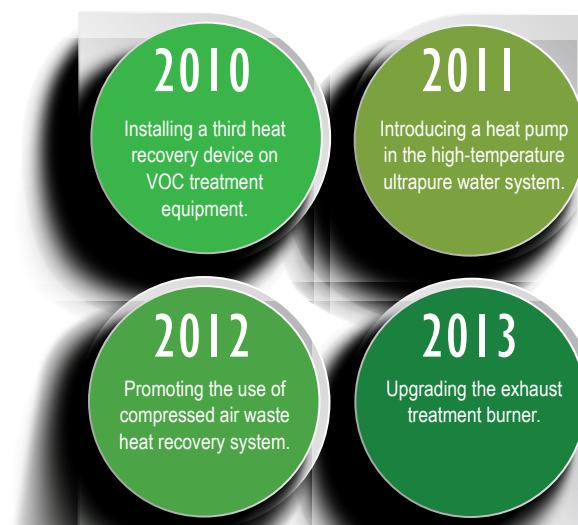
### The Amount of Solar Energy

The Amount of Solar Energy		kWb
2009	—	75,000
2010	—	153,473
2011	—	294,911
2012	—	982,868
2013	—	1,240,725

### Natural Gas Reduction

Since 2010, UMC has introduced different gas-saving technologies, with investments totaling about 35 million NTD in 2013, a total saving of 13,590 Mwh of natural gas (natural gas usage reduced by 5.64%, compared with 2012), equivalent to reducing 2,673 tons of CO<sub>2</sub> emission. In 2014, to promote the natural gas reduction program, UMC will continue to invest in heat pump in the high-temperature ultrapure water system, upgrade the exhaust treatment burner, and increase heat recovery in the high-temperature super ultra-pure water filtration system. In 2014, UMC could save an estimated 9,633 Mwh of natural gas, and reduce usage by 3.99% (compared with 2012), equivalent to reducing CO<sub>2</sub> emissions by 1,931 tons.







### UMC Energy-saving Technologies for Gas Reduction



## 2013 Natural Gas Saving Measures

2013 Natural Gas Saving Measures	6A	8A	8C	8D	8E	8F	8S	12A	12i	8N
Introducing a heat pump into high-temperature ultrapure water.		●	●	●		●			●	
Utilizing Promotus compressed air system for recycling waste heat.			●	●				●		●
Upgrading the exhaust treatment burner.								●		
Optimizing boiler operation.								●		
2013 annual maintenance to save gas.	●									
Lowering the temperature of VOC treatment equipment.	●									
Optimizing the operation of VOC treatment equipment.								●	●	
Saving 13,590 Mwh of natural gas, reducing CO2 emissions by 2,673 tons.										

## 2014 Natural Gas Saving Measures

<p>Introducing a heat pump into high-temperature ultrapure water.</p> <p>8A,8F,8N,12i</p> 	<p>2013 annual maintenance to save gas.</p> <p>6A</p> 	<p>Upgrading the exhaust treatment burner.</p> <p>12A</p> 
<p>Increasing heat recovery in the high-temperature ultra-pure water filtration system.</p> <p>12A,8N</p> 	<p>Optimizing boiler operation.</p> <p>12A</p> 	<p>Optimizing the operation of VOC treatment equipment.</p> <p>12A</p> 

Expected to save 9,633 Mwh of natural gas, reducing CO2 emissions by 1,931 tons.

## Consumption of Natural Gas and Per Unit Consumption (NER) Chart



## Reduction of Natural Gas and Per Unit Reduction (NER) Chart



Note1 : UMC's overall NER including subsidiaries and fab (8N) was 1.50 Mwh/Wafer-m<sup>2</sup>  
Hsinchu fab (6A, 8A, 8CD, 8E, 8F, 8S) : natural gas calorific value of the translation factor = 0.010354 Mwh / m<sup>3</sup>  
Tainan fab (12A) : translation of the calorific value of natural gas coefficient = 0.011284 Mwh / m<sup>3</sup>  
Continental fab (8N) : translation of the calorific value of natural gas coefficient = 0.008725 Mwh / m<sup>3</sup>  
Singapore fab (12i) : LPG translated calorific value factor = 0.012695 Mwh / kg  
Town Gas calorific value of the translation coefficient = 0.001 Mwh / Kwh  
(The calorific is calculated using coefficient of heat value conversion from gas supplier)

Note2 : The amount of natural gas saved is a theoretical value. Another reference is the 2006 IPCC stationary sources and mobile sources (fuel).  
CO<sub>2</sub> emission factor and Carbon emission is calculated based on local plant's gas calorific value.





Note3 : Taiwan fab gas carbon equivalent = 1.879 KgCO<sub>2</sub>/M3  
Singapore (12i) Town Gas translation of the calorific value of the coefficient= 0.0201 KgCO<sub>2</sub>/MWh  
Continental fab (8N) gas carbon equivalent = 2.17 KgCO<sub>2</sub>/M<sup>3</sup>

### 3-3 Water Risk Management

#### 3-3-1 Fab Water Resource

Under the effect of extreme climate, water risk management becomes a critical and urgent issue for companies that should face. Water risk management is urgent in the semiconductor industry. In order to create a draw up the water risk management strategy, UMC adopted risk assessment results developed by WRI (Water Resource Institute) and differentiated the risk degree of all UMC all fabs which are located at water stressed areas, based on Taiwan's water resource distribution.

##### All UMC fabs' Water Resource

<p>Hsin-Chu science park 6A 8A 8C 8D 8E 8F 8S</p>	<p>Besides the original water source, Shihmen Reservoir and Yongheshan Reservoir are available for support. Every year, before the dry season, WRA (Water Resources Agency) holds a meeting to review water risk to minimize such risk.</p>	<p>Singapore 12i</p>	<p>NEWater is recycled from living waste water. The water resource is stable and with low risks.</p>
<p>Water stress grade *</p>  <p>Low</p>	<p>Water Resource Pao-Shan Reservoir Pao-Shan Second Reservoir Longen Weir</p>	<p>Water stress grade *</p>  <p>Medium-high</p>	<p>Water Resource Singapore NEWater</p>
<p>Tainan science park 12A</p>	<p>Nan-Hua Reservoir is the main resource. Dry season is from Nov. to the following next May. WRA reviews risks regularly. If it's necessary, they will distribute from Tseng-Wen Reservoir.</p>	<p>China 8N</p>	<p>Lake Tai reserves water of 27.2 tons. The water resource is plentiful and stable.</p>
<p>Water stress grade *</p>  <p>Medium</p>	<p>Water Resource Nan-Hua Reservoir Tseng-Wen River</p>	<p>Water stress grade *</p>  <p>Low</p>	<p>Water Resource China's Lake Tai</p>

Remark: adopt WRI (water resource institute) Aqueduct Tool to do risk assessment. <http://www.wri.org/our-work/project/aqueduct/aqueduct-atlas>

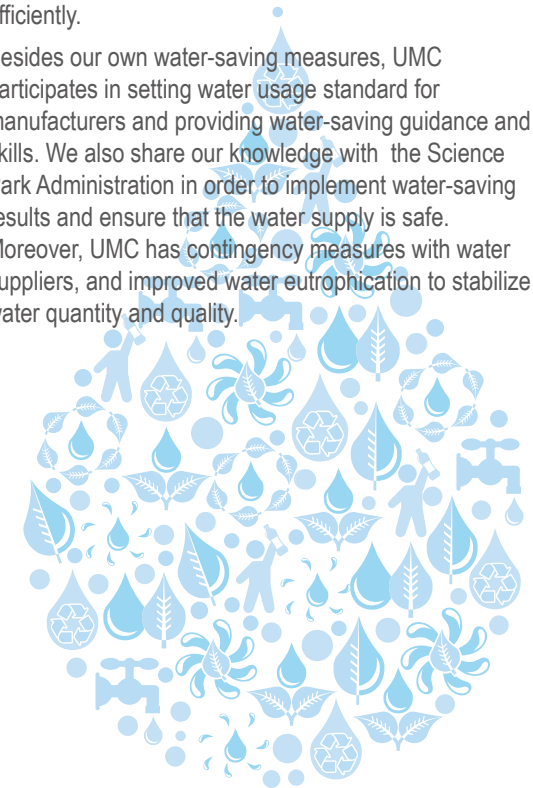
#### 3-3-2 Water Quality Risk Management

Before going in to fabs, water needs to pass pH equipment and be sequentially monitored by electrical conductors so that the water quality is stable. In producing pure water, there are equipment within every section to assure water quality reliability.

#### 3-3-3 Water-saving Process

UMC's rule of water usage starts with designing a water-saving process. Next, recycle as best as possible while practicing high-effectiveness water management. Combining these can reduce water consumption more efficiently.

Besides our own water-saving measures, UMC participates in setting water usage standard for manufacturers and providing water-saving guidance and skills. We also share our knowledge with the Science Park Administration in order to implement water-saving results and ensure that the water supply is safe. Moreover, UMC has contingency measures with water suppliers, and improved water eutrophication to stabilize water quantity and quality.





## UMC Water Saving Practices

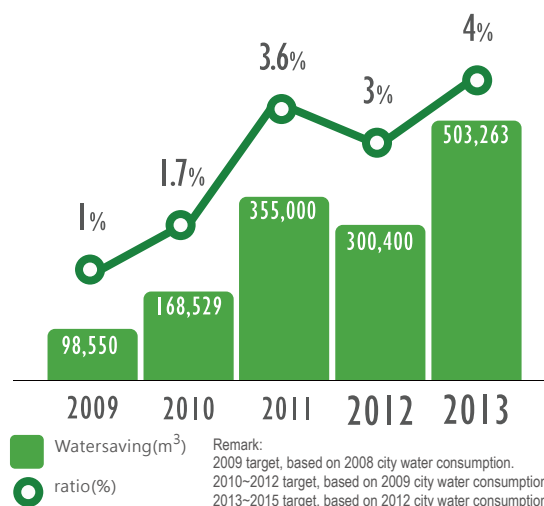
- 1 Establish working principles to achieve water conservation results.
- 2 Expand water recycling methods and reduce water consumption.
- 3 Implement PDCA when integrating environmental protection goals.
- 4 Achieve end-pipe management through a day-to-day management approach.
- 5 Establish a wastewater treatment system and develop multiple recycling processes to maximize efficiency.
- 6 Establish UMC's water resources management system and check total water balance in all to confirm rationality of water usage.
- 7 Establish an integrated technology committee under the facilities department, responsible for experience integration.
- 8 Establish water conservation measures and directly introduce new construction standards.

## 2013 New Water Conservation Measures

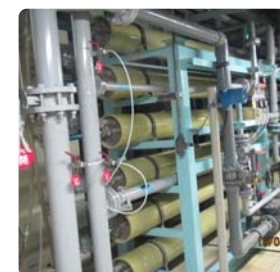
Water Conservation Measures	Implementation Fabs	Water Conservation Results (ton) <small>Note2</small>
New separate piping for LSR reuse	12A	182,300
Optimize CuCMP waste water reuse	12A	185,481
Keep LHF separated from origin	8E	27,500
To promote recovery rate of LSR	8N	24,675
Recycle waste water from acid drain at Subfab as scrubbing water for central scrubber.	12i	24,025
R-RO brine water re-condense (increase recovery rate)	8S	23,032
SF/AC backwash wastewater reuse	12A	21,105
RO brine water overflow reuse	6A	12,038
Waste water area water quality change to reclaim water	8E	92,00
Track tool discharge reclaim	8F	5,973
AHU condensate reclaim	12A	5,503
RO bypass from general acid reclamation system	8E	3,720
ACF Backwash recycling	12i	3,350
Acid rinse water quality was over specification, so R-RO reclaim was conducted	8S	37

New measures only count twelve months performance, while cross -yearly plan only counts in 2013's performance.

## Performance of Water Saving



New separate piping for LSR reuse

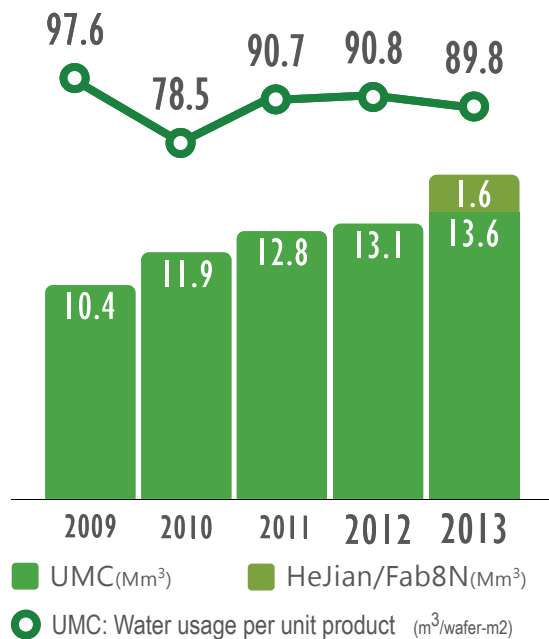


Promoting recovery rate of LSR

## ► Total Water Usage

UMC made efforts to conserve water reservation. For example, we enhanced efficiency and value, reducing the degree of environmental impact and reduced incoming water. Tap water is the mainstream source; rain and condensate water are the alternatives.

### UMC's Total Water Usage Result



Remark : Total NER of UMC, including the subsidiary Hejian fab(8N) is 90.3m³/wafer-m².

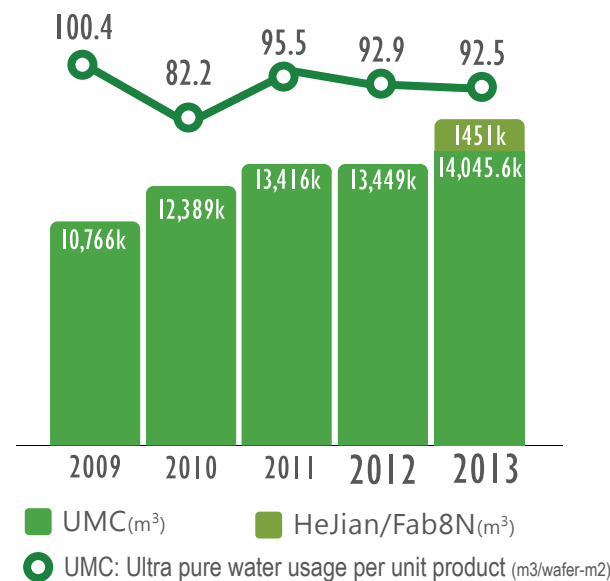
## ► Rain and Condensate Water

Rain and Condensate water are precious natural resources of nature. The Changing climate influences rain and condensate water. Though they are equivalent to 5% of total water usage, if they could be used appropriately, they can it is possible to reduce the degree of environmental impact.

### Recycled Rain and Condensate Water

rain and Condensate water	tons
2009	522212
2010	484889
2011	633248
2012	573268
2013	661191

### UMC's Total Ultra Water Usage

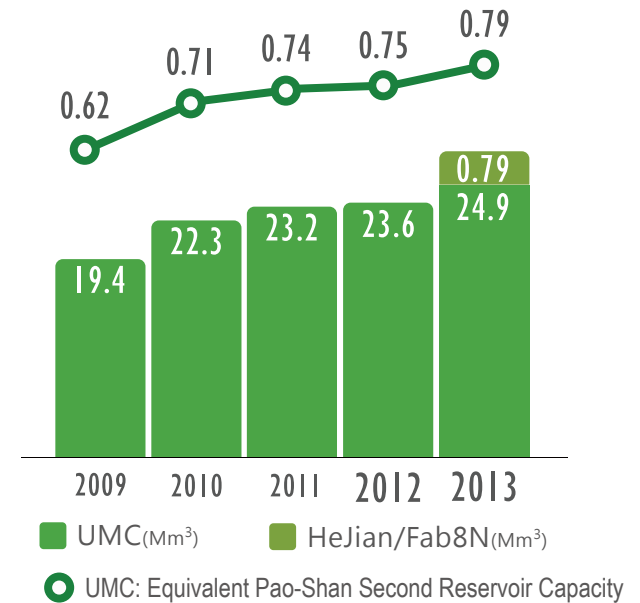


Remark : Total NER of UMC, including the subsidiary Hejian fab(8N) is 91.8m³/wafer-m².

## ► Total Water Recycled

Total water recycled over past years was 24.91 million tons, equivalent to conserving 0.79 of Pao-Shan Second Reservoir's \*1 water storage capacity.

### UMC's Total Recycled Water Result



Remark1 : Total NER of UMC, including the subsidiary Hejian fab(8N) is equivalent to conserving 0.87 of Pao-Shan Second Reservoir .  
Remark2: Pao-Shan Second Reservoir is the main water source supply to the Science Park. The total water storage capacity is 31.417 million tons (source: Water Storage Capacity Report on February 2014, WRA, MOEA).

### Future Water Conservation Projects Consumption

Water Conservation Measures	Implementation Fabs	2014 Reduction Target (tons)
LDI system ROR water reclamation	12A	48,096
Recycle waste water from acid drain at Subfab as scrubbing water for central scrubber	12i	24,365
Acid drain recovery of Ni-Solvent tool from gas /liquid separator to DIR 30%	12i	12,410
Modify Reclamationim Tank drain piping	8N	8,250
Stop Chemical station IPA Scrubber washing	8A	7,360
Increase LDI quality to reduce Cooling tower Blow down	12A	6,120
Extend MMF Service Time	12A	5,010
FAB Tube tool PCW Drain reclamation	12A	3,340
Modify 2B3T WA/SA resin ratio	8CD	23,54
Outside air conditioning condensate reclamation	6A	1,375
Mix bed rinse water reclamation	6A	1,100
Reduce EPI RO cleaning	8F	668

Water conservation will face increasing challenges in the future as fewer areas will be available to further save water. UMC will continue to introduce new technologies that can help save water in a cost-effective way. Based on 2012 year's city water consumption, UMC has set a goal to save 6% more water in the upcoming 3 years.

### 3-3-4 Water Pollution Prevent

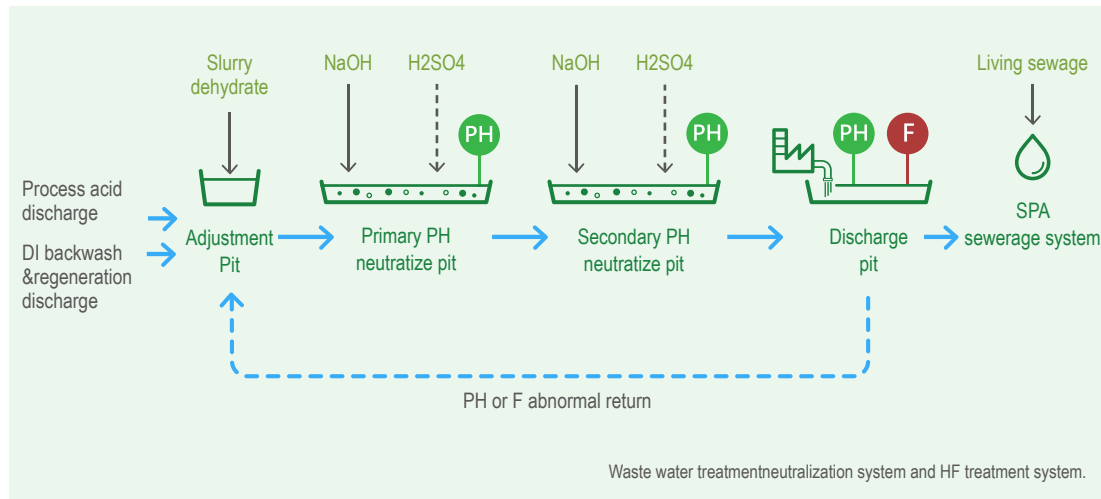
#### ► Wastewater Treatment

Three critical principles of UMC water pollution treatment are reducing use in the manufacturing process, diverting waste liquid and recycling. There are 27 kinds of waste piping in new fabs, which are sorted into "solvent", "inorganic acid " and "waste water". Solvent could be burned for reuse by its high or low flash point's characteristic. Inorganic acid could be reused. Waste water could be reused by its inherent characteristics. Doing this can obtain the highest profit and simplify waste water compared to releasing it to waste water processing station, and satisfies the Science Park Administration's standard.

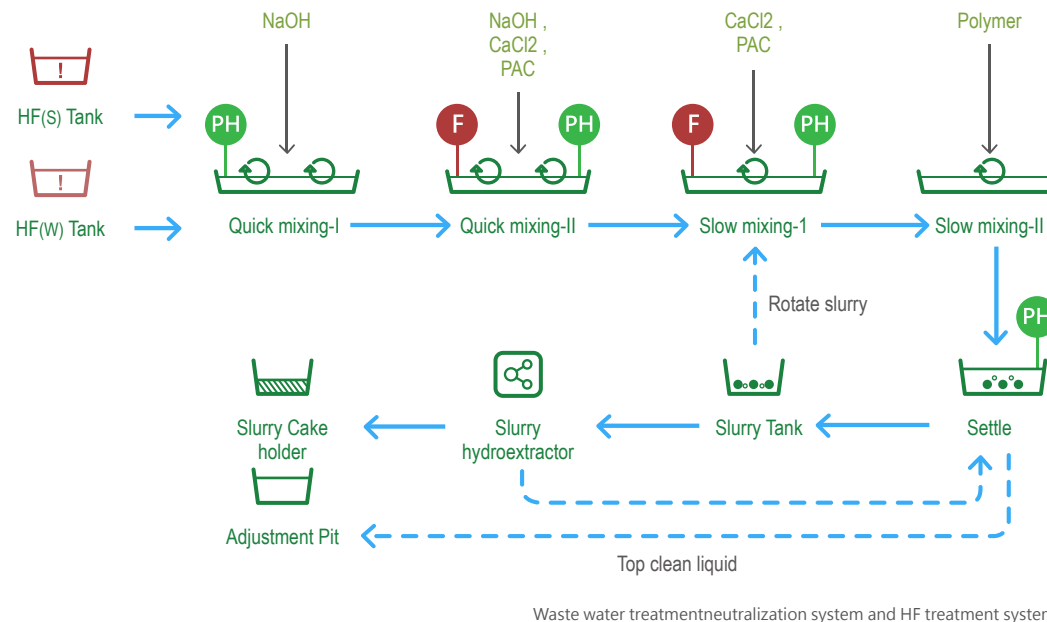
To be responsible for our society, UMC is continuing to develop techniques for waste water treatment. In 2013, we finished waste silt reuse on air pollution treatment, and used progressive Anammox's biology treatment to deal with NH<sub>3</sub>-N waste water.



## Neutralization System Flow Sheet






## HF Treatment System Flow Sheet

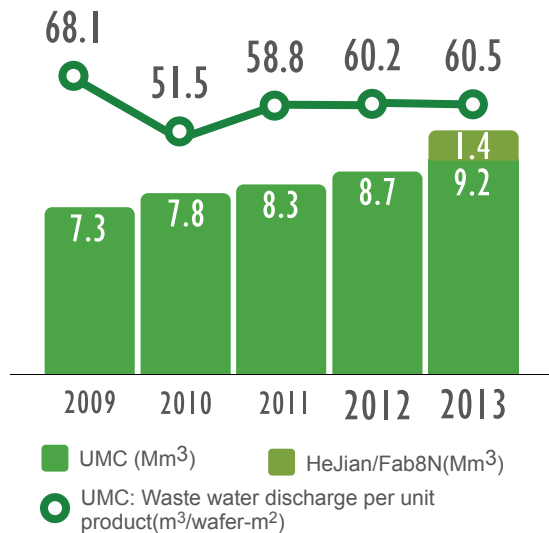


## Wastewater Discharge

To monitor and deal with wastewater immediately, there are discharge quality (PH, Fluoride concentration) contamination monitors to ensure rule compliance. Science Park Administration will also perform random inspections every month to double check the discharge quality. In addition, all fabs regularly conduct wastewater quality tests to ensure that they meet local effluent water standards.

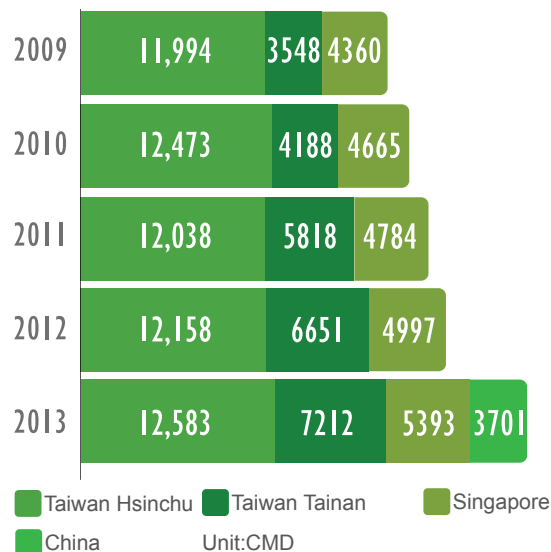
 Taiwan	<b>Wastewater quality indicators</b> Hydrogen ion concentration index, temperature, chemical oxygen demand, suspended solids, ammonia, cyanide, total chromium, cadmium, hexavalent chromium, zinc, nickel, copper, total mercury, lead, arsenic, nitrate anion interface activity agents, boron, fluoride salt
<b>Hsin-Chu science park</b> 6A 8A 8C 8D 8E 8F 8S  <b>Wastewater Further Treatment :</b> Treatment: The wastewater treatment system of Hsin-Chu Science Park Administration Destination : Keya River	<b>Tainan science park</b> 12A  <b>Wastewater Further Treatment :</b> Treatment: The wastewater treatment system of Tainan Science Park Administration Destination : Yanshuei River
 Singapore	<b>Wastewater quality indicators</b> Biochemical oxygen demand, chemical oxygen demand, total suspended solids, total dissolved solids, chlorides, sulfates, sulfides, cyanides, detergents (LAS as Silver), grease, arsenic, barium, tin, iron, beryllium, boron, manganese, phenolic compounds, fluoride, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc and ammonium. Acetone
<b>12i</b> <b>Wastewater Further Treatment :</b> The wastewater treatment system of Public Utilities Board (PUB) Destination : South China Sea	
 China	<b>Wastewater quality indicators</b> Hydrogen ion concentration index \ fluoride \ suspended solids \ COD \ ammonia \ total phosphorus \ Volatile Phenols \ oil
<b>HeJian/ Fab8N</b>  <b>Wastewater Further Treatment :</b> The wastewater treatment system of Suzhou Industrial Park Destination : Wusongjiang River	

### UMC's Total Waste Water Discharge



Remark: Total NER of UMC, including the subsidiary Hejian fab(8N) is 62.5m³/wafer-m².

### UMC's Total Waste Water Discharge by Destination



### 3-3-5 Reduction of TMAH in Developer Solution and Ammonia Nitrogen

Ammonia nitrogen and tetramethylammonium hydroxide, TMAH, in wastewater are the major sources of biological toxicity in water. Although UMC produces much less ammonia nitrogen and TMAH compared with other companies in the industry, UMC still invests significant manpower and material resources based on the concept of sustainable symbiosis in the environment. Since 2011, UMC has actively participated in the "Functional Group in Response to Wastewater Emission Standards by High-tech Industries" held by Hsinchu Science Park Bureau, Industrial Associations and The Allied Association for Science Park Industries. UMC is mainly responsible for TMAH improvement assessment and proposes the assessment report for Hsinchu Science Park Bureau and the Functional Group to implement relevant feasible control methods.

In addition to actively participating in government policy making and pollution improvement assessment, UMC also established a taskforce to improve wastewater treatment based on revisions of the Science Park's wastewater standards. In addition to assessing ammonia nitrogen and TMAH from end-of-tube treatment equipment, UMC more actively reduces ammonia nitrogen and TMAH to comply with the latest water quality standards in the Science Park.

Hsinchu Science Park fabs promoted the nitrogenous pollutants reduction project in 2013. The project members included staff from Environmental Safety Department, Operation Control Department, Research and Development Department and Production Department. In the first stage, the Research and Development Department assessed the feasible reduction methods and then tested them in a plant. The testing stage involved the change of production process and the certification of product quality. After the testing stage, the project was implemented in all plants and supported by senior managers.

In 2013, the reductions of ammonia and developer solution in all plants were 29% and 8% respectively. The numbers achieved UMC's goals.

### The Ratio of Ammonia and Developer Reduction in 2013

	Before	After
ammonia	100%	71%
developing solution	100%	92%

### ► Benefits Achieved by the Project

**Economic Benefits:** A cost reduction of 28 million NT dollars each year on the ammonia and developer solution raw materials and a potential saving of 135 million NT dollars each year for wastewater treatment can be realized by the Science Park after 2017.

**Environmental Benefits:**


The reduction of the ammonia and developer solution raw material usage can reduce the emission of ammonia nitrogen and TMAH pollutants in the water. When ammonia nitrogen and TMAH are below certain levels, UMC would not set up its own treatment equipment, which can save a further 500 million NTD for equipment purchase and 38 million operating costs a year.



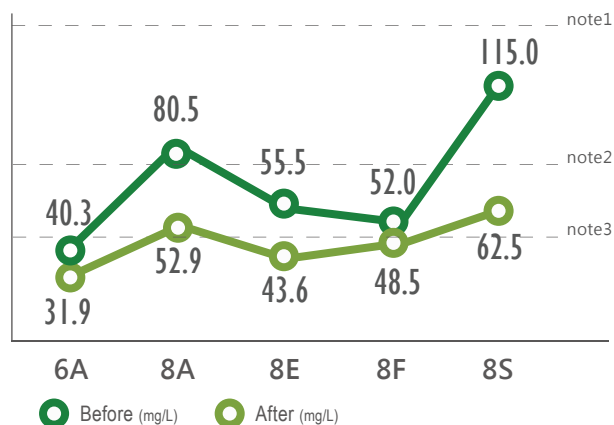
### Benefits Achieved by The Reduction of TMAH in Developer Solution and Ammonia Nitrogen Project

Ammonia	8A 8C 8D 8E 8F 8S Reducing ammonia in Chemical Mechanical Process	Reducing 7%~46% of ammonia nitrogen pollutants
	6A 8A 8C 8D 8E 8F 8S Reducing ammonia in Wafer Clean Process	

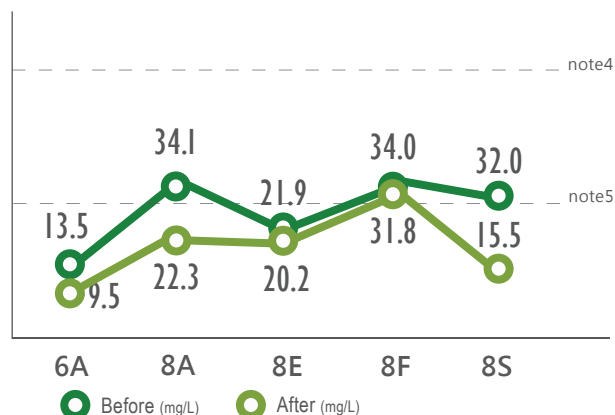
Developer Solution	8A 8C 8D 8E 8F 8S Reducing Developer Solution in Developer Process	Reducing 7%~52% of TMAH pollutants

Economic Benefits 	Raw materials	Saving of 28 million NT dollars each year
	Wastewater fee	Saving of 135 million NT dollars each year

### The TMAH Concentration in Effluent



### The NH<sub>3</sub>-N Concentration in Effluent



Note1. The standard of NH<sub>3</sub>-N is 125 mg/L (103.1.1~103.9.30)  
Note2. The standard of NH<sub>3</sub>-N is 75 mg/L (103.01.1~105.12.31)  
Note3. The standard of NH<sub>3</sub>-N is 50 mg/L (106.1.1~)  
Note4. The standard of TMAH is 60 mg/L (103.1.1~103.12.31)  
Note5. The standard of NH<sub>3</sub>-N is 30 mg/L (104.1.1~)



Experience Sharing



Robert Chang  
Department Manager

Industrial waste water often contains high concentrations of ammonia nitrogen, which is harmful to the environment. To protect the environment, the government has toughened the standards for ammonia nitrogen discharge. In response to raised standards, UMC devised plans to reduce ammonia and developer solution by decreasing discharge at the source and improving waste water treatment. Proposals to reduce waste from wet bench and CMP post cleaner successfully reached their targets through the efforts of ESH and fab personnel. The ability to leverage our expertise and resources to achieve organizational targets is one of our most valued core strengths. This year, we proposed the plan to lower the concentration of NH<sub>4</sub>OH. We are ready to face more challenges!



### 3-4 Green Product

Being a global citizen, we should responsibly seek green products with our suppliers and customers. We are in a stage of environmental awakening, and are committed to providing our customers with more advanced, efficient, and environmental products for reducing source consumption and unnecessary pollution. As a middle-producer and trusted customer partner,, UMC-manufactures ICs that are used in a broad variety of applications covering various segments of computer, communication, and consumer electronics, industrial applications and other markets through customers' advanced designs. Thorough our manufacturing, we can contribute to the green cause and fulfill our promise. UMC takes pride in setting a positive green example while we pursue profitable growth. This helps us maintain sustainable operations and is a blessing for the country and people.

To ensure UMC products conform to international standards such as EU RoHS Directive (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment), and customers' request for control of hazardous substances, UMC completed third-party verification on hazardous substances process management and has regular tests conducted by a third-party laboratory to make sure that UMC's products are free from hazardous substances. In addition, UMC completed carbon and water footprint verification for products to reduce the impact on the environment.

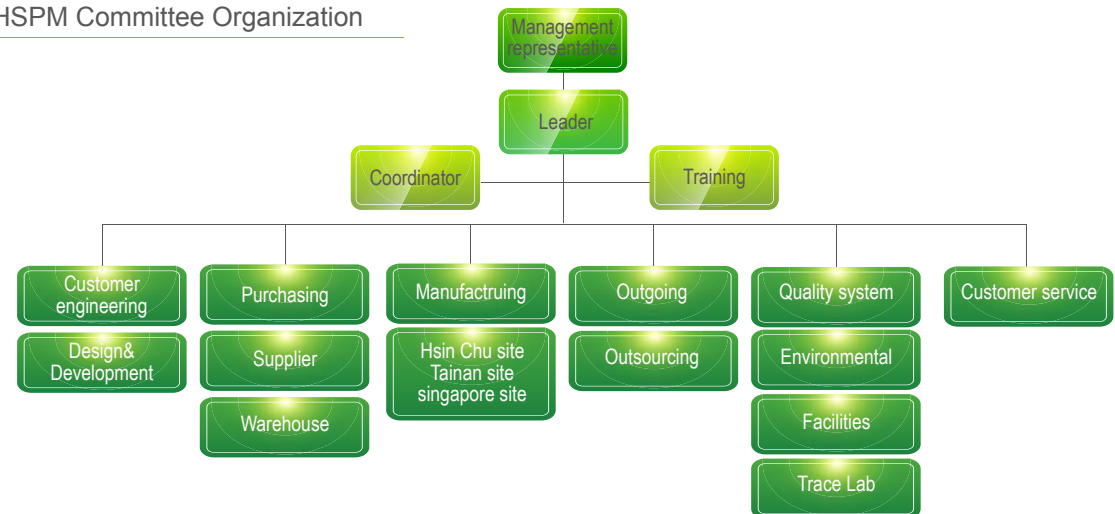
#### Product Design Criteria and Response

Environmental impact of product use and maintenance Developing low carbon emissions and low energy consumption processes.	Environmental impacts of product manufacturing Installing various effective pollution control equipment.	Environmental impacts of raw materials Assessing the environmental impact of raw materials through the LCA system.
Environmental impact of procured components Promoting green procurement.	Design for disassembly and reusability of products/components Maintaining unified IC wafers.	Design for recycling of remaining materials Maintaining unified IC wafers.
Use of recycled components Promoting recycling of products, raw materials and waste.	Reduction of hazardous materials Promoting cleaner production.	Weight reduction Developing the semiconductor processes to reduce chip area and increase efficiency. .

#### 3-4-1 Hazardous Substances Restrictions and Management

UMC continues to ensure that products follow EU restricted substances for electronic products (ex. EU RoHS) regulations, international chemical control specifications, and comply with customers' requests by established hazardous substances management system QC 080000. In addition, an interdepartmental Management Committee (HSPM Committee, Hazardous Substances Process Management Committee) has been set up for years to promote efficient green product management.

#### HSPM Committee Organization



Contract/ Design Review

Supply Chain/ Materials Process Management

Manufacturing Process Controls

Quality Assurance Processes

## UMC Measures Regarding International Hazardous Substances Management

### EU hazardous substances restricted Directive

EU's new RoHS 2.0, 2011/65/EU didn't change with regard to restricted substances control in 2011. Lead is still permitted for semiconductor manufacturing, and UMC can comply with the above request.

**EU RoHS**

### Halogen Free Request

In general, our customers request the concentration of Bromine and Chlorine in products to be less than 900 ppm respectively and less than 1500 ppm in total. All UMC's products are in compliance.

### EU REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) directive

All UMC's products are compliant with the REACH dangerous chemicals and SVHC (Substance of Very High Concern) limits.

**EU REACH**

### EU Waste Electrical and Electronic Equipment (WEEE) Directive

This regulation is to require the recycling of electronic end-user products, for example: computers and mobile phones, to stipulate the recycle rate. UMC's chips are recycled along with electronic final products after being used by consumers.

**WEEE**

## UMC Hazardous Substances Management

### Establish List of Controlled Hazardous Substances

UMC has established a hazardous substance control list based on international environmental protection laws and customers' requirements. The list is regularly adjusted in line with international environmental regulations by expanding the application scope and controlled range of hazardous substances. By 2013, more than 200 substances were included in UMC's List of Hazardous Substances control list.

### New Materials Evaluation System

UMC has established a comprehensive process to evaluate new materials, and confirms if they are listed on the hazardous substance control list and understands its impact to the environment. This process is to effectively manage the introduction of new materials in new process development.

### Hazardous Substances Management Verification and Product Tests

- UMC established a cross-divisional Hazardous Substances Process Management committee (HSPM committee) to improve the efficacy of green product management.
- UMC completed the system audit for QC080000 IECQ HSPM qualification on June 9th, 2006 to become the first semiconductor manufacturer worldwide to achieve HSPM certificate for all of its fabs.
- A third-party laboratory conducts a regular test to examine the toxicity level in UMC's products to make sure that UMC complies with international regulations.

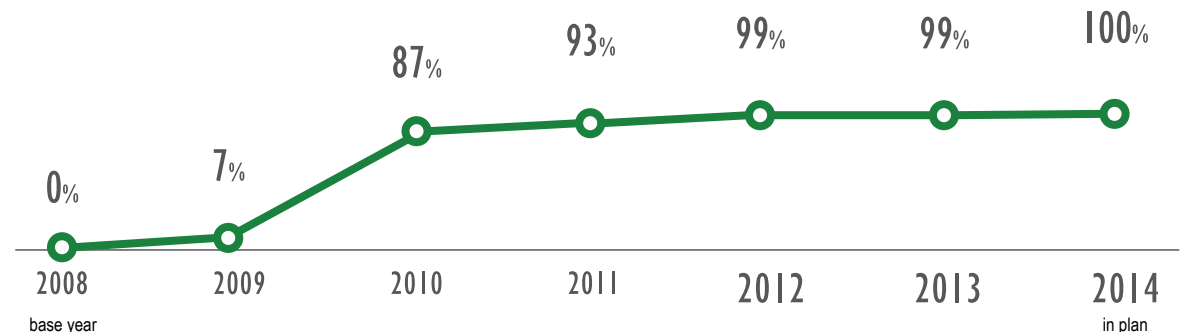
### Hazardous Materials Replacement Program

- PFOS Replacement: In 2013, PFOS-containing raw materials were replaced by other substances, which represents a verified replacement rate of over 99%. UMC expects to use up all stock by 2014. Regarding subsidiary HeJian (8N), the replacement rate is over 95% and set a PFOS-free goal in 2014.
- PFOA Replacement: The use of PFOA has been abandoned in new products from 2011, and over 50% technical evaluation has been completed in 2012. PFOA will be completely phased out once the replacement technology finishes verification.

### Formulate Green Procurement Process of Raw Materials

- UMC's e-procurement system plays an important role in its green procurement management. Suppliers must upload their examination results for materials and goods through this platform, which allows UMC to identify items that violate applicable regulations in advance and take countermeasures immediately.
- Hazardous substances control is also applied to material merchandising. All materials that violate the control will be deemed as disqualified products and returned to the suppliers, who are then required to provide correction and prevention measures.
- Suppliers have to sign a guarantee agreement and provide third-party examination reports if necessary to ensure that their products meet the requirements of applicable environmental regulations.

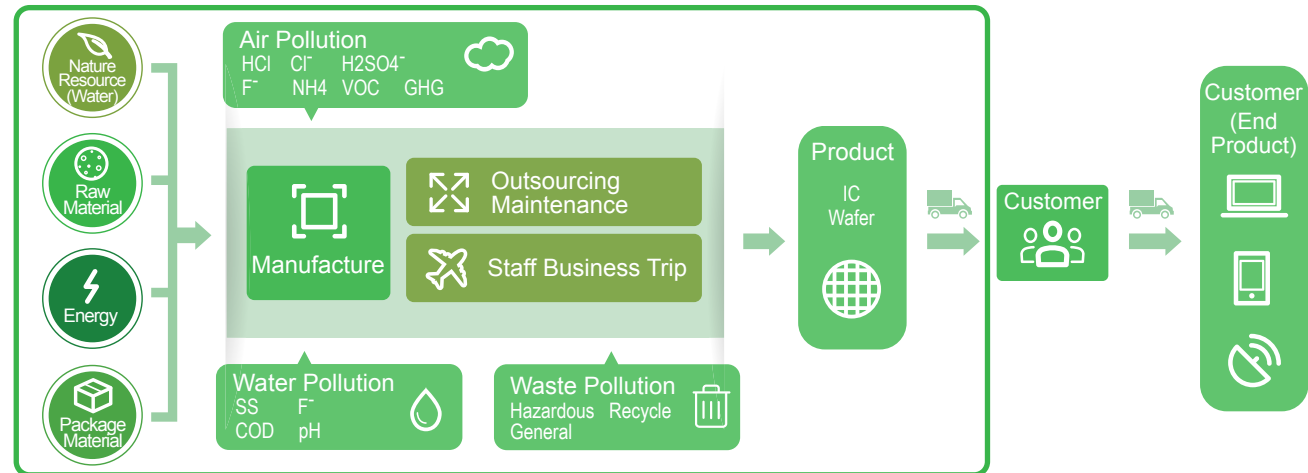
## PFOS Phase-out Rate (%)



### 3-4-2 Life Cycle Assessment

UMC introduced the product life cycle assessment in 2005. It covers the entire production process from cradle to gate (UMC shipping) and assesses energy consumption materials and waste production. In addition, UMC uses Simapro to assess the environment impact of its production process, and uses it as the baseline for comparison and improvement.

### Semiconductor Product Life Cycle Concept Map



### 3-4-3 Carbon Footprint

Although UMC is not an end product manufacturer, it strives to help customers produce green products.

UMC has actively implemented the Total Carbon Management Project, in addition to internal GHG emission inventory and Carbon Footprint Inventory.

#### Milestone

- 2013** Developed a software to calculate the carbon footprint of different products.
- 2012** Developed a method to calculate the carbon footprint based on product complexity.
- 2011** Collaborated with suppliers to promote green supply chain.
- 2010** Conducted carbon footprint inventory for 300mm wafers according to international carbon footprint standard PAS2050/ISO14067 (CD).
- 2009** UMC was the first semiconductor foundry to complete carbon footprint and EPD (Environmental Production Declaration) verification.

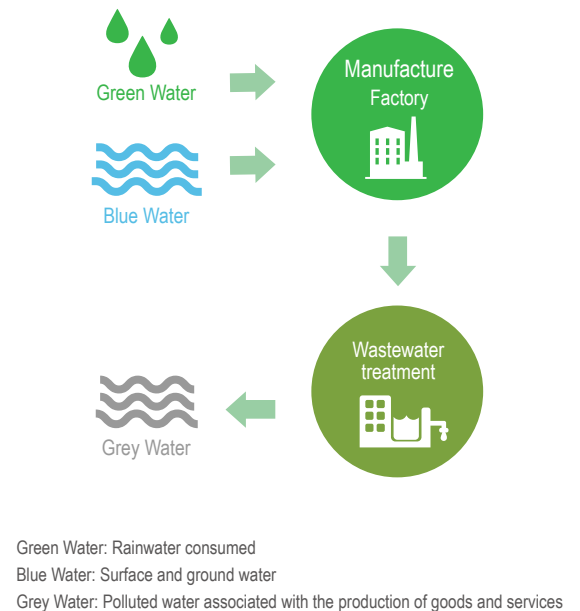
### 3-4-4 Water Footprint

UMC pioneered water footprint verification for 8- and 12-in semiconductor manufacturing, using Business Water Footprint Accounting developed by non-profit organization Water Footprint Network.

The water footprint is an important consideration for UMC and UMC will continue to work with suppliers to reduce water usage.



### Water Footprint Concept Map



### 3-4-5 LCA to go project

#### ► Project base

UMC participates in EU FP7 to its CFP inventory to improve and provide product-specific CFP information to customers. UMC also established a foundation for Energy Conservation.

In 2010, became an official member in the FP7. UMC joined "Boosting Life Cycle Assessment use in SMEs: development of sectoral methods and tools" (LCA to go).

#### Project Name

Boosting Life Cycle Assessment use in SMEs: development of sectoral methods and tools ( LCA to go)

#### Objective

- Provide a simple, smart and decision-making tool for EU's SMEs.
- There are six sectors; UMC is responsible for the semiconductor sector.

#### Basis of Concept

- Using life cycle assessment to evaluate environmental impact and sustainability.
- Solving the difficulties of using Life Cycle Assessment for green design.

#### Members



18 member from 9 countries

#### ► EU FP7 Project

ITRI (Industrial Technology Research Institute of Taiwan) and DoIT (Department of Industrial Technology) introduced this EU project domestically. UMC collaborates with the industry and academia to simplify the LCA model. Through the project UMC develops future talents, teaches suppliers about carbon footprint inventory, and holds educational events.

#### UMC LCA TO GO Project Executive Work

## 2011

UMC completed the survey on SMEs' demand for LCA for Taiwan products.

## 2012

Designed simple carbon footprint prediction model and low-carbon services network platform software architecture by analyzing product categories, process parameters, process steps, and energy and resource usage.

## 2013

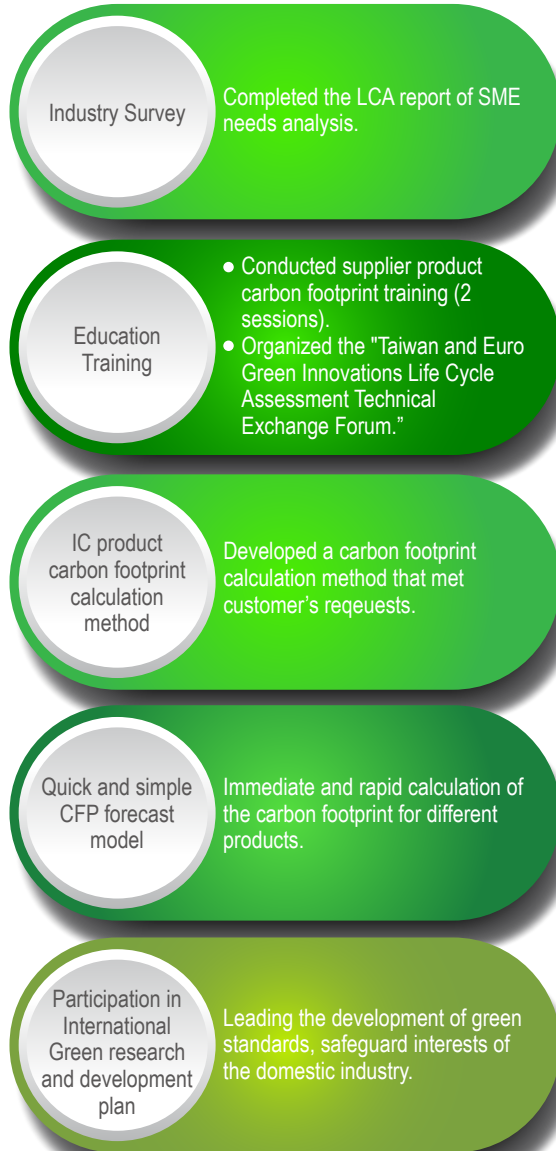
- Completed low-carbon web-based simple life cycle assessment tools.
- Organized the "2013 Taiwan and Euro Green Innovations Life Cycle Assessment Technical Exchange Forum."

## 2014

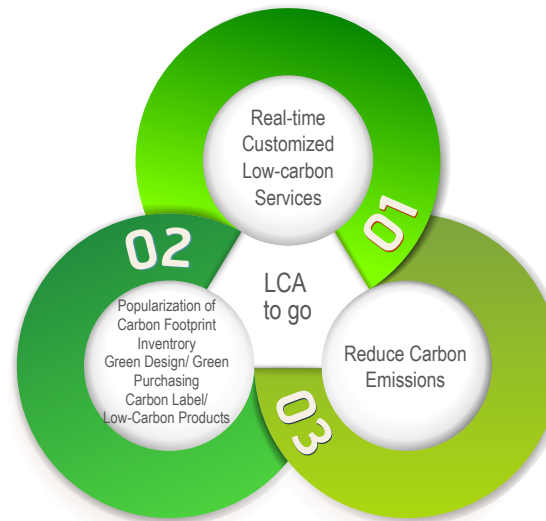
- Organized a series of educational activities, to promote carbon footprint assessment footprint trajectory.
- Organized a series of educational activities, to promote carbon footprint assessment software.



## UMC LCA TO GO Project results



## Benefits of UMC's LCA to go Project



## UMC organized the "2013 Taiwan and Euro Green Innovations Life Cycle Assessment Technical Exchange Forum."



SAVE THE EARTH

### 3-5 Green Concept

#### 3-5-1 2013 Environmental Protection Month

UMC hosts a series of environmental protection activities for Earth Day, from April to June. The Environmental Protection Activities in 2013 were themed on the slogan 「I-green · U-green」 to express the love UMC has for the Earth. Through these activities, we hope to make people aware of the resources for environmental protection. For the launch of Environment Protection Month in 2013, we invited the CEO to announce UMC's environment protection mission and the company's "369+" Energy and Resource Productivity Improvement plan.



Announced "369+" Energy and Resource Productivity Improvement plan

#### ► 2013 Environmental Protection Activities

##### Green Market



Organized Green Market for organic products.



##### Green Restaurant



Established Green Restaurant to provide healthy meals for lunch.



##### Green soap teaching course



Introduced soap making at home.



##### Green Idea Brainstorming



Collected green ideas for recycling.



##### Eco- trip



Hsinchu: Invited the Society of Wilderness to introduce plant species in the botanical garden.

Tainan: Visited a former garbage dump which was turned into a memorial park.



##### Environmental Protection Knowledge Contest



Offered prizes to encourage understanding of environmental protection knowledge.



##### Green Mark Raffle



Organized a raffle for participants of Environmental Protection Month.



##### Environmental Protection Course



Invited Da-Ai Technology to speak about recycled products and carbon reduction.

Invited Everest Textile to introduce the green building designs of the Ecological Park.



# 4

## Sustainable Development Society

### 4-1 Employment Rights

- Human right
- Labor-Management Communication

### 4-2 Talent Attraction, Retention and Development

- Human Resource
- Compensation and Benefits
- Education and Training
- Cultivating Talent on Campus

### 4-3 Healthy and Safe Workplace

- UMC's Six Elements of a Healthy and Safe Workplace
- Industrial Safety and Health
- UMC Fire Brigade

### 4-4 Social Commitment and Participation

- Social Participation
- UMC Volunteers
- UMC Science and Culture Foundation
- Participation in social welfare



Training &  
Development

92.9%

Overall Satisfaction  
of training

279,326 participants attended 9,050 classes in 2013. The overall satisfaction rate was 92.9%. The satisfaction rate regarding the lecturer and materials was 92.8%.



Social  
Participation

85%

Volunteer  
(employee) Service  
Hour increase 85%

The volunteer service hour in 2013 is 8,528 hours, and it was 4,609 hours in 2012.



Welfare

100%  
Certificated

All sites obtain "DOH Bureau of Health Promotion Independent Certification Mark" because of promoting a non-smoking workplace and healthy activities in every site.



Labor-  
Management  
Communication

0 Labor-Management  
controversy

Build a strong relation between company management and employees by positive communication.



Occupational  
safety and  
health protection

1<sup>st</sup> corporation to  
wins the National  
Industrial Safety &  
Health Award twice.

## Major Social Materiality Issues

Material Issues	Key Performance Indicators	2013 Objectives	2013 Outcomes	2014 Objectives
Occupational safety and health protection	The number of accidents	No major accidents Minor accidents $\leq 16$ cases	● No major accidents. Thirteen minor accidents.	No major accidents. Minor accidents $\leq 12$ cases
	OHSAS 18001 certification.	To pass the OHSAS 18001 certification.	● UMC passes the OHSAS 18001 certification and wins the National Industrial Safety & Health Award again.	To implement in overseas subsidiary's fab.
Compensation	Provide competitive compensation	Keep benchmarking compensation information and enhance competitiveness	● Compliance with regulatory requirements, benchmarking over 3 companies' compensation report to keep competitiveness.	Keep providing competitive compensation to attracting and retaining talents.
	Satisfaction with health promotion activities	Satisfaction : 90%	● Health promotion activities for the year amounted to 95.3 percent satisfaction	Maintain more than 90% Satisfaction
	UMC brand building and marketing, enhance solidarity among employees	Build Innovation welfare platform(APP)	● Mobile phone APP welfare platform 100% complete	Continue to strengthen platform capabilities
	Constructing comprehensive welfare system and strengthen employees care system	All sites achieve healthy workplace self-certification up to 100% in Taiwan	● All of UMC's Taiwan sites achieved healthy workplace status through self-certification	Keep 100% certification
Labor-Management Communication	Expanding healthy workplace awareness	Degree of recognition of employees up to 85%	● Annual employee recognition survey was 89.4% through survey findings	Execution of employees' identity and cohesion project.
	Strengthen multiple communication mechanisms, ensure harmonious labor relations	Communication completion rate 100%; 0 labor dispute cases	● Annual target achieved. Various health indicators have been implemented in the workplace, and many honored bestowed upon, such as Get Vision Corporate Social Responsibility Award, Healthy Workplace of the Year Award, Taipei City Government Happiness Enterprise Award, Consecutive years winning the World Corporate Citizenship Award, and six consecutive years as a DJSI component.	Annual online training and assessment is 100%
	UMC supports and respects the related international labor right standards	EICC labor/ethics training is 100% complete.	● Establish EICC committee.No violation of ethics. Online training and assessment is 100%	Annual online training and assessment is 100%
	Enhance the business core values and achieve the organizational mission.	Team-Work Reward Mechanism 100% Completed. Lecture for business core values "Accountability" and "7-Habits"	● Complete building the Team-Work Reward Mechanism Held lectures for core value education. The completion rate of 7-habits is 96.3% for managers and 94.3% for employees.	Strengthen Core Value Education and its Practicability



## 4-1 Employment Rights

### 4-1-1 Human right

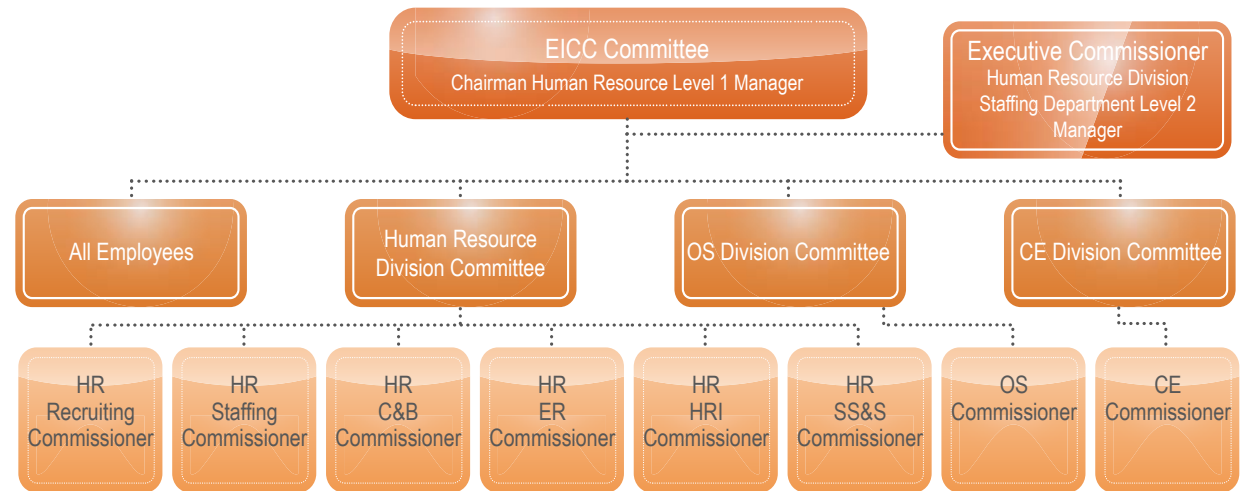
UMC supports and respects the related international labor right standards



#### ► EICC Committee

In order to ensure workplace safety and comply with the labor right standards of the global electronic industry supply chain, UMC established its EICC committee in 2013 to focus on five areas: labor, health and safety, environmental, ethics and management system. The EICC committee clearly defines committee members' authority and duty, sets related policies and performance objectives, and conducts self-assessments and reviews.

### UMC EICC management system



Note: Environmental, Health and Safety can be referred to ISO 14001 & OHSAS 18001

UMC establishes an integrated management system to comply with EICC. UMC accepts third party audits from customers and also makes self-evaluations. In order to enhance employees' knowledge of human rights, UMC incorporates the EICC training course into new employee orientation and provides online training courses for all employees. In 2013, UMC completed EICC related training and assessment in Taiwan and Singapore.

### EICC Mission

#### EICC Mission

- Raise awareness for EICC labor, ethics and management system.
- Establish EICC labor, ethics and management system policy and performance objectives.
- Ensure EICC labor, ethics and management system comply with local laws.
- Discuss EICC labor, ethics and management system action plan priority.
- Assist EICC labor, ethics and management system action plan.
- Assess EICC labor, ethics and management system results.

**EICC**



## 2013 EICC Implementation



Note: Risk index : result level (1-5)x possibility level(1-5)

### ► Human Rights

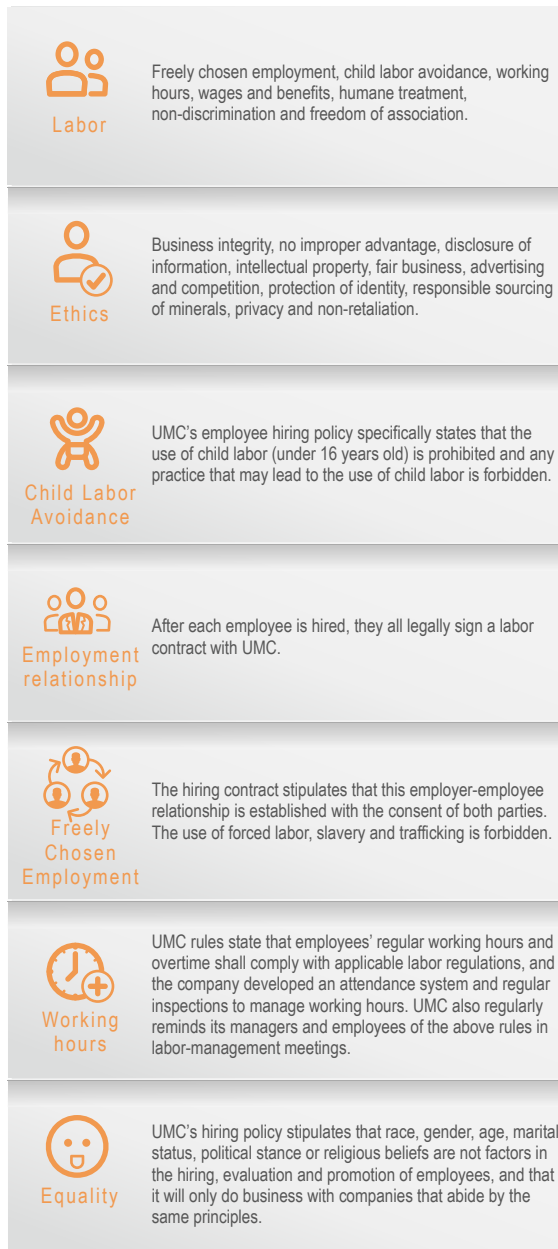
UMC respects the EICC and supports the implementation of EICC labor and ethics standards within the organization. By using the employee handbook and regularly examining employee conduct, UMC hopes to raise awareness for labor, ethics, child labor, employment relationship, no forced labor, working hours and equality. In order to protect human rights and provide fair treatment and respect for every employee, UMC formulated a "Workplace Sexual Harassment Prevention Appeal and Disciplinary Act" and provided confidential reporting channels to protect female employees.

UMC follows related regulations of Taiwanese Labor Standards Law, Singapore Employment Act and Chinese Employment Contract Rule when employment changes occur. Where an employer terminates a labor contract pursuant to Taiwanese Labor Standards Law, the provisions set forth below shall govern the minimum period of advance notice:

1. Where a worker has worked continuously for more than three months but less than one year, the notice shall be given ten days in advance.
2. Where a worker has worked continuously for more than one year but less than three years, the notice shall be given twenty days in advance.
3. Where a worker has worked continuously for more than three years, the notice shall be given thirty days in advance.

UMC did not commit any human rights violations in 2013.

## UMC's Labor Rights Emphasis



## 4-1-2 Labor-Management Communication

To communicate effectively with its employees, UMC sets up labor-management meetings, departmental meetings, communication meetings and suggestion boxes as well as appeals channels for employees. Employees also have the freedom to communication meetings, independent clubs without interference or intervention from UMC.



## UMC Communication Meetings

**Corporation Communication Meeting** 4  
Quarterly

**On-Site Consultation Meetings** 84  
Biannually (by site)

**Secretary Communication Meeting** 8  
Quarterly (HC & TN)

**Labor-Management Consultation Meeting** 36  
9 times a quarter

**Employee Welfare Committee Conference** 6  
Quarterly, and occasional.



## ► Labor-Management Consultation Meeting



UMC holds quarterly labor-management consultation meetings on each site to discuss its labor-management issues.

Since 2011, UMC has provided on-site consultation. Before a labor-management consultation meeting, UMC collects important issues and related laws, and explains them to employers and employees' representatives. Moreover, human resource administrators and supervisors provide on-site consulting service on regulations and labor laws during the meetings. The HR consulting team is responsible for recording suggestions and conveying them to relevant departments or committees. This meeting helps build a strong relation between company management and employees.

## ► Senior Executive On-site Meeting 、 Corporation Communication Meeting and Communication Channels

UMC has always focused on employees' compensation, benefits, development, as well as labor laws that protect employees' interests. Employees are encouraged to communicate with management via meetings and other communication channels.

To communicate company strategies and performance with employees in Taiwan and overseas, a company-wide communication meeting is held by the CEO after each quarterly Investor Conference. After the forum, the director of each site convenes related follow-up meetings to discuss development plans with employees.

In addition to the corporate communication meeting, there are other conferences and meetings held by the chairman, the CEO and top managers to discuss relevant issues with employees. The chairman/CEO also delivers important messages to employees by formal letters or email.

To further enhance communication, we combined all communication channels including CHO's Mailbox, Whistleblower, Sexual Harassment Help, e-Suggestion, Notes BBS, IT Service, GRM&ESH Mailbox, Communication Meetings Info, and UMCWe website to form "Communication Area" on our portal website "eUMC" for all employees.

A new portal "eUMC 5.0" started in 2011 is a global communication platform for both headquarters in Taiwan and overseas branches. All employees in UMC are able to get information from eUMC.

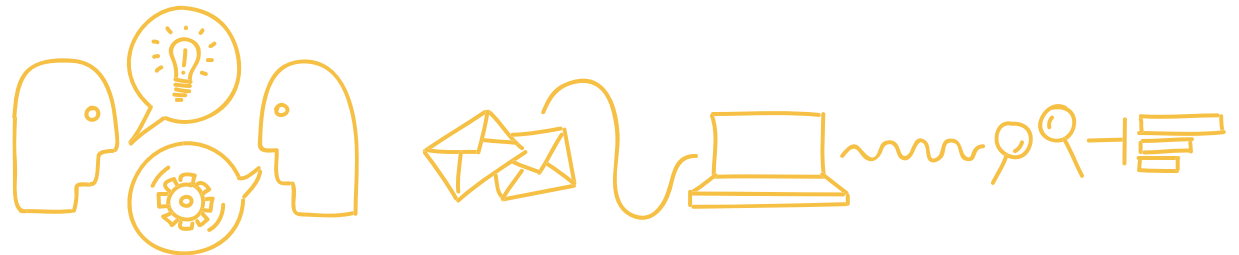


"UMCWe Website" has been online since September 29, 2011.

In 2013, UMC combined several communication platforms to build a brand-new welfare platform to provide the latest welfare news. This APP informs not only employees but also their family.

### ► Compliance & Suggestion Channels for Other Employees

In 2013, UMC held 138 communication meetings to deliver relevant messages and help solve employee related issues. Because of these effective communication platforms and channels, UMC employees have not demanded their own labor union thus far.



### Compliance & Suggestion Channels for Other Employees

Appeals  
channels for  
individual cases  
and employees  
of all levels

Appeals channels for  
sexual harassment

Service line: 31995  
Mailbox: 31995@umc.com

The ER Help Service  
Line: 12885

CHO MailBox

CSR Mailbox:  
csr@umc.com

Appeals Service Line  
Ext: 31425

Appeals Mailbox:  
whistleblower@umc.com

## 4-2 Talent Attraction, Retention and Development

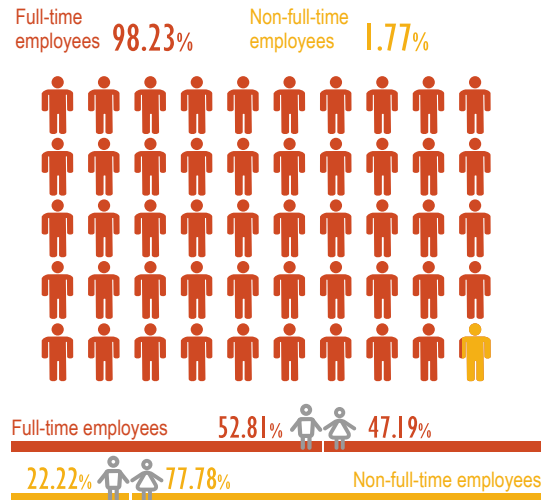
### 4-2-1 Human Resource

#### ► Employment Distribution

In 2013, UMC (includes UMC subsidiary in China, HeJian Technology Co., Ltd., ) had 15,953 employees, among which, there were 1,561 managers, 7,612 engineers, 468 administrative staff, 6,300 technicians and 12 clerks. When categorized by type of employee, UMC employees can be divided into full-time employees (98.23%), non-full-time employees, contract workers, and people sent by other companies to work at UMC (1.77%). These non-full-time employees are required temporarily to fulfill the duties for those employees who were on parental leave. As for the distribution of work area, about 80% of our employees are located in Taiwan. In term of age group, employees with ages between 21 and 40 comprised approximately 81% of the workforce.

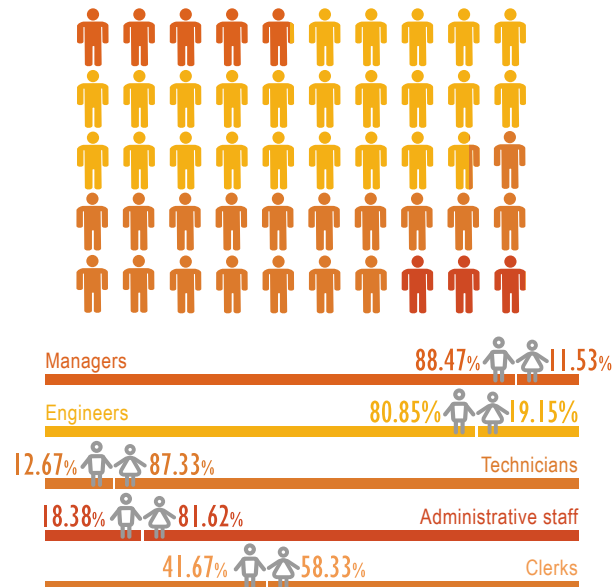
In 2013, UMC Taiwan hired 55 employees who were Taiwan aborigines. Out of these employees, 12.73% were male and 87.27% were female; 38.13% of them were between the ages of 21 to 30, 50.91% were between the ages of 31 to 40, and 10.91% were between the ages of 41 to 50.

#### Employees – Categorized by Employment Type and Gender:

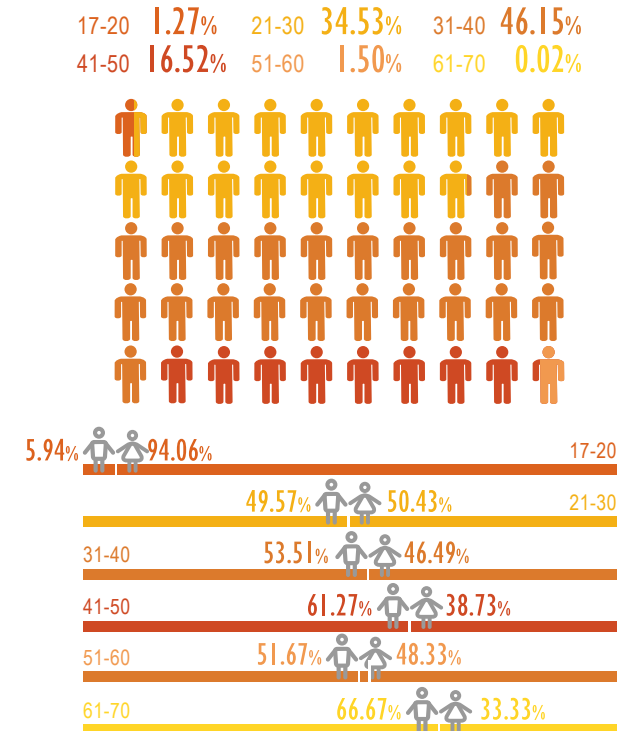


#### Full-Time Employees – Categorized by Position and Gender

Managers **9.78%** Engineers **47.72%** Technicians **39.49%**  
Administrative staff **2.93%** Clerks **0.08%**



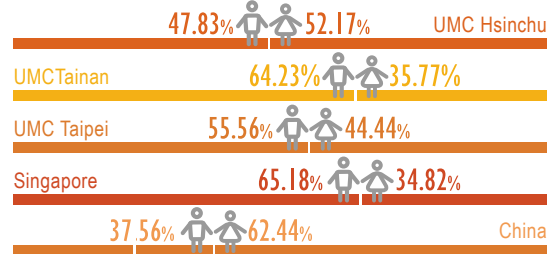
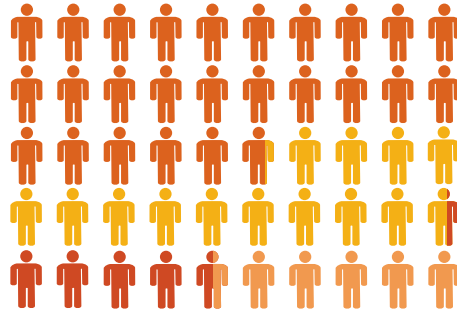
#### Full-Time Employees – Categorized by Age and Gender





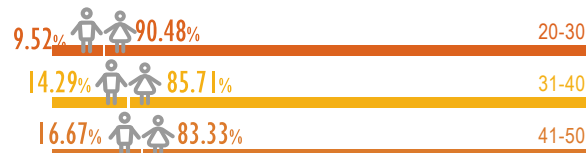
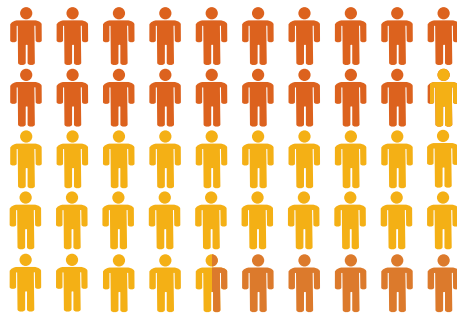
## Full-Time Employees – Categorized by Work Area and Gender

UMC Hsinchu 51.49% UMC Tainan 27.32%  
UMC Taipei 0.17% Singapore 9.56% China 11.46%



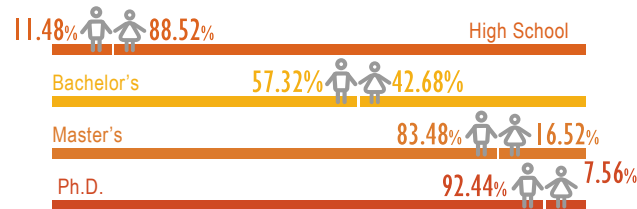
## Full-Time Employees of Taiwan aborigines – Categorized by Gender

20-30 38.18% 31-40 50.91% 41-50 10.91%



## Full-Time Employees – Categorized by Education and Gender

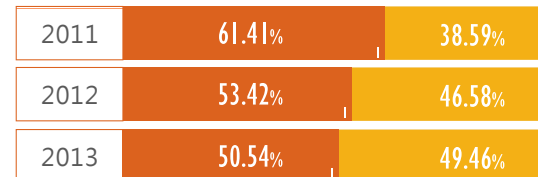
High School 25.67% Bachelor's 47.11%  
Master's 25.73% Ph.D. 1.49%



## New Hiring

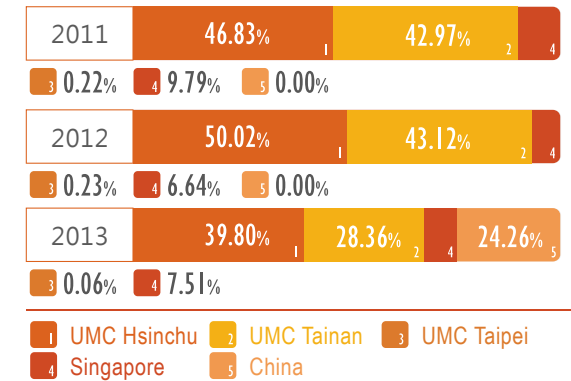
There were approximately 3,314 new full-time employees in 2013. They are categorized by gender, work area, and age below.

## New Full-Time Employees – Categorized by Gender

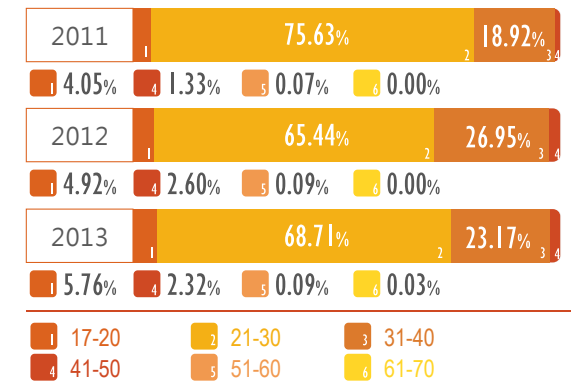


1 Male 2 Female

## New Full-Time Employees – Categorized by Work Area



## New Full-Time Employees – Categorized by Age

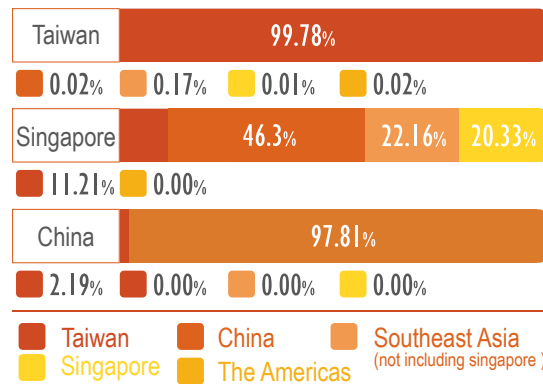




## ► Hiring from Locals

In adherence to social responsibility, UMC has maintained balanced job opportunities for local people. In 2013, 99.8% of full-time employees in UMC Taiwan are locals, and 99.2% of high-level managers in UMC Taiwan are locals. Because of multi-racial demography in Singapore, 20.3% of full-time employees in UMC Singapore are locals, and 30.0% of high-level managers in UMC Singapore are locals. As for UMC China, 97.8% of full-time employees in UMC China are locals. In terms of hiring high-level managers from locals, the ratio of UMC Taiwan increases 1.0% comparing with 2012, while the ratio of UMC Singapore increases 7.8% comparing with 2012.

### Full-Time Employees – Categorized by Nationality:



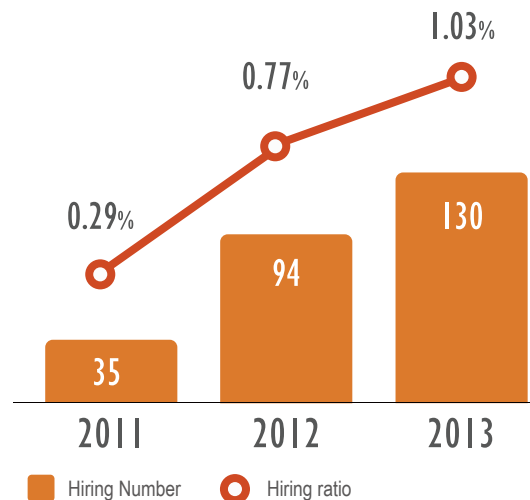
### The ratio of hiring high-level managers from locals between 2011 and 2013

	Taiwan	Singapore
2011	98.1%	22.2%
2012	98.2%	22.2%
2013	99.2%	30%

## ► Hiring disabled employees

UMC Taiwan proactively supports the employment of people with disabilities, establishing the channel of hiring disabled employees by campus recruiting projects. In 2013, UMC Taiwan hired 130 employees with disabilities in total. In the last 3 years, the number of disabled employee hired is continuously increasing. Three people employed in excess of legal requirement since 2013. Comparing to 2012, the ratio has increased 0.26%. In compliance with Taiwanese regulation of employment of people with disabilities, UMC will continue to arrange suitable internal opportunities for those with disabilities.

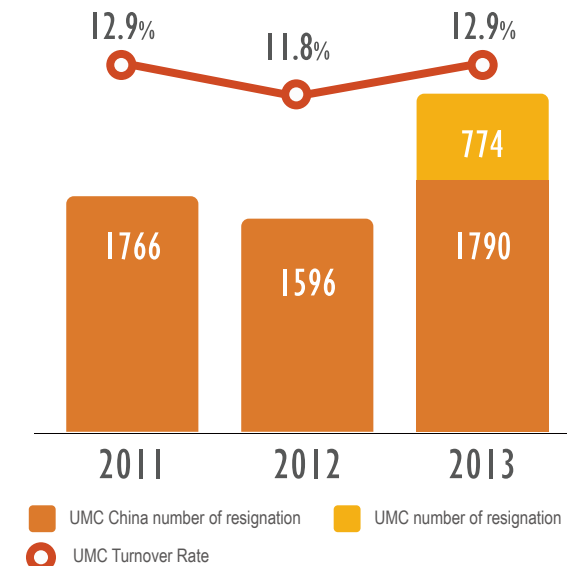
### UMC employees with disability



## ► Turnover rate

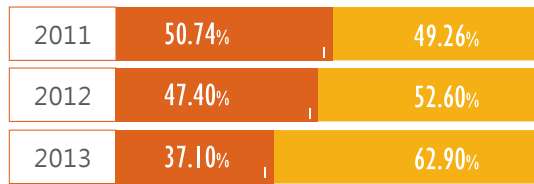
UMC subsidiary in China, HeJian Technology Co., Ltd., has joined UMC since 2013. Due to high turnover rate of UMC China, the average turnover rate of UMC between 2011 and 2013 is about 16.3% (excluding UMC subsidiary in China is about 12.5%). When UMC employees apply for resignation, supervisors and HR will do the interview in order to understand the resignation reasons. Through understanding of personnel professional specialty, UMC can adjust the job content or work area and provide internal transfer opportunity for retention. UMC HR will regularly conduct survey on those resigned employees who demonstrated good performance in their past posts, so to create opportunities for them to return to UMC.

### Turnover Rate in Past 3 years



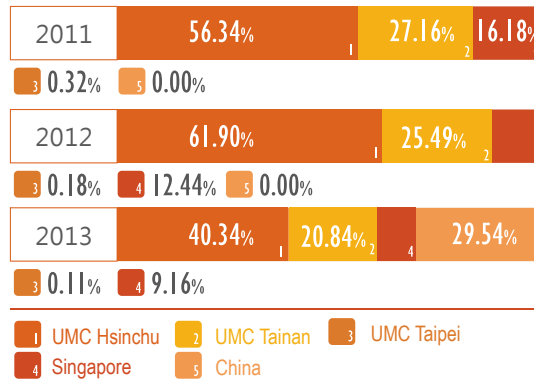
Note : Annual turnover rate = number of resignation / number of employment (by total number of employees at the end of each month /12)

#### Resigned Employees– Categorized by Gender

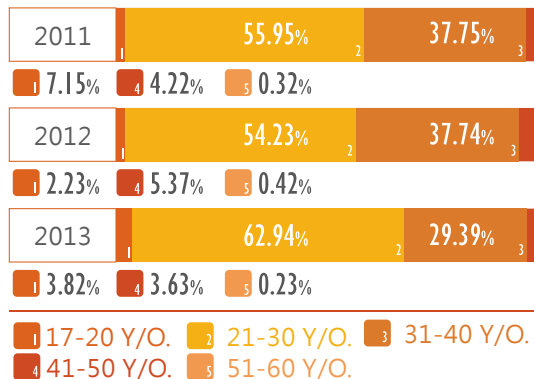


1 Male 2 Female

#### Resigned Employees– Categorized by Work Area



#### Resigned Employees– Categorized by Age



#### 4-2-2 Compensation and Benefits

UMC always considers employees as important assets, through providing market competitive compensation to attract excellent talent to join UMC. We expect all employees can work together and work smart to achieve company goals and create superior results.

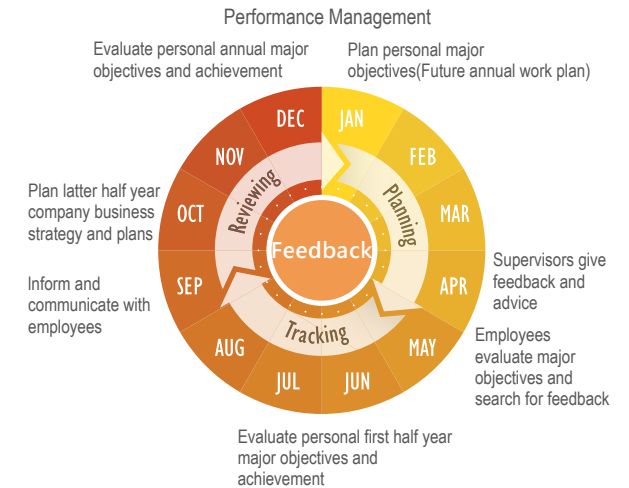
##### ► Performance-Oriented Remuneration System

The factors that decide the salaries of employees include educational background, work performance and market value. No employee will be discriminated against because of their gender, race, religious beliefs, political stance or marital status. UMC employees in Taiwan enjoy salaries that are higher than the lowest wage stipulated by the Labor Standards Act. In order to make sure that UMC provides its employees with salaries that are market-competitive, UMC participants the compensation survey conducted by well-known consulting company. On the other hand, for attracting, retaining and motivating talented employees, UMC has provided various forms of compensation and benefits, including salary increases, variable bonuses, profit sharing<sup>\*NOTE</sup>, stock compensation (stock option plans and treasury stock), etc., which is according to individual's performance, responsibility and potential.

The Company's remuneration system for directors and managers is considered and evaluated by the Remuneration Committee to make sure UMC provides the market-competitive compensation, in order to attract, motivate and retain talents. The total compensation is divided into fixed and variable payment, for reflect personal and company performances. The company can ensure stable operation with fixed payment and stimulated company growth with variable payment.

Note : According to the allocating policy of our employees' profit sharing, if there is an earning in the fiscal year, the Corporation will (1) pay for the tax, (2) Making up the loss for preceding years, (3) Set aside 10% of the profit as the legal serve, (4) Appropriating or reversing special reserve by government officials or other regulations. Allocation of 0.1% of residual amount after deducting the amounts stated, in Items 1 through 4 above for remuneration of directors. The amount of no less than 5% of the residual amount after distribution of item 1 to 4, plus distributed earnings from previous years, shall be distributed as bonus to employees in the form of cash or new shares.

#### Performance Management



##### ► Performance-Oriented Compensation System

In order to achieve personal, departmental and company performance goals as well as understand the job performance of employees, UMC conducts annual performance evaluation every year. The information obtained can be used as a reference during employee promotions, training and compensation adjustment. The evaluation includes reviewing of previous performance and the setting of future goals, and managers and colleagues work together to agree on the priority of focuses, and devise developmental plans based on current working style, capability, career goals, and project evaluation. Employees with poor performance will have to go through an improvement plan that focuses on a few critical points to improve their efficiency.

## ► Superior leave of absence system

UMC's leave system in Taiwan goes above and beyond the requirements of the Labor Standards Act. For example:



We provides newly hired employees 1-2 days special annual leave in the first year and also flexible days off, so that employees can utilize their leaves of absence to balance work and life. Temporary employees follow the Labor Standards Act.



Employees into 3 months of pregnancy and above can apply for special maternity leave for their medical examinations.



UUMC encourages employees to devote themselves to public welfare activities. Through the company's "UMC Cultural and Educational Foundation", employees may participate in public welfare activities using voluntary leave during the work hours.

## ► Complete Insurance Program

UMC provides employees with insurances in compliance to the local laws, to ensure employees are covered by the basic protections and benefits. Besides providing employees with labor insurance and national health insurance according to the Taiwan regulations, UMC also provides group insurance with life, medical, accident, cancer, and overseas business travel insurance, to ensure the safety of employees at work and in daily life. Furthermore, UMC provides several different family insurance options to choose from, so that employees can work in UMC with joy and carefree minds. Besides, UMC regularly sends newsletters on the insurance and benefit to introduce the insurance which employees should know. It helps employee understand the content and the coverage of company's insurance package.

## ► Comprehensive Retirement System

UMC follows the related retirement laws and regulation in every country, to ensure retired employee's right and benefit. UMC's retirement system is in accordance with "Labor Pension Act" to appropriate Workers' Retirement Reserve Funds. UMC also takes care of the payment of the Labor Pension according to Labor Standards Act. Since July 1st 2005, those who chose to follow the "Labor Pension Act", UMC contributed an amount equal to six percent of employee's monthly wage and deposited this into the employee's individual account for labor pension to safeguard the employee's rights and interests.

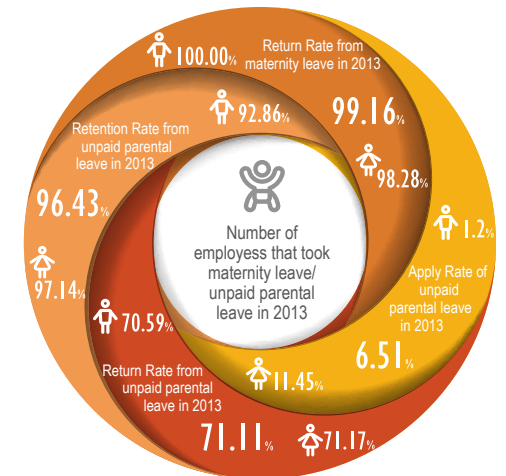
When an employee applies for the retirement, UMC provides the retirement pension and issues a commemorative medal in appreciation of the employee's long-term services in and contribution to UMC. Moreover UMC awards the employee with the lifelong membership card for UMC's Fitness Center.

## ► Maternity leave and Unpaid parental leave

In 2013, 524 female employees applied for maternity leave, and 98.28% of them returned to their posts after the leave. Those employees who did not return to work after the leave turned in their resignations because of family needs. In accordance with the rights stipulated in the Gender Equality in Employment Act for applying paternity leave, 543 male employees applied for paternity leave, and all of them returned to their posts after the leave.

Based on the rights stipulated in the Gender Equality in Employment Act, male/female employees can all apply for unpaid parental leave worry-free. As for contract termination in 2013, 116 female employees returned to their posts which account for 71.17%, while 12 male employees returned to their posts which account for 70.59%. Those employees who returned to work will be observed in the future, whereas, those employees who did not return to work after the leave turned in their resignations because of family needs. UMC observed those employees who returned to their posts after the leave from 2012 to 2013. The retention rate of female employees from unpaid parental leave is 97.14%, while, the retention rate of male employees from unpaid parental leave is 92.86% in 2012.

## Number of employees that took maternity leave/ unpaid parental leave in 2013



## 4-2-3 Education and training

### ► Comprehensive Training & Development

UMC integrates and utilizes its resources to provide an all-round and diverse learning environment to all employees regardless of gender. We cultivate and retain our talented employees by providing them with comprehensive and well-developed training.



Performance of diverse education/training in 2013

- Number of training classes: 8,919 classes
- Total number of training hours(by class): 32,462 hours
- Total number of participants: 276,286 people
- Total cost of training: 42,647,312 NTD

Other satisfaction level for different categories of classes all reached at least 90 %(Table 1). The satisfaction level grows every year.

### ■ Satisfaction Level of Classes

	2011	2012	2013
Number of Class	8,429	8,665	9,050 (contain 8N 131)
Participant	244,676	260,944	279,326 (contain 8N 3030)
Overall	90.4%	91.8%	92.9% <sup>Note</sup>
Lecturer	91.0%	92.0%	92.8% <sup>Note</sup>
Material	90.6%	91.8%	92.8% <sup>Note</sup>
Job Helping	90.9%	91.7%	92.9% <sup>Note</sup>

Note: The satisfaction Level of was over 90% in UMC subsidiary in China (HeJian Technology Co., Ltd.).

The average training hours for each employee is 42.3 hours in UMC. Training hours and content depends on employee category. Both genders receive equal training.

### ■ Training Hours per Employee

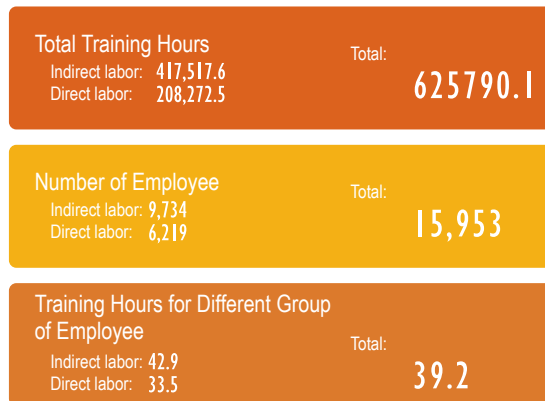
2011	Total Training Hours 524,788	Number of Employee 13,499	Training Hours per Employee 38.9
2012	Total Training Hours 638,966	Number of Employee 13,722	Training Hours per Employee 46.6
2013 UMC	Total Training Hours 597,577.1	Number of Employee 14,124	Training Hours per Employee 42.3
UMC+8N	Total Training Hours 625,709.1	Number of Employee 15,953	Training Hours per Employee 39.2

	UMC	UMC&8N
2013	42.3 Hr	39.2 Hr
2012	46.6 Hr	
2011	38.9 Hr	

Note: Training hours per employee was 39.2 hours in 2013 includes UMC and subsidiary (HeJian Technology Co., Ltd.)

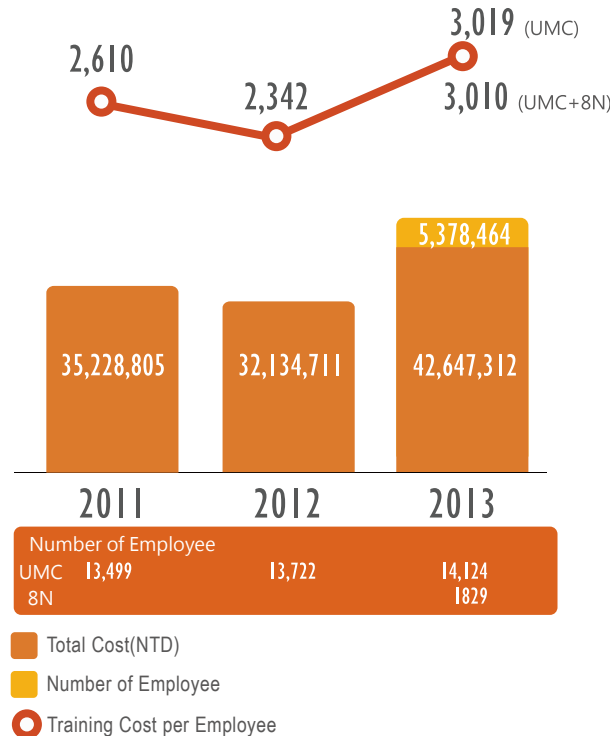
Employees are divided into two groups: indirect labor and direct labor. Indirect labors' average training hours is 42.9 hours, and direct labors' average training hours are 33.5 hours.

### Training Hours for Different Groups of Employee in 2013



In 2013, the average training cost per person is NTD\$ 3,019, which is higher than 2011 and 2012. It demonstrates UMC's commitment to employee training.

### Training Cost per Employee



Note: Training cost per employee was NTD\$ 3,010 in 2013 includes UMC and subsidiary (HeJian Technology Co., Ltd.)

### Reference competency models to plan corresponding development courses

UMC implements the training program which is based on functional coverage, core competencies and professional skills for employees at various levels to ensure employees fulfill all working requirements. When designing training courses, we address job requirements to plan corresponding development courses. In addition to the mandatory training courses, employees can choose to take some optional training courses according to their needs for their career development.



Leadership Development Web

In order to enhance the business core values, especially accountability, UMC has been conducting the "7 Habits of Highly Effective Managers" class since 2011. It is now a common language in UMC, from the top managers to the basic level employees. The "7 Habits of Highly Effective Managers" class teaches the concept of "team-accountability" to the UMC managers and "self-accountability" to the UMC staff.

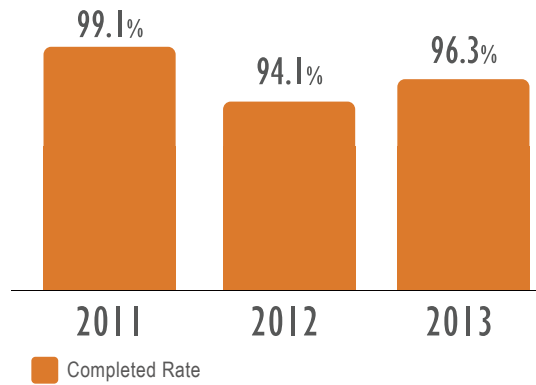
職能類型圖表	
R Result	事業結果
O Others	其他人貢獻
I Individual	個人貢獻
L Leadership	團隊領導技巧
Please click on the "check mark" button or the competency name to read more.	
類別	職能名稱
<input type="checkbox"/>	建立互信關係 Building Trust
<input type="checkbox"/>	策略性顧客關係 Customer Orientation
<input type="checkbox"/>	策略性夥伴關係 Developing Strategic Relationships
<input type="checkbox"/>	驅動結果 Driving for Results
<input type="checkbox"/>	銷售願景 Selling the Vision
<input type="checkbox"/>	改變領導 Change Leadership
<input type="checkbox"/>	培養組織人才 Building Organizational Talent
<input type="checkbox"/>	團隊發展與成功 Team Development
<input type="checkbox"/>	制定策略方向 Establishing Strategic Direction
<input type="checkbox"/>	企業家精神 Entrepreneurship
<input type="checkbox"/>	營運決策能力 Operational Decision Making

Competency Dictionary





### “The 7 Habits of Highly Effective People for Manager” Completed Rate in 2011~2013



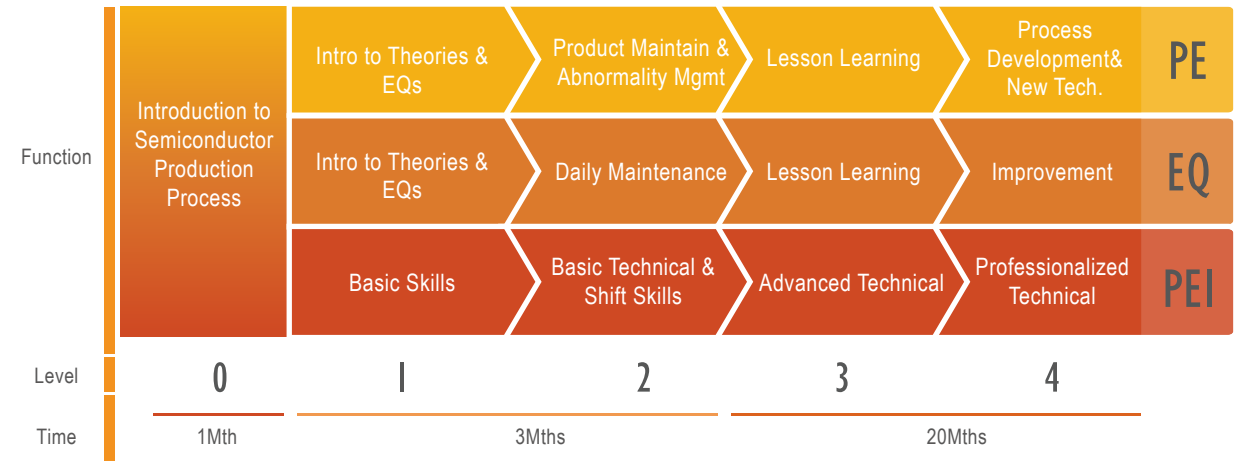
### “The 7 Habits of Highly Effective People for Employee” Completed Rate in 2011~2013



### Professional Engineer Training Courses

Courses for training professional engineers should be designed according to functional requirements in each engineering unit. UMC conducts a solid, professional training system to improve the professional skills for our engineers. Below is a graph showing the training process for engineers.

### Professional Engineer Training Courses



In 2012, UMC developed a system of “learning passport”. It established the learning roadmap and the user-friendly learning platform to track the achievement of talented people effectively. We will continue to promote and teach employees how apply the system in 2014.



Technical Skill Certificate Assessment System

Course Name	Course Code	Course Type	Course Status	Course Date	Course Score	Course Grade	Course Remark
Introduction to Semiconductor Production Process	00000001	Classroom	Completed	2012/10/25	95	A	
Intro to Theories & EQs	00000002	Classroom	Completed	2012/10/26	90	B	
Product Maintain & Abnormality Mgmt	00000003	Classroom	Completed	2012/10/27	85	C	
Lesson Learning	00000004	Classroom	Completed	2012/10/28	80	D	
Process Development & New Tech.	00000005	Classroom	Completed	2012/10/29	75	E	

Personal Learning Passport

### A One Stop Service Learning Website

Aside from professional skills and management classes covered elsewhere, UMC establishes an e-Learning platform to provide employees with a convenient and easy to access voluntary learning environment. In order to enhance the pleasure of learning, we also mixed on-line courses with physical classes to balance and substantiate the learning experience for participating employees.

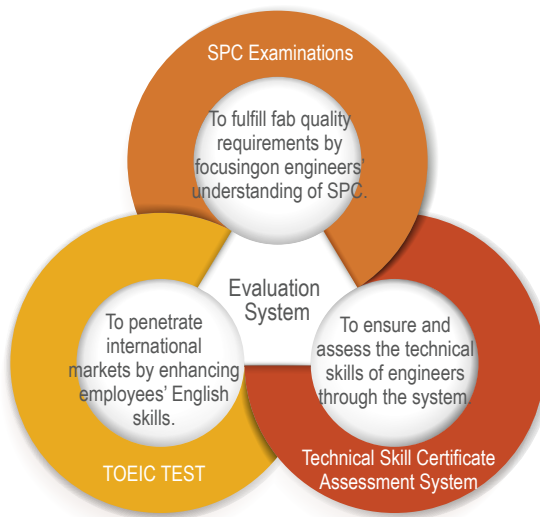


Learning Portal

## ► Evaluation of Professional Skills

UMC has a comprehensive evaluation system not only to effectively evaluate employees' competence which could satisfy all manufacturing procedures and standards, but also to achieve customers' expectations. For example, UMC has TOEIC test to qualify employee's English skill, and SPC (Statistical Process Control, SPC) examinations and technical skill certificate assessment system to well assess professional skills and knowledge. In addition, taking SPC as an example, unless the assessment is passed, employees cannot operate the machine, and job promotion will be deferred. The target pass rate of SPC assessment was 95% and the actual pass rate was 97% in 2013

### ■ Evaluation System



## ■ Technical Skill Certificate Assessment System

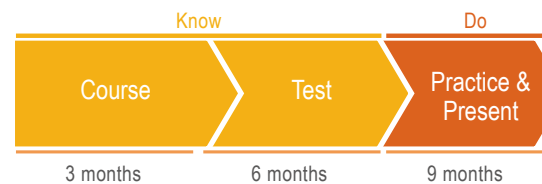


### ■ SPC Assessment: 369 Rule

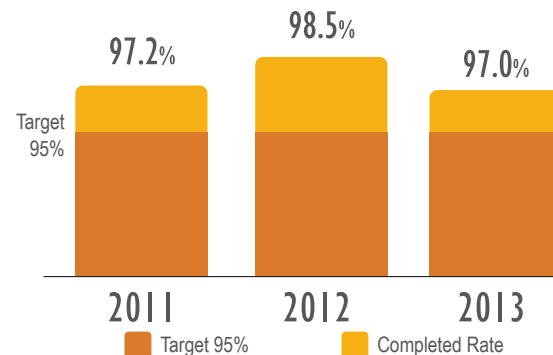
Complete SPC training course within 3 months (from hire day)

Pass SPC writing test within 6 months (from hire day)

Pass SPC practical test within 9 months (from hire day)



### ■ SPC Assessment Completed Rate in 2011~2013



## ► The Training of New Employees - Experiencing Corporate Culture

In order to help new employees to quickly fit in with the culture of UMC, shorten learning times and emphasize the values of "recruiting, cultivation and retaining of talent", new employee training focuses on creating a learning organization. Managers from various departments all support and put effort into training new employees to maximize the effectiveness of training. All new employees have to take training classes, and they also need to participate in the U-Camp which includes organizational core value. The class is taught directly by the managers, over the topics such as corporate vision, strategies, and advantages. Moreover, there are classes about stress-management in the workplace and proactive attitude. 845 employees finished the U-Camp training camp for new employees (including stress management related training).

(The number above only includes the data in Taiwan. All indirect labors are participants in U-Camp).



the Training of New Employees-Team Building

## ► Key Success Factors of Training & Development

Because of the fast-changing times and unprecedented amount of competition in the industry, being able to cultivate and retain talented people is an essential factor in improving the competitiveness of a company. Top managers' prospective thinking—"cultivation and retaining of talent" is one of the business policy. Furthermore, UMC promotes comprehensive training and development program to continuously fuel the growth and innovation of the company, for enabling the company to stay at the top of worldwide semiconductor industry.


### 4-2-4 Cultivating Talent on Campus

To speed up the growth of the semiconductor industry and technology, UMC focused on two advanced campus recruiting strategies, "UMC Excellent R&D Talent Strategy" and "Universities of Science and Technology Engineer Cooperation" in 2013.

## ► UMC Excellent R&D Talent Strategy

UMC PTP Program ( Prospective Talent Program) developed a series of activities for R&D potential talents to promote UMC's corporate culture and corporate vision. Since the start of PTP program, it has attracted almost 300 members.

## UMC Excellent R&D Talent Strategy

International Summer Internship	In 2013, UMC selected 40 outstanding talents for International Summer intern. During this period, UMC provided tutors for this project to help these interns experience organizational culture and the ongoing projects in UMC with the global team members. In the meanwhile, these interns are able to learn and obtain team work experiences in workplace by this project.
Career speech on campus/ Career Coaching Program	UMC and top Taiwanese universities collaborated on "Career Speech on campus" and "Career Coaching Program" in 2013. With these two programs, UMC provided an opportunity for students to discuss their career plans with UMC managers or HR specialists.
Business Visiting for Potential Students	<p>In 2013, 300-350 students visited UMC. Through these visits, students learn about UMC culture and get information about their future career.</p>  <p>The 2013 Electrical Engineering Camp Visited UMC</p>

## ► Universities of Science and Technology Engineer Cooperation

Industry Lecturer Coaching	UMC provides excellent industry lecturers to share their experience. This collaboration can reduce the gap between theory and practice.
Internship Program for University Students in Senior Year	This program provides university with a one-year enterprise internship to help students obtain practical experiences and enhance competency for jobs in the future.

Experience Sharing



Fangyu ,Qiu  
Department of Materials Science and Engineering,National Cheng Kung University

Students often have many doubts for their future, so I chose to join the UMC campus career assessment exercise and Career Coaching Program.

The UMC HR specialist was very helpful advising me tips for real interview through the assessment exercise. Besides, not just only the interview skill, but the interviewer also kindly assisted me with a lot of helpful career planning related advice. I felt much better prepared for launching myself into workplace after being consulted by UMC HR specialist.

Career Coaching Program is a week-long program, conducted by seasoned managers in UMC, focusing on several much needed skill sets in workplace.

Thanks much to UMC management's willingness to take time coaching us and sharing experience. In my opinion, UMC is beyond just a company with excellent track record in advanced semiconductor technology. UMC is also a company dedicated to serving the community.

## 4-3 Healthy and Safe Workplace

### 4-3-1 UMC's Six Elements of a Healthy and Safe Workplace

The "UMC's Six Elements of a Healthy and Safe Workplace" project started in 2010 and is focused on creating the perfect workplace to provide UMC employees with competitive salaries, benefits and a safe, sanitary work environment.

UMC's Healthy Workplace project has four stages: (1) Establish a system (2) Promote and implement good practices (3) Expand the scope of these practices (4) Strengthen the practice.

#### 6 Golden Episodes of UMC's Healthy Workplace



The project ended in 2013, it emphasized on achieving work-life balance, creating a friendly and a developing a dynamic enterprise. Through this project, UMC hopes to increase employee engagement and satisfaction, and ultimately improve overall business performance.

#### ► Element 1- A Safe UMC

UMC has always placed great emphasis on employee's compensation, benefits, and rigorously safeguarded employees' rights and interests by following labor laws. To maintain harmonious labor relations, UMC's policies for employees' welfare, education, training and retirement system all comply with related labor laws and acts. By establishing a safety management system, UMC can remove potential hazards from the workplace and realize its goal of a "Safe UMC".



#### ● Voluntary Leave Program

In order to achieve work-life balance, UMC implemented the Voluntary Leave Program which encourages employees to arrange their vacation through various promotions. Moreover, all supervisors in UMC are asked to remind their subordinates to make plans for their vacations.

The UMC recreational centers in Hsinchu and Tainan have exclusive discount programs that encourage employees to exercise and relax during their free time. All employees in UMC follow regulations and local laws, especially with regard to overtime work prevention rules. To prevent too much overtime, we set up an early alert function on our work attendance system to remind every employee concerning his/her working time, and review all records of this system. Results are reported in Labor-Management communication meetings quarterly.

#### ● Non-Smoking Pollution Program

Long before the government enacted its non-smoking policy, UMC had worked to create a non-smoking office environment. Besides implementing an absolute ban on indoor smoking and designating outdoor smoking areas, UMC has also educated new employees during new employee orientation about UMC's non-smoking policy, stating the policy explicitly in its rules and regulations and promoting the policy regularly through various channels within the company. All of these measures are implemented to ensure our employees are free from exposure to secondhand smoke.



## UMC Approaches to Ensure a Safe Workplace

### Gender equality employment system

All regulations and policies in UMC follow local laws regarding gender equality

### Night shift safety for women

UMC provides cab service, night escort, car trouble services, emergency buttons, various types of emergency services, shuttle service, 24-hour employee hot line and night emergency response measures.

### Assistance for pregnant and special needs employees

Pregnant women have priority at the company cafeteria, parking lot, and receive notifications when company office areas are being sterilized. Both male and female employees can apply for childbirth subsidy; female employees who are more than 3 months pregnant can apply for maternity leave. Breast feeding rooms are also provided for mothers.

### Flexible working hours and leave that achieve a balance between work and family

UMC employees have flexible work hours, and employees with less than one year of work experience at UMC are provided with special or flexible leave.

In accordance with the rights stipulated in the Gender Equality in the Employment Act, male/female employees can all apply for unpaid parental leave.

### Sexual harassment prevention measures

UMC has formulated a "Workplace Sexual Harassment Prevention Appeal and Disciplinary Act". This act will publicize the case investigation procedures and the members of the investigating team, provide confidential reporting channels, train employees on sexual harassment prevention and provide a support network which is maintained by company security guards.

Remarks : UMC complies with the local laws, act of gender equality in employment and sexual harassment prevention act to establish UMC personnel regulations and implement related measures.

## Element 2 – A Healthy UMC

UMC held plenty of health activities to practice its "Healthy Workplace" project. There were 23,567 participants in these activities in 2013, and their overall satisfaction was up to 94%. The program obtained not only a "Healthy Work Place Certificate" from the Government but also a "Corporate Citizenship Award" from CommonWealth Magazine in 2013.

### 2011-2013 Health Center Services

Health Lecture	Participants
2011	121
2012	236
2013	985

Physical Examination	Participants
2011	2569
2012	1889
2013	1393

Stress Relief	Participants
2011	193
2012	14471
2013	21189

### 2011-2013 Health Center Service Satisfaction

Health Lecture	Satisfaction
2011	94%
2012	95%
2013	95%

Physical Examination	Satisfaction
2011	94%
2012	94%
2013	94%

Stress Relief	Satisfaction
2011	97%
2012	97%
2013	97%



## Healthy UMC Measures

Measures Name	Users	Implementation date
Healthy Workplace independent certification	All Staff	Since 2011
Blood Donation	All Staff	Regular
Various types of health promotion activities	All Staff	Regular
Weight loss contest	All Staff	2011~2013
Customized health promotion project	8CD Staff	2013/Apr.~ Dec.
Promotion of healthy eating and healthy meals	All Staff	2013/ Apr.~ Dec.
Health Check	All Staff	By Decree
eHR electronic personal health information database	All Staff	Since 2010
Physician Services in UMC	All Staff	2012 Mar.
First Aid Training	All Staff	By Decree and UMC rule
Employee Assistance Program promotion and network building	All Staff	Since 2003
Injuries return to work	All Staff	Since 2012
Education for managers to help psychological cases for employees	All Staff	Since 2012
Care professional advisory and emergent ambulance system	All Staff	Since 2012 Mar.

### ● Prevention and Treatment of Metabolic Syndrome

The annual plan of UMC's health center focused on metabolic syndrome prevention in 2013. Together with Hsinchu's National Health Council and Tainan City Health Bureau, we implemented a "Healthy Weight Activity" program that encourages employees to develop healthy eating habits and exercise regularly. UMC planned customized health projects for the employees to fight high blood pressure, high blood glucose and hyperlipidemia.

In addition, a UMC employee won first place in Hsinchu's weight loss competition, while four UMC sites obtained a "Healthy Work Place Certificate" in 2013.

### ● All Sites Obtain the "Healthy Workplace Independent Certification."

Since UMC implemented the healthy workplace project, each site has been independently certified. In 2013, all sites of UMC including UT, Fab 6A, Fab 8S, Fab 8AB, Fab 8C, Fab 8D, Fab 8E, Fab 8F, and Fab 12A received "DOH Bureau of Health Workplace Independent Certification". UMC is one of only two companies to receive the certification in all sites.



## Healthy Workplace Independent Certification

Award	Healthy Workplace Independent Certification
Reason	Committed to promoting smoking prevention and health promotion activities in the workplace
Certification Unit	National Health Council
2013	Award Site 8C 8D 8E 8F
2012	Award Site 12A 8AB 8S
2011	Award Site UT 6A



## Contributing to the Community and Charitable Activities

UMC actively participates in social welfare activities. We provide massage services by the visually impaired for employees in Hsinchu and Tainan that not only provides working opportunities for the handicapped, but also helps employees relieve pressure through professional massage services. In addition, UMC colleagues respond enthusiastically to blood drives which are held two to five times a year. In 2013, Hsinchu and Tainan fabs were awarded "Best Blood Donation Organization". Since 2011, more than 5100 employees have participated to and donated 6640 bags of blood in total.

## Actively Guarding the Health of Employees and Their Family

UMC is aware that prevention is better than the cure. In addition to conducting annual physical examinations, we also hire specialists to provide free health consulting services to help special case employees return to work. Moreover, we implement employee assistance programs, conduct emergency personnel training and other preventive initiatives. We arrange activities that are related to our seasonal health themes, such as special examinations, vaccination and other physical fitness activities. We encourage our employees to have a healthy lifestyle.

In addition to the main plants in Hsinchu and Tainan, UMC's subsidiary also customizes exclusive local health activities for employees, including annual health check, health education, pregnancy management, management of special operations personnel, external counseling services, and so on. UMC also cares about the families of employees. We provide annual health checks and massage services to family members.

## Weight Management Competition

In response to activities organized by the National Health Board and the Hsinchu and Tainan City Health Bureau, since 2012 UMC has planned variety of health promotion activities and healthy diets to help employees develop healthy lifestyle.

## Achievements



In 2013, a UMC employee won first place in the personal weight loss competition.

UMC employee Mr. Daniel Huang, who lost 31 kg, won the championship in Hsinchu.



In 2012, 470 people from Hsinchu and Tainan participated in the State Bureau of Health's weight loss competition, winning the second place in the group competition with 808.1 KGs lost.

Experience Sharing

Daniel Huang

UMC Staff

Since graduating from school, I've been heavier and heavier during these past 10 years. Participating in this program by National Health Department, I started my diet by staying away from fried and high- calorie foods.. Moreover, I swam every day during the program, rain or shine. After 10 months, I lost 31KG, dropping from 105 kg to 74kg. My waistline was reduced from 108 cm to 86 cm.

## ● Custom Designed Health Activities— e.g. Fab 8CD Health Institute

Under the lead of Fab 8CD's Division Director, the fab secretary, nurse and employees co-planned 8CD's "Healthy School" to create a fun and lively atmosphere within the fab that promotes a healthy lifestyle with a credit program. This program encourages employees to practice a healthy lifestyle during work, and also participate in physical activity courses after work by awarding credits. Implementing a concept of fitness will help encourage employees to be physically and mentally healthy.

### 8CD Health Institute Credit Plan

Elementary ( 2 credits per quarter limit )	Walking and climbing stairs	30 / 2 credits	1
Midrange ( 4 credits per quarter limit )	UMC recreational centers in Hsinchu Clubs Aerobic classes	≥ 9 / 4 credits 8~6/ 2 credits	
( 3 credits per quarter limit )	mountain-climbing Individual sports	3/per quarter/ 3credits bike : 20km/1credit running : 5km/1credit	2
High level ( No maximum )	Large sporting events	Each / 5 credits	3
Added Points ( No maximum )	Sector activities	Each / 1 credits	4

Note: In the first quarter (April to June)

## ● Healthy Diet Program

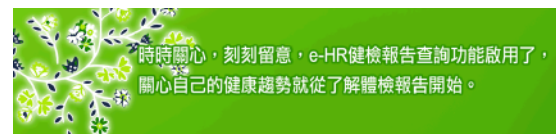


health education, UMC employees are encouraged to eat healthy and safely.

UMC launched a healthy meal program designed by dietitians. The meals are launched weekly with themes from the health center.

Working in conjunction with

## ● eHR Electronic Personal Health Information Database



To help employees timely manage their personal health information, UMC established an electronic health check management platform. Every employee can access their personal health examination reports and medical history over past years through the system. UMC provides educational information based on personal health examination reports and enhances employees' self-management skills for health.

## ● Physician Services

On-site physicians offer employees health advice and conduct assessments. UMC also plans physician lectures to give exclusive medical advice and assistance services.

## ● First Aid Training

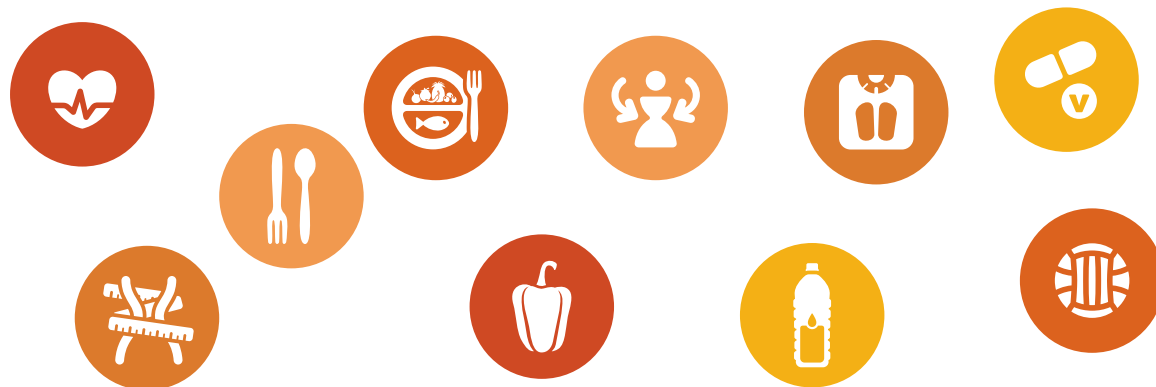
UMC arranges intensive training twice a year. This training could enhance the ability to deal with emergencies .

## ► Element 3 – A Warm UMC

In order to provide timely assistance to employees, UMC has established a full range of professional counseling services for employees. Consultation platforms serve the needs of employees and promote business productivity and employee stability.

## ● Employee Assistance Services Program (EAPC)

UMC started its "Employee Assistance Services Program (EAP)" in 2003, offering free employee counseling services to relieve physical and mental stress. Between 2011 and 2013, up to 400 visits were made. An internal website "Spiritual Healthy Living" was created to promote the program and used an internal homepage banner with mobile APP.



## 2011-2013 Employee Assistance Programs Attendance

Assistance Programs Attendance	Employees
2011	91
2012	163
2013	146

## UMC "Spiritual Healthy Living " website



### ● Education for Managers on Employee Counseling

Since 2012, UMC has cooperated with Hsinchu Lifeline - EAP Center to progress the professional training of counseling skills for supervisors and managers. The purpose is to provide promptly assistance in dealing with psychological cases for employees. These courses strengthen counseling skills through the training and practices with external consulting experts. UMC would like to establish a comprehensive network of consultative assistance services and provide intimate care for all staff. In 2012 and 2013, a total of 821 employees participated in this training course. Currently, training completion rate is 60.9% in 2013. This training program be continued in year 2014, and of 80% targeted a completion rate in the end of 2014.

The period from 2013 to 2014 is the key promotion stage of this project. UMC has been strengthening education and training for all department managers, focusing on the case awareness for early detection with employees, and timely referral to the health centers or the Employee Assistance Service Center (EAPC). To ensure all managers and executives have the necessary skills, the training course listed above is bundled into managers' training schedules and all managers will be invited to enroll within the target time. UMC's aim is to enhance and assure the effectiveness through these practices.

## Schedule and the Number of Training Courses

### 2012

Hsinchu 6 Schedules (2/9、2/10、2/15、6/5、6/11、9/17)

Tainan 2 Schedules (3/1、3/7)

445 employees that completed training

### 2013

Hsinchu 4 Schedules (5/21、6/4、8/20、11/14)

Tainan 4 Schedules (7/24、7/30、8/28、12/04)

376 employees that completed training

### ● Care Service

Health center nurses follow up by telephone and e-mail with employees that have encountered mental or physical trauma, such as from traffic accidents. Nurses will provide sufficient assistance to help employees return to work as soon as they are able.

## 2011-2013 the total number of injury care services and care times

2011	persons
number of yearly case	61
closure case number	14
caring times	138

2012	persons
number of yearly case	68
closure case number	55
caring times	677

2013	persons
number of yearly case	122
closure case number	125
caring times	810

### ● Injured Employees Returning Work

UMC has established a concise mechanism in order to provide fullest assistance to the employees who have suggested from physical/mental injuries, to get back to work. This mechanism involved department managers, onsite health care workers, HR dept., in reviewing revising the job scope these is appropriate for the employees to return to work.

For 2012-2013, a total of 23 employees have returned to work under such circumstances.



## ● Professional Nursing Advice and Emergency Care System

UMC was the first to establish a 24-hour information platform for nursing advice and emergency care. Each nurse has industry experience in various outpatient divisions. Those with any medical problems or require health care advice can contact the nearest fab for immediate medical advice or to reach a dedicated nurse.

## ● Overwork Prevention

In order to manage employees' working hours effectively, UMC implements a voluntary leave management system and sets up an early alert function on working attendance system to remind every employee about his/her working time. We review the records of this system and announce them to employees and their supervisors.

### One-day Trip

Held one-day employee trips each quarter to encourage them and their families to relax and achieve work-life balance. These one-day trips in UMC are popular with employees.

### Star activity center

To provide high-quality recreational sports environment for employees. UMC will spend several hundred million dollars to build a five-star Union Park (HSP) / United Yuan (NSC) Activity Center. Facilities include swimming pool, gymnasium, billiard room, basketball court, badminton / volleyball court, arts space, diverticulitis and rhythm classrooms for family fun.

## "Tainan City cherish life, workplace, LOHAS" self-certification mark.

Awards	"Tainan City cherish life, workplace LOHAS" self-certification mark
Winners reason	Promote workplace mental health
Certification Organization	Tainan City Government Department of Health
2013	Winning site 12A



## Event Photos



Sports



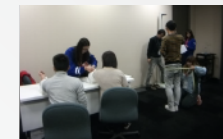
Blood Donation



Massage Events



Health and disease screening examination



Physical Fitness



Health Education Lectures



Counseling Internal Staff Training





## ► Element 4 – A Cohesive UMC

In order to enhance a positive atmosphere and employees' coherence in corporation, UMC implements several activities including team building activities and sports festival according to each site's request and previous satisfaction surveys.

### ● Team Cohesion of site Activities

In order to strengthen organizational cohesion, we planned a series of activities for celebrating our corporate anniversary, including several team competitions such as dodge ball games, laser strike, and puzzle games over five weeks.



### ● Employee Family Activities

UMC emphasizes work-Life balance beyond employees to also include their families. UMC plans appropriate activities specifically for the families of employees to participate in, such as 2013 "UMC Duck Come" Family Day activities, monthly movies and Arts Festival activities. UMC anticipates the families of employees appreciate and support these ongoing efforts at UMC.



## ► Element 5 - A Vigorous UMC

UMC believes employees are a company's most valuable asset, and we realize that healthy and happy employees lead to a highly productive corporation. Therefore, UMC provides a safe workplace and takes care of employees' life and welfare.

### ● 2013 UMC Recreation Project



## UMC Clubs

Diverse clubs in UMC: sports, social participation, musical, art, etc..

## UMC Clubs' Activities



## 2013 results



## UMC Recreation Centers: Hsinchu/Tainan/Jinshan

Quality Recreation Center in Hsinchu for employees and their families.

Dormitory in Tainan with integrated recreational facilities.

Each site (6A, 8E, 8F, 8S, 12A) provides fitness equipment for employees.

## UMC Leisure Facilities



## 2013 results



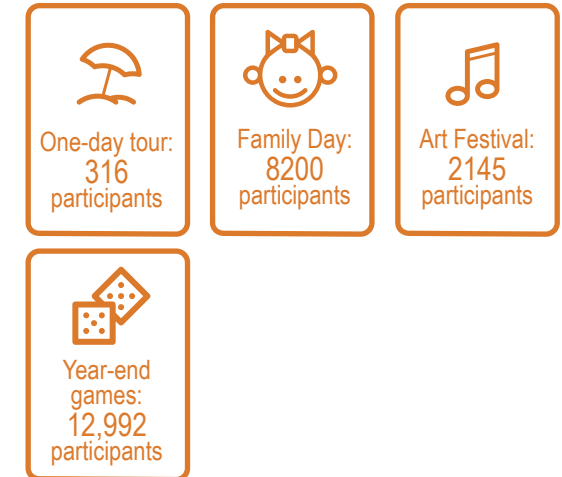
## Diverse employee activities

One-day tour  
Family Day  
Art Festival  
Year-End Activities

## Highlights of 2014 UMC "UMC Duck Come" Family Day



## 2013 results



## Sports Events

Conduct diverse activities and sporting competitions for all employees to encourage exercise.



Softball Game in UMC

## 2013 results



## ► Element 6 – A Cultured UMC

UMC employees are encouraged to engage in various art and social welfare activities to improve organizational atmosphere and external social image.

## Provide various and latest welfare information via several platforms



### UMC iceCream APP

UMC is the first corporation to provide various welfare information to employees and their families on a mobile platform, using a new APP named "UMC iceCream APP"



### UMCWe Website

All UMC employees are able to obtain welfare information and communicate and interact with each other on this website.



### Ustore Website

Ustore website has been used since Oct. 1st, 2012. It is an internet website that provides various goods for UMC employees and their families.

UMC hopes that each employee can work worry-free. In 2013, we established a new mobile platform named "UMC iceCream APP" to provide information on everyday aspects such as shopping and discounts for food, clothing, transportation, etc., so they may improve their work and life. In order to build an ideal workplace, UMC's efforts in human resource management pays special attention to human capital development.

## UMC iceCream APP



### Food

Every UMC site has a cafeteria, café, and convenient stores providing various dishes and snacks for employees.



### Clothing

UMC provides new jackets for all employees.

Most employees are free from dress code requirements, besides receptionists.



### Accommodation

UMC provides quality dormitories for employees.



### Transportation

UMC provides free shuttle buses for employees



### Entertainment

UMC provides recreation centers both in Hsinchu and Tainan.

UMC holds several activities every year to improve employee work-life balance.



"2013 UMC Art Festival" held 18 events in the company providing various activities for employees and their families such as movies, photography exhibition, animation exhibition, musician, lectures, and so on. We encourage employees to enrich their life and achieve an ideal work-life balance by experiencing diverse activities.

## 2013 UMC Art Festival



## 4-3-2 Industrial Safety and Health

### ► Safety and Health Policy

01

To achieve zero accidents and comply with all applicable safety and regulatory requirements to ensure safety as the top priority.

02

To continually reinforce best safety and health management practices to reach international ESH and risk management standards.

03

To apply total risk control, advanced ESH management and rescue technologies to enhance the company's safety standards.

04

To ensure a safe work environment and operation through preventive management and auditing.

05

To eliminate hazardous factors and prevent accidents by meeting safety and health commitments on all levels.

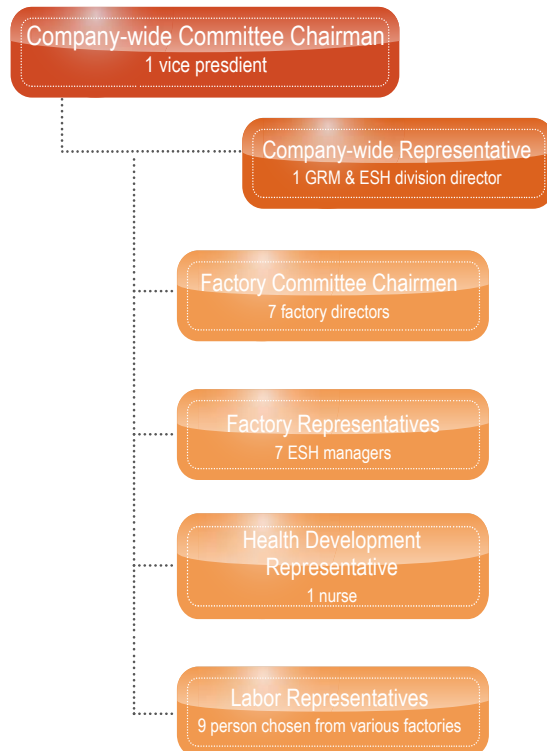
06

To encourage all employees to actively participate in safety and health training, and promotional activities.

## ► Safety and health organization

UMC established a company-wide safety and health committee, and the vice president is the committee chairman. Nine of twenty-six committee members, which account for 34.6% of the committee, are employee representatives chosen from various fabs. Each fab also has its own such committee.

### Structures of Company-wide Committee



The safety and health committee meetings convene every quarter to review the following issues



## ► Build a “Safety is My Responsibility” Company Culture

UMC believes that taking care of employees and building a safe workplace are the responsibilities of the company. Safe equipment design is the foundation for the company’s safety and health management. UMC ensures that the mantra “Safety is My Responsibility” is part of the company culture. UMC hopes that achievements in safety and health management will translate into positive business outcomes.

In 2013, aligned with the company’s operations, UMC promoted safety awareness with these projects: “Behavior Safety Observation”, “Equipment Risk Assessment and Video Making”, “Safety Detectives”, “Zero Incident Recurrence” and “Factory Director Inspection Tours.” The main purpose is to remind employees that workers might ignore health and safety precautions; therefore to enhance the safety of employees and suppliers, safety discipline should be enforced to reduce incidents.

## Implemented Items for “Safety is My Responsibility” in 2013

### Behavior Safety Observation : Thousands-Eyed Angel

Encouraging UMC employees to be more attentive to at-risk behaviors, and prevent them from happening at work.

#### Outcome

Participants included 148 departments and 2,300 people. Safety behavior percentage is the indicator to show that safety behaviors have become habits.

### Risk assessment of equipment and video shooting

A reward system is set up to encourage factories to find risks.

#### Outcome

Eight factories participated in shooting videos, and produced 29 films. Eight films were promoted in UMC Safety Month.

### Safety Detectives

A reward activity called “Finding Abnormalities” encourages all employees to be safety detectives and correct unsafe conditions.

#### Outcome

Nine factories participated in the activity. Finders of 403 abnormalities were rewarded.

### No recurring incidents : web-based training materials

Using recurring incidents to make web-based training materials. These training sessions are mandatory for all new employees.

#### Outcome

Six training materials were adopted as compulsory for relevant departments.



### No recurring incidents: inspections and safety audits

Inspections or safety audits focus on recurring incidents to prevent them from happening again.

#### Outcome

UMC ESH staff continuously audited recurring incidents for three quarters in 2013, and accidents decreased every quarter.

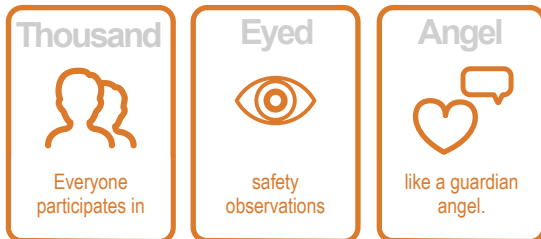
### Inspection tours for factory directors

The number of audits performed by senior managers and cases of incidents during 2010~2012 are found to be related using Spearman's rank correlation coefficient. Thus factory directors are encouraged to perform an audit at least 4 times a month.

#### Outcome

In 2013, UMC's senior executives performed 493 inspection tours (147 inspections performed by the factory directors). Unscheduled inspection tours were also carried out.

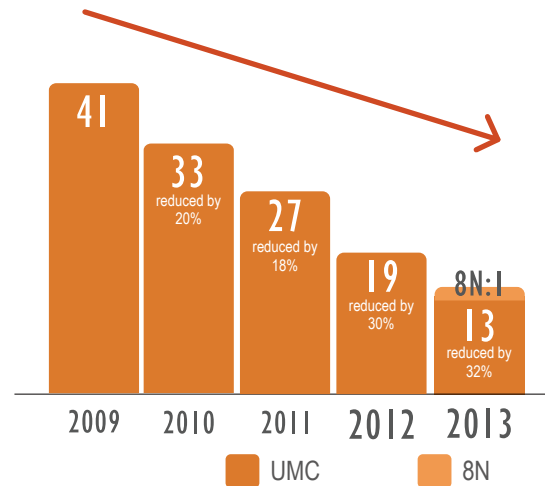
UMC was honored to win the 7th National Industrial Safety & Health Award again in 2013. 'Thousand-Eyed Angel', one of UMC's original activities, encouraged the UMC workforce to be more attentive to at-risk behaviors. The participation of all employees reinforces the safety culture.



### Incident management

UMC is committed to reducing the number of incidents. The target was to reduce the number of incidents by 15% in 2013 (compared with 2012). In order to achieve this target, UMC proposed several activities. The "No recurring incidents" activity successfully prevented incidents from recurring. Through "Safety is My Responsibility" implemented in 2013, incidents were reduced by approximately 32%. A decade target was set for 2020 to reduce the number of incidents by 75% compared with 2011.

#### Accident cases



Note1: The target is to reduce the number of cases by 15% per year.

Note2: The target for 2014 is less than 12 accidents.

Note3: UMC's accidents take into account injuries, production losses, property losses, chemical properties, fires and personal behaviors. Not all accidents involved injuries.

Note4: The reduction rate is calculated by comparing the number of accidents with the number for the previous year.

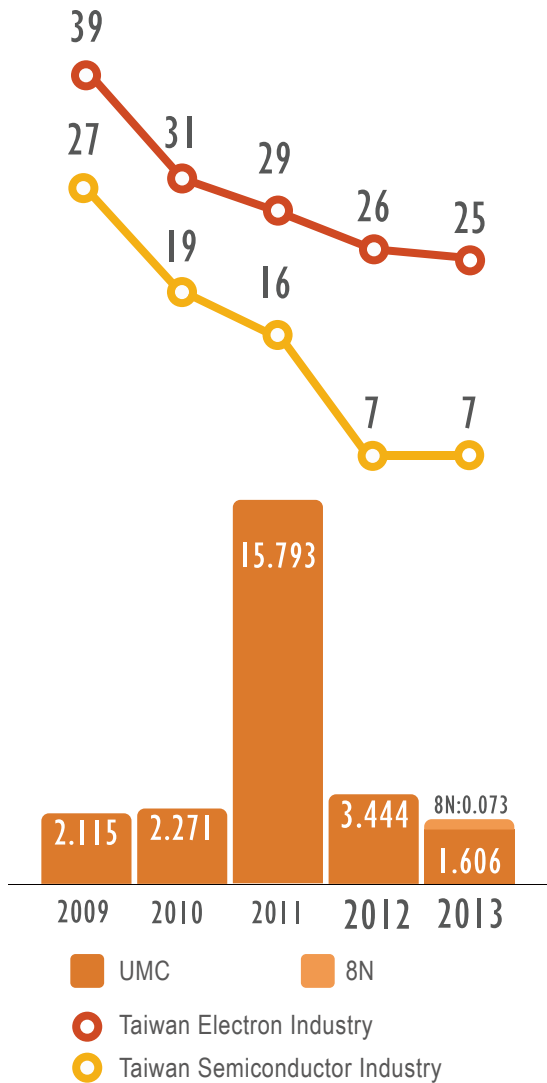
### Injury Management

UMC's disabling frequency rate (FR) and disabling severity rate (SR) were 0.06 and 1.61 respectively in 2013, and both were far below the average rates in Taiwan semiconductor industries. UMC will continue to promote activities which can prevent incidents and achieve the target of zero incidents.

#### Disabling frequency rate(FR)



## Disabling severity rate (SR)



Taiwan	Male	Female	Total
	FR	FR	0.04
	SR	SR	1.75
Singapore	Absenteeism	Absenteeism	0.19
	FR	FR	0
	SR	SR	0
China	Absenteeism	Absenteeism	1.18
	FR	FR	0.27
	SR	SR	2.16

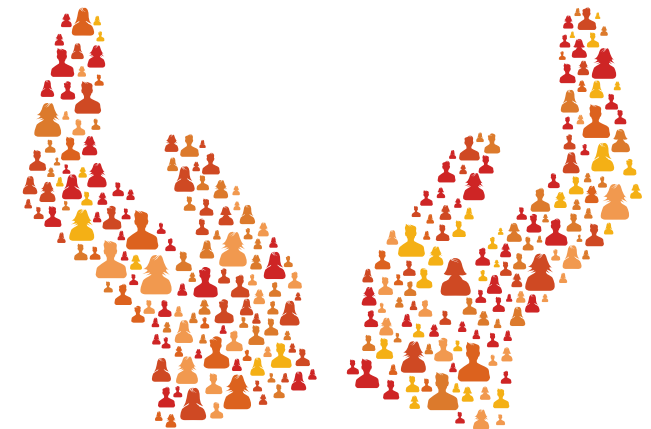
Note 1: No occupational diseases or work-related fatalities from 2009 to 2013

Note 2: Absentee rate: personal leave and sick leave / total working hours.

## Safety and Health Training

UMC believes that continuous training and promotion of safety can improve safety awareness and emergency response skills. UMC's training plan integrates emergency response, license requirements, safety and health management, risk prevention and contractors/foremen training. Moreover, lessons learned from accidents were also included in the training materials to prevent accidents from recurring.

UMC reviews its existing training methods frequently. UMC discarded the traditional training methods and uses animated videos and case studies from other companies. UMC also teaches its employees safety awareness, safety recognition and safety behaviors by using 3D-training-methods, i.e. directing videos, in-depth learning and delight in learning.



## ESH training methods



## Directing videos

- 2009 Caring for others
- 2010 Lessons learned
- 2011 Finding faults
- 2012 Life-saving rules
- 2013 Be aware of traps



## Delight in learning

Interesting videos can express safety concepts



Fun games



## In-depth learning

### Fire fighter training



Rescue in confined spaces  
(Training with themes)



Ironman Duathlon  
(Physical training)

### ERC Training

### Fire simulation site

Note: Emergency Response Center (ERC)



Rescue in small spaces



Experience Flashover

### Community trainers

### Environmental Emergency Response Team Central



Exchange of know-how with government agencies



## ► Contractor Management

Contractor management is very important to UMC. UMC requests every contractor to sign an administrative agreement to be familiar with UMC's safety rules. The rules of reporting accidents, inspection and job observation that apply to UMC's employees also apply to contractors. Unsafe acts performed by contractors would be reported to the contractors' supervisors or relevant personnel. The computerized working permit systems enable UMC to manage tasks efficiently. UMC requests that all tasks performed in the factories must be done with working permits.

UMC requests all contractors to complete required ESH trainings before conducting works. UMC also requests all foremen to complete required ESH trainings before supervising works.



Note: Trainings Weork permits Procedures

### | Safety rules for contractors

- 01 Use of electricity
- 02 Dismantling of dangerous pipelines
- 03 Working in confined space
- 04 Suspending the fore system
- 05 Segregating the fire alarm detector
- 06 ESH requirements for contractors

## 4-3-3 UMC Fire Brigade

Semiconductor factories store many different types of gases and chemicals, and the clean rooms within these factories are large, closed-off spaces. These reasons make firefighting in the semiconductor industry different and riskier compared to traditional firefighting. In April 1999, UMC established a high-tech fire brigade that is under the Group Risk Management & Environmental, Safety and Health Division of UMC. This makes UMC the only company in Taiwan's electronics industry with its own firefighting force.

The UMC Fire Brigade members are reorganized every two years. The team in 2013 was the seventh UMC Fire Brigade organized. There are a total of 120 members in the fire brigade, including 6 full-time members and 106 Volunteer firefighters. Most of the members have Masters Degrees, making them the most educated firefighting team in Taiwan.

### | UMC Fire Brigade Professional Skills Training



Fire simulation Room Training



Protective Clothing Wearing Training



Fire Hose Equipment Training



Chemical Hazard Rescue Training



## ► Professional Skills Training

All employees have to be trained by UMC Fire Brigade members on basic firefighting and the fire extinguisher use every 5 years. In 2013, UMC employees took 17,701 Training classes. UMC employees are aware of emergency response measures, fire prevention and firefighting methods.



Emergency Response team Training



Basic Fire fighting Training



Refuge and Escape Trainig

## Professional Training Numbers

Training Object	Item/Year	2010 Numbers Trained	2011 Numbers Trained	2012 Numbers Trained	2013 Numbers Trained
Employees	New Employee Firefighting Training	1874	1010	1976	1512
Employees	Hazardous, Dangerous and Harmful Materials Training	1874	1010	2016	1512
Employees	Firefighting Training	1674	2640	2977	345 Note
Employees	Evacuation Training	7673	7686	8110	9152
Employees	First-aid Personnel Training	520	575	553	550
Employees	Rescue Team Training	415	332	358	378
Fire Brigade/ Employees	Commander Training	121	133	148	15
Employees	Rescue Team Re-Training	1779	1786	2016	2200
Employees	Reporting Control Team Training	129	150	147	147
Fire Brigade/ Employees	Fire SimulationRoom Training	325	325	325	280
Fire Brigade	UMC Fire Brigade Training	735	787	870	860
Fire Brigade	UMC Fire Brigade Telecommunication SMS Training	605	649	723	750

Note: Since 2013, all employees will complete the firefighting training term within 5 years.

## ► Advanced Firefighting Equipment



Chemical Fire Truck



ERCv



Personal Alert Safety Systems



Infra-red Thermograph Helmet



Heat and Chemical Protecting Coat



Installation of self-developed mobile water spray  
in the clean rooms and high-risk areas



## 4-4 Social Commitment and Participation

### 4-4-1 Social Participation



Lifestyle of Health and Sustainability

UMC's social responsibility practice is in accordance with "Lifestyle of Health and Sustainability, LOHAS), and we believe that corporation's performance and sustainability are supported by harmonious society. Therefore, we make efforts not only within corporate

operations, but also social participation. Employees are encouraged to participate in various social welfare activities through "UMC Science and Culture Foundation", welfare clubs, and volunteer teams. UMC employees have contributed more than 8,528 hours in total in 2013 and benefited 7,340 people. The 2013 participation man-hour has increased about 85% in comparison with 2012.

Moreover, UMC had invested over NTD 18,000,000 to social public welfare groups and activities including UMC Science and Culture Foundation, UMC Operation and Management Thesis Awards, Very-Large-Scale Integration (VLSI) Conference, UMC Green Technology Seminar in National Taiwan University (NTU), and so on.

### UMC Social Public Welfare Investment

Social Welfare Donation	2012 Over NTD 18 million	2013 Over NTD 18 million
Served Person-time	2012 Over 8,651 People	2013 Over 7,340 People
Volunteer Hour	2012 Over 4,609 hours	2013 Over 8,528 hours

### Devotion to Management Talent Development

UMC pays attention to not only technical talent development but also management talent development. In 2010, we founded "UMC Operation and Management Thesis Awards" and contributed NTD 3,000,000 every year to advance the management academic discipline and tighten the link between academy and practice with a vision to improve the corporate and, in the end, social sustainability.

### Social Welfare Groups in UMC

#### UMC Science and Culture Foundation

Spreading the Seeds of Hope Project  
Life Education- UMC Love Storyteller Club  
Gifted education- mathematics camp for gifted students  
Parenting Education



Since 1996

#### UMC Lohas Education Foundation

Sports  
-Recreation center facility sponsorship for social welfare groups.  
-Recreation center sponsorship to university students.  
Chinese literacy training for naturalized spouses



Since 2009

#### UMC Fire Brigade

Serving Science Park and surrounding neighborhood during fire accidents  
Promoting fire safety in elementary schools



Since 1999



## ► Social Public Welfare Project-“Spreading the Seeds of Hope ”



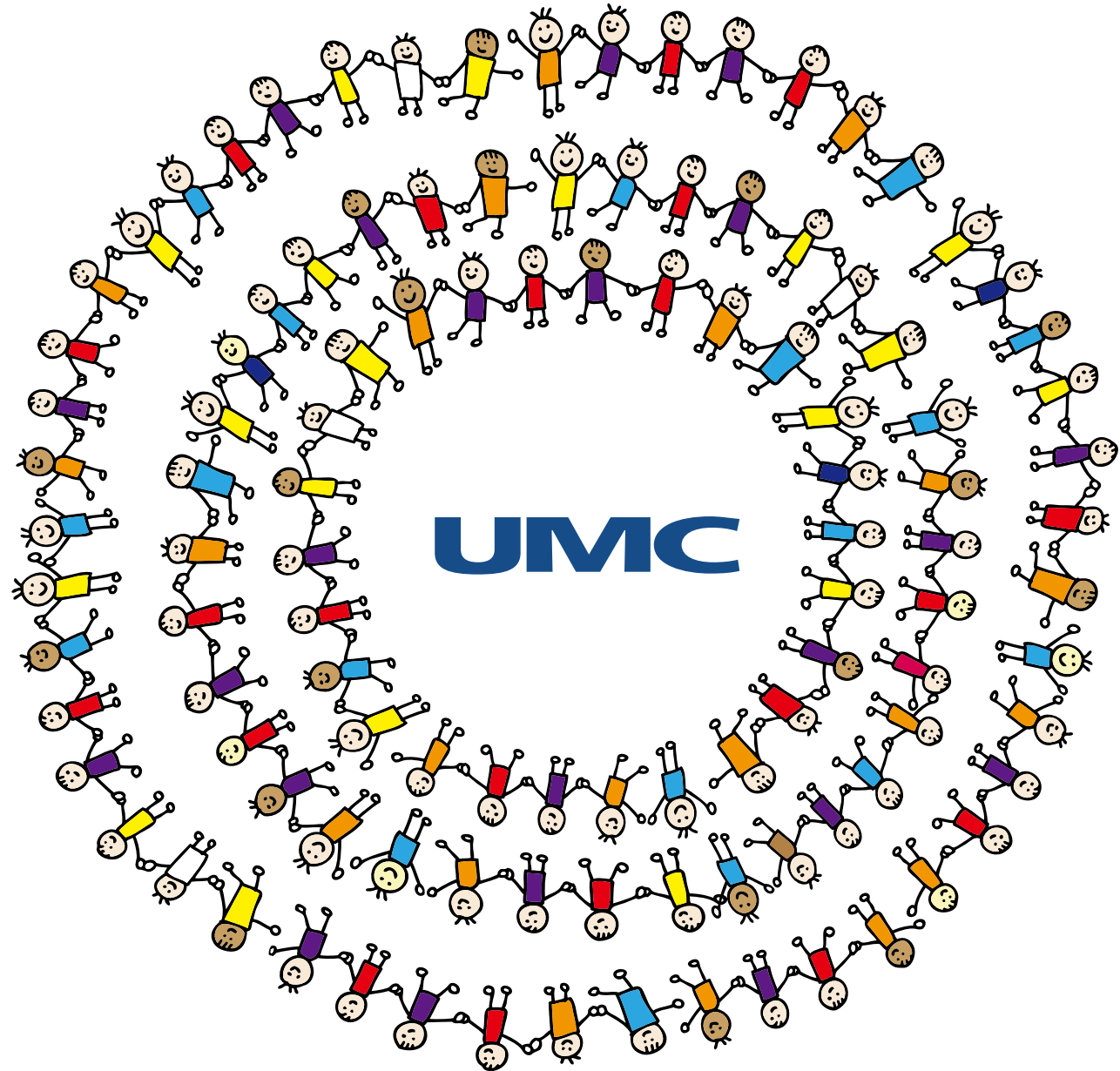
UMC understands its business success stems not only from employees' efforts, but also a stable community. Therefore, since its inception, UMC abided by the principle that corporations have to contribute to the society as a long-term approach to sustainability. UMC works hard for business growth and also contributes to the society. One of the contributions focuses on education, because we believe it is an effective way to help disadvantaged families out of their current situation. Therefore, UMC started “Spreading the Seeds of Hope ” program in 2005, the 25th anniversary for UMC, to support education for children from disadvantaged families.

### ● “Seeds of Hope”- Aid For the Children from Disadvantaged Families



Members of “Seeds of Hope” aid for children from disadvantaged families in Hsinchu and Tainan regions. UMC Science and Culture Foundation and UMC Candlelight Club hosted routine activities, various extra curriculum camps and visiting activities in order

to take care of the children and share the proper values with them. Moreover, UMC employees and their families are encouraged to join tutor volunteer teams for the children with various activities. We expect more employees and enthusiastic educators to join UMC's volunteer team to help the children from disadvantaged families build their confidence and help them enjoy learning.



- “Seed of Life Education”- Promoting Life Education



“Seed of Life Education” focuses on helping disadvantaged youth to find the bright side of life and strengthen themselves. In order to help indigenous children and disadvantaged youth to realize the meaning of life, UMC started Life Education volunteer training class for employees and their families. They visit remote areas and have summer camps to tutor and take care of children and youth.

Moreover, UMC Love Storyteller Club achieved similar goals by different media including stage plays. In particular, club members spend their free time during workdays to rehearse and ensure the stage is set up properly. This is also a form of life education for themselves and their family members. During these four years, the club brought lots of joy and emotion for over ten thousand students. Moreover, it might inspire these children to dream and try to make those dreams come true someday.

- “Seed of Me 2 We”- Promoting Reading Habits

“Me 2 We Reading Club” is formed by UMC employees. They share what they’ve learned from reading within the club and communicate outside of the club to let all members and hopefully, the people around them, enjoy reading and make their life better.

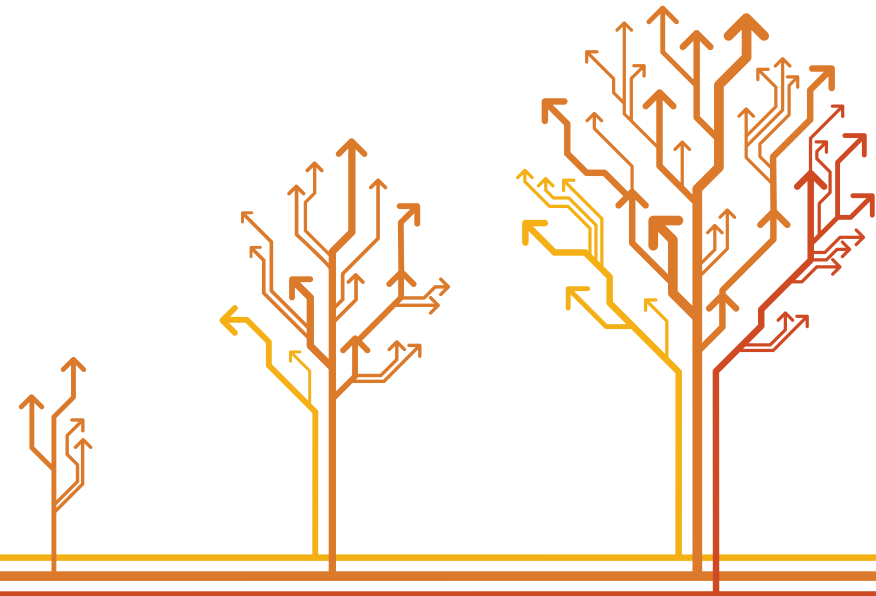
- “Seed of Green Energy”- Promoting and Educating Green Energy Talents

UMC make efforts in a low-carbon supply chain and green energy industry. Moreover, UMC works hard to support various environmental activities and environmental education such as “Turn-off lights”, “Green UMC, Happy Earth”, “Tzu Chi Foundation Camp”, and so on. In addition, UMC also promotes the concepts of environmental protection to students, friends and families to practice in everyone’s life.

- Seed of Semiconductor Knowledge”- Educating high-tech talents



This plan focuses on educating high-tech talents. We invest in developing internal talents’ ability, and also hold semiconductor manufacturing training courses at Chung Yuan Christian University, National Central University, National Cheng Kung University, National Kaohsiung University of Applied Sciences, and Kuang-Fu High School. UMC experts in various fields serve as lecturers to teach young students about semiconductor manufacturing to cultivate semiconductor talents.



## Achievement of "Seed of Semiconductor" in 2013

### Categories

Cooperation between the industrial and academic sectors



### Implementation Summary

Semiconductor manufacturing training courses at Chung Yuan Christian University and National Central University. 112 students took these courses in 2013.

Nanotechnology courses at the Graduate School of Electrical Engineering in National Cheng Kung University. 123 students participated in 2013.

Industry-academia cooperation program with Kuang-Fu High School. 123 people participated in the program in 2013.

### Categories

Focus on schools



### Implementation Summary

Summer internship programs for university students during July-August. 40 students took part in this program in 2013.

UMC encourages schools to come and visit the company premises to bridge the gap between theory and practice. In 2013, over 300 students from NCKU and NCCY visited UMC.

UMC has combined its ideas with substitutive military service to create the "8th Distinguished Technology Talents Cultivation Project". In 2013, UMC provide scholarship of NTD 600,000 for five participants..

Career Tutor Program in NTU and NCKU.

UMC provide 15 part-time jobs opportunities in 2013 for students with physical disabilities.

Prospective Talent Program brought into practice in 2013, it provides 270 opportunities.





## Five Seeds of “Spreading the Seeds of Hope ”

<p><b>Seeds of Hope</b> Children from Disadvantaged Families</p> <p><b>Implementations</b> tutoring, reading education, character education, caring, occasionally activity</p>	<p><b>2013 Outcome</b> volunteer service hour: 800 hr Sponsor of Nantou Karate Team Served over 150 students</p>	<p><b>Efficiency</b> Provide correct notion for students to avoid deviation. Sponsor of Nantou Karate Team to help player</p>
<p><b>Seed of Life Education</b> Disadvantaged youth</p> <p><b>Implementations</b> Volunteer team of life education Stage Plays Visiting and caring for youth in remote areas</p>	<p><b>2013 Outcome</b> Life education volunteer training, 45 finished in total Movie appreciation activities, 3 times Sponsor of parenting education radio program for a total of 51 episodes in 2013 Caring for Chengjiheng High School (juvenile correction school) students 4 times, 800 person-time total. Storyteller volunteer service, 15 times Ukulele club performance, 14 times for schools and welfare groups. Two clubs provided 302 person-time volunteers, serviced 2928 hours for 3520 person-time in 2013.</p>	<p><b>Efficiency</b> Caring the youth in remote areas to provide the correct notions for life education.</p>
<p><b>Seed of Me 2 We</b> Children from Disadvantaged Families</p> <p><b>Implementations</b> Reading club</p>	<p><b>2013 Outcome</b> 6 hours training for storyteller volunteer, 50 volunteers finished the course. Volunteers serviced for students in remote areas Sponsor of Hope Reading Project Promoting newspaper reading in remote area schools. Reading clubs held activities 105 times in remote areas and serviced for 1600 people-time.</p>	<p><b>Efficiency</b> Develop reading habit for children</p>
<p><b>Seed of Green Energy</b> Children, University department of environmental engineering</p> <p><b>Implementations</b> Environment protection activities. Sponsor of NTU Green Energy Speech. Sponsor of NTU Green Energy lab. Sponsor of solar energy system.</p>	<p><b>2013 Outcome</b> “Turn Off Light to protect Taiwan”, “Green UMC &amp; Earth” activities. Summer camp for kids Environment camp Sponsored NTU Green Energy Lab and Solar system Summer camp training for 300 students as environmental seeds.</p>	<p><b>Efficiency</b> Conduct employees and students correct environmental conscious. Provide relevant resource for NTU postgraduate student to do green energy research</p>
<p><b>Seed of Semiconductor</b> Relevant Schools, Kuang-Fu High School</p> <p><b>Implementations</b> Semiconductor course R&amp;D project      Other relevant projects Projects in campus</p>	<p><b>2013 Outcome</b> Semiconductor course with university and Kuang-Fu high school, 274 students participated. R&amp;D project with three universities</p>	<p><b>Efficiency</b> Make effort to develop semiconductor talents.</p>



## 4-4-2 UMC Volunteers

### ► UMC Volunteer Clubs

UMC took part in public welfare activities in various ways by following the core-value of “Grow with the society”, furthermore, we provide official leave for volunteers to encourage employees participating in public welfare activities. UMC volunteer teams are organized by UMC Science and Culture Foundation, Candlelight Club, Mountaineering Club, and Ukulele club. In 2013, all volunteer teams provided 216 sessions in total.

#### Candlelight Club

- Accompany and Caring
- Service for welfare groups
- Service for remote areas
- Fundraising

##### Object

- Children
- Elders
- Environment protection

2013 Session: 148



#### Mountaineering Club

- Accompany and Caring
- Farm Produce Supporting
- Fundraising

##### Object

- Children
- Farmer

2013 Session: 20



#### Ukulele club

- Students in remote areas
- Teaching Ukulele

##### Object

Children

2013 Session: 16



#### Company-wide

Charity sale

##### Object

- Children
- Elders
- Environment protection
- Handicap
- Battered Women, Children
- Prisoner

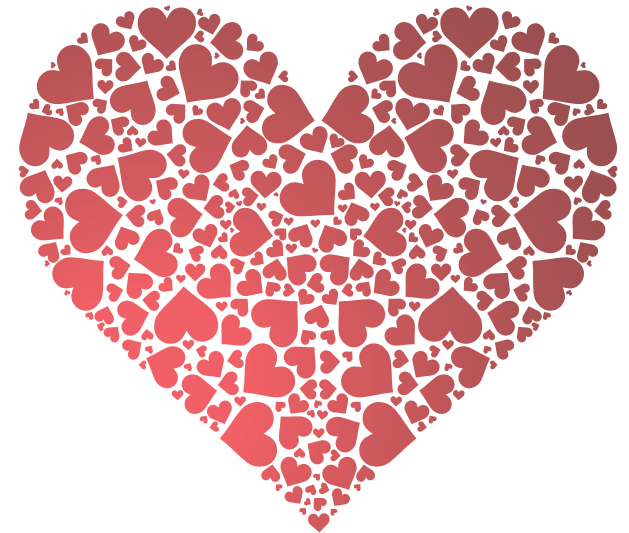
2013 Session: 32



Employees are encouraged to volunteer in social public welfare activities. We encourage clubs to care for people who need help in community by adding “Public Service” item to annual club assessment, and provide budget for clubs according to their assessment scores. On the other hand, the employee welfare committee invites several volunteer clubs to plan annual activities in order to strengthen social participation to help more people in Taiwan.

### ► Candlelight Club

Candlelight Club provides care service every month; we share and learn with children by movie appreciation and discussions. In addition, we hold several activities and form volunteer teams to service students in remote areas during Christmas and other special holidays. Fund raising campaigns raised NTD 980,000 during 2013 with presents for elders in the 2013 Moon-Festival. In addition, we answered the call to “Love Bread” project from World Vision with almost 1000 people-time taking part in this activity.



## 2013 Records

Time	Events
Twice a week	Caring service for schools in remote areas
Twice a month	Recycle activities
Once a month	Accompany service for schools in remote areas
Once every other month	World Vision "Love Bread" project
December	"Dreams Come True" project in Christmas
November	Charity sale and fundraising for public welfare group in UMC Family Day
September	Fundraising for elders.
July	Help a high school in remote area refresh their library
July	World Vision "Sponsor a Child" project.
May	Volunteer Forum in Hsin Chu site.
April	Caring for Nantou Karate Team
January	Fundraising

## Mountaineering Club

Mountaineering club members use their free time to take care of elementary students in the remote mountain areas during their mountaineering activities. Helping the children find meaning in life and strengthening their confidence, the club members visit and tutor the students when they go mountain climbing. Actually, it not only helps students in remote areas, but also helps club members to obtain spiritual growth.

## 2013 Records

Time	Events
Once a month	Storytelling in tribes (Nantou)
December	"Dreams Come True" project in Christmas
June, November	Storytelling in tribes (Taitung)
November, December	Storytelling in tribes
August	Supporting Pomelo farmer in Matou town
August	Fund and goods raising for welfare group
March	Fundraising for tribes (Taitung)

## Ukulele Club

Ukulele club members go to remote areas serving students with UMC Science and Culture Foundation, by teaching them ukulele playing. In 2013, Ukulele club went to four elementary schools to teach disadvantaged students to play the ukulele, and sponsored 120 ukuleles for students in those schools to encourage them to enrich their leisure life.

One of the four schools held a performance on January 18th, 2014 to show their achievements of learning from UMC Ukulele Club. The school principal praised the club members were patient to teach students playing ukulele which has encouraged them to love the music and enriched their leisure life as well.



## 2013 Records: Teaching Ukulele in Schools

Time	Schools
December	YanJou Elementary School in Pintung
November	Fu-Sing Elementary School in Hsinchu County
September-December	UMC Science and Culture Foundation volunteer team
June-September	Lu-Fong Elementary School in Hsinchu County
March-December	Nei Hu Elementary School

## 2013 Records: Volunteer Activities

Time	Events
November	Perform for Lu-Fong Elementary School
November	Perform for social welfare events
November	Perform for Dong Guang Elementary School
August	Perform for Harmony Home Association
August	Perform on Hawaii Ukulele Ceremony in Jung Li
August	Perform on Grandparents Day Party in HsinChu
August	Perform in restaurant in Hukou
June	Perform for Lu-Fong Elementary School Graduate Ceremony
June	Perform for social welfare activity in Hsinchu
March	Perform for social welfare group in Miaoli
January	Perform for social welfare activity in Hsinchu County

## ► Charity Sale

UMC Science and Culture Foundation routinely hold charity sales on special holidays for every site since 2001, and we invited over 20 public welfare groups to hold 32 charity sales in 2013. Various products such as handmade soap, handmade eggrolls, coffee beans, handmade bags and so on are sold in the charity sale to support disadvantaged minorities.

Moreover, UMC Family Day activity invites public social welfare groups to join our charity sale every year, as the income is all donated to them. In 2013, there were 11 vendors at "UMC Duck Come" Family Day activity and they brought a variety of themes to the event. On the other hand, the event also provides meaningful education for children to establish the correct concept about public social welfare and participation.

UMC and UMC Science and Culture Foundation pay much attention to these activities and make lots of effort to support the social welfare groups.

### 4-4-3 UMC Science and Culture Foundation

UMC Science and Culture Foundation was founded in 1996 to focus on welfare promotion, especially on long-term education support and employee volunteering. "Spreading the Seeds of Hope" program was initiated in 2005, the 25th anniversary for UMC, to advance education for children who are from disadvantaged families. We cooperate with National Hsinchu University of Education and National University of Tainan to set up free after-school tutoring class in order to help the students from disadvantaged families.

Seeing more learning needs from 12-year national education, UMC Science and Culture Foundation established "Sacred Heart After-school Tutoring Center" in Hsinchu in 2013 by cooperating with over 40 volunteers from NTHU, NCTU, and engineers in Hsinchu Science Park. The tutoring center provides tutoring for elementary school and junior high school students from afternoon to evening on weekdays and helps the students to obtain correct values and attitudes for life as well.

#### Spreading the Seeds of Hope

Tutoring disadvantaged students for their studies after school in Hsinchu and Tainan.

Served 150 students



#### UMC Love Storytellers Team

Tutoring disadvantaged students by stage drama in Hsinchu, Tainan and Pingtung.

41 events from 2010 to 2013 and over 14,000 guests.



#### 『U』 Drum Club

UMC volunteer team cooperates with "U-Theatre" to form "U Drum Club" to enhance the spirit of dedication and team-work by drumming.

45 members in 2013



#### Mathematics camp

UMC organizes a camp for high school students gifted in mathematics during summer and winter vacation to provide more diverse courses.

Served 100 students.



#### Radio program- "Reasonable"

UMC sponsored the radio program- "Reasonable" for 5 years that talks about parenting education and has kept sponsoring it.

Sponsoring 5 years since 2009.





### Storyteller Volunteers

Volunteers go to 3 elementary schools in Hsinchu County once a month to interact and tutor students by storytelling with various topics and media.


Served 340 students.

### Letter Volunteers


Sponsoring disadvantaged students and encouraging them by mail and letters.


Served 110 students.





Experience Sharing





Tzu Hui Li  
YanJou Elementary School  
Teacher

Every time UMC's Foundation performs for children, it brings a positive energy to them. Thank you UMC for your care for children in remote areas even though your main business is semiconductor technology and manufacturing. Through UMC's actions, these children have the opportunity to broaden their horizons beyond the school environment, dream bigger and envision a brighter future.

## 4-4-4 Participation in social welfare

In April 1999, UMC established a high-tech fire brigade that is under the Group Risk Management & Environmental, Safety and Health Division of UMC. This makes UMC the only company in Taiwan's electronics industry with its own firefighting force.

Also, we provide assistance to outside parties such as large public drills and disaster relief.

We promote the concept of fire safety to elementary students under the UMC Science and Culture Foundation.



Fire Department Training in Hsinchu



National Fire Agency Instructor Training



EPA-EERT Training



Fire Brigade Drill in Tainan

## ► Emergency Rescue Assistance

Provided TDI Leakage Assistance to Feng Tai Company in Hsinchu County



Provided Assistance to Handle Explosive Sodium Waste



## ► Community Fire Education



CRP Training



The Advocation of Fire Disaster Prevention

## ► United Prevention Management Contribution Award



The EPA awarded UMC the United Prevention Management Contribution Award to affirm its contribution to disaster prevention.





## ASSURANCE STATEMENT

### SGS TAIWAN LTD.'S INDEPENDENT ASSURANCE STATEMENT ON SUSTAINABILITY ACTIVITIES IN THE UNITED MICROELECTRONICS CORPORATION'S CORPORATE SUSTAINABILITY REPORT OF 2013

#### 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 Sustainability Report (hereinafter referred to as CS Report) of 2013. The scope of the assurance, based on the SGS Sustainability Communications Assurance methodology, included the text, and data in accompanying tables contained in UMC's operational sites in Taiwan, China and Singapore of this report.

The information in the UMC's CS Report of 2013 and its presentation are the responsibility of the superintendents, CS committee and the management of UMC. SGS has not been involved in the preparation of any of the material included in the UMC's CS Report of 2013.

Our responsibility is to express an opinion on the text, data, graphs and statements within the scope of assurance set out below with the intention to inform all of UMC's stakeholders.

The SGS Group has developed a set of protocols for the Assurance of Sustainability Communications based on current best practice guidance provided in the Global Reporting Initiative (hereinafter referred to as GRI) Sustainability Reporting Guidelines and the AA1000 Assurance Standard (2008). These protocols follow differing options for Assurance depending the reporting history and capabilities of the Reporting Organization.

This report has been assured using our protocols for:

- ☒ evaluation of content veracity at a high level of scrutiny;
- ☒ evaluation of the report content and supporting management systems against the AA1000 Accountability Principles (2008);
- ☒ evaluation of the report against the GRI Sustainability Reporting Guidelines (G3.1 2011).

The assurance comprised a combination of pre-assurance research; interviews with relevant superintendents, CS committee and the management; 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 affirms our independence from UMC, being free from bias and conflicts of interest with the organization, its subsidiaries and stakeholders.

The assurance team was assembled based on their knowledge, experience and qualifications for this assignment, and comprised auditors experienced in one or more of the following: AA1000, GRI, ISO 26000, ISO 20121, ISO 14001, OHSAS 18001, SA8000, SMETA, EICC, ISO 50001, QMS, GPMS, CFP, WFP, GHG Verification and GHG Validation Lead Auditors and experience on the SGS Integrating Sustainability Communications service provision.

#### 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 CS Report of 2013 verified is accurate, reliable and provides a fair and balanced representation of UMC sustainability activities in 01/01/2013 to 12/31/2013.

The assurance team is of the opinion that the report can be used by the Reporting Organization's Stakeholders. We believe that the organization has chosen an appropriate level of assurance for this stage in their reporting. The report is the sixth to be assured by an independent assurance team and UMC has taken a bold step by offering the report to evaluation against both GRI G3.1 guidelines and the AA1000 Assurance standard. This shows a deserved confidence in their reporting process.

In our opinion, the contents of the report meet the requirements of GRI G3.1 Application Level A+ and AA1000 Assurance Standard (2008) Type 2, High level assurance.

#### AA1000 ACCOUNTABILITY PRINCIPLES CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

##### Inclusivity

UMC is committed to being accountable to its stakeholders and to integrating inclusivity into its strategic and management approach. Interviews at CSR team members demonstrated an awareness and understanding of the obligations of the organization to its stakeholders as well as the importance of stakeholders in realizing the organization's business goals. A variety of engagement efforts underpin the organization's understanding of stakeholder concerns, and its ability to integrate them into its decision making processes. For future reporting, UMC may proactively consider having more direct 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. It is recommended that the process and criteria applied to assess materiality to be formalized and documented to ensure better consistent result in future reporting.

##### Responsiveness

The report includes coverage given to stakeholder engagement and channels for stakeholder feedback. Future reporting may focus on how current stakeholder engagement is managed and the contribution it is making to sustainable development outcomes.

#### GLOBAL REPORTING INITIATIVE REPORTING GUIDELINES CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

The report, UMC's CS Report of 2013, is adequately in line with the GRI G3.1 Application Level A+.

It is encouraged to adopt GRI G4 in next report. Further disclosure on performance of supply chain management, DMA (Disclosure on Management Approach) for material aspects and impacts outside of the organization are also recommended.

Signed:



**AA1000**  
Licensed Assurance Provider  
000-8

For and on behalf of SGS Taiwan Ltd.  
Dennis Yang, Chief Operating Officer  
Taipei, Taiwan  
12 May, 2014  
WWW.SGS.COM

## Global Reporting Initiative (GRI) Index (version 3.1)

GRI Guidelines			Location	Page	Disclosures	Note
Strategy and Analysis	1.1	Statement from the most senior decision maker of the organization about the relevance of sustainability to the organization and its strategy	Letter from CEO	p 3	●	
	1.2	Description of key impacts, risks, and opportunities. The reporting organization should provide two concise narrative sections on key impacts, risks, and opportunities	2-1 Corporate Governance 2-2 Innovation Management 2-4 Risk and Crisis Management	p 22 p 27 p 34	●	
Organizational Profile	2.1	Name of the organization	About UMC	p 8	●	
	2.2	Primary brands, products, and/or services.	About UMC	p 8	●	
	2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures.	About UMC	p 8	●	
	2.4	Location of organization's headquarters.	About UMC	p 8	●	
	2.5	Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report.	About UMC	p 8	●	
	2.6	Nature of ownership and legal form.	About UMC	p 8	●	
	2.7	Markets served.	About UMC	p 8	●	
	2.8	Scale of the reporting organization, including: number of employees, number of operations; net sales, total capitalization; quantity of products or services provided.	About UMC 2-2-3 Operating Performance	p 8 p 29	●	
	2.9	Significant changes during the reporting period regarding size, structure, or ownership.			●	No significant changes occurred during the reporting period
	2.10	Awards received in the reporting period.	Sustainability Performance	p 5	●	
Report Parameters	3.1	Reporting period for information provided.	Reporting Principles	p 4	●	
	3.2	Date of most recent previous report.	Reporting Principles	p 4	●	
	3.3	Reporting cycle.	Reporting Principles	p 4	●	
	3.4	Contact point for questions regarding the report or its contents.	Reporting Principles	p 4	●	
	3.5	Process for defining report content, including: determining materiality; prioritizing topics within the report; and identifying stakeholders the organization expects to use the report.	1.Communication with the Stakeholders	p 15	●	

\* ● disclosed (or partially disclosed) ○ N/A

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GRI Guidelines		Location	Page	Disclosures	Note	
	3.6	Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers).	Reporting Principles	p 4	●	
	3.7	State any specific limitations on the scope or boundary of the report.	Reporting Principles	p 4	●	All specific limitations on the scope or the report are described in relevant sections.
	3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations.	Reporting Principles	p 4	●	The scope of this report covers some parts of information from the subsidiary Hejian fab in China.
	3.9	Data measurement techniques and the basis of calculations, including assumptions and techniques underlying estimations applied to the compilation of the indicators and other information in the report.	Reporting Principles	p 4	●	Data measurement techniques and the bases of calculations are specified in footnotes in relevant sections.
	3.10	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement.			●	None.
	3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report.	Reporting Principles	p 4	●	The scope of this report covers some parts of information from the subsidiary Hejian fab in China.
	3.12	GRI Content Index	Global Reporting Initiative (GRI) Index	p 120 - 130	●	
	3.13	Policy and current practice with regard to seeking external assurance for the report.	Reporting Principles and Third-Party Verification and Assurance Statement	p 4 p 119	●	
Governance, Commitments, and Engagement	4.1	Governance structure of the organization. Describe the mandate and composition (including number of independent members and/or non executive members) of the highest governance body and its committees. Report the percentage of individuals by gender within the organization's highest governance body and its committees, broken down by age group and minority group membership and other indicators of diversity.	About UMC 2-1 Corporate Governance	p 8 p 22	●	
	4.2	Indicate whether the Chair of the highest governance body is also an executive officer.	2-1 Corporate Governance	p 22	●	
	4.3	State the number and gender of members of the highest governance body that are independent and/or non-executive members.	2-1 Corporate Governance	p 22	●	

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GRI Guidelines		Location	Page	Disclosures	Note
Governance, Commitments, and Engagement	4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body.	1.Communication with the Stakeholders 4-1 Employment Rights	p 15 p 78	●
	4.5	Linkage between compensation for members of the highest governance body, senior managers, and executives (including departure arrangements), and the organization's performance (including social and environmental performance).	2-1 Corporate Governance /Compensation Committee	p 22 / 23	● note1
	4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided.	2-1 Corporate Governance /Audit Committee	p 22 / 23	●
	4.7	Process for determining the member composition, qualifications, and expertise of the highest governance body and its committees, including any gender consideration and other indicators of diversity.	2-1 Corporate Governance	p 22	●
	4.8	Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation.	2-1 Corporate Governance / About UMC / Sustainable Strategy and Organization	p 22 / 8 / 12	●
	4.9	Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles.	Sustainable Strategy and Organization	p 12	●
	4.10	Processes for evaluating the highest governing body's own performance, particularly with respect to economic, environmental, and social performance.	Sustainable Strategy and Organization	p 12	●
	4.11	Explanation of whether and how the precautionary approach or principle is addressed by the organization.	2-4 Risk and Crisis Management 3-4.Green Product	p 34 p 70	●
	4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses.	Sustainable Strategy and Organization 2-5 Sustainable Supply Chain Management 4-1 Employment Rights	p 12 p 36 p 78	●
	4.13	Memberships in associations and/or national/international advocacy organizations.	About UMC	p 8	●

Note1:

The compensation of Directors and Managers is based on the company's Article and formulations, and is distributed in proper ratios.

Policy for Directors' compensation: The Company's Article has stated that Directors' compensation is the allocation of 0.1% of the residual amount from net profit after tax payments are deducted, making up loss for preceding years and setting aside 10% for legal reserve.

Policy for Managers' compensation: The company annually evaluates its salary level with similar companies in the industry to ensure the company's salary is competitive. Compensation is reported to the audit committee and subject to board review. The company's salary structure can be divided into fixed and variable. Compensation is set to fully reflect the achievements of individuals and teams.

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## Global Reporting Initiative (GRI) Index (version 3.1)

GRI Guidelines			Location	Page	Disclosures	Note
Governance, Commitments, and Engagement	4.14	List of stakeholder groups engaged by the organization.	1.Communication with the Stakeholders	p 15	●	
	4.15	Basis for identification and selection of stakeholders with whom to engage.	1.Communication with the Stakeholders	p 15	●	
	4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group.	1.Communication with the Stakeholders	p 15	●	
	4.17	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting.	1.Communication with the Stakeholders	p 15	●	
GRI Guidelines			Location	Page	Disclosures	Note
Indicator Hierarchy Key			Environmental			
Materials	EN1	Materials used by weight or volume.	3-1-3 Clean Production	p 46	●	
	EN2	Percentage of materials used that are recycled input materials.			●	Note2
Energy	EN3	Direct energy consumption by primary energy source.	3-2-7 Energy Management	p 59	●	
	EN4	Indirect energy consumption by primary source.	3-2-7 Energy Management	p 59	●	
	EN5	Energy saved due to conservation and efficiency improvements.	3-2-7 Energy Management	p 59	●	
	EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.	3-2-7 Energy Management	p 59	●	
	EN7	Initiatives to reduce indirect energy consumption and reductions achieved.	3-2-7 Energy Management	p 59	●	
Water	EN8	Total water withdrawal by source.	3-3-3 Water-Saving Process	p 63	●	
	EN9	Water sources significantly affected by withdrawal of water.	3-3-1 Fab Water Resource	p 63	●	
	EN10	Percentage and total volume of water recycled and reused.	3-3-3 Water-Saving Process	p 63	●	

Note2 :

Due to the nature of the semiconductor industry, only 114 tons of recycled raw materials were reused in specific manufacturing processes in 2013. The recycling rate was 34%.

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## Global Reporting Initiative (GRI) Index (version 3.1)

GRI Guidelines		Location	Page	Disclosures	Note	
Indicator Hierarchy Key	Environmental					
Biodiversity	EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.		●	UMC's fabs are located in a highly developed science park. No significant impact on biodiversity.	
	EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.		●		
	EN13	Habitats protected or restored.		●		
	EN14	Strategies, current actions, and future plans for managing impacts on biodiversity.		●		
	EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.		●		
Emissions, Effluents, and Waste	EN16	Total direct and indirect greenhouse gas emissions by weight.	3-2-4 Climate Change Mitigation Measures	p 56	●	Non-Use of Ozone Depleting Substances (ODS)
	EN17	Other relevant indirect greenhouse gas emissions by weight; this indicator should incorporate emissions generated by employee travel, including commuting to and from work and for business related travel.	3-2-4 Climate Change Mitigation Measures	p 56	●	
	EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.	3-2-4 Climate Change Mitigation Measures	p 56	●	
	EN19	Emissions of ozone-depleting substances by weight.			●	
	EN20	NOx, SOx, and other significant air emissions by type and weight.	3-1-3 Clean Production	p 46	●	
	EN21	Total water discharge by quality and destination.	3-3-4 Water Pollution Prevention	p 66	●	No spills occurred during the reporting period.
	EN22	Total weight of waste by type and disposal method.	3.1.3 Clean Production	p 46	●	
	EN23	Total number and volume of significant spills.			●	
	EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.			●	
	EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.	3-3-4 Water Pollution Prevention	p 66	●	

Note3: Instead of shipping the waste abroad, UMC disposes all of its waste in its own country. UMC's only international waste transportation took place in May 2013, when 2.478 tons of NiCd batteries were exported to South Korea for reuse.

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## Global Reporting Initiative (GRI) Index (version 3.1)

GRI Guidelines		Location	Page	Disclosures	Note
Indicator Hierarchy Key Environmental					
Products and Services	EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.	3-4 Green Product	p 70	●
	EN27	Percentage of products sold and their packaging materials that are reclaimed by category.	3-1-3 Clean Production	p 46	●
Compliance	EN28	Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with environmental laws and regulations.		●	No non-compliance with environmental laws and regulations occurred during the reporting period.
Transport	EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.	3-2-4 Climate Change Mitigation Measures 3-4 Green Product	p 56 p 70	●
Overall	EN30	Total environmental protection expenditures and investments by type.	3-1-4 Environmental Accounting	●	
GRI Guidelines		Location	Page	Disclosures	Note
Indicator Hierarchy Key Labor Practices and Decent Work					
Employment	LA1	Total workforce by employment type, employment contract, and region, broken down by gender.	4-2-1 Human Resource	p 82	●
	LA2	Total number and rate of new employee hires and employee turnover by age group, gender, and region.	4-2-1 Human Resource	p 82	●
Labor/Management Relations	LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation.	4-2-2 Compensation and benefit	p 85	●
Occupational Health and Safety	LA4	Percentage of employees covered by collective bargaining agreements.		●	No employee labor unions were formed before the end of the reporting period.
Training and Education	LA5	Minimum notice period(s) regarding operational changes, including whether it is specified in collective agreements.		●	Based on the relative regulations of Taiwanese Labor Standards Law and Singaporean Employment Act.

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## Global Reporting Initiative (GRI) Index (version 3.1)

GRI Guidelines			Location	Page	Disclosures	Note
Indicator Hierarchy Key	Labor Practices and Decent Work					
Occupational Health and Safety	LA6	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs.	4-3-2 Industrial Safety and Health	p 102	●	
	LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work related fatalities by region and by gender.	4-3-2 Industrial Safety and Health	p 102	●	
	LA8	Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.	4-3-1 UMC's Six Elements of a Healthy Work Environment	p 92	●	
	LA9	Health and safety topics covered in formal agreements with trade unions.			●	Health and safety issues were discussed by the ESH Committee.
	LA10	Average hours of training per year per employee by gender, and by employee category.	4-2-3 Education and Training	p 87	●	
Training and Education	LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	4-2-3 Education and Training	p 87	●	
	LA12	Percentage of employees receiving regular performance and career development reviews, by gender.	4-2-2 Compensation and benefit 4-2-3 Education and Training	p 85 p 87	●	
Diversity and Equal Opportunity	LA13	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.	4-2-1 Human Resource	p 82	●	
	LA14	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation.	4-2-2 Compensation and benefit	p 85	●	
	LA15	Return to work and retention rates after parental leave, by gender.	4-2-2 Compensation and benefit	p 85	●	

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GRI Guidelines		Location	Page	Disclosures	Note
Indicator Hierarchy Key	Human Rights				
Investment and Procurement Practice	HR1	Percentage and total number of significant investment agreements and contracts that include clauses incorporating human rights concerns, or that have undergone human rights screening.		●	No significant investment agreements and contracts were signed during the reporting period.
	HR2	Percentage of significant suppliers, contractors and other business partners that have undergone human rights screening, and actions taken.	2-5 Sustainable Supply Chain Management p 36	●	
	HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.	4-1-1 Human rights p 78	●	Note 4
Non-discrimination	HR4	Total number of incidents of discrimination and corrective actions taken.		●	None for discriminatory incidents.
Freedom of Association and Collective Bargaining	HR5	Operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and actions taken to support these rights.	4-1-2 Labor-Management Communication p 79	●	
Child Labor	HR6	Operations and significant suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor.	4-1-1 Human rights p 78	●	
Forced and Compulsory Labor	HR7	Operations and significant suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor.	4-1-1 Human rights p 78	●	
Security Practices	HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations.		●	Note 5
Indigenous Rights	HR9	Total number of incidents or violations involving rights of indigenous people and actions taken.		●	No concerns of violations of indigenous rights
	HR10	Percentage and total number of operations that have been subject to human rights reviews and/or impact assessments.	4-1-1 Human rights p 78	●	
	HR11	Number of grievances related to human rights filed, addressed and resolved through formal grievance mechanisms.	4-1-2 Labor-Management Communication p 79	●	

Note4: Human rights" education training courses for employees: total training hours amounted to 7062 hours. In 2013, employees in Taiwan and Singapore have all completed the training.

Note5: All security personnel are hired from qualified security service providers and have completed relevant training programs offered by local authorities. Human rights issues related to security duties are specified in UMC's directions and shall be observed by security personnel.No concerns of violations of indigenous rights

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GRI Guidelines		Location	Page	Disclosures	Note
Indicator Hierarchy Key Society					
Local Communities	SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs.	4-4 Social Commitment and Participation	p 109	●
	SO2	Percentage and total number of business units analyzed for risks related to corruption.	4-1-1 Human rights	p 78	●
Corruption	SO3	Percentage of employees trained in organization's anti-corruption policies and procedures.	4-1-1 Human rights	p 78	●
	SO4	Actions taken in response to incidents of corruption.		●	No business units have been analyzed for risks related to corruption.
Public Policy	SO5	Public policy positions and participation in public policy development and lobbying.		●	Note 6
	SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country		●	No financial and in-kind contributions to political parties are made during the reporting year.
Anti-Competitive Behavior	SO7	Total number of legal actions for anticompetitive behavior, anti-trust, and monopoly practices and their outcomes.		●	UMC is not involved in legal actions for anticompetitive behavior, anti-trust, and monopoly practices during the reporting period.
Compliance	SO8	Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with laws and regulations.		●	UMC is not involved in noncompliance with regulations nor has it been found guilty during the reporting period.
	SO9	Operations with significant potential or actual negative impact on local communities.	4-4 Social Commitment and Participation	p 109	●
	SO10	Prevention and mitigation measures implemented in operations with significant potential or actual negative impact on local communities.	2-4 Risk and Crisis Management	p 34	●

Note6: UMC remains impartial in public policies and never participates in any lobbying activities. UMC did not attend related activities in the reporting year.

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GRI Guidelines		Location	Page	Disclosures	Note	
Indicator Hierarchy Key	Economic					
Economic Performance	EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.	Sustainability Performance 2-2-3 Operating Performance 4-4-1 Social Participation	p 5 p 29 p 109	●	For more information, please refer to the 2013 Annual Report
	EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change.	2-4 Risk and Crisis Management 3-2-3 Climate Challenges and Opportunities	p 34 p 55	●	
	EC3	Coverage of the organization's defined benefit plan obligations.	4-2-2 Compensation and benefit	p 85	●	
	EC4	Significant financial assistance received from government.			●	Note7
Market Presence	EC5	Range of ratios of standard entry level wage by gender compared to local minimum wage at significant operating locations.	4-2-2 Compensation and benefit	p 85	●	
	EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant operating locations.	2-5-1 Strategies and Goals for Sustainable Supply Chain Management	p 36	●	
	EC7	Procedures for local hiring and proportion of senior management hired from the local community at significant operating locations.	4-2-1 Human Resource	p 82	●	
Indirect Economic Impacts	EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in kind, or pro bono engagement.	4-4 Social commitment and participation	p 109	●	
	EC9	Understanding and describing significant indirect economic impacts, including the extent of the impacts.	4-2-2 Compensation and benefit	p 85	●	No assessment of indirect economic impact has been conducted.

Note7: For the purchase of automated machinery, research and development, and other capital expenditure, UMC is entitled to tax incentives, such as tax exemption and investment tax credits. For more information, please refer to the section on "income tax" in the 2013 Annual Report on pages 208–211 of the instructions

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GRI Guidelines			Location	Page	Disclosures	Note
Indicator Hierarchy Key	Product Responsibility					
Customer Health and Safety	PR1	Life cycle stages in which health and safety impact of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures. percentage of significant products and services categories subject to such procedures.	3-4 Green Product 4-3-2 Industrial Safety and Health	p 70 p 102	●	
	PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impact from products and services during their life cycle, by type of outcomes.			●	No non-compliance with regulations occurred during the reporting period.
Product and Service Labeling	PR3	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements.	3-4 Green Product	p 70	●	
	PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes.			●	No non-compliance with regulations occurred during the reporting period.
	PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.	2-3 Customer Service	p 32	●	
Marketing Communications	PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship	2-1 Corporate Governance	p 32	●	UMC complies with all laws and regulations, including intellectual property law and competition law .
	PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes .			●	No non-compliance with regulations occurred during the reporting period .
Customer Privacy	PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.			●	No complaints were received during the reporting period.
Compliance	PR9	Monetary value of significant fines for noncompliance with laws and regulations concerning the provision and use of products and services .			●	No non-compliance with regulations occurred during the reporting period.

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Core Subjects and Issues		Related CS Report Section	Page(s)	Explanatory Notes
Organizational governance	Decision-making processes and structures	Sustainable Strategy and Organization	p 12	
		2-1 Corporate Governance	p 22	
Human rights	Due diligence	2-5 Sustainable Supply Chain Management	p 36	
		4-4-1 Human Rights	p 78	
	Human rights risk situations	2-5 Sustainable Supply Chain Management	p 36	
		4-4-1 Human Rights	p 78	
	Avoidance of complicity	2-1 Corporate Governance	p 22	
		4-4-1 Human Rights	p 78	
	Resolving grievances	4-4-1 Human Rights	p 78	
			p 79	
	Discrimination and vulnerable groups	4-4-1 Human Rights	p 78 p 109	
Labor practices	Civil and political rights	4-4-1 Human Rights	p 78	
	Economic, social and cultural rights	4-4 Social Commitment and Participation	p 109	
	Fundamental principles and rights at work	4-1 Employment Rights	p 78	
	Employment and employment relationships	4-2 Talent Attraction, Retention and Development	p 82	
	Conditions of work and social protection	4-1-1 Human Rights	p 78	
		4-3 Healthy and Safe Workplace	p 92	
	Social dialogue	1.Communication with the Stakeholders	p 15	
		4-1-2 Labor-Management Communication	p 79	
The environment	Health and safety at work	4-3-1 UMC's Six Elements of a Healthy Work Environment	p 92	
		4-3-2 Industrial Safety and Health	p 102	
	Human development and training in the workplace	4-2-3 Education and Training	p 87	
	Prevention of pollution	3.1.3 Clean Production	p 46	
		3-3-4 Water Pollution Prevention	p 66	
	Sustainable resource use	3.1.3 Clean Production	p 46	
		3-2-7 Energy Management	p 59	
	Climate change mitigation and adaptation	3-2 Climate and Energy Management	p 55	
The environment	Protection of the environment, biodiversity and restoration of natural habitats	3-1-1 Green Factory and Green Building	p 44	

Core Subjects and Issues	Related CS Report Section	Page(s)	Explanatory Notes
Fair operating practices	Anti-corruption	2-1-5 Code of conduct and Anti-Corruption	UMC did not provide any political donations in the reporting year.
	Responsible political involvement		
	Fair competition	4-1-1 Human Rights	
	Promoting social responsibility in the value chain	2-5 Sustainable Supply Chain Management	
	Respect for property rights	2-1-6 Legal Compliance	
Consumer issues	Fair marketing, factual and unbiased information and fair contractual practices	2-1 Corporate Governance	p 22
	Protecting consumers' health and safety	3-4.Green Product	p 70
	Sustainable consumption	2-5 Sustainable Supply Chain Management	p 36
		2-5-7 Conflict Minerals Management	p 40
	Consumer service, support, and complaint and dispute resolution	2-3 Customer Service	p 32
	Consumer data protection and privacy	2-3 Customer Service	p 32
	Access to essential services	2-3 Customer Service	p 32
Community involvement and development	Education and awareness	2-3 Customer Service	p 32
	Community involvement	4-4 Social Commitment and Participation	p 109
	Education and culture	4-2-4 Cultivating Talent on Campus	p 91
		4-4-1 Social Participation	p 109
	Employment creation and skills development	2-2 Innovation Management	p 27
		4-2 Talent Attraction, Retention and Development	p 82
		4-2-4 Cultivating Talent on Campus	p 91
	Technology development and access	2-2 Innovation Management	p 27
	Wealth and income creation	4-4-1 Social Participation	p 109
	Health	4-4 Social Commitment and Participation	p 109
		4-4-2 UMC Volunteers	p 114
	Social investment	4-4 Social Commitment and Participation	p 109



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