Contents

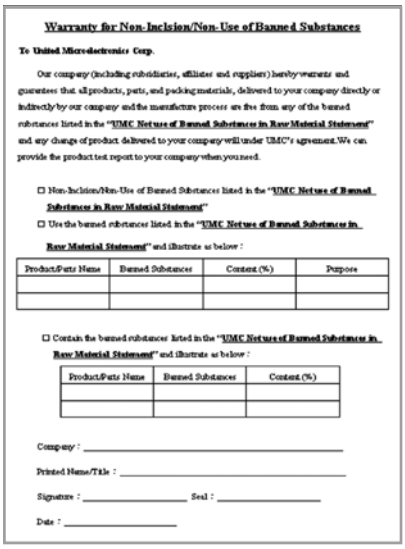
Sustainable Development

Green Supply Chain Management

In 2001, the Netherlands blocked the sale of a video game console from a popular international brand due to cadmium levels exceeding the country's allowed standard. This issue received worldwide attention and inspired the global trend towards a green supply chain. Green supply chain management refers to setting requirements for suppliers to manage environmental related issues. By combining the ideas of environmental protection and hazardous substance control, products are made environmental friendly, and the traditional supply chain has been transformed to a green partnership rather than a pure procurement-supply relations.

Since the European Union announced the RoHS and the WEEE Directive in 2003, the requirement for green products has gradually become a green trading barrier in the international community that has prompted multinational corporations to draft countermeasures. The WEEE Directive requires manufacturers selling electrical and electronic products to take responsibility in product recycling to lower the impact caused during electrical and electronic waste treatment. Companies are also held accountable for source control. Effective in July 2006, the RoHS Directive further limits the use of six hazardous substances (Pb, Cd, Hg, Cr+6, PBB, and PBDE) in electrical and electronic equipment with the hope oflimiting the use of hazardous substances early during the design and production stage. Consumer, computer and communication products tend to be banned by certain markets if they fail to conform to related regulations. Therefore, with the aim to manufacture green products, many multinational corporations are evaluating more activities that enhance green competitiveness in the industry, ushering in a new era of green industry revolution.

UMC's material composition control list



Warranty for Non-Inclusion/Non-Use of Banned Substances

To United Microelectronics Corp.

Our company (including subsidiaries, affiliates and suppliers) hereby warrants and guarantees that all products, parts, and packing materials, delivered to your company directly or indirectly by our company and the manufacture process are free from any of the banned substances listed in the "UMC Net use of Banned Substances in Raw Material Statement" and any change of product delivered to your company will under UMC's agreement.We can provide the product test report to your company when you need.

☐ Non-Inclusion/Non-Use of Banned Substances listed in the "UMC Net use of Banned Substances in Raw Material Statement"

☐ Use the banned substances listed in the "UMC Net use of Banned Substances in Raw Material Statement" and illustrate as below :

Product/Parts Name	Banned Substances	Content (%)	Purpose

☐ Contain the banned substances listed in the "UMC Net use of Banned Substances in Raw Material Statement" and illustrate as below :

Product/Parts Name	Banned Substances	Content (%)

Company : _____

Printed Name/Title : _____

Signature : _____ Seal : _____

Date : _____

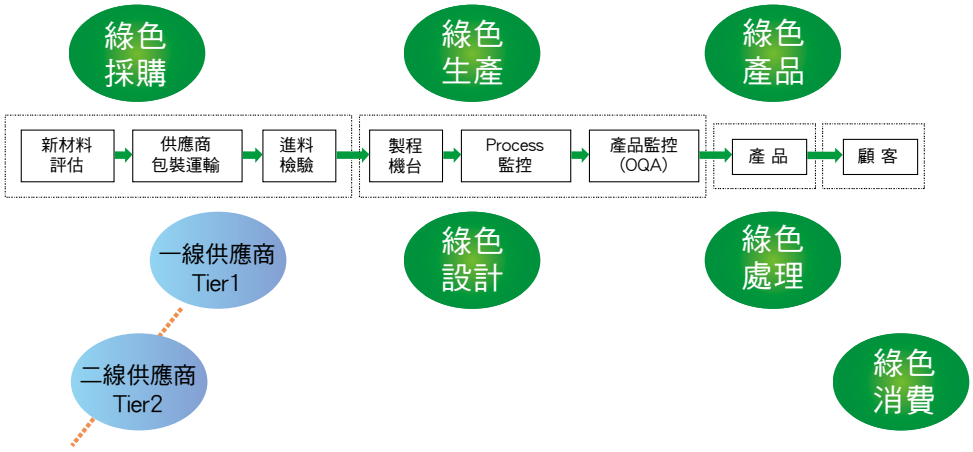
UMC's supplier material composition warranty

Green Supply Chain Management

While protecting the earth has evolved from ideology to real-world regulations, green supply chain must be more than an empty promise. To provide customers and consumers with environmental friendly products, UMC continues to promote and participate in various improvement programs. In 2004, UMC participated in the “Industrial Sustainable Development and Promotion Project” led by the Industrial Development Bureau, Ministry of Economic Affairs. With help from the Industrial Technology Research Institute, UMC established a green supply chain management system to ensure its overall supply chain conforms to international regulations in environmental protection. Major measures are listed as follows:

1. Formed a material composition control list. The list is updated according to international environmental protection regulations and international hazardous substance control, and is deemed as a self-managed standard that conforms to international trends.
2. Formed a supplier material composition warranty that requires material suppliers’ products to be free of hazardous substances, thereby ensuring that UMC’s products conform to international requirements.
3. Created evaluation forms to evaluate each supplier’s environmental protection performance.
4. Evaluation forms and suppliers’ product examination reports were collected and categorized to enhance data management for current suppliers’ environmental protection information.
5. UMC’s requirements for suppliers’ green production were sent out through the company’s e-procurement system to implement green procurement management.

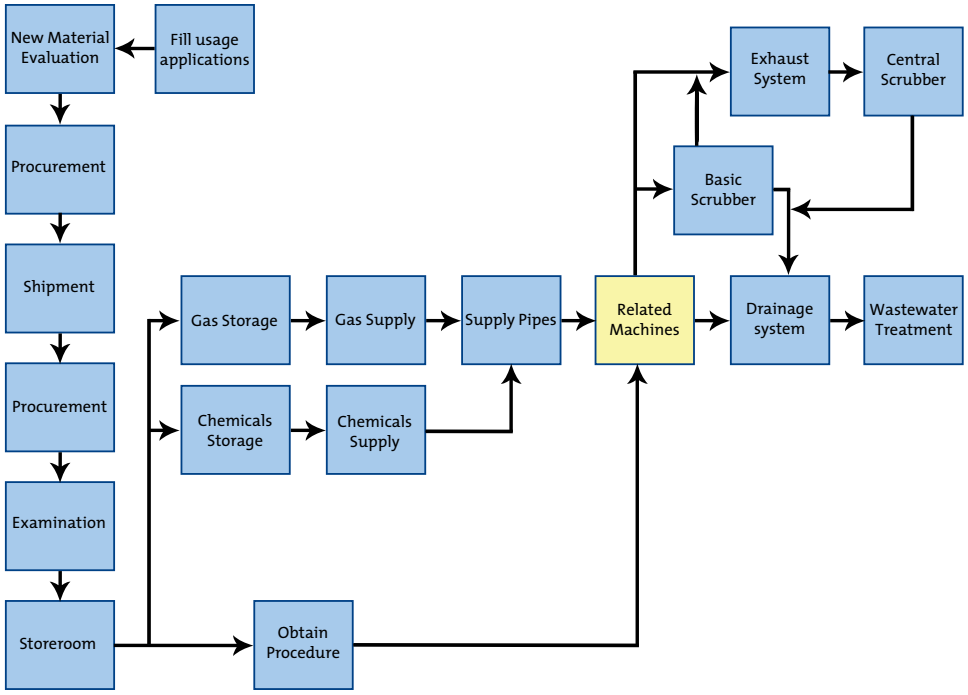
In 2006, UMC has promoted Hazardous Substance Process Management (HSPM) and has received IECQ-QC080000 qualification. This qualification ensures UMC’s products conform to the requirements of the RoHS Directive, and acts as a goal for UMC’s products to be free of hazardous substances. UMC also collaborates with the Industrial Development Bureau on the “RoHS Implementation Project” to improve suppliers’ management capabilities for producing green products. By helping them establish a hazardous substance control mechanism to conform to international regulations, this project enhances the competitiveness of the entire green supply chain.



UMC green supply chain management signified diagram

Chemical Management

UMC's chemical management begins before they are allowed entry into the fabs. Chemicals that haven't been used in UMC fabs before are allowed to enter only after an application process is completed and the chemicals have passed all safety, health and environmental risk evaluations. Chemicals are not adopted unless they are confirmed as not containing any substance violating government regulations and international conventions. Chemical use and end-pipe treatment strictly follow related regulations on industrial safety and environmental protection. UMC's chemical management flow chart is shown below:



Chemical Entry Control

The items in the safety, health and environmental risk evaluations include: the chemical' s toxicity and hazard potential, the impact the chemical has on humans and the environment, what kind of protection tools are required when handling this chemical, waste treatment methods after use, and safety and protection measures. UMC also builds up its Chemical Inventory based on CAS No. Chemical substances categorized as confirmed or suspected carcinogens (A1, A2) according to IARC will be restricted from use unless careful precautions are taken.

Chemical Management

Chemical Usage Management

UMC requires its suppliers to provide material safety data sheets (MSDS). Moreover, the company itself posts MSDS in its fabs and on its intranet for employees to access. UMC also labels and stores all chemicals based on government regulations and the results of chemical evaluations, and prepares proper protection devices for its employees.

UMC conducts general hazard knowledge training to employees who are likely to handle chemicals. This training provides chemical hazard prevention knowledge to help employees understand the meaning of MSDS and hazardous materials they may encounter. It also instructs employees on how to administer proper first-aid care in the event of chemical exposure.

UMC installs hazardous gas detecting and alert systems where hazardous chemical substances are present. If the concentration of hazardous gas is higher than safety thresholds, the system sounds, prompting the evacuation of all on-site workers while containment units identify and address the source of the abnormal gas emission. Operation will only resume when the situation has been cleared.

Chemical End-pipe Treatment

The carefully controlled chemicals used in UMC are also closely monitored for their wastewater, waste gas and other waste treatment. To ensure the lowest impact to the environment, all wastewater and waste gas is processed with specialized equipment and is not discharged until it has passed emission standards. As for other chemical waste, UMC is aggressively promoting waste reduction and selecting qualified vendors to process the waste. UMC regularly conducts quality checks on its waste treatment vendors and cooperates with them to ensure that all waste is properly managed to avoid second-hand pollution.

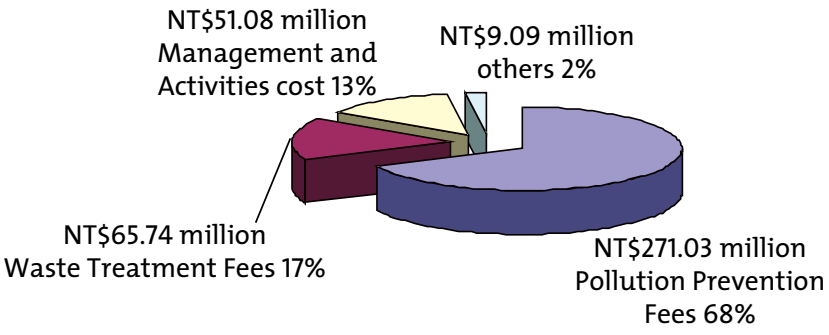
Environmental Accounting System

UMC implemented its “UMC Environmental Accounting System” in January 2001 as the first high-tech corporation to use such a comprehensive method. This 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. UMC also builds a database for storing expense and expenditure data related to environmental, safety and health management sorted from a common accounting database. Data is calculated and analyzed every month for management to review. Cost-effective environmental management projects are then drafted to target key initiatives that give equal attention to both corporate operations and environmental protection.

2005 Environmental Protection Expenditure Report

In 2005, UMC’s total capital expenditure for environmental protection equipment was NT$487 million, accounting for 0.7% of UMC’s overall capital expenditure. The main portion of this expenditure, 68%, was used for fees associated with the annual maintenance of various pollution prevention and control equipment. Waste treatment and resource recycling accounted for 17%, while environmental protection related management and activities costs accounted for 13%. NT$6 million was used for global environmental protection issues, while NT$3.5 million was used for examination fees associated with environmental protection.

Estimated expenditures in 2006 include: 1. Modernization and upgrade of current pollution control facilities, 2. Operational fees of NT$ 23 million per month for pollution control facilities, 3. Handling fees related to waste treatment of NT$ 5 million per month and 4. Environmental monitoring fees of NT$ 4 million.



UMC Environmental Protection Expenditure Ratio in 2005

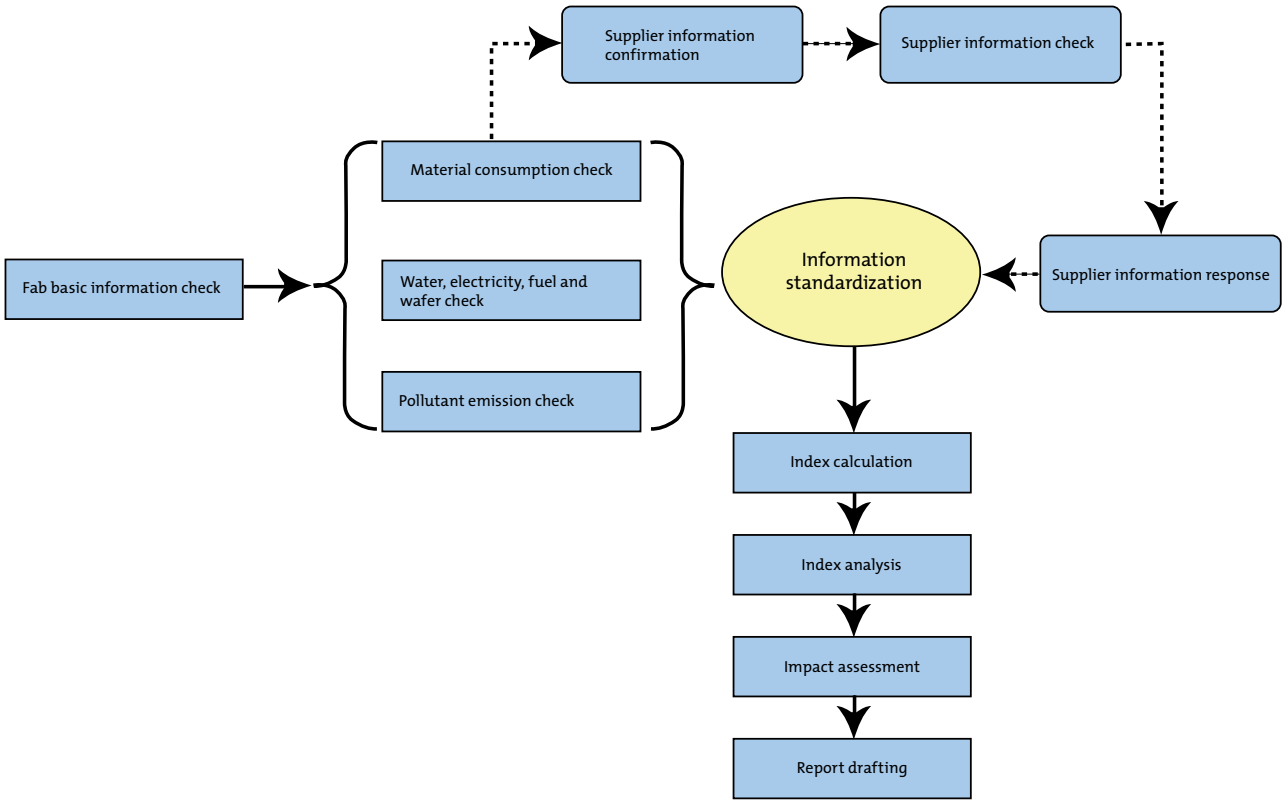
Product Life Cycle Assessment

After managing back-end pollution control for twenty years, European countries and Japan now realize that pollution resulting from product consumption will exceed pollution resulting from product manufacturing. Therefore they have begun to request detailed environmental impact evaluations for various products during the stages of material exploit, manufacturing, assembling, selling, utilizing and disposing, to seek ideal manufacturing methods that cause minimum impact on the environment. This is the concept of Life Cycle for product management. In the past several years, Life Cycle Assessment has gained more and more attention as environmental protection has become an international trend. This trend can be illustrated through the European Union's request relating to product environmental labels, American corporations' encouragement on TQEM (Total Quality Environmental Management) and ISO organization's promotion on ISO14001. Led by SETAC (Society of Environmental Toxicology and Chemistry), the framework and structure of Life Cycle Assessment has been established and a common consensus reached. The first stage - Life Cycle Inventory technique principles - has effectively enabled companies to perform various analyses.

In 2005, UMC authorized Energy and Resources Laboratories (now Energy and Environmental Research Laboratories) at Industrial Technology Research Institute (ITRI) to implement Life Cycle Assessment in each fab. Through the evaluation of environmental impact on the entire supply chain and manufacturing processes, the impact on the environment resulting from products is clarified and the result of evaluations is used as a reference for the environmental management system. UMC has already completed an "Eco-Profile" in all 150mm fabs and 200mm fabs. Externally, Eco-Profile conforms to all international environmental protection regulations and can be provided to UMC' s customers as a reference for the impact on the environment in product manufacturing processes; internally, it can be used as a basic standard for further improvement.

Product Life Cycle Assessment

According to the evaluations, the major material used in manufacturing processes is water, followed by air, coal and crude oil. However, air is deemed as a renewable resource that cannot be depleted. Water consumption causes the most impact to the environment, followed by energy consumption and the greenhouse effect.



Life-Cycle Assessment Flow at UMC

Greenhouse Gas Reduction

The “Kyoto Protocol” is the only international convention that addresses global warming issues. It is clearly written that those that have signed the protocol must reduce the emission of greenhouse gases between 2008 and 2012 to 5.2% lower than the 1990 average. After six years of negotiation within the global community, the Kyoto Protocol has officially been effective since February 16, 2005.

Although the Republic of China (Taiwan) has not signed the Kyoto Protocol and is not obligated to its content, Taiwan has begun to draft its own “Greenhouse Gas Reduction Law” for the future regulation of its local enterprises. This is because the control on the emission of CO_2 in the Kyoto Protocol will have a significant impact on the allotment of energy resources and the structures of industries in every country, which may influence their economic development and moreover, may damage their competitiveness.

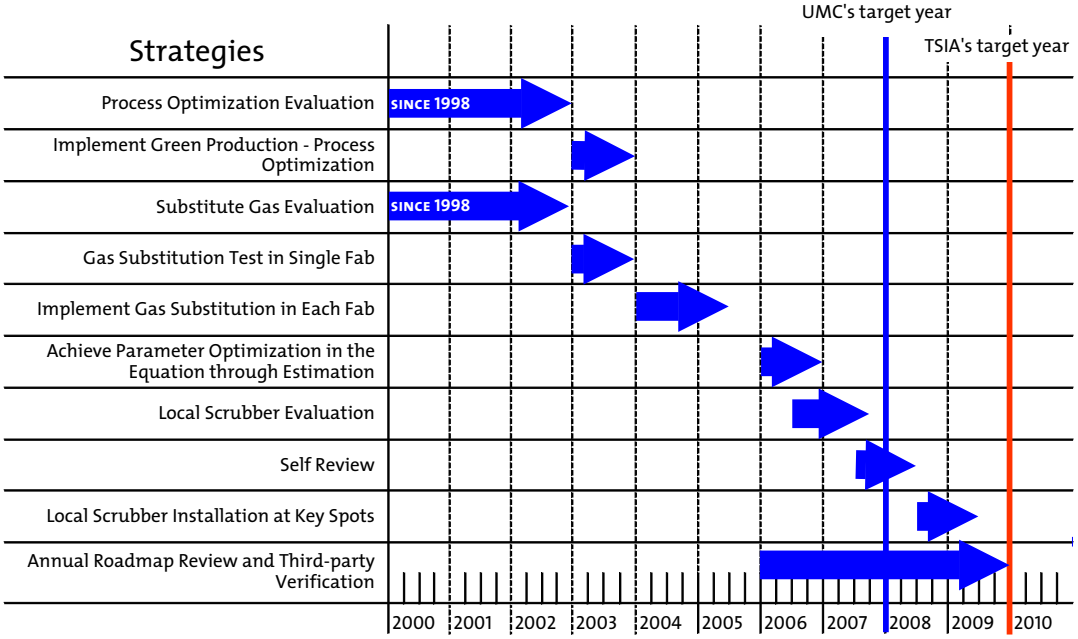
Among six Greenhouse gases (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6), PFCs (Perflourinated Compounds, including CF_4, CHF_3, C_2F_6, C_3F_8, C_4F_8, NF_3) and SF_6 are necessary for semiconductor manufacturing processes. TSIA (Taiwan Semiconductor Association, in which UMC is the member) has committed itself to reduce the emission of PFCs and has reported to the World Semiconductor Association (WSC) to target PFCs emission reduction by “10% in 2010 compared to 1998 (the emission of 1998 is the MMTCE average of 1997 and 1999) levels”.

Peter Chang, UMC’s vice chairman, mentioned during his acceptance speech while receiving the Industrial Sustainable Excellence Award in 2004, “While the public is merely discussing the countermeasures for the Kyoto Protocol, UMC has already been implementing the control on CO_2 emissions in accordance with international standards for many years.” UMC established its “PFCs Emission Reduction Team” in 1999 to implement the reduction plan. The reduction plan focuses on the development of PFCs emission reduction technologies and promotion, including: research and test on substitute gases, evaluation and selection of reduction equipment and others. UMC hopes to lower the

Greenhouse Gas Reduction

emission of PFCs year after year. UMC conducted a project called “Replace C_2F_6 with C_3F_8 as cleansing gas in CVD process” in 2004 and 2005. For this project, UMC led the industry in replacing the high GWP (Global Warming Potential) gas C_2F_6 with low GWP gas C_3F_8 in CVD chamber cleaning. In 2004, UMC’s Fab 8AB was the first foundry fab to complete gas substitution. After completing gas substitution in all fabs in 2005, the use of C_3F_8 had already resulted in a reduction of 0.1651 (38.56%) MMTCE (Metric Million Tons of Carbon Equivalent). In the future, C_3F_8 will be the first choice for new equipment, and a new generation of low GWP gas, NF_3, will be widely adopted in all 300mm fabs.

In 2006, UMC is collaborating with ITRI (Industrial Technology Research Institute) to achieve parameter optimization of greenhouse gas emission by using its measuring techniques. The result is used to calibrate UMC’s PFCs emissions. Moreover, it is used as the reference for future installation for Local Scrubbers to help achieve PFCs emission reduction. UMC also authorizes a third-party verifier to conduct “greenhouse gas examination and verification” to establish a standard mechanism to control the utilization status of greenhouse gases and to verify the results of PFCs emission reduction.



UMC's Greenhouse Gas Reduction Roadmap