# Table of Contents

1. **Message from Jonney Hsih** ........ 3
2. **About ASUSTek** ........ 5
3. **About This Report** ........ 8
4. **ASUS Social and Environmental Responsibility** ........ 10
    - ASUS Social and Environmental Responsibility (SERASUS) Policy ........ 11
    - Management Systems Certification ........ 11
    - Organization and Management Responsibilities ........ 12
    - **4.1 Elements of our Environmental, Health and Safety System** ........ 13
        - 4.1.1 Legal and Customer Requirements ........ 13
        - 4.1.2 Environmental Aspect and OH&S Hazard Identification ........ 13
        - 4.1.3 Competence, training and awareness ........ 14
        - 4.1.4 Communication and Worker Feedback ........ 14
        - 4.1.5 Audit ........ 14
        - 4.1.6 Performance Measurement and Monitoring ........ 14
    - **4.2 Environmental Impact of our Operations** ........ 15
        - 4.2.1 Greenhouse Gases ........ 15
        - 4.2.2 Energy ........ 16
        - 4.2.3 Transportation and Business Travel ........ 17
        - 4.2.4 Air Emission Management ........ 19
        - 4.2.5 Water Saving ........ 20
        - 4.2.6 Wastewater Management ........ 21
        - 4.2.7 Waste Management ........ 22
        - 4.2.8 Raw materials, supplied components and packaging materials ........ 25
5. **Environmental-friendly Products** ........ 26
    - **5.1 Environmental Management** ........ 26
        - 5.1.1 GreenASUS Policy ........ 26
        - 5.1.2 System Certification ........ 27
        - 5.1.3 Management Review for GreenASUS ........ 27
        - 5.1.4 Green Supply Chain Management ........ 27
        - 5.1.5 Green manufacturing management system ........ 28
        - 5.1.6 Green sub-contractor management ........ 28
        - 5.1.7 Green Product Management System ........ 28
        - 5.1.8 Green Procurement and Management of Chemical Substances ........ 29
        - 5.1.9 Milestones for Product Material Restriction and Related Events ........ 29
        - 5.1.10 Hazardous Chemical Substance Management ........ 30
        - 5.1.11 End-of-Life Management Policy ........ 30
        - 5.1.12 Environmental Management Information System ........ 31
    - **5.2 Design for Environment** ........ 32
        - 5.2.1. Green Design Policy ........ 32
        - 5.2.2 Green Design Procedure ........ 32
        - 5.2.3 Precautionary Policy ........ 33
        - 5.2.4 Substitution Principle ........ 33
        - 5.2.5 Controlled Hazardous Substances ........ 33
        - 5.2.6 RoHS Laboratory & Testing Method ........ 34
        - 5.2.7 End-of-Life Design and Life-Extension Design ........ 34
        - 5.2.8 Design for End-of-Life Policy and Procedures ........ 34
        - 5.2.9 Energy Efficiency ........ 35
        - 5.2.10 Life Cycle Assessment ........ 35
        - 5.2.11 Packaging Design ........ 37

5.3 Eco-Labels....38
5.4 Case Studies – Green Products ....39
5.5 Product Environmental Profile ....40
5.6 Environmental Management Information System....41
5.7 Special program& Project....47
6. The Future .... 49
Appendixes.... 53

# 1. Message from Jonney Hsih

Chief Executive Officer and President

ASUSTeK Computer Inc (ASUS) is honoured to present our first Environmental Sustainability Report. In this report we present details on ASUS's global activities, which contribute to sustainable development. Our focus at this time is predominantly on environmental impacts and performance. In future reports, we will address social issues more fully.

ASUS is pleased to be an active participant in the worldwide effort to provide greener computers and other information technology equipment. We are committed to protecting the environment in many ways, especially in our manufacturing processes and our products. To demonstrate our commitment to protecting the environment and global challenges such as climate change, we have implemented a set of rigorous policies and standards that all of our manufacturing and product design processes aimed to meet. In addition, we focus just as thoroughly on responsible end-of-life management for our products. Finally, we are committed to continuous improvement of conditions related to workers' safety and health.

Since 2000, we have been carrying out a series of special initiatives and research projects, such as developing Taiwan's first lead-free motherboard and Taiwan's first Green Parts Management System. One focus of our current GreenASUS projects is Green Design, through the precautionary principle whereby we monitor and seek to eliminate the use of toxic chemicals at all steps in the manufacturing process. As we phase out substances that may be hazardous, we review and test alternative substances to ensure that they will not have adverse impacts. This is both in keeping with the Restriction on Hazardous Substances (RoHS) law and for substances not presently banned under RoHS and related laws.

Our GreenASUS project also supports the design of products for ease of recycling. We initiated Taiwan's first green design system for easy reuse, easy recycling and easy disassembly. This project aims at increasing the reuse and recyclability of products through careful material selection and easy-disassembly-conscious design. As our products reach the end of their useful life, ASUS advocates for responsible end-of-life management. We follow the European Union directive on the Waste Electrical and Electronic Equipment (WEEE) and are proud to be part of programs for recycling and reusing our products worldwide. We are vigorously developing green recycling systems and are pleased to announce that since September 2006, customers in the United States have been able to recycle old ASUS notebook computers free of charge. We are proud that we are the first Taiwanese company to take a step forward to taking extended producer responsibility in providing free takeback services in the United States.

Our goal is to meet and exceed international legislation on design, including the future European Union directive on Energy-using Products (EuP), which establishes a framework for setting eco-design requirements.

In 1998 ASUS acquired the ISO 14001 certification of our environment management system, which demonstrates our commitment to managing and reducing the environmental impact of our operations.

Moreover, we are proud that we have never experienced any losses or disciplinary action due to any national or international environmental violation.

This year, we acquired the IECQ QC 080000 HSPM (Hazardous Substance Process Management) certificate which again demonstrates ASUS commitment and actions towards greening our products and management systems.

ASUS's employees are our most important asset. We have more than ninety-seven thousand employees around the world, and it is our responsibility to make sure that we provide them with a healthy and safe working environment. ASUS received the OHSAS 18001 employee health and safety management system certification in 1999. For three consecutive years since 2001, we received two awards recognizing our efforts—Taiwan's best Company for Labour Safety and Health Prize and the Taiwan Five Star Awards. We are not content to stop at these achievements and are committed to working hard to further improve our employees' social welfare.

We at ASUS are proud of our environmental efforts in the past years. We will continue to commit to proactively protecting natural resources. In addition, we will strive for pollution prevention and will persist in our active commitment to "clean production, green manufacturing." Most importantly, we pledge to continue taking good care of our employees and the world we live in by taking full corporate social and environmental responsibility for our actions.

Jonney Shih

Jonney Hsih
Chief Executive Officer and President

# 2. About ASUSTek

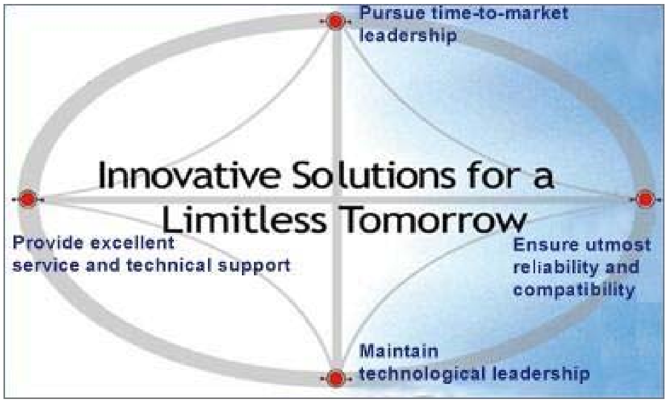
*" The Leading Provider of High-Performance 3C Total Solutions. "*

**Corporate Vision**

ASUS, a technology-oriented company with a world class R&D team, is well known for high-quality and innovative technology. As a leading provider of 3C (computers, communications and consumer electronics) total solutions, ASUS offers an extensive product portfolio to compete in the new millennium.

ASUS products' top quality stems from strong product development. It's like learning Chinese Kung-Fu; one must begin with cultivating the "Chi" and inner strength. Besides innovating cutting-edge features, ASUS engineers also pay special attention to EMI (electromagnetic interference), thermal, acoustics and other details that usually go unnoticed to achieve complete customer satisfaction. ASUS notebooks are the first to have achieved TCO'99 certification worldwide. The requirements for this include radiation emission control, energy consumption (battery), ecology (environmentally friendly) and ergonomics.

To succeed in this ultra-competitive industry, innovative products need to be complimented by speed-to-market, cost and customer service. That is why all 97,000 ASUS employees aim for the "ASUS Way of Total Quality Management" to offer the best quality products without compromising cost and time-to-market, while providing maximum value to all customers through world-class services.


Pursue time-to-market leadership
Innovative Solutions for a Limitless Tomorrow
Provide excellent service and technical support
Ensure utmost reliability and compatibility
Maintain technological leadership

**Management Philosophy**

- Inspire, motivate and support our employees to realize their highest potential.
- Commit to the values of integrity, ingenuity, honesty, and diligence.
- Strive to be number 1 in the areas of quality, speed, service, innovation and cost-efficiency.
- Strive to be among the world-class high-tech leaders and to provide a valuable contribution to society.

**Mission and Value**

As a major player in the IT industry, ASUS has determined that its corporate mission is to: Provide innovative IT solutions that empower people and businesses into reaching their full potential.

The philosophy of ASUS product development is to do the fundamentals well before progressing onto other more complex products. Having started with computer components such as motherboards, graphic cards, and optical storage devices, ASUS now has over 16 product lines, including desktop bare bone systems, servers, notebooks, handhelds, network devices, broadband communications, LCD monitors, TVs, wireless applications, and CPT (chassis, power supply and thermal) products.

Rock Solid • Heart Touching
ASUS

**The Five Factors of Success**

- *Uncompromised Quality*

At ASUS we believe that a company is nothing without the best products and services, and therefore achieving the highest quality has always been the top priority of ASUS and all its employees. After winning numerous awards from respected IT organizations and media for its complete product line, ASUS has become synonymous with quality.

- *Manufacturing Expertise*

ASUS has manufacturing plants in Taiwan, China, the Netherlands, Czech Republic and Mexico to service our worldwide customers. The ASUS Hi-Tech Park, located in Suzhou, China, covers 540,000 square meters (roughly 82 soccer fields). The park serves as the company's main production centre to offer our customers and partners cost-effective and efficient manufacturing capability.

- *Innovation & Speed – The Best Solutions from the Best R&D Team*

The ASUS Research and Development Division has accumulated over 6,000 man-years of design expertise in the information technology field. ASUS engineers have extensive experience in high-frequency electronics, proactive EMI (electromagnetic interference), thermal technology and quality testing etc. to provide worldwide users with superior products. With its world class R&D team, ASUS will continue to introduce innovative solutions before its competitors.

- *Service – Customer Satisfaction Stems from Caring Services*

Complete customer satisfaction comes from efficient service both before and after the sale. ASUS's Customer Service Centre has 11 worldwide branches that provide technical support to ASUS customers and end-users. Combined with a complete sales network that includes over 300 channel partners and industry vendors, the most advanced ASUS products can reach all corners of the world.

- *Partnership – Growing With Our Customers*

ASUS believes in building long lasting and mutually beneficial relationships with our partners and understands that customer satisfaction drives success. ASUS takes pride in understanding its customer's requirements and expectations, and incorporating this knowledge into product development.

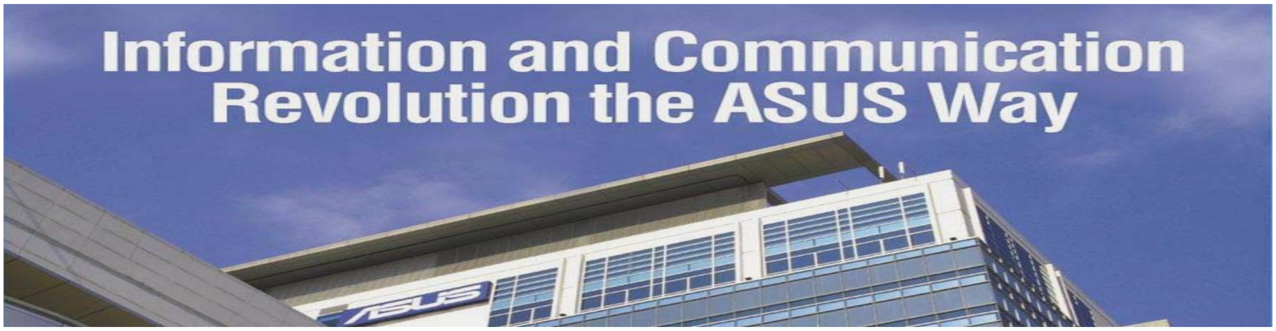
## Recent Company Achievements

ASUS's commitment to innovation and quality was recognized in 2006 when the company won 2,168 awards, which averages out at over 5 awards per day. Business Week ranked ASUS amongst its "InfoTech 100" for the 9th straight year. The readers of Tom's Hardware Guide, the world's largest IT website, selected ASUS as the best manufacturer of motherboards and graphics cards. Furthermore, the company is ranked as No.1 in quality products and services by the Wall Street Journal.

Rock Solid Quality
ASUS

ASUS Won 2,168 Awards in 2006 and a selection of these are:

- France's Micro Portable Magazine presents the Deluxe Award to S6F notebook (July, 2006)
- Singapore's Hardware Zone presents the Most Overclockable Product Award to M2N32-SLI motherboard (July, 2006)
- VX1 notebook wins Top Performance Award from Greece's RAM Magazine (July, 2006)
- Silent Square Series CPU cooler wins Hot Award from Australia's Atomic (June, 2006)
- W7J notebook and P5WDG2-WS motherboard win Best Choice of Computex (June, 2006)
- W5F notebook wins Best Value Award from South Africa's Charged SA (June, 2006)
- Korea's Seoul Digital Economy selects ASUS as the world's best motherboard brand (June, 2006)
- WL-566gM wireless router wins Editor's Choice from Romania's PC Magazine (May, 2006)
- A6Ja notebook is the test and quality winners of Germany's PC Welt (May, 2006)
- Spain's PC Plus recommends EN7800GT/ 2DHTV/256M graphics cards (May, 2006)
- A8R32-MVP Deluxe motherboard receives Extreme Recommendation from UK's Hexus.net (May, 2006)
- PW201 monitor wins Excellent Design Award from Taiwan's PC DIY (May, 2006)



## 3. About This Report

This report, ASUS's first Environmental Sustainability Report, outlines the management systems that have been created and our continuing endeavours to ensure:

- Products and manufacturing processes are environmentally responsible;
- safe working conditions; and
- our workers are treated with respect.

The maturity of our environment, health & safety and labour management process vary. This report predominantly focuses on environmental issues of both our activities and products. However, we also recognise the importance of developing systems to enable us to report on our health & safety and labour management.

We follow requirements of international standards and are certified by authorized third parties on the management of Environmental, Health and Safety impacts and other legal requirements. Where performance data is available we also present this to demonstrate our current performance and aspirations.

This report is divided into two sections that correspond to ASUS'S two main management systems:

1. **Social Environmental responsibility, Health and Safety Management System (SERASUS)** that covers ASUS's social and environmental (operational) responsibilities.

2. **Quality Management System (GreenASUS)** that covers ASUS's policy and control processes on hazardous substances, design for the environment, design for end-of-life, product take back programmes etc.

*Note: more information on the areas covered by "SERASUS" and "GreenASUS" management systems can be found in Section 4.1 - ASUS Social Environmental Responsibility Management System and Policy" and Section 5 which covers our programmes and activities under GreenASUS.

**Locations Covered**
The locations covered in this report are for all business and manufacturing sites within the ASUS Group (100% coverage). The ASUS Group contains the following sites:

Taiwan
- ASUSTeK Computer Inc. - ASUS Corporate Office (headquarters)
- ASUS Taoyuan Factory

China
- ASUS Suzhou Factory (MAINTEK)
- ASUS Shanghai Factory (Protek)
  * Shanghai Factory has just been established in June, 2006

Other International Sites
- ASUS Mexico Factory
- ASUS Czech Republic Factory

Table 3.1 – Numbers of Employees (2006)

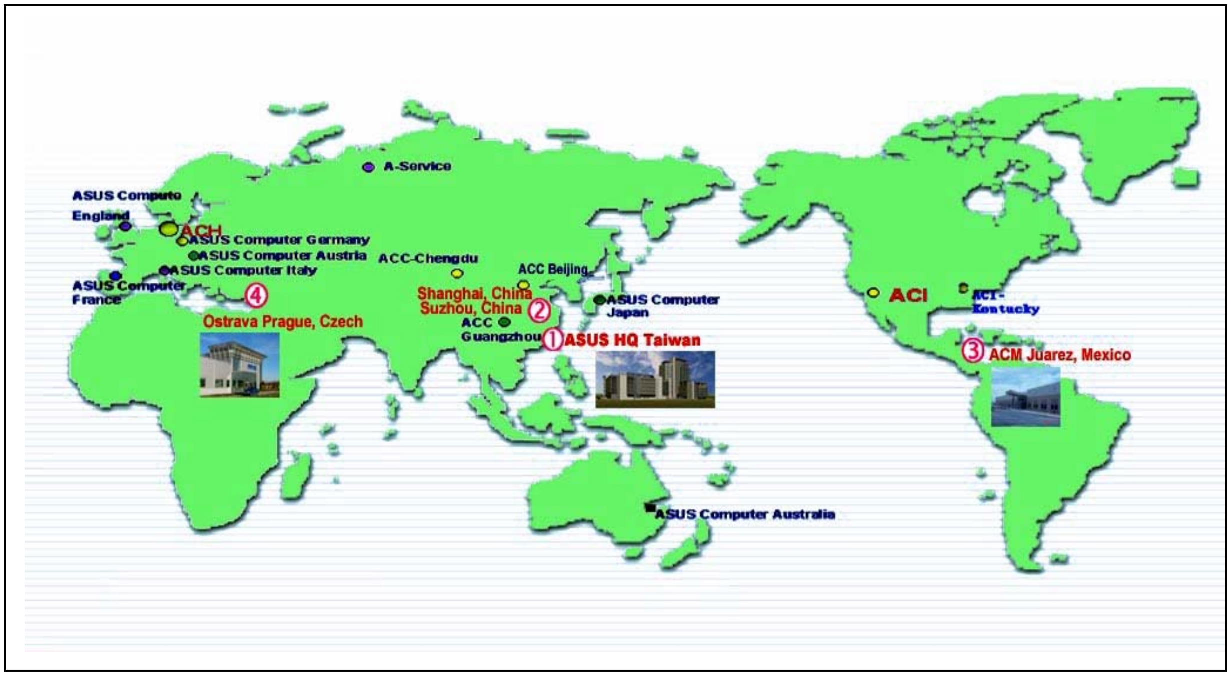
| Site | Numbers of Employees |
|---|---:|
| Taiwan<br>(headquarters and Taoyuan Factory) | 8,800 |
| ASUS Suzhou Factory | 82,360 |
| ASUS Shanghai Factory | 5,500 |
| ASUS Mexico Factory | 750 |
| ASUS Czech Republic Factory | 450 |

**Products covered**
The products covered in this report are all those with the ASUS brand.

**On-line Information**
This report is also available on the following ASUS websites:
http://www.asus.com (with links to next two addresses)
http://ser.asus.com/english/
http://green.asus.com/english/

Disclaimer: any misuse or copying of this report without authorization is prohibited. ASUS does not provide a guarantee to any statement not from this report.

Figure 3.1 - ASUS worldwide sites


A-Service
ASUS Computo England
ACH
ASUS Computer Germany
ASUS Computer Austria
ASUS Computer Italy
ASUS Computer France
④
Ostrava Prague, Czech
ACC-Chengdu
ACC Beijing
Shanghai, China
Suzhou, China ②
ACC Guangzhou
① ASUS HQ Taiwan
ASUS Computer Japan
ASUS Computer Australia
ACI
ACI-Kentucky
③ ACM Juarez, Mexico

# 4. ASUS Social and Environmental Responsibility

The aim of the Social and Environmental management system is to formulate an environmental and occupational health and safety policy, and to implement this throughout the company. The company has achieved ISO 14001 environment management system certification, OHSAS 18001 occupational health and safety management system certification and non-use of the ozone destroying substances (ODC) certification. ASUS also designs, develops and promotes ‘environmentally friendlier’ products, which are more able to be recycled in order to meet WEEE and RoHS international environment protection regulations. Our management systems associated with our products are discussed in Section.

### ASUS Social and Environmental Management Systems

As identified earlier, the management system which relates to social and environmental management within our operations is ASUS’s Social Environmental responsibility, Health and Safety Management System (SERASUS). This system reflects the following international standards:

- ISO 14000- Environmental Management Systems
- OHSAS 18000 - Occupational Health and Safety Management Systems
- ASUS also refers to EICC - Electronic Industry Code of Conduct for guidance on labour rights, commercial ethics and opportunities for improvement, although ASUS are not a member of the EICC.

The SERASUS management system follows a “Plan, Do, Check, Act” cycle to assess the operational control, environmental impacts and OH&S risks associated with the activities of the organization. This management system commits to upholding the human rights of workers and to treating them with dignity and respect, as understood by the international community and in accordance with national legal requirements.

The SERASUS management system also includes the organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the organization's social and environmental responsibility policy.

## ASUS Social and Environmental Responsibility (SERASUS) Policy

1. Abide by all environmental protection, labour, safety and health laws.
2. Conserve natural resources and endeavour to prevent pollution.
3. Reduce environmental impacts and safety risks.
4. Satisfy customer requirements and aim to become an ‘entirely green’ enterprise
5. Facilitate a company-wide promotion of corporate responsibility particularly social and environmental aspects.
6. Encourage all employees to participate in the program and continuously improve it.

ASUS Social and Environmental Responsibility policy covers 100% of all ASUS’ business and manufacturing sites worldwide.

## Management Systems Certification

Table 4.1 – Management Systems Certification

| Year Certified | Certificate | Coverage |
|---|---|---|
| 1999 | OHSAS 18001:1999 | Taiwan:<br>ASUSTeK Corporate Office<br>ASUS Taoyuan Factory<br>China:<br>ASUS Suzhou Factory |
| 2006 | OHSAS 18001:1999 | China:<br>Asus Shanghai Factory |
| 1998 | ISO 14001:1996 | Taiwan:<br>ASUSTeK Corporate Office<br>ASUS Taoyuan Factory<br>China:<br>ASUS Suzhou Factory<br>Other international sites:<br>ASUS Czech Republic Factory<br>ASUS Mexico Factory |
| 2006 | ISO 14001:2004 | |
| 2006 | ISO 14001:2004 | China:<br>ASUS Shanghai Factory |

* Please see Appendix 1(p.53) for copies of the certificates.

## Social and Environmental Milestones

1990 ASUS was formally established and received capital $909,100 US.

1998 The corporate office and factory in Taiwan attained ISO 14000certification.

1999 The corporate office and factory in Taiwan attained OHSAS 18001certification.

2001 Attained ODC verification

2002 Was awarded the labour safety and health well-performed company of Taipei city.

2002 Won the nation’s labour safety and health well-performed company award.

2003 Won the nation’s labour safety and health well-performed company for the third time.

2003 Won the Taiwan Environmental five star award.

2005 Was awarded the Taiwan "Award for best continual improvement team of Occupational Health and Safety Management System"

2005 Was awarded the "Excellence Award for promoting occupational health programs"

2005 Was awarded the "Excellence Award for promoting a non-smoking working environment"

2005 Produced our first "Environmental, Occupational Health and Safety Report"

2006 Initiated ASUS Environmental Cost Accounting Program [Phase I].

2006 Initiated Greenhouse Gases Evaluation and Quantification Training Project

2006 Participated in the community sewage system operation and management rating. (Taiwan)

2006 Participated in the Taipei "Environmental Volunteer Work" (ASUS is the 1st Corporate member)

## Organization and Management Responsibilities

ASUS has allocated resources for the implementation, maintenance and improvement of the SERASUS management system and are committed to the following:

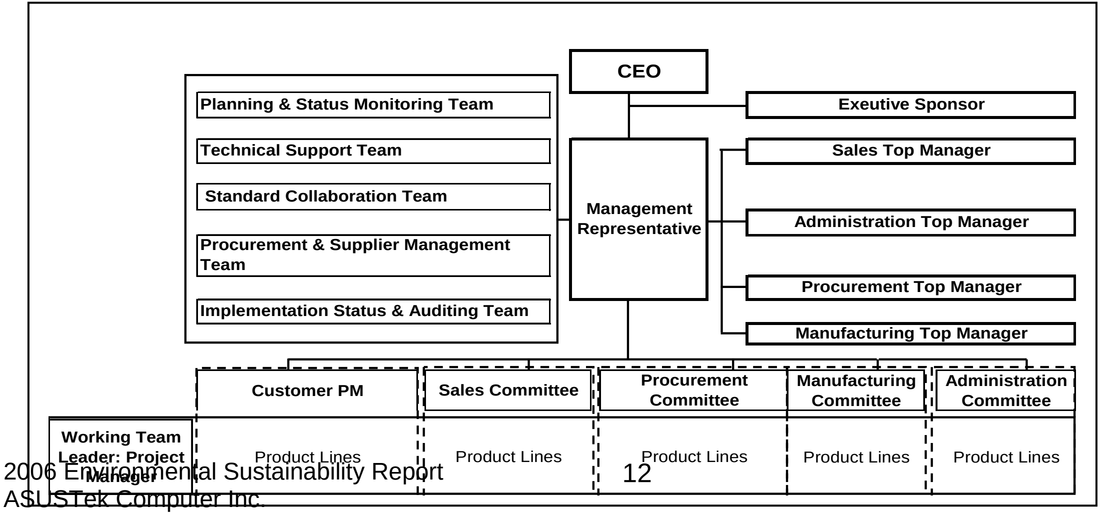
1. Abide by environmental and labor protection laws, regulations to meet related demands issued by the government, and vouch to support the global environmental protection, labor rights and occupational hazard control.
2. Educate the entire staff, making them aware that protecting the environment, respecting the dignity of life, conserving limited natural resources, and ensuring occupational health and safety are the responsibilities of everyone.
3. Decrease resource consumption and at the same time recycle resources.
4. Enhance the waste handling and monitor it. The responsible unit shall ensure the wastes handling from not being reused nor re-sold in order to safeguard the company and customer's rights.
5. Step up measures to monitor and reduce pollutants along with work hazards, in the hope that adverse impacts on the environment and employees will be reduced to the least.
6. Promote the independence and reliability of the OHSMS so as to optimize the quality of occupational hazard control.
7. Establish an operating system and endow it with the highest authority in the OHSMS, labor rights and environmental protection management system. The operating system should provide clearly defined job descriptions for all tasks to be shared, in order to improve the efficiency in performing these tasks.
8. Implement health care programs and improve the environment of the workplace to ensure the employees' mental and physical health.
9. Openly pledge the company's commitment in protecting the environment and labor rights and reducing occupational hazards.

Figure 4.1 shows the organization chart for the Corporate SERASUS Committee, which is a company wide social and environmental committee initiated by our CEO. This corporate committee is supported by senior individuals at a site level who have been allocated day-to-day responsibilities for implementing and maintaining the environmental, health & safety management systems.

As part of our overall environmental and social management programme every six months the "SER Management Review Meeting" is convened to review:

- environmental and social objectives / targets / programs;
- current status of significant environmental improvements;
- internal and external audit results;
- corrective and improving actions taken for nonconforming items found in audits; and
- the effectiveness of the system and key performance indicators

Figure 4.1 - SERASUS Committee


CEO
Exeutive Sponsor
Planning & Status Monitoring Team
Technical Support Team
Standard Collaboration Team
Procurement & Supplier Management Team
Implementation Status & Auditing Team
Management Representative
Sales Top Manager
Administration Top Manager
Procurement Top Manager
Manufacturing Top Manager
Customer PM
Sales Committee
Procurement Committee
Manufacturing Committee
Administration Committee
Working Team Leader: Project Manager
Product Lines
Product Lines
Product Lines
Product Lines
Product Lines

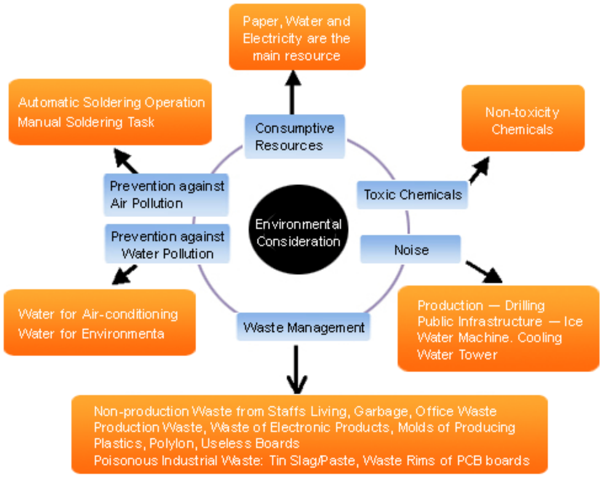
# Elements of our Environmental, Health and Safety System

## 4.1.1 Legal and Customer Requirements

ASUS has established and maintained procedures for identifying and recording legal and customer requirements, which will be updated at regular intervals, and committed to communicate these to ASUS's employees and other interested parties.

## 4.1.2 Environmental Aspect and OH&S Hazard Identification

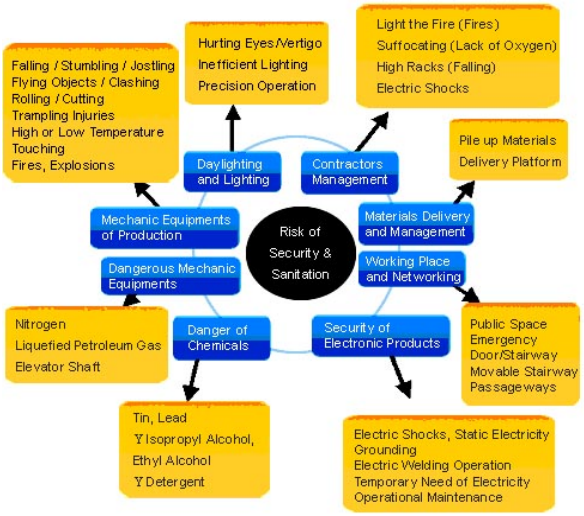
### a. Environmental Aspects


Paper, Water and Electricity are the main resource
Automatic Soldering Operation
Manual Soldering Task
Consumptive Resources
Non-toxicity Chemicals
Prevention against Air Pollution
Toxic Chemicals
Environmental Consideration
Prevention against Water Pollution
Noise
Water for Air-conditioning
Water for Environmenta
Waste Management
Production — Drilling
Public Infrastructure — Ice Water Machine. Cooling Water Tower
Non-production Waste from Staffs Living, Garbage, Office Waste
Production Waste, Waste of Electronic Products, Molds of Producing Plastics, Polylon, Useless Boards
Poisonous Industrial Waste: Tin Slag/Paste, Waste Rims of PCB boards

The possible environmental impacts are illustrated in the above diagram. For example, a primary cause of air pollution of all ASUS's manufacturing sites comes from soldering where fumes carrying metallic and organic elements are produced. These pollutants are extracted and treated and the company also continuously updates the production machinery to meet relevant national environmental regulations.

Further details on how we manage key environmental impacts and our performance in these areas are discussed in the following sections.

### b. Occupational Health & Safety Hazard Identification (identified with risks)


Falling / Stumbling / Jostling
Flying Objects / Clashing
Rolling / Cutting
Trampling Injuries
High or Low Temperature
Touching
Fires, Explosions
Hurting Eyes/Vertigo
Inefficient Lighting
Precision Operation
Light the Fire (Fires)
Suffocating (Lack of Oxygen)
High Racks (Falling)
Electric Shocks
Pile up Materials
Delivery Platform
Daylighting and Lighting
Contractors Management
Mechanic Equipments of Production
Risk of Security & Sanitation
Materials Delivery and Management
Dangerous Mechanic Equipments
Working Place and Networking
Nitrogen
Liquefied Petroleum Gas
Elevator Shaft
Danger of Chemicals
Security of Electronic Products
Public Space
Emergency Door/Stairway
Movable Stairway
Passageways
Tin, Lead
Y Isopropyl Alcohol,
Ethyl Alcohol
Y Detergent
Electric Shocks, Static Electricity
Grounding
Electric Welding Operation
Temporary Need of Electricity
Operational Maintenance

The production activities with higher risks are shown in the above figure. Hazard prevention measures include equipment safety design, health and safety training, routine inspection and maintenance of equipment, emergency response planning and training, chemical management, employee health examination and management, personal protection equipment, operational management, ergonomic improvement program, etc. The above-mentioned factors are used to ensure that employees have the safest working environment.

### 4.1.3 Competence, Training and Awareness

We are committed to all employees having the relevant training and/or experience to enable them to do their work with competence. We also make our employees aware of the possible dangerous consequences, actual or potential of their work activities. We also strive to ensure that all employees are aware of their roles and responsibilities in achieving conformance to the SERASUS policy, procedures and to the requirements of the SERASUS management system, including emergency response requirements and qualifications.

### 4.1.4 Communication and Worker Feedback

ASUS uses both internal and external means to communicate between management, employees and external stakeholders to ensure that everyone understands ASUS's Social and Environmental Responsibilities. For example, there are "suggestion boxes" in our factories for employees to provide suggestions or raise issues.

### 4.1.5 Audit

We have established an internal "SERASUS Audit" programme that assesses the status of compliance with the ASUS's SERASUS requirements and effectiveness and efficiency of its implementation of the SERASUS. ASUS trained its internal auditors who must possess the necessary qualifications to perform the audits. These audits are additional to the external assessments that are conducted as part of maintaining our IS14001 and OSHAS certifications.

### 4.1.6 Performance Measurement and Monitoring

We use qualitative and quantitative measures (including KPIs and targets) to monitor the effectiveness of our system implementation and our performance. Specific targets are discussed in the relevant sections below.

Targets for environmental and health & safety performance are established at a site level. Assessing performance against these targets has primarily occurred on a site-by-site basis, and selected elements of this site level performance data are presented in the following sections. On reviewing the performances of the past years, the objectives/targets/programs for the next year will be set*.

We are starting to establish a mechanism for the aggregation of environmental, health and safety data to enable performance across the whole company to be reported in the future.

---

* For detailed 2007 environmental, health and safety objectives/targets/programs, please refer to Appendix 2 (p.57).

# 4.2 Environmental Impact of our Operations

## Introduction

ASUS identifies environmental aspects based on company manufacturing and daily operation processes, and provides improvement programs to reduce possible environmental impacts. All environmental and social objectives and targets (previously only set at a site level) were achieved in 2004, 2005 and 2006.

Meeting legal requirements and governmental regulations are of the outmost importance to ASUS' environmental management system. ASUS performed very well in the past three years in which we received no fines or violations across all sites worldwide.

Our focus of environmental activities is not only on relevant legislative requirements but also strives towards our overall goal of achieving our "Zero Pollution, Zero Accident" objectives. The following sections refer to ASUS's actions and performance in the areas that we believe are the key environmental impacts of our operations:

- emissions of Greenhouse Gases,
- energy management and efficiency
- other air emissions;
- water and waste water management;
- waste management;
- hazardous chemical management; and,
- transportation.

### 4.2.1 Greenhouse Gases

In response to global climate change, ASUS has developed a "Reducing Greenhouse Gas (GHG) Emission Policy," which states:

> *"ASUS is committed to reducing its GHG (greenhouse gas) emissions in both manufacturing operations and product design through energy conservation and efficiency in operations, improved energy efficiency of our products, and optimising transportation."*

This policy is classified as corporate level and as part of implementing this policy we have launched a GHG emissions assessment program. The preliminary objective is to:

- investigate and document all GHGs generated from our manufacturing and operational activities as well as transportation by ASUS both in the movement of its products and employees; and
- set GHG reduction targets and strive to achieve these.

We also plan to reduce the environmental impacts of the company manufacturing and employee activities by setting various targets and objectives each year.

Our assessment project will reference and use the ISO 14004 GHG accounting and verification.

We anticipate that our energy use is our main impact on climate change and greenhouse gas emissions. Our programmes associated with reduction of our energy use are discussed in the following section.

### 4.2.2 Energy

The types of energy currently used by our company are mainly electricity and natural gas. Electricity is used for the ASUS' infrastructure (air-conditioning, lighting and mechanical power, etc) while natural gas is used for catering, heating and the boilers. ASUS does not generate its own energy but purchases energy from local government organisations where the ASUS sites are located.

At the beginning of every fiscal year, our energy saving objectives of the previous year are reviewed and new targets for the coming year are set. We pursue our targets mainly by installing energy saving devices to reduce electricity consumption. In line with our approach to date of setting targets on a site-by site basis, projects to reduce energy usage and increase efficiency have tended to be identified and managed at a site level.

#### Energy Saving Programmes

An example of our approach to energy saving is the program run at our Taiwan sites which looks at two main areas:

(a) Reviewing opportunities for reducing the energy usage of the air-conditioning systems including through：

1. Installing a frequency conversion device for the air-conditioning.
2. Changing air-conditioning operation timing mode from 24 hours into only when required.
3. Conducting regular maintenance of the equipment.
4. Adjusting ice-water temperature
5. Installing time dependent controls for each floor.

(b) Reviewing opportunities for reducing energy use in the power system through：

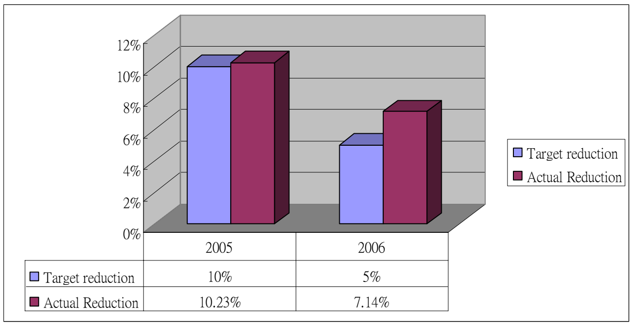
1. Installing time dependent floor electricity and lighting controls.
2. Improving the efficiency of electricity power
3. Changing low power efficiency equipment into high power efficiency ones.

Case Study

Electricity Reduction at Taoyuan Factory, Taiwan

At the ASUS Taoyuan factory in Taiwan, the air-conditioning system running rate was optimised and this increased the efficiency of the Cooling Tower. Significant reduction in energy usage has been achieved through this initiative as shown in the figure below, and this also saves ASUS more than $68,750 US every year. Moreover, the Taoyuan site also added a frequency converter to its 30HP smoke exhaust device that saves more than $5,000 US per year.

Figure 4.2 – Electricity Reduction at Taoyuan Factory (Taiwan)



#### Future Objective and Challenges

With the expansion of the ASUS Group, it is inevitable that the total energy consumption will increase due to the growing number of employees and facilities. However, ASUS endeavours to reduce the proportion of energy consumption per-unit by setting annual energy-saving targets with regular improvement reviews, installing energy saving devices as well as carrying out frequent machine maintenance. Increasing the percentage of renewable energy used such as solar energy, solar power generators or renewable/bio fuel are our mid and long-term goals.

### 4.2.3 Transportation and Business Travel

ASUS is committed to reducing the GHG emissions resulting from its use of the global transportation infrastructure. This applies to all uses of transportation by ASUS both in the movement of its products and employees. For the movement of goods, this policy applies to:

- Raw materials, components, and parts being transported through our supply chain to manufacturing facilities where finished goods are made
- Finished goods transported to consumers around the world

The employee travel policy applies to:

- Normal commuting to and from work
- Business travel:
  - Sales personnel travelling to customer sites, sales expositions and sales meetings
  - R&D personnel travelling to manufacturing facilities and research conferences
  - Operations and management personnel visiting manufacturing and supplier facilities and attending conferences
  - Many senior personnel travel around the world and to our headquarters in Taiwan for senior-level meetings.

In order to conserve energy used in transportation and to increase efficiency in this sector, our transport and business travel green policy was initiated in 2007 and it set the following initial goals.

**Transportation of Goods**

ASUS has a goal of continuous improvement and conducts reviews annually to improve energy efficiency in all areas. We continuously seek to improve packaging and product design to make our products and their packaging lighter, thus requiring less fuel in transport. A supplier's geographic location and the associated cost of transport are taken into account when selecting suppliers. We review our supply chain annually In order to identify means of moving goods more efficiently and at less cost – such as evaluating rail transport over truck transport, or using sea cargo versus air cargo where appropriate.

As this area is new to us, our first year's goal is to gather baseline data on energy and kilometres per unit transported. The baseline data would be used to calculate our greenhouse gas (GHG) emissions impact. This analysis will aid us in identifying other helpful metrics for monitoring progress. Once baseline data on energy use during transportation and associated GHG impact for goods in our supply and delivery chain is established, ASUS plans to start with a modest goal of reducing GHG emissions impacts by 1-3%, overall.

**Employee Transportation**

We have identified two main areas of focus for employee transport as follows:

Normal commuting to and from work

In Taiwan, more then half of our employees use public transport to reach work places at our factories and headquarters. ASUS also operates shuttle vans to transport its employees within the factories. In 2007, we will measure the GHG impact of our employees' normal commuting travel, and establish baseline data. In Suzhou, the shuttle buses run for more than 1600 trips per day.

Business-required travel

ASUS has already implemented many years of strategies such as using video/audio conferencing and web-based presentation to replace face-to-face meetings, using online monitoring interfaces to manage suppliers' data, etc.

In 2007, ASUS will establish metrics to determine its current GHG impact, and the impact on current operations of all business travel. Metrics to be gathered include: kilometres travelled by various divisions to conduct business by mode of transport (rail, air, automobile, etc.); cost of business travel; purpose of business travel. With those metrics, ASUS plans to enhance the use of the current and the following strategies to reduce GHG emissions associated with business travel by using the following techniques:

- Increasing the use of video conferencing to replace face-to-face meetings
- Increasing the use of web-based presentation to share information
- Further developing online monitoring interfaces, enabling ASUS personnel to gather data from suppliers with fewer in-person visits
- Working with ASUS air travel suppliers to offset carbon dioxide emission caused by employee air travel. This might include projects that offset emissions through investment in green projects such as tree planting or wind-power generation; and
- Replacing gasoline-fuelled vehicles with hybrid, bio diesel, or other alternative fuel vehicles for company-owned vehicles.

Once the baseline data for energy use during transportation and associated GHG impacts for all employee travel is established, ASUS plans to start with a modest goal of reducing GHG emissions impacts by 1-3%, overall.

### 4.2.4 Air Emission Management

ASUS' manufacturing activities are mainly assembly processes; therefore the potential for significant air pollution situation is relatively low. Nevertheless, we still monitor and minimize possible pollutants, such as lead and organic solvent isopropyl alcohol (IPA) emissions generated from our manufacturing and daily operation processes. The attention of the EHS (environmental, health and safety) team is focused on monitoring the emissions of our SMT (Surface Mount Technology) solder reflowing and wave soldering processes, especially for IPA, granular pollutants and granular lead-pollutants. For the routine maintenance on equipment, which may produce air emissions, we follow government regulations to test for IPA concentration every six months and granular lead-pollutants in the air once a year. To date these concentrations have not exceeded the local government emission standards.

Below is an example of our air quality monitoring for lead and IPA concentrations for factories in Taiwan:

Table 4.2 –Air emissions

| | Air Emission Standard* | Maximum Concentrations at Taipei and Taoyuan Site | | |
|---|---|---|---|---|
| | | 2004 | 2005 | 2006 |
| Lead | 0.1mg/$m^3$ | 0.0160 | 0.0016 | 0.0020 |
| IPA | 400 ppm | 2.11 | 1.37 | 0.55 |
| *Source: Taiwan EPA. | | | | |

Figure 4.3 – Maximum concentrations of Lead

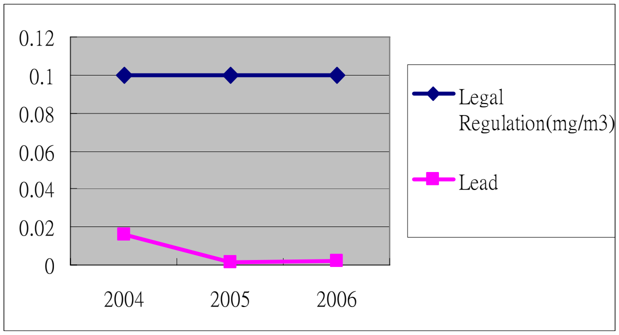
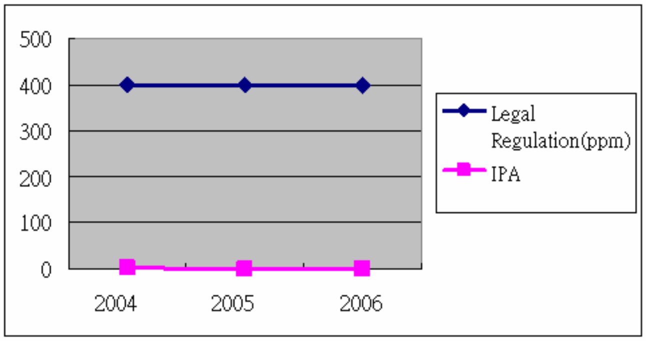


Figure 4.4 –Maximum concentrations of IPA



**Routine Waste-gas Inspections**

Each factory also carries out "waste-gas inspections" by authorized third parties. These are undertaken at specific times and in accordance with local laws and ASUS procedure regulations, to ensure the emissions are within legal limits.

An annual assessment by an authorized third party is conducted at the corporate head office and factories in Taiwan as well as irregular audits by government inspection units. These audits aim to review all operations and related activities and to confirm whether these emissions comply with local legal requirements.

Meanwhile, ASUS Corporate is also trying to substitute low-hazard water-based flux solvents for hazardous solvents such as IPA which will help to reduce the sources of our air emissions.

**Indoor Air Quality**

ASUS tests the concentration of $CO_2$ every six months to monitor indoor air quality as part of our programmes to manage our employee's health

## 4.2.5 Water Saving

Our manufacturing activities use limited water and therefore the majority of water used is by employees. The one exception is the water used for cleaning at the Suzhou (China) manufacturing site, which is controlled in the operational process.

**Install Water-Saving Device**

ASUS encourages employees to minimize the use of water and has water-saving devices installed in factories and office areas, for example:

(1) Installed water-saving devices on faucets;

(2) Used water from water-recycling tower for toilet and urinal flushing;

(3) Collected overflow water from swimming pool and used by recycling tower;

(4) Increased underground water pipes, ditch and rainwater collection capacity and used collected water in recycling tower;

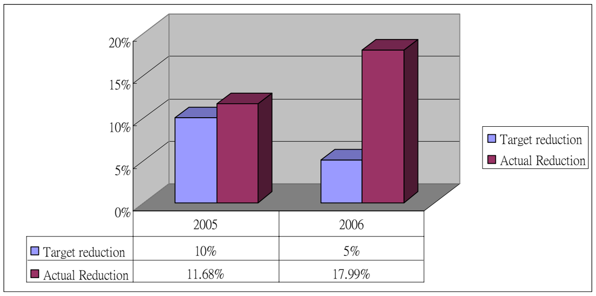
(5) Raised the default central air conditioning temperature setting and decreased the loading on cooling device, thus saved water.

Case Study

Water Savings at ASUS Headquarters

Through the above initiatives we have reduced the water consumption per employee at our head office for the last two years with an overall saving of nearly 25% as shown in Figure 4.5.

Figure 4.5 – Water Saving (Headquarters, Taipei)



**Future Objective and Challenges**

We will continue to promote awareness and seek further water saving measures where appropriate.

Besides setting specific water reduction targets, each site also focuses on implementation of specific programmes and technologies in accordance with the environmental management systems. ASUS reviews and updates the water conservation plans and targets on an annum basis to ensure that ASUS water conservation measures are fully implemented.

### 4.2.6 Wastewater Management

ASUS' general manufacturing process only uses a small amount of water, and therefore, it does not produce a significant volume of wastewater. Most of the water consumed is by employees, therefore the wastewater is mainly domestic.

**Domestic Wastewater**

Domestic wastewater is discharged into a sewage system. Wastewater discharged at each factory is managed by individual facilities and complies with government requirements. The treated wastewater quality is monitored at the discharge points and conforms to the national wastewater discharge standard.

Data from domestic wastewater monitoring performed at ASUS headquarters are shown in Table 4.3 and the subsequent charts.

The parameters measured by ASUS in its routine wastewater monitoring for all sites are as follows:

- Water temperature
- Dissolved $O_2$
- pH concentration
- Biochemical Oxygen Demand (BOD)
- Chemical Oxygen Demand (COD)
- Suspension Solids (SS)

Table 4.3 – Wastewater Effluent Monitoring Results (ASUS Headquarters)

| | Standard | 2004 | 2005 | 2006 |
|---|---|---|---|---|
| BOD | 50 | 22.1 | 18.0 | 35.6 |
| COD | 150 | 48.9 | 59.5 | 120.4 |
| SS | 50 | 19.0 | 7.9 | 25.2 |
| Escherichia coli | 300,000 | 210 | 33500 | 30000 |

Figure 4.6 – BOD

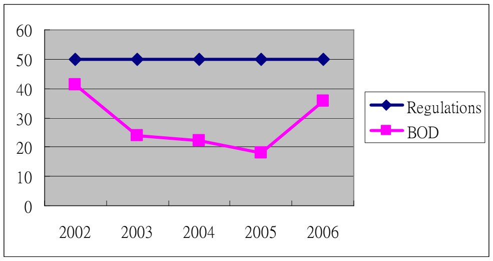


Figure 4.7 – COD

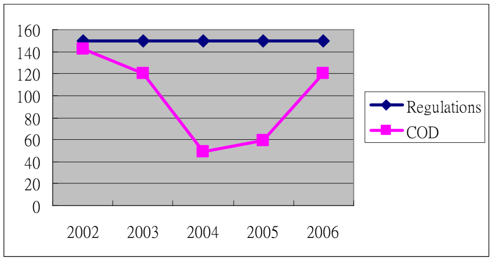


Figure 4.8 – SS

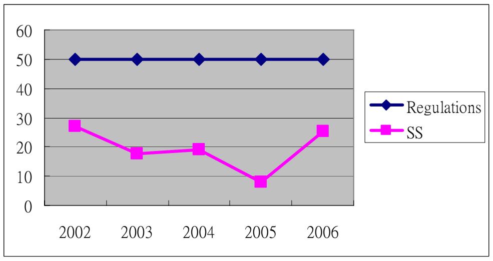
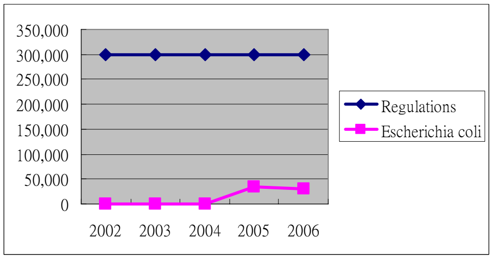


Figure 4.9 – Escherichia coli



The data collection system for wastewater discharges at other sites is not yet fully implemented. We will apply the current data collection system used in the headquarters to firstly Taipei and Taoyuan factories, then Shanghai and Suzhou sites and lastly factories in Mexico and Czech Republic.

**Hazardous Wastewater**

There is only a small portion of hazardous wastewater from manufacturing (mostly from electric plating). This only applies to the ASUS Suzhou factory, which discharges 357,000 tons of wastewater a year, or 15.5% of total wastewater discharged by the factory. The factory owns a hazardous wastewater treatment facility that enables the factory to safely and responsibly treat the wastewater generated before it is discharged into the local drain system. The wastewater discharge effluent of Suzhou factory is regularly tested and monitored in compliance with local legislative requirements.

## 4.2.7 Waste Management

ASUS's manufacturing is mainly assembly with minimal waste produced. The sources of ASUS's industrial waste are mainly test materials for research and development, faulty raw materials, packaging materials and commodity wastes. We strive to ensure that these are properly stored, transported, recycled or disposed of to reduce the potential for impact on the environment. Hazardous wastes are treated through physical or chemical disposal or recycling processes at third party licensed hazardous waste management facilities. ASUS uses responsible and qualified recycling/ disposal vendors and works closely with them to raise the premiums generated from the recycled materials. We also strive to increase the reuse and recycling rate to minimise waste incineration or landfill.

### Waste Classification

ASUS classifies its wastes according to the definitions of local Environment Protection Agency (EPA) regulations. For example, in Taiwan, ASUS's waste is classified into three categories:

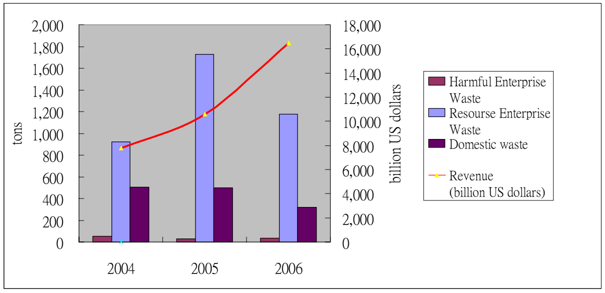
- Harmful Enterprise Waste: Hazardous or dangerous waste produced by company in the concentrations and/or quantities that can affect human health or pollute the environment; such as waste solvent, soldering, printed circuit boards, cables, components, batteries, etc.
- Resource Enterprise Waste: Waste produced by company but recyclable; such as metals, papers, cardboard, and polyester bottles
- Domestic Waste: Waste produced by company other then the above two categories, which are non-hazardous and non-recyclable. For example, garbage, food wastes from kitchen, tissues and food packing bags, etc.

We monitor waste generated in the above categories. An example data is presented below (Table 4.4) for our Taoyuan factory, ASUS's main manufacturing site in Taiwan. The majority of waste volume is Resource Enterprise Waste, followed by Domestic Waste while the volume of Harmful Enterprise Waste is relatively small.

Table 4.4 –Taoyuan Factory (Taiwan)

| Waste volume*<br>(in kilograms) | 2004 | 2005 | 2006 |
|---|---|---|---|
| Harmful Enterprise Waste | 51,903 | 27,913 | 34302 |
| Resource Enterprise Waste | 922,250 | 1,729,240 | 1,176,756 |
| Domestic waste | 502,220 | 500,470 | 318,809 |

Figure 4.10 – Waste Generated at Taoyuan Factory



* The reason of the slight increase in Harmful Enterprise waste volume is due to ASUS's production growth with the resultant extra defective products.

Data generation in Suzhou (China) site were collected from 2005. Table 4.5 presents the data on harmful and resource enterprise waste in ASUS's Suzhou factory.

Table 4.5 – Suzhou Factory (China)

| Waste volume**<br>(in kilograms) | 2005 | 2006 |
|---|---|---|
| Harmful Enterprise Waste | 7,567,800 | 9,915,000 |
| Resource Enterprise Waste | 24,445,200 | 25,184,000 |

** ASUS Suzhou factory expanded rapidly in 2005. The growth of employee number increased from 51,720 to 82,360 (60% growth).

### Waste Management and Control System

To ensure effective and legal waste handling in the design, manufacture and repair processes, ASUS has established a waste management and control system. We also conduct non-scheduled audits to ensure that our contracted waste handling vendors fully comply with the local environmental laws and regulations.

In order to ensure that all waste generated at ASUS' sites is managed properly and responsibly, we have established the "Waste Rubbish Control Management Procedure".

### Waste Handing and Minimization

ASUS' first priority on waste handling is reuse. Parts that cannot be reused will be broken down or shredded and recycled as raw materials.

Incineration and landfill is our last option (except kitchen waste and other organic/natural waste). Gradually reducing incineration percentages are ASUS' goal for the coming years.

We also conduct waste minimization programs and encourage our employees to recycle waste actively so as to improve our recycling rate. Examples of waste handling and minimization initiatives for our key streams are discussed below:

### ■ Handling Harmful Enterprise Waste

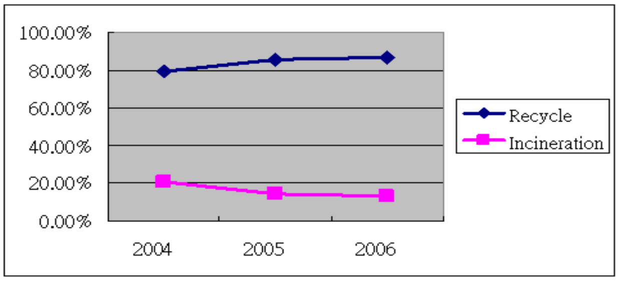
For Harmful Enterprise Wastes, ASUS has contracted qualified and responsible recycling vendors to dispose of the wastes from design and manufacturing processes, this is undertaken in a way that is compliant with local regulations.

Percentage of Harmful Enterprise Waste managed in all Taiwan factories is shown in Table 4.6 and Figure 4.11.

Table 4.6 – Harmful Enterprise Waste handling process (all Taiwan sites)

| Waste Handling | 2004 | 2005 | 2006 |
|---|---|---|---|
| Recycle | 79.06% | 85.53% | 86.65% |
| Incineration | 20.94% | 14.47% | 13.35% |
| Landfill | Almost zero | Almost zero | Almost zero |
| Safe disposal of hazardous waste | 100% | 100% | 100% |

Figure 4.11

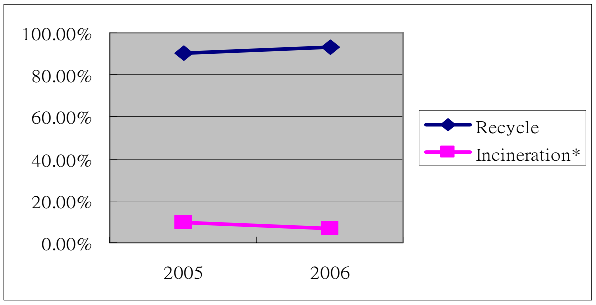


Percentage of Harmful Enterprise Waste managed in Suzhou factory is shown in Table 4.7 and Figure 4.12.

Table 4.7 – Harmful Enterprise Waste handling process (Suzhou factory, China)

| Waste Handling | 2005 | 2006 |
|---|---|---|
| Recycle | 90.6% | 93.2% |
| Incineration | 9.4% | 6.8% |
| Landfill | Almost zero | Almost zero |
| Safe disposal of hazardous waste | 100% | 100% |

Figure 4.12



*Data generation in Suzhou (China) site has just started in 2005. Table 4.5 represents data on harmful and resource enterprise waste in ASUS's Suzhou factory.

The incinerated Harmful Enterprise wastes are basically board level products such as motherboards and Video Graphics Array (VGA) cards and also fibreglass. These products cannot be reused. However, ASUS has been working with its waste-handling vendors and has successfully developed a recycling process in which these wastes are shredded and then made into fibreglass artworks. Therefore, the actual incinerated volume in 2006 should be much less then reported. All Harmful Enterprise Waste is either recycled or incinerated. Only the ashes after incineration are sent to landfill.

- **Handling Resource Enterprise Waste**

One way to reduce the wastes in factories is to return the packaging materials of raw materials back to vendors for them to reuse. In ASUS global factories, Harmful and Resource Enterprise Wastes are being managed by government-authorized third parties and packing materials are returned to vendors as well.

- **Handling Domestic Waste**

ASUS's non-hazardous, non-recyclable waste is entrusted to qualified waste handling vendors who deliver this type of waste to local government waste processing sites for incineration. The emissions produced during the process will be monitored 24 hours to make sure that they comply with government environmental standards.

Kitchen waste and other organic waste produced by catering and employees are carefully sorted into edible and non-edible waste and these are delivered to nearby farms for animal feed or used as fertilisers.

## Future Objective and Challenges

Due to the expansion of the company in sales volume and employee numbers, it is inevitable that ASUS' total waste volume will increase. This is a serious challenge for ASUS in terms of waste management. Therefore, ASUS is currently developing an internal electronic system to control and increase reuse of faulty or discarded electronic products and machines before disposing of these as waste. This system has been started and was piloted in the second half of 2006. In 2007, ASUS will start a step-by-step approach to implement this system to all manufacturing sites (Taiwan, China, and then the international sites) in order to reduce industrial waste. Furthermore, revising current waste management procedures and continuously improving the waste reduction system will be ASUS' next step. Digitalising the current waste management system and integrating resources of each department effectively through a web-based platform to optimise the waste recycling system as well as reduce the volume of faulty products, are our goals.

### 4.2.8 Raw Materials, Supplied Components and Packaging Materials

At all ASUS sites, packaging materials used for raw materials are collected and returned to the supplier for reuse.

In accordance with international guidelines and standards such as the European Union RoHS and WEEE directives, ASUS has established the 'GreenASUS Technical Standard - S-AT2-001(E)' that clearly defines substances that are banned. The GreenASUS Technical Standard also specifies plans and schedules for phase-out and reduction of substances as well as any control exemptions. This technical standard is based on the following three principles:

a) Prevent controlled substances being used in GreenASUS products

b) Abide by the national and international laws

c) Protect the global environment and reduce the impacts to ecological systems.

For more information on hazardous materials, products and packaging materials please see Section 5.2 Design for Environment (p.32).

**Hazardous Chemical Management**

The chemical substances used in our operations are mostly soldering paste, soldering wire, soldering bar, IPA, alcohol, etc. ASUS has set up handling processes for these chemicals to ensure that they are used in such a way as to avoid harm to the environment or to employees. All chemical substances will be stored and handled in accordance with the Material Safety Data Sheet (MSDS) information.

The hazardous chemical substances used for ASUS products are analyzed in the ASUS laboratory in accordance with international environmental restriction requirements. All restricted and banned hazardous chemical substances are being controlled*. Raw material purchasing is executed through a component approval process and incoming material quality control. All personnel working with hazardous substances have received proper training courses and have passed the examinations. Emergency response plans and related procedures have been developed and implemented along with appropriate hazardous chemical management procedures

*For more information on controlled hazardous chemicals, please see Section 5.2.5 (p.33).

**Future Objective**

The design of packaging material to meet environmental protection requirements will be our first priority, packaging layer quantities shall also meet the environmental requirements. We will strive to reach waste reduction targets in 2007.

# 5. Environmental-friendly Products

**Introduction**

Recently, much attention has been paid to environmental and energy issues regarding electronic and electronic equipment. Demand for green products is increasing worldwide, and regulations regarding hazardous substances and the waste treatment of electronic products are dramatically changing how ASUS conducts its business – enabling it to engage more fully in environmental protection.

ASUS is aware of the importance of “green” requirements and environmental responsibilities and established the GreenASUS Steering Committee in July 2004. The Steering Committee is co-operating with each department including Co-operating Quality Assurance, Research and Development department, Purchase department, Manufacturing department, Sales department, and Health and Safety department etc. to promote and improve environmental management and activities (Figure 5.1). ASUS is committed to meeting and surpassing environmental requirements and responsibilities.

GreenASUS is the full-time department to conduct and manage environmental actions and especially focuses on product-oriented environmental issues. Amongst others it covers relevant issues such as RoHS, WEEE and EuP.

## 5.1 Environmental Management

### 5.1.1 GreenASUS Quality Policy

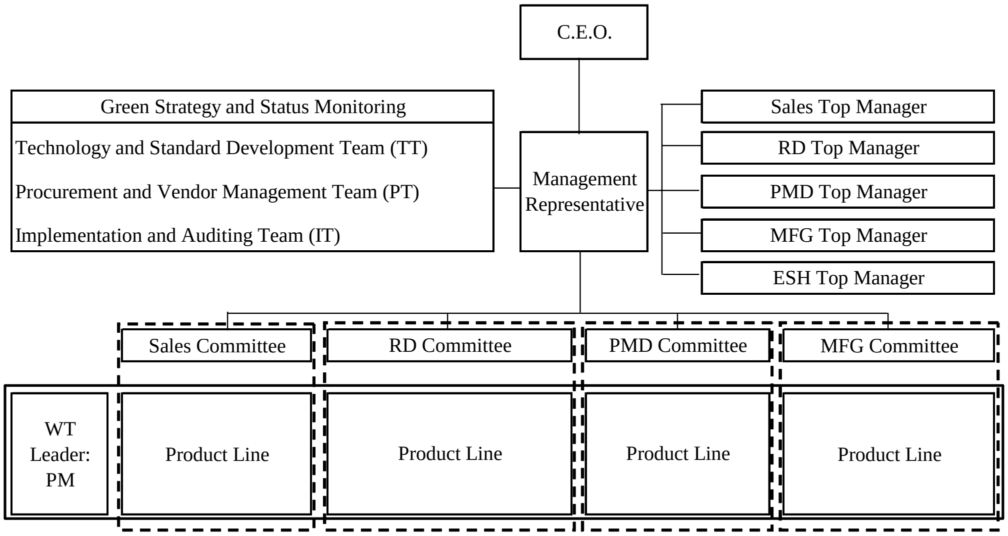
Our GreenASUS Quality policy states:

> *“ASUS is committed to world-class quality green products, precise and efficient product development and manufacturing, prompt service and delivery, relentless process improvement and nurturing industry talents, in striving for the highest customer confidence and satisfaction.”*

This policy covers 100% of all ASUS’ business and manufacturing sites worldwide.

GreenASUS
People and Business

Figure 5.1 – GreenASUS organization and management responsibilities.


C.E.O.
Green Strategy and Status Monitoring
Technology and Standard Development Team (TT)
Procurement and Vendor Management Team (PT)
Implementation and Auditing Team (IT)
Management Representative
Sales Top Manager
RD Top Manager
PMD Top Manager
MFG Top Manager
ESH Top Manager
Sales Committee
RD Committee
PMD Committee
MFG Committee
WT Leader: PM
Product Line
Product Line
Product Line
Product Line

### 5.1.2 System Certification

To achieve certification of its environmental systems, ASUS's Quality Management System complies with International Standardization Organization's (ISO) and IECQ QC 080000 Hazardous Substance Process Management (HSPM) criteria.

Table 5.1 –ASUS's System Certification

| Year Certified | Certificate | Coverage |
|---|---|---|
| 1994 | ISO9002:1994 | Taiwan:<br>ASUSTeK Corporate Office<br>ASUS Taoyuan Factory<br>China:<br>ASUS Suzhou Factory<br>Other international sites:<br>ASUS Czech Republic Factory<br>ASUS Mexico Factory |
| 2000 | ISO9001:1994 | |
| 2003 | ISO9001:2000 | |
| 2006 | ISO9001:2000 | China:<br>ASUS Shanghai Factory |
| 2006 | IECQ QC 080000 HSPM | All ASUS Sites |

* Please see Appendix 1(p.53) for copies of the certificates.

In addition, ASUS has developed and implemented the procedures and processes of the HSPM.

The IECQ QC080000 Hazardous Substance Process Management (HSPM) is an internationally recognized standard which specifies the technical requirements that manufacturers and producers could adopt to ensure that their products conform to new manufacturing limits, including compliance with the European Directives for RoHS and WEEE.

### 5.1.3 Management Review for GreenASUS

The GreenASUS management programme is reviewed together with other environmental and social management programmes in the "Management Review Meeting". This meeting is convened to review:

- GreenASUS objectives/ targets/ programmes;
- current status of significant product-oriented environmental improvements;
- internal and external audit results;
- corrective and improving actions taken for non-conforming items identified in audits; and
- the effectiveness of the system and key performance indicators

### 5.1.4 Green Supply Chain Management

ASUS has established supplier management standards and procedures to gather critical information, such as supply chain certifications and compliance information, to comply with and exceed environmental requirements. We have a good relationship with our suppliers and business partners and this helps promote a win/win outcome.

In addition, ASUS helps our suppliers establish their own environmental quality assurance systems and internal regulations for continuous quality management.

ASUS audits each GreenASUS (GA) supplier yearly. Auditing covers the following areas:

**A. Product environmental quality management system**

1. Product's environmental requirements;
2. Legal regulations for all countries where product is made or sold;
3. Customers' requirements;
4. Environmental education training for employees;
5. Monitoring practices (internal auditing procedures); and
6. Transfer of GreenASUS Information and announces to the suppliers' internal departments.

**B. Document standard system:**

1. Design management, parts and materials quality sampling, and change management
2. Purchasing and vendor management
3. Fault correction procedures and management for non-conformance disposal.

**C. Process management system**

1. Overall manufacturing process control
2. Avoiding mix, leakage, and contamination in processes
3. Warehouse (raw materials/products) management
4. Shipping inspection. (Environment-related materials must be checked. The history of the environment-related materials in the manufacturing process must be able to be tracked and identified)

When suppliers pass the audit (exceeded 80%) they are awarded with GreenASUS qualified certification. If the audit result does not meet the above requirements for two successive years or a non-conformance product is found, the company will not be GreenASUS accredited.

Auditing Results of Supplier (including Headquarters/ Suzhou factory / Czech factory)

- In 2005, 88.09% of suppliers passed auditing performed by ASUS.
- In 2006, 95.43% of suppliers passed auditing performed by ASUS.

### 5.1.5 Green Manufacturing Management System

To maintain high quality and meet the requirements of clients ASUS has established a green manufacturing management system. This system is in line with the ISO requirements relating to manufacturing management

ASUS has completed the ISO documents for Green manufacturing management (see Table 5.2) and also reviews and maintains them continuously.

Table 5.2 – GreenASUS documents of Green manufacturing management

| ISO document list of Green manufacturing management | GA document No. |
|---|---|
| GA Manufacturing Process Management Procedure | P-GA2-008 |
| GA Outgoing Control Management Procedure | P-GA2-009 |
| GA Incoming Inspection Management Procedure | P-GA2-010 |
| GA Modification Management Procedure | P-GA2-011 |
| GA Correction and& Prevention Management Procedure | P-GA2-012 |
| GA Reliability Testing Management Procedure | P-GA2-013 |

### 5.1.6 Green sub-contractor management

To ensure the quality of sub-contractor products, ASUS has established the GreenASUS Out-sourcing Vendor Quality Management Procedure. This procedure aims to ensure that sub-contractors' products meet GreenASUS standards.

ASUS has established a sub-contractor qualification system. Each sub-contractor is audited using the same criteria used in the supplier qualification system.

The results of the sub-contractor audits are as follows:

- In 2005, 100% of sub-contractors passed auditing performed by ASUS.
- In 2006, 96% of sub-contractors passed auditing performed by ASUS.

### 5.1.7 Green Product Management System

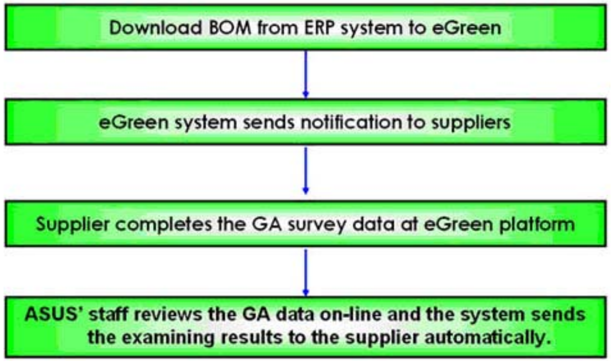
**A. Green Product Management System for Green Component**

ASUS set up the first Green Product Management System (GPMS) in Taiwan, which helps our R&D staff determine if suppliers in our supply chain are using specific hazardous substances. The system also helps ASUS and our suppliers select green components in a systematic and efficient way. Through this eGreen IT platform, our suppliers can download ASUS's green requirements and formats and then upload required information as follows such as:

1. Certificate attesting to non-use of Controlled hazardous substances;
2. Component composition table;
3. Lead-free Component Survey; and
4. Third-party test reports on hazardous substances.

This electronic data gathering enables ASUS's R&D staff to conduct its component approval process (see Figure 5.2) and select green components accordingly.

Figure 5.2 ASUS component approval procedure


Download BOM from ERP system to eGreen
eGreen system sends notification to suppliers
Supplier completes the GA survey data at eGreen platform
ASUS' staff reviews the GA data on-line and the system sends the examining results to the supplier automatically.

As of February 2007, ASUS approved 96,250 green components through e-Green platform.

**B. Green Product Management System for Green Material**

ASUS has set up the Green Product Management System for mechanical materials known as the e-material system. Many mechanical parts use the same raw materials we consider and test raw materials for controlled substances. This avoids duplication in the approval R&D process.

In general, considering raw material instead of each mechanical part can save more than 60% reduplicate approving processes and R&D approval time.

The system helps ASUS and our suppliers select green material in a systematic and efficient way. Through this e-material system, our suppliers can upload required information on controlled substances and reports from third parties regarding hazardous substances as follows:

1. Certificate attesting to non-use of Controlled hazardous substances
2. Third-party test reports on hazardous substances.

This system also serves as a database that R&D staff use when designing new products.

### 5.1.8 Green Procurement and Management of Chemical Substances

The Procurement and Material Department and Supplier Quality Engineering departments are responsible for GreenASUS procurement. These departments are also responsible for undertaking the annual supplier audits.

### 5.1.9 Milestones for Product Material Restriction and Related Events

ASUS has achieved a number of milestones in "greening" its products and practices. Table 5.3 shows accomplishments to date, and the planned schedule for further environmental restrictions.

Table 5.3– Milestones in Green ASUS's policies and practices

| Schedule | Events |
|---|---|
| 2001.03 | Survey the Plumbum (Pb) and Candela (Cd) content of Electrical and Electric (EE) parts and Mechanical (ME) parts |
| 2002.02 | Control hazardous substances in ASUS technical standard |
| 2004.06 | First lead-free motherboard |
| 2006.03 | First RoHS-compliant notebook |
| 2006.10 | Qualification of QC080000 |
| 2008.01 | Prohibit polyvinyl chloride (PVC) and PVC blends in some applications (such as cables and wires) |
| 2011.02 | Prohibit PVC, PVC blends and Tetrabromobisphenol-A (TBBP-A) in all applications |

### 5.1.10 Hazardous Chemical Substance Management

The ASUS technical standards define four levels of hazardous substance management, as elaborated below. Annually, we check and modify the content of ASUS technical standards based regulations and current best practice.

Level 1: Use of the substances and/or their purposes must be banned immediately.

Level 2: Phase-out periods for individual substances and/or their purposes are individually set. On or after the date set, the substances in the respective tables will be classified at Level 1 and must not be contained in modules, parts, sub materials, and materials.

Level 3: The substances and purposes are identified as banned for use, but no period or target dates for banning have been set. They will be classified as Level 2 to be banned in phases, once alternative parts, new materials, or techniques are available that, in ASUS's judgment, satisfy the intended application in modules, parts, sub materials, and materials.

Exemption: These substances are used for modules, parts, sub-materials, and materials. However, they are not regulated by the law or excluded from the controlled-substances category because adequate alternative parts and materials that satisfy the intended application are unavailable.

Our products and packaging materials that comply with the European RoHS requirements have the following Green ASUS label:

Figure 5.3– The GreenASUS label

GREEN
ASUS
RoHS
Compliant

### 5.1.11 End-of-Life Management Policy

As ASUS's market share rapidly grows worldwide, we have made a commitment to extend producer responsibility for product end-of-life management. This responsibility includes product takeback, recycling, and responsible end-of-life management for ASUS products.

As mentioned, ASUS supports producer responsibility for proper end-of-life management of our products and has the following policies:

- We exclude incineration as an option for all vendors managing ASUS end-of-life products in any situation;
- We prohibit the use of incarcerated labour for processing and managing ASUS end-of-life products in any situation; and
- We seek to keep the ASUS product takeback program accessible to all customers, including consumers, small businesses, and institutions, but keep it in accordance with our unique stance in the marketplace. We prohibit export of end-of-life electronics, components, and scrap to any countries that are in violation of the Basel Convention. In the United States, we work only with vendors that have signed the Pledge of True Stewardship.

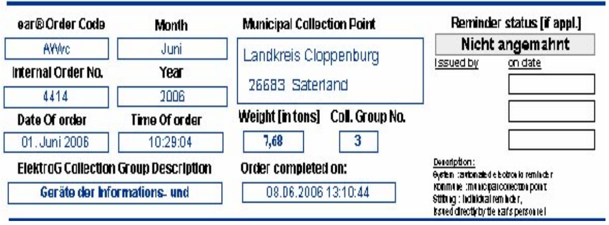
ASUS offers customers free recycling of a used product in many areas not only to comply with WEEE and related laws, but to demonstrate our commitment to responsible end-of-life management.

As well as with our headquarters in Taiwan, ASUS has established recycling programs in Europe and North America, and is in the process of planning programs for other territories as well.

**In Taiwan**, ASUS cooperates with the EPA's recycling policies and requirements; provides complete product support; periodically conducts product health examinations; and carries out product inspections, test services, and upgrade services, which all can contribute to lengthening a product's lifetime.

**In Europe**, ASUS and the German recycling facility have established a take back system, and cooperate with many businesses to meet WEEE directive requirements. Furthermore, ASUS and the recycling facilities created an online recycling management platform to facilitate to immediate monitoring of the progress of recycling and gather processing information. (See Figure 5.4)

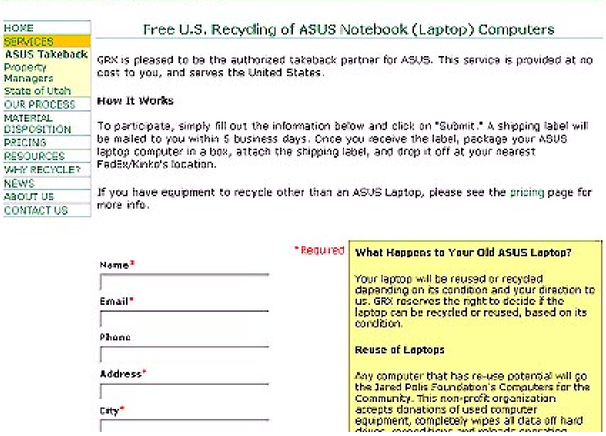
Figure 5.4
Online management information system for German recycling facility for ASUS end-of-life products



ear® Order Code: AWvc
Month: Juni
Internal Order No.: 4414
Year: 2006
Date Of order: 01. Juni 2006
Time Of order: 10:29:04
ElektroG Collection Group Description: Geräte der Informations- und
Municipal Collection Point: Landkreis Cloppenburg 26683 Saterland
Weight [in tons]: 7,68
Coll. Group No.: 3
Order completed on: 08.06.2006 13:10:44
Reminder status [if appl.]: Nicht angemahnt
Issued by
on date

**In the United States**, ASUS provides consumers with access to recycling for end-of-life ASUS products, in all fifty states. Consumer can register via the Internet to send their computers to a recycling facility, free of charge. ASUS works with local advisers and ensures adherence to its end-of-life management policy through audits of its recyclers. ASUS was the first company in America to provide free take back services for notebooks, setting an example for others. Figure 5.5 shows the online interface for US ASUS notebook recycling.

Figure 5.5
Online interface for recycling ASUS laptops



Free U.S. Recycling of ASUS Notebook (Laptop) Computers

GRX is pleased to be the authorized takeback partner for ASUS. This service is provided at no cost to you, and serves the United States.

How It Works

To participate, simply fill out the information below and click on "Submit." A shipping label will be mailed to you within 5 business days. Once you receive the label, package your ASUS laptop computer in a box, attach the shipping label, and drop it off at your nearest FedEx/Kinko's location.

If you have equipment to recycle other than an ASUS Laptop, please see the pricing page for more info.

*Required

Name*
Email*
Phone
Address*
City*

What Happens to Your Old ASUS Laptop?

Your laptop will be reused or recycled depending on its condition and your direction to us. GRX reserves the right to decide if the laptop can be recycled or reused, based on its condition.

Reuse of Laptops

Any computer that has re-use potential will go the Jared Polis Foundation's Computers for the Community. This non-profit organization accepts donations of used computer equipment, completely wipes all data off hard

Recycle Reports from Vendors

To raise recycling effectiveness and decrease hazardous materials that affect the environment from electronic equipment, ASUS does not use mechanical shredders for recycling. Its recyclers are required to provide periodic written product disassembly reports, with data on time required to remove components, details on procedures and specific tools used for disassembly. This data is then used as feedback to improve product design, to fulfil LCI requirements, and to provide recyclers with useful reference material.

### 5.1.12 Environmental Management Information System

ASUS Environmental Management Information System covers a products end-of-life management, for more information please see: (http://green.asus.com/english)

## 5.2 Design for Environment

With regard to design for environmental compliance and protection, GreenASUS (GA) is phasing in design for the environment (DfE) improvements in three major areas:

- Restriction and control of hazardous and toxic substances;
- Ease of disassembly; potential for reuse; recyclability; and
- Energy-saving features.

The products covered by these GA standards are as follows:

- GA products that are designed, manufactured, sold, or distributed by the ASUS group;
- GA products that are being sold or distributed with the ASUS group's logos on them, although the design or production of these products may be subcontracted to parties or companies outside the ASUS group; and
- Green products that are outsourced by international OBM (Own Brand Manufacturer) customers to the ASUS group, and which are specified to follow the GA technical standard for design or production.

### 5.2.1 Green Design Policy

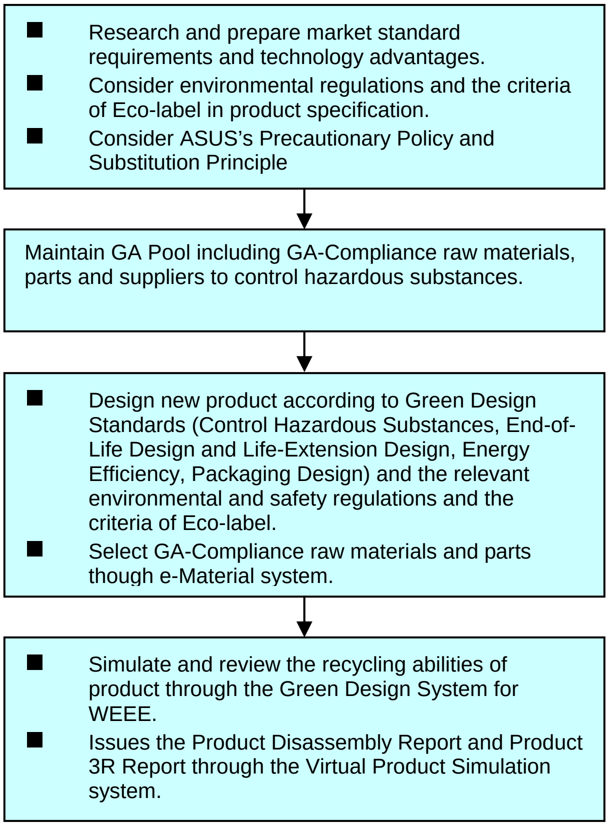
ASUS's Green Design Policy includes the precautionary principle, the substitution principle, and end-of-life policy.

For GreenASUS products in the research and development (R&D) design stage, R&D will first choose compliant materials and parts on the basis of our technical standards. Based on our own green design procedure (see Figure 5.7) and the ASUS design checklist. R&D is also phasing in the design of products that are easy to disassemble so they can be easily reused and recycled, and that have energy-saving features. As well, R&D double-checks that green design attributes are included in each of the design phases.

### 5.2.2 Green Design Procedure

Because GreenASUS products are developed through a multi-phase process, as shown in Figure 5.6

Figure 5.6– Green Design Procedure



- Research and prepare market standard requirements and technology advantages.
- Consider environmental regulations and the criteria of Eco-label in product specification.
- Consider ASUS's Precautionary Policy and Substitution Principle

Maintain GA Pool including GA-Compliance raw materials, parts and suppliers to control hazardous substances.

- Design new product according to Green Design Standards (Control Hazardous Substances, End-of-Life Design and Life-Extension Design, Energy Efficiency, Packaging Design) and the relevant environmental and safety regulations and the criteria of Eco-label.
- Select GA-Compliance raw materials and parts though e-Material system.

- Simulate and review the recycling abilities of product through the Green Design System for WEEE.
- Issues the Product Disassembly Report and Product 3R Report through the Virtual Product Simulation system.

The green Design Procedure includes the following subjects:

- Precautionary Policy;
- Substitution Principle;
- Controlled Hazardous Substances;
- End-of-Life Design and Life-Extension Design;
- Energy Efficiency;
- Packaging design; and
- Life Cycle Assessment.

### 5.2.3 Precautionary Policy

ASUS complies with all mandated restrictions on hazardous substances. We seek to go beyond legislated mandates such that if there is a threat of harm, even if full scientific certainty is lacking about a substance's impact on the environment and human health, the substance will be phased out (if currently used) or will be not selected for future use in ASUS products or in our manufacturing process.

### 5.2.4 Substitution Principle

ASUS' substitution principle policy states: "In phasing out hazardous or potentially hazardous substances, ASUS reviews all available information to ensure that the replacement substance is less hazardous, or ideally non-hazardous."

### 5.2.5 Controlled Hazardous Substances

The ASUS technical standard includes eleven categories of Controlled hazardous substances, with specific requirements addressing restriction or banning for each substance. All parts designed for GA products must meet these requirements, and the related vendors also must provide corresponding certification and third-party reports to document compliance with requirements.

Besides the six substances controlled by the RoHS directive, ASUS further prohibits fifteen other hazardous substances that damage the human body and the environment. Table 5.4 lists ASUS's controlled hazardous substances:

To download the complete document on ASUS's hazardous substances management standard, please go to [http://green.asus.com/english/post.asp?IDno=33&mode=5](http://green.asus.com/english/post.asp?IDno=33&mode=5) and click on the "GreenASUS Technical Standard (S-AT1-001) ".

Table 5.4 – ASUS's Controlled Hazardous Substances

| Substances | |
|---|---|
| Heavy metals | Cadmium (Cd) and cadmium compounds |
| | Lead (Pb) and lead compounds |
| | Mercury (Hg) and mercury compounds |
| | Nickel (Ni) and nickel compounds |
| | Hexavalent chromium ($Cr^{+6}$) compounds |
| Chlorinated organic compounds | Polychlorinated biphenyls (PCBs) |
| | Polychlorinated naphthalenes (PCNs) |
| | Polychlorinated terphenyls (PCTs) |
| | Chlorinated paraffins (CPs) |
| | Other chlorinated organic compounds |
| Brominated organic compounds | Polybrominated biphenyls (PBBs) |
| | Polybrominated diphenylethers (PBDEs) |
| | Tetrabromobisphenol-A (TBBP-A) |
| | Other brominated organic compounds |
| Organic tin compounds (tributyl tin compounds, triphenyl tin compounds) | |
| Asbestos | |
| Specific azo compounds | |
| Formaldehyde | |
| Polyvinyl chloride (PVC) and PVC blends | |
| EPS (expanded polystyrene) | |
| Ozone-depleting substances | |
| Radioactive substances | |

All or most of these controlled hazardous substances are categorized as Level 1 restriction (banned immediately). The levels of restriction and accompanying timetable for phase-out are described below, in section 5.1.10 "Hazardous Chemical Substance Management." A few of these controlled hazardous substances (for example, PVC) will have a deadline for phase-out established once the proper substitution has been found.

For TBBP-A, the scope of ASUS's restrictions and the deadline for compliance are shown in Table 5.5:

Table 5.5 – ASUS's TBBP-A Policy

| Substance: Tetrabromobisphenol-A (TBBP-A) | | |
|---|---|---|
| Targets | | Implementation Date |
| Level 1 | All purposes (excluding PCBs, wires, and connectors) | Banned immediately |
| Level 3 | PCBs, wires, and connectors | |
| Allowable concentration: Less than 1,000 ppm for all applications. | | |

### 5.2.6 RoHS Laboratory and Testing Method

ASUS has established laboratories that test for hazardous substances and is addressing challenges in the measurement of hazardous substances through two separate resources:

■ ASUS uses an X-Ray Fluorescence Spectrometer (XRF) for speedy screening for RoHS-Controlled hazardous substances, especially $Cr^{6+}$, PBBs, and PBDE.

ASUS has strong internal quality control (IQC) procedures. The GreenASUS document contains the high-risk parts' list of Br (Bromine) and is used to pre-screen for XRF testing. In addition, ASUS has set up a RoHS laboratory in China SZ/ASH and Taiwan TY factory to conduct confirming tests for $Cr^{6+}$, PBBs, and PBDE, using UV and GC-MS instruments. Meanwhile, if necessary, these laboratories can also use ICP instruments to test for the presence of Pb, Cd, and Hg.

■ ASUS requires proper testing methods for electrical and electronic (EE) components, especially for ICs, chipsets, and metal parts with plating.

ASUS provides its vendors with GA documents that describe (1) standard mixed testing methods for ICs and chipsets and (2) the formal testing method and criteria based on the IEC 62321 standard for metal parts with plating. ASUS also reviews the third-party testing reports on ICs and chipset parts that we receive from our vendors. Compliance is assured to some degree as our suppliers of these EE parts are almost all international and well-known companies.

### 5.2.7 End-of-Life Design and Life-Extension Design

Because extending the life of electronic products is better for the environment than simply disposing of them, and in order to make disassembly of our products easier for both refurbishes and recyclers. GreenASUS has established a policy setting these standards. The reuse, recovery, and recycling rate of green products can be increased by this green design standard and the associated management procedures guiding DfE operating processes.

### 5.2.8 Design for End-of-Life Policy and Procedures

The ASUS policy is to design products to maximize usable life span. We also design our products for ease of reuse and refurbishment, and when they reach the end of a useful life span, products have been designed for ease of disassembly and reduced disassembly time.

In the ASUS ISO document, "Management Procedure of DfE Operating Process" (P-GA2-023) it is specified that ASUS's R&D staff shall use the Green Design System for WEEE to conduct an initial design review as VPS (Virtual Product Simulation); for instance, assembly verification, and disassembly feasibility study on proposed new product designs. The procedure directs R&D team to produce environmental information reports such as "3R" (Reuse, Recycle and Recovery) and disassembly reports, which include estimates of ease of disassembly and estimated time to do so.

The Green Design system for WEEE stores and systemizes all linkages between components as well as their disassembly time. This system enables the designer and R&D staff to evaluate different disassembly methods. Moreover, this system stores the disassembly features of every component, from which the total disassembly time of a finished product can be calculated (by accumulating the disassembly time for removing each component within a product).

Because the European Union still has not clearly defined the recycling principle addressed in the waste electric and electrical equipment (WEEE) directive, ASUS has joined with ITRI, a third-party recycler, to establish ASUS's own WEEE recycling principle. ASUS and ITRI analyze data from actual disassembly of ASUS's electronic equipment. ASUS's Green Design system enables R&D staff to estimate the overall recyclability of a product based on the Pro-E drawing of each model at design stage. The Pro-E drawing includes material types – thus allowing estimations of a potential recycle rate for a product.

### 5.2.9 Energy Efficiency

ASUS has also implemented design for energy savings as part of its DfE initiative. We continuously seek to improve the energy efficiency of green products, based on international standards.

We have made the Energy Star® criteria part of ASUS DfE standards. It is our goal to meet Energy Star criteria in all of our products. ASUS products must:

1. Have the sleep mode function operational.
2. Meet the maximum limitation of power consumption.
3. Have the energy-saving function installed on the monitor.
4. Have the properties of low-power operation.
5. Meet the limitation of the maximum output power in Energy Star standards.

Table 5.6 – Energy Star Specifications

| Energy Star office equipment item specifications (Computer） | |
|---|---|
| Maximum continuous output power of Power supply | Power wattage consumed in sleep mode |
| Supplier ≦200 W | ≦15 W |
| 200 W＜Supplier ≦300 W | ≦20 W |
| 300 W＜Supplier≦350 W | ≦25 W |
| 350 W＜Supplier≦400 W | ≦30 W |
| Supplier＞400 W | Ten percent of the maximum continuous output power |

### 5.2.10 Life Cycle Assessment

In the face of European Union's Energy Using Product (EuP) directive coming and to understand how products may affect our environment through the resources used in their manufacture, use, and end-of-life phases, ASUS initiated a Life Cycle Assessment (LCA) program, which is sponsored by the Taiwan Government. ASUS provides the first Life Cycle Inventory Questionnaire Form in Taiwan and would like to drive other Taiwanese industries to implement and set up a Taiwanese Eco-profile database together.
We research and execute lifecycle inventory and assessment cooperatively.

In accordance with the ISO 14040:2006 (Lifecycle Cycle Assessment Principle and Framework) and ISO 14044:2006 (Life Cycle Assessment Requirements and Guidelines), we have established the structure and standard processes of our Life Cycle Inventories (LCI) work. Furthermore, ASUS undertakes LCI surveys and issues Eco-profiles, so-called technical documents, as the basis for evaluating our compliance with the EuP directive.

ASUS "customizes" mechanical parts for its products during the design phase, our R&D department cooperates with our strategic partners to better, jointly, assess the LCA impact of these mechanical parts. Therefore, one phase of the LCI focuses on products' mechanical components. In this phase, ASUS collects information regarding the manufacturing process' environmental and energy inputs and outputs. This data is entered into our Eco-profile database to compile and measure the overall LCA impacts of manufacturing mechanical parts.

With this data available in our Eco-profile databases for each distinct component manufacturing process, designers can better understand the potential environmental impacts of each process. At the same time, TEEMA Association (Taiwan Electrical and Electronic Manufacturers' Association) and ASUS cooperate to establish LCI tables and Eco-profile databases for mechanical parts manufactured by Taiwanese industries. Data is being gathered from a standardized LCI survey form (see Figure 5.7) from all industries in Taiwan.

## Future LCI Actions

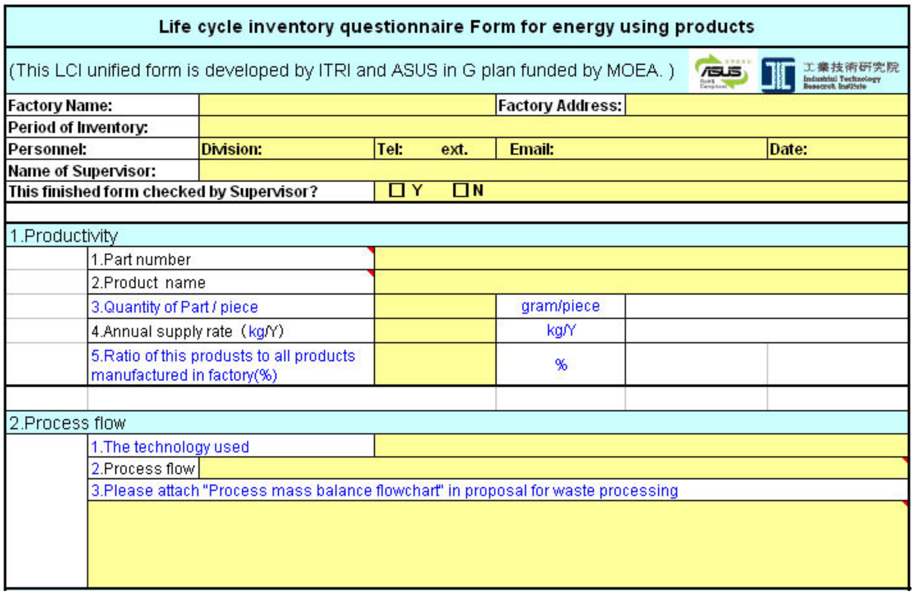
ASUS aims to also phase in the below LCI action items in the future.

(1) Conduct the Life Cycle Assessment according to ISO 14044:2006’s evaluation analysis procedures. The company and Taiwan market will demonstrate the Life Cycle Assessment’s model standards; and

(2) Demonstrate products that meet the EuP’s requirements in the Eco-profile technical document, by referencing the mechanical parts of the Life Cycle Assessment table and ensuring the manufacture of mechanical parts meeting the criteria specified in the Eco-profile database.

To drive the Taiwan system of business organization/TEEMA (Taiwan Electrical and Electronic Manufacturers' Association) EuP SIG and the strength of committee members, discussing Life Cycle Assessment table and the possibility of a data platform, all the while establishing the Life Cycle Assessment database for the Taiwan Region mechanical parts.

Figure 5.7 – ASUS’ Life Cycle Inventory Questionnaire Form



**Life cycle inventory questionnaire Form for energy using products**

(This LCI unified form is developed by ITRI and ASUS in G plan funded by MOEA. )

工業技術研究院 Industrial Technology Research Institute

| | | | | | |
|---|---|---|---|---|---|
| **Factory Name:** | | | **Factory Address:** | | |
| **Period of Inventory:** | | | | | |
| **Personnel:** | **Division:** | **Tel: ext.** | **Email:** | | **Date:** |
| **Name of Supervisor:** | | | | | |
| **This finished form checked by Supervisor?** | | ☐ Y ☐ N | | | |
| | | | | | |
| 1.Productivity | | | | | |
| | 1.Part number | | | | |
| | 2.Product name | | | | |
| | 3.Quantity of Part / piece | | gram/piece | | |
| | 4.Annual supply rate （kg/Y) | | kg/Y | | |
| | 5.Ratio of this produsts to all products manufactured in factory(%) | | % | | |
| | | | | | |
| 2.Process flow | | | | | |
| | 1.The technology used | | | | |
| | 2.Process flow | | | | |
| | 3.Please attach "Process mass balance flowchart" in proposal for waste processing | | | | |
| | | | | | |

### 5.2.11 Packaging Design

Resource conservation, reusability, and recyclability are not a short-term, temporary trend. It is vital that packaging designers incorporate these values into designs while ensuring the survivability of products. ASUS' Green Packaging Design incorporates these green elements into its comprehensive assessments during design, including minimizing the adverse environmental impacts of packaging materials, the manufacturing process for making packaging, and the final disposal of unneeded packaging material.

Besides meeting required product features and specifications, ASUS packaging design also uses environmentally sound materials, adheres to substance restrictions, and uses the recycling logo in accordance with logo licensing requirements. For example, the ink used on packaging fully meets green requirements. ASUS uses recycled materials: more than 90 percent of all ASUS packaging is made with recycled materials. Use of the international recycling logo on our packaging stresses the importance of the environment to the consumer. Specific details of packaging design include:

**Design to reduce overall material use**

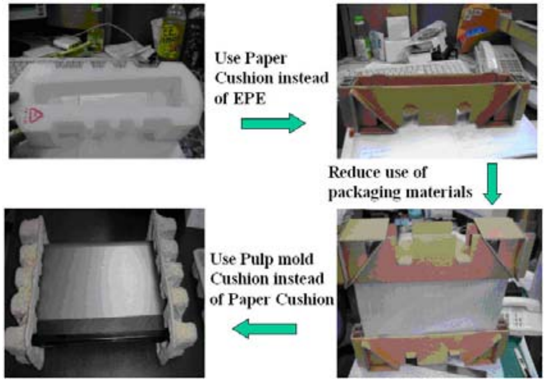
1. Use of soft paper boards to replace hard paper boards and bottom boards.
2. Decrease the cushion material structure as well as the overall carton's weight.
3. Alter the packaging and folding designs to accommodate more merchandise.

**Environmentally friendly design**

1. Use recycled materials.
2. Use paper pad to replace polyurethane sponge
3. Restrict the use of expanded polystyrene (EPS).
4. Use only one colour of ink to make recycling easier.

Packaging prohibits the use of all materials containing lead (Pb), cadmium (Cd), mercury (Hg), chromium ($Cr^{6+}$), and polyvinyl chloride (PVC).

Figure 5.8 – Packaging Improvement in environmental friendly design


Use Paper Cushion instead of EPE
Reduce use of packaging materials
Use Pulp mold Cushion instead of Paper Cushion

Case study of reducing packaging materials:

- ASUS 15.4 inch Notebook S5/M5/M2 models. The weight of carton including gift boxes and cushions were reduced for more than 191.7 tonnes in 2006.
- ASUS 12.2 inch Notebook A3/A6 Model. The weight of carton including gift boxes and cushions were reduced for more than 19.1 tonnes in 2006.

**Recycling Logo Marked**

International Recycling logo is included to demonstrate the ability of packaging materials to be recycled.

In the ASUS ISO document, we have completed some standards for packaging design and identification such as the identification and implementation of packaging material standard (P-GA3-038) and Table 5.7shows the packing material code and logo temples.

Table 5.7 –Packaging Material Code and Logo

| Name | Codes | | Logo |
|---|---|---|---|
| Plastic | High density polyethylene | HDPE | ♻ 04<br>LDPE |
| | Low density polyethylene | LDPE | |
| | Polyvinyl chloride | PVC | |
| | Polyester | PET | |
| | Polypropylene | PP | |
| | Polystyrene | PS | |
| | Paper | WPP | |
| | Paperboard | PB | |
| Paper | Corrugated cardboard | CB | ♻ CB |
| | Corrugated fiberboard | CFB | |
| | Non-corrugated fiberboard | NCFB | |

## 5.3 Eco-Labels

### 5.3.1 Energy Star®

ASUS emphasizes the importance of limiting power consumption, and its goal is that all ASUS computers will fulfil Energy Star requirements. Currently, all ASUS green products are designed in compliance with the following Energy Star standards:

Ever since ASUS began to introduce products, it has sought to meet Energy Star standards, and in 2006 ASUS became an Energy Star partner. At the end of 2006, ASUS has applied to Energy Star for a whole range of its products to be verified that these products meet Energy Star's standards and got the permission to put its logo into these products. To date 100 percent of ASUS's visual display monitor products has acquired the Energy Star logo.

### 5.3.2 Taiwan Green Mark

ASUS and its designers cooperate to design products that meet Green Mark requirements. ASUS has committed to have all its products fulfil 100 percent of all Green Mark standards, even as the Taiwanese government introduces new product categories and associated standards to meet Green Mark. Presently, all ASUS desktop and notebook computers, including notebooks sold to the government/Central Trust of China, have acquired the Taiwan Green Mark. Monitors adopted the Taiwan Green Mark standard later than notebooks, now eleven ASUS LCD monitors have received the Taiwan Green Mark.

### 5.3.3 TCO

TCO Development's standards are the chief standard for monitor devices, where the four main requirements address ergonomics, radiation, power consumption, and safety measures. At present, more than 70 percent of ASUS's monitor products have acquired the TCO marks.

### 5.3.4 J-MOSS

JIS C 0950 is Japan's directive regulating the management of certain electronic equipment.
As of August 2006, ASUS has registered for the J-MOSS right of use. All ASUS's electronic equipment have 100 percent compliance with the JIS C 0950 requirements for chemical material restrictions or requirements.

### 5.3.5 China Energy Conservation Program

ASUS computer product designs aim to meet Energy Star requirements, and presently our green design standards have already fully been covered within Energy Star. Besides this standard, ASUS has started to design products that are 100 percent compliant with the China Energy Conservation Program.

ASUS started applying for the China Energy Conservation certificate for all notebooks sold to China in October 2006. As of April 2007, all notebooks sold to China are certified with this label.

For information on ASUS' certified products, please log on to our website:
http://green.asus.com/english.html

## 5.4 Case Studies – Green Products

### 5.4.1. Notebook Computer

ASUS A8F laptop complies with the Energy Star, EU RoHS, JIS-C-0950, Taiwan Green Mark and GreenASUS standard. The most significant environmental attributes of this laptop include:

**6 RoHS hazardous substances**
The whole notebook meets an even higher standard (GreenASUS standard):

- Cadmium ：less than 5 ppm in plastics, rubber, paints, and inks
- Lead less than 100 ppm in plastics, rubber, paints, and inks
- Hexavalent chromium less than 100 ppm
- PBB less than 5 ppm
- PBDE less than 5 ppm

**Additional restricted hazardous substances**
In addition to the 6 chemicals restricted by the EU RoHS Directive, ASUS has restricted use of additional hazardous substances including nickel, PCB, PCN, PCT, CP, TBBPA, other chlorinated organic compounds, other brominated organic compounds, tributyl tin compounds, triphenyl tin compounds, asbestos, specific azo compounds, formaldehyde, PVC, ozone depleting substances and radioactive substances (15 in total) in both product and manufacture process.

**Deca-BDE**
Though Deca-BDE is an exemption of EU RoHS Directive it is restricted in ASUS' list of hazardous substances.

**Plastic components greater than 25g**
All plastic components of this notebook weighting 25g or greater do not contain (not detected by Instrument detection limit) cadmium, lead, hexavalent chromium or mercury; PBB, PBDE, long-chained chloroparaffins with 10-13 carbon atoms per (fulfils the Taiwan Greenmark standard).

**Energy Saving**
This notebook consumes less than 1 Watt in Sleep Mode, which greatly exceeds stringent requirements of ENERGY STAR (15 Watt or less).

Figure 5.9 –ASUS A8F Notebook Computer

Note: ASUS's 1st green laptop, also Taiwan's 1st RoHS compliant laptop, is our U5A model, launched in November 2005.

### 5.4.2. LCD Monitor

ASUS MM17T LCD monitor complies with the Energy Star, EU RoHS, JIS-C-0950, Taiwan Green Mark and TCO 03 standard. The most significant environmental attributes of this monitor include:

**Hazardous substances**
All plastic components of this monitor weighting 25 g or greater do not contain (not detected by instrument detection limit) cadmium, lead, hexavalent chromium or mercury; PBB, PBDE, long-chained chloroparaffins with 10-13 carbon atoms per (fulfils Taiwan Greenmark’s standard).

**Energy Saving**
This monitor exceeds stringent requirements in Sleep, and Off Modes of ENERGY STAR.

2.1 In On Mode, the maximum allowed power varies based on the monitor's resolution.

2.2 In Sleep Mode, this monitor models consumes 0.6W (Energy Star standard: 2 watts or less)

2.3 In Off Mode, this monitor models consumes 0.5W (Energy Star standard: 1 watts or less)

**Design for Recycling**
This monitor meets the TCO 03 standard for design for recycling.

### 5.4.3. LCD TV

ASUS TLW32001 LCD TV model complies with the Energy Star, EU RoHS, JIS-C-0950 and GA standard. The most significant environmental attributes of this LCD TV include:

**6 RoHS hazardous substances**
The whole LCD TV meets an even higher standard (GreenASUS standard):

- Cadmium less than 5 ppm in plastics, rubber, paints, and inks
- Lead less than 100 ppm in plastics, rubber, paints, and inks
- Hexavalent chromium less than100 ppm
- PBB less than 5 ppm
- PBDE less than 5 ppm

**Additional restricted hazardous substances**
In addition to the 6 chemicals restricted by the EU RoHS Directive, ASUS has restricted the use of additional hazardous substances including nickel, PCB, PCN, PCT, CP, TBBPA, Other chlorinated organic compounds, other brominated organic compounds, tributyl tin compounds, triphenyl tin compounds, asbestos, specific azo compounds, formaldehyde, PVC, ozone depleting substances and radioactive substances (15 in total) in both product and manufacture process.

**Deca-BDE**
Though Deca-BDE is an exemption of EU RoHS Directive it is restricted in ASUS' list of hazardous substances.

**Energy Saving**
This monitor meets the stringent requirement in Standby Mode of ENERGY STAR (≦ 1 Watt).

Figure 5.10 –ASUS TLW32001 LCD TV

## 5.5 Product Environmental Profile

To help consumers easily understand the environmental impacts of the product they bought, ASUS publishes environmental profiles of its notebook computers, computer monitors, and liquid crystal display (LCD) televisions online. The profiles answer the following questions:

1. Does the product comply with regulations that prohibit the presence of hazardous substances?

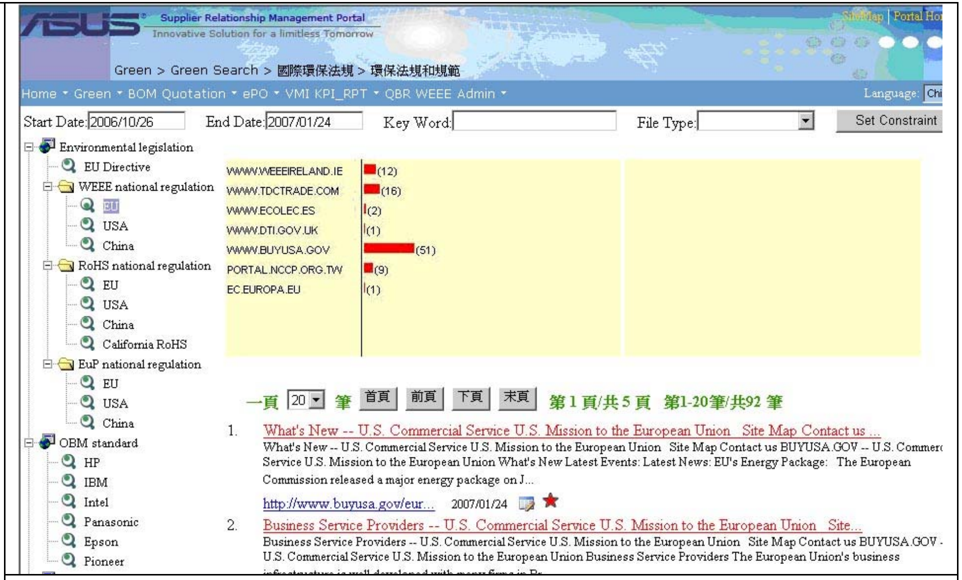
2. What are procedures for end-of-life management?

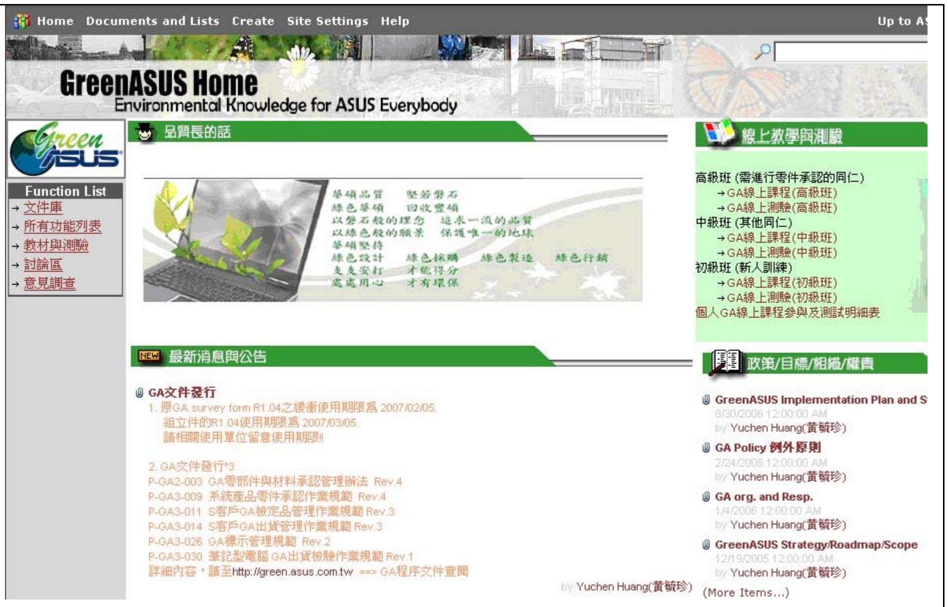
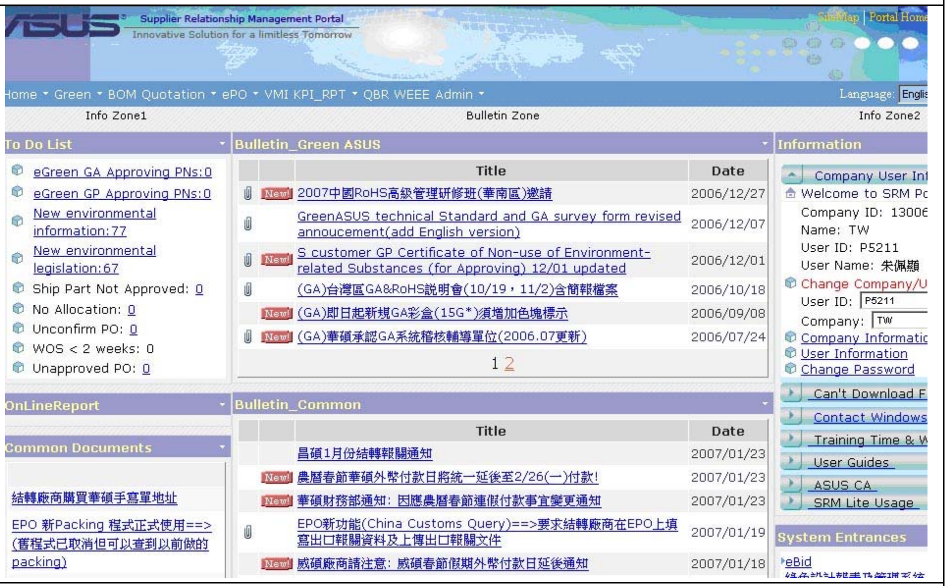
3. Does the product comply with Energy Star requirements?

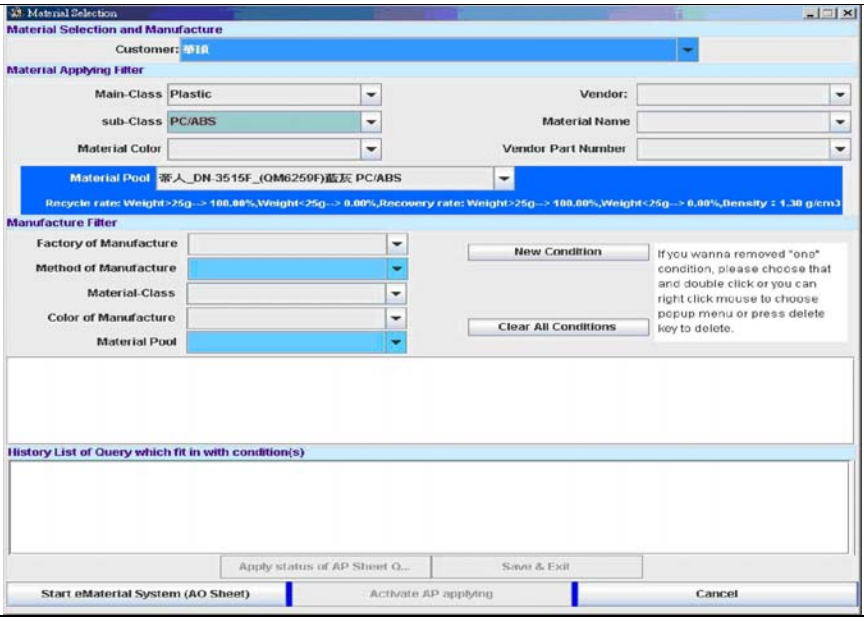
These profiles can be found online, in English, at http://green.asus.com/english/ .

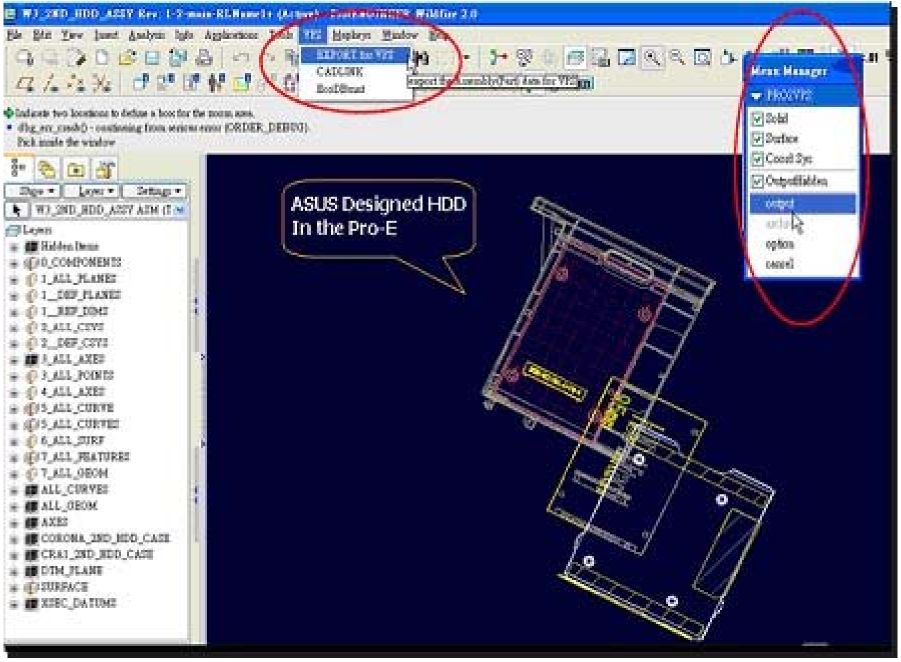
## 5.6 Environmental Management Information System

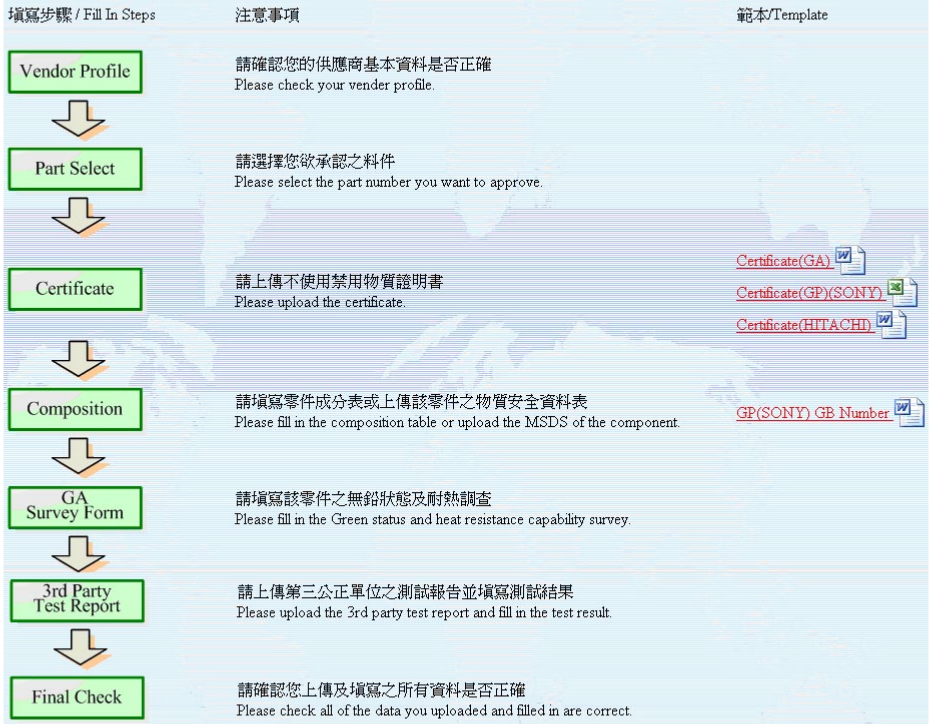
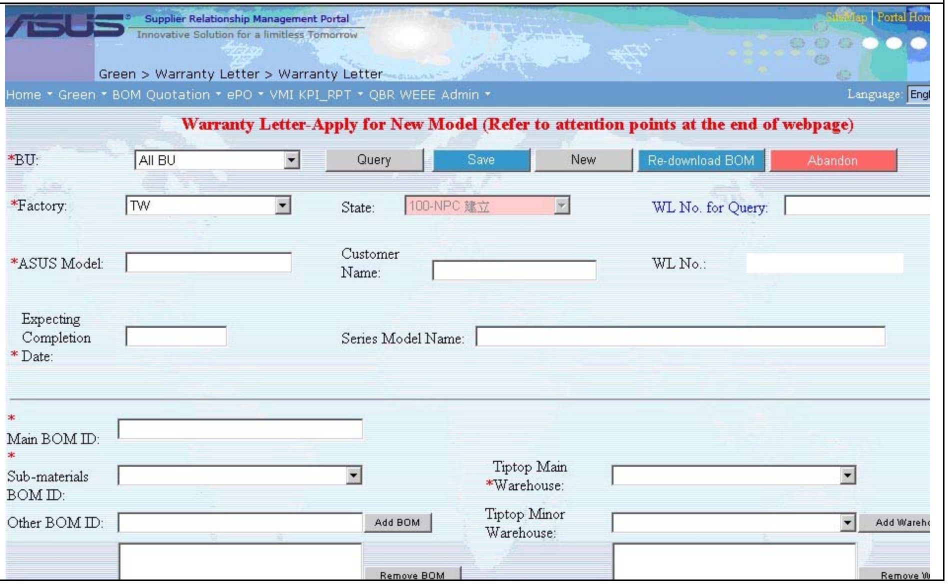
ASUS environmental management information system covers our product end-of-life management to ensure our product be environmental-friendly. Our product related environmental information is released on GreenASUS website (http://green.asus.com/english/).

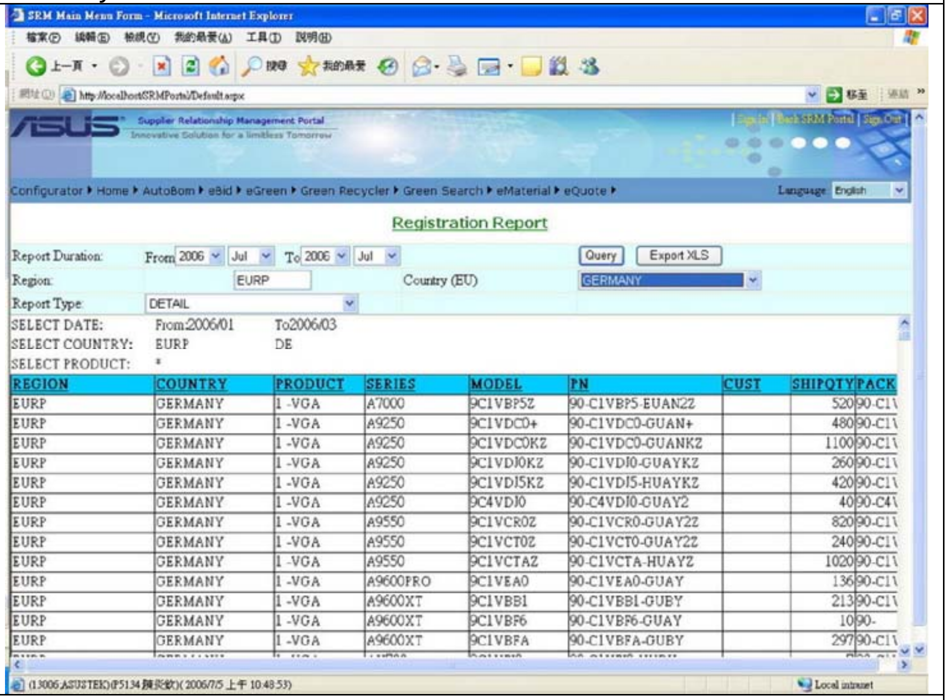
| | |
|---|---|
| A. Search Engine |  Supplier Relationship Management Portal<br>Innovative Solution for a limitless Tomorrow<br>SiteMap \| Portal Hom<br>Green > Green Search > 國際環保法規 > 環保法規和規範<br>Home Green BOM Quotation ePO VMI KPI_RPT QBR WEEE Admin<br>Language: Chi<br>Set Constraint<br>Environmental legislation<br>EU Directive<br>WEEE national regulation<br>EU<br>USA<br>China<br>RoHS national regulation<br>EU<br>USA<br>China<br>California RoHS<br>EuP national regulation<br>EU<br>USA<br>China<br>OBM standard<br>HP<br>IBM<br>Intel<br>Panasonic<br>Epson<br>Pioneer<br>WWW.WEEEIRELAND.IE (12)<br>WWW.TDCTRADE.COM (16)<br>WWW.ECOLEC.ES (2)<br>WWW.DTI.GOV.UK (1)<br>WWW.BUYUSA.GOV (51)<br>PORTAL.NCCP.ORG.TW (9)<br>EC.EUROPA.EU (1)<br>一頁 20 筆 首頁 前頁 下頁 末頁 第 1 頁/共 5 頁 第1-20筆/共92 筆<br>Start Date: 2006/10/26 End Date: 2007/01/24 Key Word: File Type:<br>1. What's New -- U.S. Commercial Service U.S. Mission to the European Union Site Map Contact us ...<br>What's New -- U.S. Commercial Service U.S. Mission to the European Union Site Map Contact us BUYUSA.GOV -- U.S. Commerc Service U.S. Mission to the European Union What's New Latest Events: Latest News: EU's Energy Package: The European Commission released a major energy package on J...<br>http://www.buyusa.gov/eur... 2007/01/24<br>2. Business Service Providers -- U.S. Commercial Service U.S. Mission to the European Union Site...<br>Business Service Providers -- U.S. Commercial Service U.S. Mission to the European Union Site Map Contact us BUYUSA.GOV - U.S. Commercial Service U.S. Mission to the European Union Business Service Providers The European Union's business |
| | After ASUS set the specific website and key words in this system, it can search and collect the relevant information actively from these websites such as:<br>1. Official website (including European/ America/ Asia) and other ones recommended by them.<br>2.Environmental websites recommended by research institution (including ITRI/IER)<br>3. The websites of industry associations and the ones recommended by them.<br>After integrating above information, this system can provide the following functions to a user：<br>1. International regulation query.<br>2. Green information publishes.<br>3.Intelligent character data grouping<br>4.Basic / advanced query<br>5.Green news letter |

| | |
|---|---|
| B. GreenASUS EIP Knowledge Centre (Enterprise Information Portal) |  Home<br>Documents and Lists<br>Create<br>Site Settings<br>Help<br>Up to AS<br>GreenASUS Home<br>Environmental Knowledge for ASUS Everybody<br>Function List<br>→ 文件庫<br>→ 所有功能列表<br>→ 教材與測驗<br>→ 討論區<br>→ 意見調查<br>品質長的話<br>華碩品質 堅若磐石<br>綠色華碩 回收豐碩<br>以磐石般的理念 追求一流的品質<br>以綠色般的願景 保護唯一的地球<br>華碩堅持<br>綠色設計 綠色採購 綠色製造 綠色行銷<br>支支安打 才能得分<br>處處用心 才有環保<br>線上教學與測驗<br>最新消息與公告<br>政策/目標/組織/權責<br>(More Items...)<br>高級班 (需進行零件承認的同仁)<br>→GA線上課程(高級班)<br>→GA線上測驗(高級班)<br>中級班 (其他同仁)<br>→GA線上課程(中級班)<br>→GA線上測驗(中級班)<br>初級班 (新人訓練)<br>→GA線上課程(初級班)<br>→GA線上測驗(初級班)<br>個人GA線上課程參與及測試明細表<br>GA文件發行<br>1. 原GA survey form R1.04之緩衝使用期限爲 2007/02/05.<br>組立件的R1.04使用期限爲 2007/03/05.<br>請相關使用單位留意使用期限!!<br>2. GA文件發行*3<br>P-GA2-003 GA零部件與材料承認管理辦法 Rev.4<br>P-GA3-009 系統產品零件承認作業規範 Rev.4<br>P-GA3-011 S客戶GA檢定品管理作業規範 Rev.3<br>P-GA3-014 S客戶GA出貨管理作業規範 Rev.3<br>P-GA3-026 GA標示管理規範 Rev.2<br>P-GA3-030 筆記型電腦 GA出貨檢驗作業規範 Rev.1<br>詳細內容，請至http://green.asus.com.tw ==> GA程序文件查閱<br>by Yuchen Huang(黃毓珍)<br>GreenASUS Implementation Plan and S<br>8/30/2006 12:00:00 AM<br>by Yuchen Huang(黃毓珍)<br>GA Policy 例外原則<br>2/24/2006 12:00:00 AM<br>by Yuchen Huang(黃毓珍)<br>GA org. and Resp.<br>1/4/2006 12:00:00 AM<br>by Yuchen Huang(黃毓珍)<br>GreenASUS Strategy/Roadmap/Scope<br>12/19/2005 12:00:00 AM<br>by Yuchen Huang(黃毓珍) |
| | Via this system, ASUS can propagate the Green information and implement the education and training internally, the content of green information including ：<br>1. GreenASUS policy, goal, organization and responsibility<br>2. Latest news and announcement<br>3. GreenASUS ISO document<br>4. GreenASUS training material<br>5. Relevant website linking<br>6. E-learning system<br>7. On line test<br>8. GreenASUS external document and customer's information<br>9. GreenASUS FAQ |
| C. SRM (Supplier Relationship Management Portal) |  Supplier Relationship Management Portal<br>Innovative Solution for a limitless Tomorrow<br>SiteMap \| Portal Home<br>Home<br>Green<br>BOM Quotation<br>ePO<br>VMI KPI_RPT<br>QBR WEEE Admin<br>Language: Englis<br>Info Zone1<br>Bulletin Zone<br>Info Zone2<br>To Do List<br>Bulletin_Green ASUS<br>Information<br>OnLineReport<br>Bulletin_Common<br>Common Documents<br>System Entrances<br>New!<br>eGreen GA Approving PNs:0<br>eGreen GP Approving PNs:0<br>New environmental information:77<br>New environmental legislation:67<br>Ship Part Not Approved: 0<br>No Allocation: 0<br>Unconfirm PO: 0<br>WOS < 2 weeks: 0<br>Unapproved PO: 0<br>Bulletin_Green ASUS — Title / Date<br>2007中國RoHS高級管理研修班(華南區)邀請 2006/12/27<br>GreenASUS technical Standard and GA survey form revised annoucement(add English version) 2006/12/07<br>S customer GP Certificate of Non-use of Environment-related Substances (for Approving) 12/01 updated 2006/12/01<br>(GA)台灣區GA&RoHS說明會(10/19，11/2)含簡報檔案 2006/10/18<br>(GA)即日起新規GA彩盒(15G*)須增加色塊標示 2006/09/08<br>(GA)華碩承認GA系統稽核輔導單位(2006.07更新) 2006/07/24<br>1 2<br>Bulletin_Common — Title / Date<br>昌碩1月份結轉報關通知 2007/01/23<br>農曆春節華碩外幣付款日將統一延後至2/26(一)付款! 2007/01/23<br>華碩財務部通知：因應農曆春節連假付款事宜變更通知 2007/01/23<br>EPO新功能(China Customs Query)==>要求結轉廠商在EPO上填寫出口報關資料及上傳出口報關文件 2007/01/19<br>威碩廠商請注意：威碩春節假期外幣付款日延後通知 2007/01/18<br>結轉廠商購買華碩手寫單地址<br>EPO 新Packing 程式正式使用==> (舊程式已取消但可以查到以前做的packing)<br>Company User Inf<br>Welcome to SRM Po<br>Company ID: 1300б<br>Name: TW<br>User ID: P5211<br>User Name: 朱佩顯<br>Change Company/U<br>User ID: P5211<br>Company: TW<br>Company Informatic<br>User Information<br>Change Password<br>Can't Download F<br>Contact Windows<br>Training Time & W<br>User Guides<br>ASUS CA<br>SRM Lite Usage<br>eBid |
| | This portal integrates all supplier information and requirement, like: order confirm, action item review, QBR (quarterly business review), Upload the approval document of Green component…etc. ASUS can also publish the announcement and notice on it, this system can also send the e-mail to remind the action items to suppliers automatically. |

<table>
<tr>
<td rowspan="2">D.<br>e-Material<br>System</td>
<td>

Material Selection
Material Selection and Manufacture
Material Applying Filter
Vendor:
Material Name
Material Color
Vendor Part Number
Manufacture Filter
Factory of Manufacture
Method of Manufacture
Material-Class
Color of Manufacture
Material Pool
New Condition
Clear All Conditions
History List of Query which fit in with condition(s)
Apply status of AP Sheet Q...
Save & Exit
Start eMaterial System (AO Sheet)
Activate AP applying
Cancel

Customer: 華碩<br>
Main-Class: Plastic<br>
sub-Class: PC/ABS<br>
Material Pool: 帝人_DN-3515F_(QM6259F)藍灰 PC/ABS<br>
Recycle rate: Weight>25g--> 100.00%,Weight<25g--> 0.00%,Recovery rate: Weight>25g--> 100.00%,Weight<25g--> 0.00%,Density : 1.30 g/cm3<br>
If you wanna removed "one" condition, please choose that and double click or you can right click mouse to choose popup menu or press delete key to delete.
</td>
</tr>
<tr>
<td>This is the first e-Material system in Taiwan that serves as database on the raw materials used in mechanical parts. The system assists R&D staff in choosing approved material while they make template design. Meanwhile, the e-Material system also proceeds approving processes and keeps relevant approving information to build up raw material database.</td>
</tr>
<tr>
<td rowspan="2">E. Green Design System for WEEE</td>
<td>

ASUS Designed HDD
In the Pro-E
Menu Manager
Solid
Surface
Coord Sys
output
option
cancel
</td>
</tr>
<tr>
<td>In order to meet the requirement of WEEE directive, ASUS setup the Green Design System for WEEE. The system is focused on the Virtual Product Simulation (VPS) to help R&D estimate the recycle rate in product design phase. Base on the ASUS recycling principle, material density and dimensions of whole model, the system can output the product recycling rate report and disassembly report at design stage when they finish Pro/Engineer (Pro-E).</td>
</tr>
</table>

| | |
|---|---|
| F. E-Green Platform | <br>填寫步驟 / Fill In Steps — 注意事項 — 範本/Template<br>Vendor Profile: 請確認您的供應商基本資料是否正確<br>Please check your vender profile.<br>Part Select: 請選擇您欲承認之料件<br>Please select the part number you want to approve.<br>Certificate: 請上傳不使用禁用物質證明書<br>Please upload the certificate.<br>Certificate(GA)<br>Certificate(GP)(SONY)<br>Certificate(HITACHI)<br>Composition: 請填寫零件成分表或上傳該零件之物質安全資料表<br>Please fill in the composition table or upload the MSDS of the component.<br>GP(SONY) GB Number<br>GA Survey Form: 請填寫該零件之無鉛狀態及耐熱調查<br>Please fill in the Green status and heat resistance capability survey.<br>3rd Party Test Report: 請上傳第三公正單位之測試報告並填寫測試結果<br>Please upload the 3rd party test report and fill in the test result.<br>Final Check: 請確認您上傳及填寫之所有資料是否正確<br>Please check all of the data you uploaded and filled in are correct. |
| | This is the first GPMS(Green Product Management System) in Taiwan, this system provide the platform for suppliers to upload the Green component approval documents such as: certificate, component composition table, Green component survey file and 3rd party test report. ASUS can manage the Green documents and export the statistic table etc. through e-Green platform. The system will send the reminder mails of action items to vendors and ASUS employees automatically. |
| G. E-Warranty Letter | <br> ASUS<br>Supplier Relationship Management Portal<br>Innovative Solution for a limitless Tomorrow<br>SiteMap \| Portal Hom<br>Home ▾ Green ▾ BOM Quotation ▾ ePO ▾ VMI KPI_RPT ▾ QBR WEEE Admin ▾<br>Language: Engl<br>Query<br>Save<br>New<br>Re-download BOM<br>Abandon<br>Add BOM<br>Remove BOM<br>Add Wareh<br>Remove W<br>Green > Warranty Letter > Warranty Letter<br>**Warranty Letter-Apply for New Model (Refer to attention points at the end of webpage)**<br>*BU: All BU<br>*Factory: TW<br>State: 100-NPC 建立<br>WL No. for Query:<br>*ASUS Model:<br>Customer Name:<br>WL No.:<br>Expecting Completion * Date:<br>Series Model Name:<br>* Main BOM ID:<br>* Sub-materials BOM ID:<br>Tiptop Main *Warehouse:<br>Other BOM ID:<br>Tiptop Minor Warehouse: |

<table>
<tr>
<td></td>
<td>For quality assurance and sales department can monitor the green status of each model quickly, and make sure all models meet green requirements when they move into mass production stage, ASUS setup this information linking system to collect the following green related information:
<ul>
<li>Green Production line checklist</li>
<li>Material incoming test result</li>
<li>Components approval status</li>
<li>Sub-material approval status</li>
</ul>
Relevant departments can base on above information to provide the warranty letter or related data to our customer.</td>
</tr>
<tr>
<td rowspan="2">H. WEEE management system</td>
<td>
SRM Main Menu Form - Microsoft Internet Explorer
http://localhost/SRMPortal/Default.aspx
Supplier Relationship Management Portal
Innovative Solution for a limitless Tomorrow
Sign In | Back SRM Portal | Sign Out
Configurator ▸ Home ▸ AutoBom ▸ eBid ▸ eGreen ▸ Green Recycler ▸ Green Search ▸ eMaterial ▸ eQuote ▸
Language English
Query
Export XLS
Local intranet

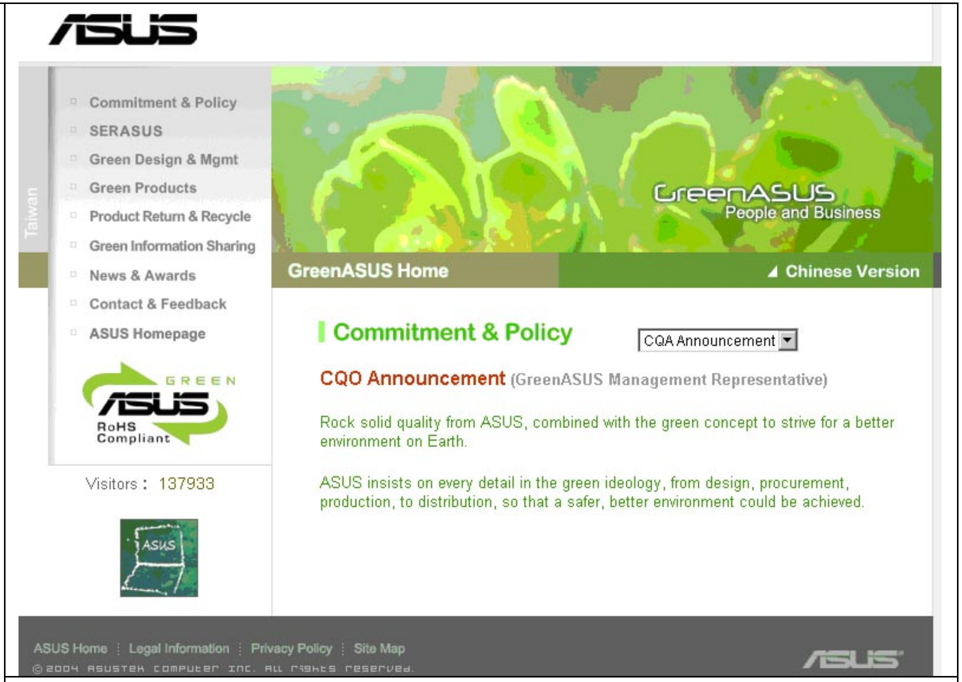
Registration Report

Report Duration: From 2006 Jul To 2006 Jul<br>
Region: EURP Country (EU) GERMANY<br>
Report Type: DETAIL<br>
SELECT DATE: From:2006/01 To2006/03<br>
SELECT COUNTRY: EURP DE<br>
SELECT PRODUCT: *

<table>
<tr><th>REGION</th><th>COUNTRY</th><th>PRODUCT</th><th>SERIES</th><th>MODEL</th><th>PN</th><th>CUST</th><th>SHIPQTY</th><th>PACK</th></tr>
<tr><td>EURP</td><td>GERMANY</td><td>1 -VGA</td><td>A7000</td><td>9C1VBP5Z</td><td>90-C1VBP5-EUAN2Z</td><td></td><td>520</td><td>90-C1</td></tr>
<tr><td>EURP</td><td>GERMANY</td><td>1 -VGA</td><td>A9250</td><td>9C1VDC0+</td><td>90-C1VDC0-GUAN+</td><td></td><td>480</td><td>90-C1</td></tr>
<tr><td>EURP</td><td>GERMANY</td><td>1 -VGA</td><td>A9250</td><td>9C1VDC0KZ</td><td>90-C1VDC0-GUANKZ</td><td></td><td>1100</td><td>90-C1</td></tr>
<tr><td>EURP</td><td>GERMANY</td><td>1 -VGA</td><td>A9250</td><td>9C1VDJ0KZ</td><td>90-C1VDI0-GUAYKZ</td><td></td><td>260</td><td>90-C1</td></tr>
<tr><td>EURP</td><td>GERMANY</td><td>1 -VGA</td><td>A9250</td><td>9C1VDJ5KZ</td><td>90-C1VDI5-HUAYKZ</td><td></td><td>420</td><td>90-C1</td></tr>
<tr><td>EURP</td><td>GERMANY</td><td>1 -VGA</td><td>A9250</td><td>9C4VDJ0</td><td>90-C4VDI0-GUAY2</td><td></td><td>40</td><td>90-C4</td></tr>
<tr><td>EURP</td><td>GERMANY</td><td>1 -VGA</td><td>A9550</td><td>9C1VCR0Z</td><td>90-C1VCR0-GUAY2Z</td><td></td><td>820</td><td>90-C1</td></tr>
<tr><td>EURP</td><td>GERMANY</td><td>1 -VGA</td><td>A9550</td><td>9C1VCT0Z</td><td>90-C1VCT0-GUAY2Z</td><td></td><td>240</td><td>90-C1</td></tr>
<tr><td>EURP</td><td>GERMANY</td><td>1 -VGA</td><td>A9550</td><td>9C1VCTAZ</td><td>90-C1VCTA-HUAYZ</td><td></td><td>1020</td><td>90-C1</td></tr>
<tr><td>EURP</td><td>GERMANY</td><td>1 -VGA</td><td>A9600PRO</td><td>9C1VEA0</td><td>90-C1VEA0-GUAY</td><td></td><td>136</td><td>90-C1</td></tr>
<tr><td>EURP</td><td>GERMANY</td><td>1 -VGA</td><td>A9600XT</td><td>9C1VBB1</td><td>90-C1VBB1-GUBY</td><td></td><td>213</td><td>90-C1</td></tr>
<tr><td>EURP</td><td>GERMANY</td><td>1 -VGA</td><td>A9600XT</td><td>9C1VBF6</td><td>90-C1VBF6-GUAY</td><td></td><td>10</td><td>90-</td></tr>
<tr><td>EURP</td><td>GERMANY</td><td>1 -VGA</td><td>A9600XT</td><td>9C1VBFA</td><td>90-C1VBFA-GUBY</td><td></td><td>297</td><td>90-C1</td></tr>
</table>

(13006 ASUSTEK\P5134 陳炎欽)( 2006/7/5 上午 10:48:53)</td>
</tr>
<tr>
<td>This WEEE reporting system can provide below two main functions：<br>
1.Base on EU’s requirement, this system can provide the transport and treatment tracking status of waste electrical equipment and output the statistic table.<br>
2.Provide recycler waste electrical equipment relevant statistic</td>
</tr>
</table>

I. GreenASUS Website


Taiwan
Commitment & Policy
SERASUS
Green Design & Mgmt
Green Products
Product Return & Recycle
Green Information Sharing
News & Awards
Contact & Feedback
ASUS Homepage
GREEN ASUS
RoHS Compliant
GreenASUS
People and Business
GreenASUS Home
Chinese Version
CQA Announcement
ASUS Home
Legal Information
Privacy Policy
Site Map

Commitment & Policy

CQO Announcement (GreenASUS Management Representative)

Rock solid quality from ASUS, combined with the green concept to strive for a better environment on Earth.

ASUS insists on every detail in the green ideology, from design, procurement, production, to distribution, so that a safer, better environment could be achieved.

Visitors : 137933

© 2004 ASUSTeK Computer Inc. All rights reserved.

In order to raise the competitiveness and share the environmental information to IT industry, ASUS set up the external environmental website to disclose the relevant information, like:

1.Commitment & Policy
2.Social Environmental Responsibility of ASUS
3.Green Design and Management
4.Green Product
5.Product Return and Recycle
6.Green information Sharing
7.News and Award

# 5.7 Special Programs & Projects

## ■ ASUS developed the first lead-free and halogen-free motherboard in Taiwan.

This is a project sponsored by the Taiwanese government, from 2002 to 2004. Through in-depth study and experiments, technical specifications for green material selection and green product design rules were developed. ASUS then used the technical specifications for specific green material selection and for green design to create the motherboard. To support this invention process, ASUS developed its infrastructure for its green supply chain management in place – which now supports all ongoing GreenASUS efforts.

## ■ ASUS has established the first Green Product Management System (GPMS) in Taiwan.

The Green Product Management System (GPMS) helps our R&D staff determine if vendors in our supply chain are using specific hazardous substances. The system provides e-Green platform for supplier to upload the Green component approval document like: Certificate, component composition table, Green component survey file and 3rd party test report. This system will send the reminding mail of action items to vendors and ASUS employees automatically while the approval progress is pended or delayed. The e-system helps and accelerates ASUS and our supply chain vendors select green components in a systematic and efficient way.

## ■ ASUS has established the first Green Design System for WEEE in Taiwan

### A. Green e-Material System

This is the first e-Material system in Taiwan that serves as database on the raw materials used in mechanical parts. The system assists R&D staff to choice approved material while they make template design. Meanwhile, the e-Material system also precedes approving processes and stores relevant approving information to build up raw material database.

### B. Green Design System for WEEE

In order to meet the requirement of WEEE directive, ASUS has established the first Green Design System for WEEE in Taiwan. The system is focused on the Virtual Product Simulation (VPS) to help R&D estimate the product reuse/recycle rate and recovery rate (3R) defined by WEEE Directive when they finish Pro-E. According to the ASUS's recycling principle, the system calculates product 3R rate based on each material density and its dimensions and output the product 3R report automatically. Furthermore, R&D staff can simulates disassembly process through VPS and the system will record each process step-by-step and output disassembly report.

## ■ ASUS has established free-of-charge takeback and recycling programmes in the US

ASUS was the first Taiwanese company to provide free take back services for notebooks in all fifty states. Our consumer can register via the Internet (GreenASUS website) to send their computers to our cooperated recycling facility, free of charge. ASUS works with local advisers and ensures adherence to its end-of-life management policy through audits of its recyclers on a regular time schedule..

## ■ GreenASUS training and education programme

To cultivate employees' understanding of requirements concerning Controlled hazardous substances, ASUS set up the GreenASUS training and education programme. Using an IT e-learning system, all new employees must complete the online training and testing within six months of being hired and must pass with a score of at least 70 percent. ASUS has planned three different levels of training, each tailored for employees depending on the scope of their work duties. Figure 5.8 shows this information.

Figure 5.8 – Environmental Awareness Training Programme for ASUS New Hires

| Level | Employees Required to Participate | Lecture (hours) | Course Description |
|---|---|---|---|
| Primary | All employees | 0.5 | This course is a review of international regulations that prohibit hazardous substances and of GreenASUS policy. |
| Intermediate | Sales personnel; product managers; research and development (R&D) staff | 1.0 | Primary material, plus explanation of basic requirements about supply chain management. |
| Advanced | Component-approval engineer; internal quality control (IQC) or laboratory engineer | 2.0 | Primary and intermediate material, plus a step-by-step guide to the system for approving green components. |

## ■ Green classrooms

To promote its green policy and management's commitment to environmental responsibility, ASUS set up green classrooms in its Taipei headquarters and in Suzhou, respectively. Besides displaying the GreenASUS policy, this classroom also includes posting of announcements and progress reports on green issues of interest to ASUS employees, customers, and guests. Topics posted include green component approval count, vendor audit results, and so on. Because of the green information and positive atmosphere, ASUS has found this classroom to be the best place for receiving customers and displaying information about its many green achievements.

# 6. The Future

ASUS's sustainability objective is to improve continuously through our global sustainable work. We remain focused on six challenges for the coming three to five years; these have been selected as we considered that they are the critical issues facing our industry and are areas where we believe we can make a great difference. Although we are pleased with progress to date, much more remains to be done. The details of these six challenges are:

1. Reducing products' adverse environmental impacts through product design for environment and life cycle assessment.

2. Enhancing green supply chain management and developing systems to assess and improve supplier's environmental performance.

3. Reducing GHG emissions from ASUS's operations, transportation and products.

4. Expanding product recycling service to take responsibility for end-of-life management of ASUS products, reducing harmful wastes.

5. Strengthening ASUS's communications with all stakeholders (customers, shareholders, employees, suppliers, communities and neighbour issues of environmental protection and corporate social responsibilities.

6. Enhancing social and environmental responsibility through working with suppliers, employees, and the general public.

More discussion of each of these items follows.

## 1. Reducing product's adverse environmental impacts through product design for environment and life cycle assessment

Design-for-Environment (DfE) is an engineering methodology in which the environmental characteristics of a product are considered and optimized in the design stage. By analyzing any adverse environmental impacts from products' constituents or performance over its entire life cycle during the design phase, DfE procedures help ASUS reduce negative environmental impacts of our products.

To achieve this objective, ASUS has established its Design for Environment (DfE), and life cycle assessment (LCA) programs. Our DfE program has defined measurable benchmarks and goals for several areas. These include reduction of, not only RoHS chemicals, but other chemicals of concern, based on the precautionary principle. Energy Star® criteria are adopted in ASUS's Green Design standard. We have goals to reduce energy consumption of ASUS products, both in the manufacture and use phases. Finally, our DfE requirements also address designing products so they can be more efficiently disassembled for reuse or recycling after first use or on reaching end of life.

**Next Steps** By actively implementing and systematically improving our DfE and LCA practices as an ongoing requirement, ASUS is continuously developing more environmentally friendly products and reducing adverse product environmental impacts. We are seeking to develop and find substitute materials to reduce the use of hazardous substances in product design and manufacture. ASUS will continue to find substitute materials and co-work with vendors to prohibit the use of PVC in practical applications (such as cables and wires). Specific targets for phase out of materials are presented in the relevant section of this report. Meanwhile, ASUS will expand the easy-reuse and easy-recycling (green) design to including all ASUS's notebook models so that all ASUS notebooks can meet the 3R (reuse, recycling, recovery) ratios of European Union WEEE requirements. In addition, to continuously improve the DfE rules, ASUS will keep having close interactions with recyclers to get feedback about substances, components or design features that would impact product's recyclability or ability to be refurbished at the end of life stage.

### 2. Enhancing green supply chain management and developing systems to measure and assess supplier performance

ASUS' objective is to build a relationship based on continuous learning and improvement with our suppliers throughout the industry. ASUS requires our suppliers to review and adhere to the ASUS green policy and the requirements for purchasing components and materials that meet the GreenASUS standards. Our online green management system ensures that the suppliers have implemented green management policies in their factories, and that their operation coordinates with our requirements.

ASUS' qualified suppliers must pass our audit of GreenASUS management system every year. The audit results will also be presented in ASUS' annual assessment which external auditors review how ASUS' qualified suppliers manage their manufacturing and operation processes in terms of controlling hazardous substances. If any inconformity is found, corrective actions have to be taken.

ASUS conducts quarterly business reviews (QBR) to evaluate how our suppliers comply with the GreenASUS standards. Suppliers are evaluated in terms of quality, cost, delivery, service, and technology. In summary, ASUS only cooperates with suppliers that pass the above reviewing and assessing processes and provides them with "GA Supplier Qualification Certificate".

**Next Steps** ASUS will revise the supplier audit procedure, system and process audit checklists for gradually improving the audit of our suppliers after we have communicated and promoted GreenASUS. After qualified and assessed the hazardous substance process control to our suppliers. ASUS will provide HSPM orientation and/or acknowledgement training to suppliers that requesting our support; also provide necessary support programs to those suppliers who are willing to enhance their environmental products, ASUS is pleased to have several outstanding suppliers as long-term cooperating partners.

### 3. Reducing GHG emissions from ASUS's operations and products

In response to current mounting global concern about the greenhouse gas emission effect and climate change, our company is in the process of reducing emission of greenhouse gases (GHGs) by first assessing the baseline emissions from ASUS' operations, transportation and those associated with product design for each of the six GHGs addressed in the Kyoto Protocol. Our goal for 2004 to 2008 is to reduce power consumption by 5% each consecutive year at all Taiwan plants. Though Taiwan is not yet a party to the Kyoto Protocol, the government does have stated strategies for GHG reductions for the period from 1998-2012. ASUS already has several energy-saving programs across operating sectors: manufacturing, offices, transportation, and distribution. These programs address strategies to reduce energy use (and thus reduce emissions of greenhouse gases) through improving equipment coefficient of performance, air-conditioner efficiency, lighting equipment efficiency, boiler efficiency, transportation and distribution energy use, and related energy use performance.

We set objectives and targets for each corporate office and factory, for GHG reductions. Each facility's GHG reduction plan also includes issues such as the promotion of changing behaviour, review of staff and equipment performance, and detailed metrics for the inventory system for the six GHGs. Furthermore, we will evaluate the result of the GHG Inventory of ASUS Taiwan sites and set up plans for the China and other overseas sites to follow.

**Next Steps** For 2007, we are gathering baseline data on GHG emissions in manufacturing, establishing metrics such as amount of carbon emitted per unit of energy used, and the metric tons of CO2 equivalent, and are researching and implementing changes to reduce carbon emissions, including measuring and marking milestones.

Our first-year goal is to gather baseline data on transportation energy used and kilometres per good travelled, in order to calculate greenhouse gas (GHG) emissions impact. This analysis will aid us in identifying other helpful metrics for monitoring progress. Once the baselines for transportation energy-use and associated GHG impact for goods in our supply and delivery chain are established, ASUS plans to start with a modest goal of reducing GHG emissions impacts by 1-3%, overall.

### 4. Expanding product-recycling service to take responsibility for end-of-life management of ASUS products, reducing harmful wastes.

Computers, notebook computers, and other electronic equipment contain hazardous chemicals that can be harmful to the environment when they reach the end of their useful life and are disposed of at a landfill. By recycling, the metals, plastics, and components found in old equipment can be broken down and reused to make new products, and the harmful chemicals can be managed in accordance with hazardous waste management laws. This helps protect the environment from uncontrolled release of harmful chemicals.

When products reach the end of their life cycle, ASUS supports the involvement of the producer in the responsibility for proper end-of-life management. ASUS works with recycling vendors around the globe for takeback programmes that demonstrate high standards of environmental protection, strong commitment to worker safety, and compliance with applicable environmental laws. ASUS seeks to keep the ASUS product takeback program accessible to all customers, including consumers, small businesses, and institutions.

**Next Steps** ASUS has established takeback and recycling programmes in 27 nations for 18 of our product categories. We plan to expand those programmes at the country or regional level. For example, in the United States, the ASUS takeback pilot programme's goal for the next 4 quarters starting in Q4 2006 is to take back 100% of the units sold 7 years ago. This translates to about 900 notebook units (2006 Q4-2007 Q3). A further takeback goal for the US is to expand the pilot takeback programme beyond notebook computers to include all ASUS's finished product categories (notebook computers, LCD monitor, LCD TVs, etc.)

### 5. Strengthening communications with all stakeholders

ASUS has completed many international environmental rating programs, and we hope to continue to participate in global social and environmental rating projects to demonstrate ASUS's social and environmental performance under clear and verifiable platforms. We uphold the highest corporate ethics and business integrity. For example, we provide training and practices that benefit employees' health and safety and emphasize human rights. ASUS also conducts employee satisfaction surveys periodically. We also plan to expand our communications with and support to communities around ASUS factories and suppliers in the near future. An example of this is the design and implementation of optional social and health events for employees in our overseas factories.

**Next Steps** Having completed many of our Green projects related to environmental improvements, we plan to improve the reporting on performance data for the whole corporation as a single entity rather than site by site. Furthermore, we would continue to increase access to environmental and public health and safety information using innovative IT solutions, to benefit ASUS's partner organizations and other stakeholders where ASUS does business worldwide. We will also offer employees opportunities to learn more about environmental impacts and to improve their health and their community's health, through volunteer programs and donations.

### 6. Enhancing social and environmental responsibility through work with suppliers, employees, and the general public.

ASUS seeks to demonstrate our commitment to high levels of social and environmental responsibility through programmes and practices focused on our employees and our suppliers. For our employees, ASUS holds several different types of events to promote well-being. We offer training in labour rights through speeches and other educational methods, to ensure that our employees' rights are protected. To promote a positive outlook and personal health for our employees, ASUS sponsors outings and family day activities. In 2007, we will conduct foreign-worker's outing, employee one-day outing, hiking, singing and dancing contest, softball game, golf, bowling and swimming games. Charity or social-donations will also continue.

For suppliers, we explain our social and environmental responsibility (SER) policy, so they would understand our queries and requests better regarding their own social and environmental practice.

**Next Steps** ASUS will launch the "Supplier SER Caring Programs" following promote the ASUS SER policy. ASUS will gather data from our suppliers to understand their compliance, education, and promotion efforts with regard to environmental, employee health and safety, labour rights and commercial ethics. We will gather this data through encouraging supplier cooperation with our purchasing and supplier quality assurance engineering teams. Once we have established baseline data on our suppliers' SER practices, we will provide appropriate support to promote our suppliers' compliance with our SER standards and requirements.

## Conclusions

In summary, ASUS strives to achieve a high level of practical social and environmental responsibility by reducing adverse air, water, waste, hazardous chemicals, and noise impacts from all aspects of our operations as well as the environmental impacts associated with the use and disposal of our products. We conduct many regular (monthly, quarterly, or yearly) programs to monitor and improve environmental impacts at the ASUS corporate office and in each factory. On measuring progresses, we establish objectives and then review the performances on meeting each objective on a regular basis. For future perspectives, ASUS looks forward to having substantial contribution on both environmental protection and corporate social responsibility.

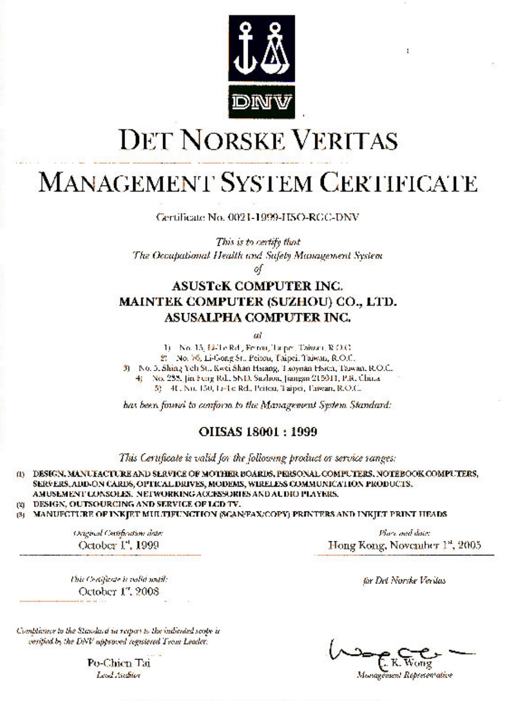
Your feedback is valuable to ASUS. Please send feedback to GreenASUS@asus.com.tw or visit our website at http://green.asus.com/english/

# Appendix 1 – Certificates

## 1. ISO 18001:1999_Occupational Health and Safety Management Certificate:

**Certified in 1999:**

- ASUSTeK Corporate Office, Taiwan;
- ASUS Taoyuan Factory, Taiwan;
- ASUS Suzhou Factory, China.



DNV

DET NORSKE VERITAS

MANAGEMENT SYSTEM CERTIFICATE

Certificate No. 0021-1999-HSO-RGC-DNV

*This is to certify that*
*The Occupational Health and Safety Management System*
*of*

**ASUSTeK COMPUTER INC.**
**MAINTEK COMPUTER (SUZHOU) CO., LTD.**
**ASUSALPHA COMPUTER INC.**

*at*

1) No. 15, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.
2) No. 76, Li-Gong St., Peitou, Taipei, Taiwan, R.O.C.
3) No. 5, Shing Yeh St., Kwei Shan Hsiang, Taoyuan Hsien, Taiwan, R.O.C.
4) No. 288, Jin Feng Rd., SND, Suzhou, Jiangsu 215011, P.R. China
5) 4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.

*has been found to conform to the Management System Standard:*

**OHSAS 18001 : 1999**

*This Certificate is valid for the following product or service ranges:*

(1) DESIGN, MANUFACTURE AND SERVICE OF MOTHER BOARDS, PERSONAL COMPUTERS, NOTEBOOK COMPUTERS, SERVERS, ADD-ON CARDS, OPTICAL DRIVES, MODEMS, WIRELESS COMMUNICATION PRODUCTS, AMUSEMENT CONSOLES, NETWORKING ACCESSORIES AND AUDIO PLAYERS.
(2) DESIGN, OUTSOURCING AND SERVICE OF LCD TV.
(3) MANUFECTURE OF INKJET MULTIFUNCTION (SCAN/FAX/COPY) PRINTERS AND INKJET PRINT HEADS

*Original Certification date:* October 1st, 1999

*Place and date:* Hong Kong, November 1st, 2005

*This Certificate is valid until:* October 1st, 2008

*for Det Norske Veritas*

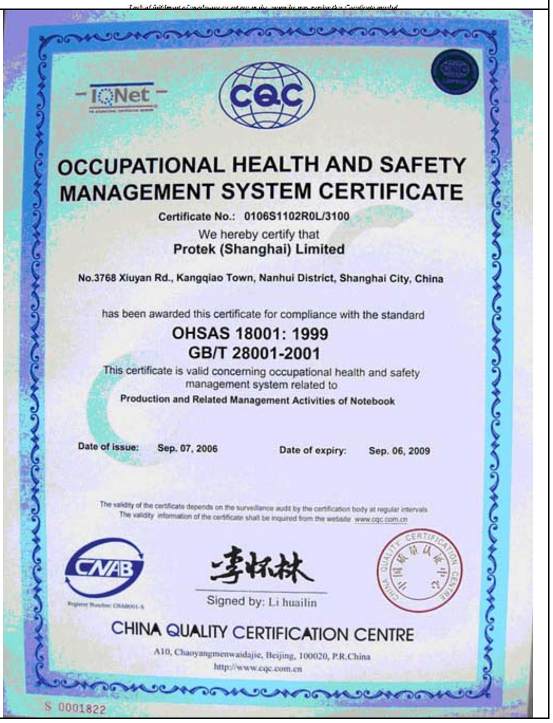
*Compliance to the Standard in respect to the indicated scope is verified by the DNV approved registered Team Leader.*

Po-Chien Tai
*Lead Auditor*

C. K. Wong
*Management Representative*

**Certified in 2006:**

- ASUS Shanghai Factory, China.



IQNet

CQC

OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM CERTIFICATE

Certificate No.: 0106S1102R0L/3100

We hereby certify that
**Protek (Shanghai) Limited**

No.3768 Xiuyan Rd., Kangqiao Town, Nanhui District, Shanghai City, China

has been awarded this certificate for compliance with the standard
**OHSAS 18001: 1999**
**GB/T 28001-2001**

This certificate is valid concerning occupational health and safety management system related to
**Production and Related Management Activities of Notebook**

**Date of issue:** Sep. 07, 2006 **Date of expiry:** Sep. 06, 2009

The validity of the certificate depends on the surveillance audit by the certification body at regular intervals
The validity information of the certificate shall be inquired from the website www.cqc.com.cn

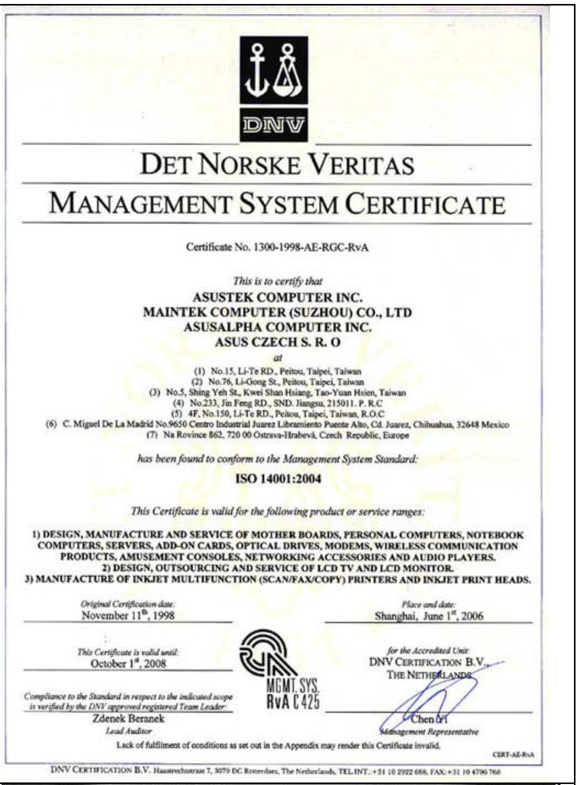
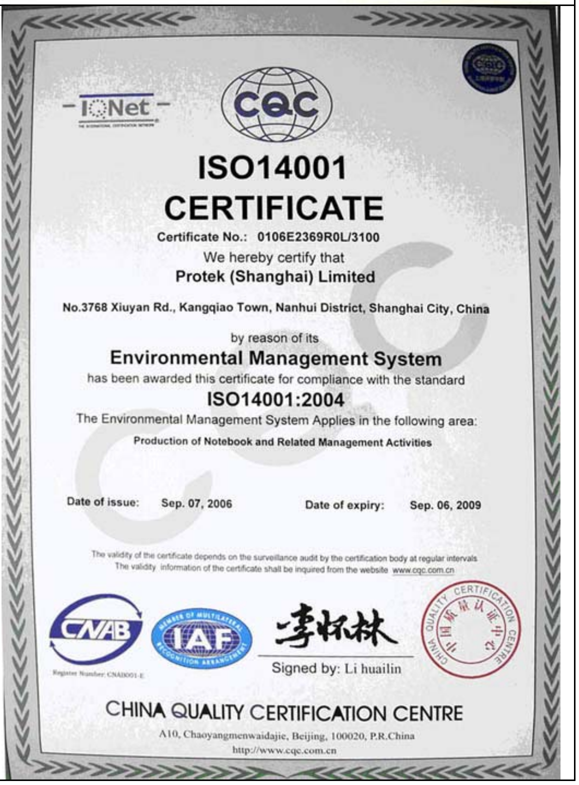
CNAB
Register Number: CNAB001-S

李怀林
Signed by: Li huailin

CHINA QUALITY CERTIFICATION CENTRE
A10, Chaoyangmenwaidajie, Beijing, 100020, P.R.China
http://www.cqc.com.cn

S 0001822

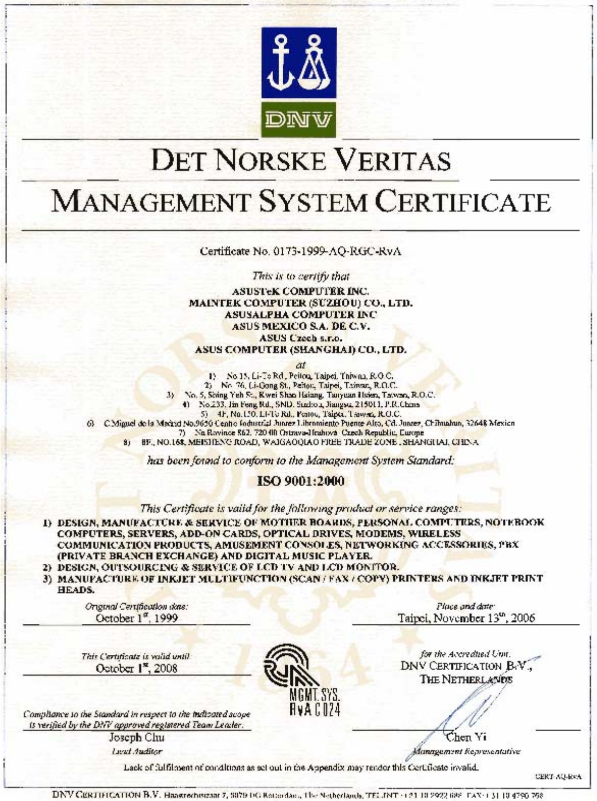
## 2. ISO 14001:2004_ Environmental Management System Certificate:

| | |
|---|---|
| **Certified in 1998:**<br>■ ASUSTeK Corporate Office, Taiwan;<br>■ ASUS Taoyuan Factory, Taiwan;<br>■ ASUS Suzhou Factory, China;<br>■ ASUS Czech Republic Factory, Europe;<br>■ ASUS Mexico Factory, Mexico. | <br>DNV<br>DET NORSKE VERITAS<br>MANAGEMENT SYSTEM CERTIFICATE<br>Certificate No. 1300-1998-AE-RGC-RvA<br>*This is to certify that*<br>**ASUSTEK COMPUTER INC.**<br>**MAINTEK COMPUTER (SUZHOU) CO., LTD**<br>**ASUSALPHA COMPUTER INC.**<br>**ASUS CZECH S. R. O**<br>*at*<br>(1) No.15, Li-Te RD., Peitou, Taipei, Taiwan<br>(2) No.76, Li-Gong St., Peitou, Taipei, Taiwan<br>(3) No.5, Shing Yeh St., Kwei Shan Hsiang, Tao-Yuan Hsien, Taiwan<br>(4) No.233, Jin Feng RD., SND. Jiangsu, 215011. P. R.C<br>(5) 4F, No.150, Li-Te RD., Peitou, Taipei, Taiwan, R.O.C<br>(6) C. Miguel De La Madrid No.9650 Centro Industrial Juarez Libramiento Puente Alto, Cd. Juarez, Chihuahua, 32648 Mexico<br>(7) Na Rovince 862, 720 00 Ostrava-Hrabevá, Czech Republic, Europe<br>*has been found to conform to the Management System Standard:*<br>**ISO 14001:2004**<br>*This Certificate is valid for the following product or service ranges:*<br>**1) DESIGN, MANUFACTURE AND SERVICE OF MOTHER BOARDS, PERSONAL COMPUTERS, NOTEBOOK COMPUTERS, SERVERS, ADD-ON CARDS, OPTICAL DRIVES, MODEMS, WIRELESS COMMUNICATION PRODUCTS, AMUSEMENT CONSOLES, NETWORKING ACCESSORIES AND AUDIO PLAYERS.**<br>**2) DESIGN, OUTSOURCING AND SERVICE OF LCD TV AND LCD MONITOR.**<br>**3) MANUFACTURE OF INKJET MULTIFUNCTION (SCAN/FAX/COPY) PRINTERS AND INKJET PRINT HEADS.**<br>*Original Certification date:* November 11th, 1998<br>*Place and date:* Shanghai, June 1st, 2006<br>*This Certificate is valid until:* October 1st, 2008<br>MGMT. SYS. RvA C425<br>*for the Accredited Unit:* DNV CERTIFICATION B.V., THE NETHERLANDS<br>*Compliance to the Standard in respect to the indicated scope is verified by the DNV approved registered Team Leader:*<br>Zdenek Bernnek<br>*Lead Auditor*<br>Chen Li<br>*Management Representative*<br>Lack of fulfilment of conditions as set out in the Appendix may render this Certificate invalid.<br>CERT-AE-RvA<br>DNV CERTIFICATION B.V. Haastrechtstraat 7, 3079 DC Rotterdam, The Netherlands, TEL.INT.:+31 10 2922 688, FAX:+31 10 4796 768 |
| **Certified in 2006:**<br>■ ASUS Shanghai Factory, China. | <br>IQNet<br>CQC<br>**ISO14001**<br>**CERTIFICATE**<br>**Certificate No.: 0106E2369R0L/3100**<br>We hereby certify that<br>**Protek (Shanghai) Limited**<br>**No.3768 Xiuyan Rd., Kangqiao Town, Nanhui District, Shanghai City, China**<br>by reason of its<br>**Environmental Management System**<br>has been awarded this certificate for compliance with the standard<br>**ISO14001:2004**<br>The Environmental Management System Applies in the following area:<br>**Production of Notebook and Related Management Activities**<br>**Date of issue: Sep. 07, 2006**<br>**Date of expiry: Sep. 06, 2009**<br>The validity of the certificate depends on the surveillance audit by the certification body at regular intervals<br>The validity information of the certificate shall be inquired from the website www.cqc.com.cn<br>CNAB<br>Register Number: CNAB001-E<br>IAF<br>李怀林<br>Signed by: Li huailin<br>CHINA QUALITY CERTIFICATION CENTRE<br>A10, Chaoyangmenwaidajie, Beijing, 100020, P.R.China<br>http://www.cqc.com.cn |

## 3. ISO 9001:2002_ Quality Management System Certificate:

**Certified in 1999:**

- ASUSTeK Corporate Office, Taiwan;
- ASUS Taoyuan Factory, China;
- ASUS Suzhou Factory, China;
- ASUS Czech Republic Factory, Europe;
- ASUS Mexico Factory, Mexico.



DNV

DET NORSKE VERITAS

MANAGEMENT SYSTEM CERTIFICATE

Certificate No. 0173-1999-AQ-RGC-RvA

*This is to certify that*

**ASUSTeK COMPUTER INC.**
**MAINTEK COMPUTER (SUZHOU) CO., LTD.**
**ASUSALPHA COMPUTER INC**
**ASUS MEXICO S.A. DE C.V.**
**ASUS Czech s.r.o.**
**ASUS COMPUTER (SHANGHAI) CO., LTD.**

*at*

1) No.15, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.
2) No. 76, Li-Gong St., Peitou, Taipei, Taiwan, R.O.C.
3) No. 5, Shing Yeh St., Kwei Shan Hsiang, Taoyuan Hsien, Taiwan, R.O.C.
4) No.233, Jin Feng Rd., SND, Suzhou, Jiangsu, 215011, P.R.China
5) 4F, No.150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.
6) C.Miguel de la Madrid No.9650 Centro Industrial Juarez Libramiento Puente Alto, Cd. Juarez, Chihuahua, 32648 Mexico
7) Na Rovince 862, 720 00 Ostrava-Hrabova Czech Republic, Europe
8) 8F., NO.168, MEISHENG ROAD, WAIGAOQIAO FREE TRADE ZONE , SHANGHAI, CHINA

*has been found to conform to the Management System Standard:*

**ISO 9001:2000**

*This Certificate is valid for the following product or service ranges:*

1) **DESIGN, MANUFACTURE & SERVICE OF MOTHER BOARDS, PERSONAL COMPUTERS, NOTEBOOK COMPUTERS, SERVERS, ADD-ON CARDS, OPTICAL DRIVES, MODEMS, WIRELESS COMMUNICATION PRODUCTS, AMUSEMENT CONSOLES, NETWORKING ACCESSORIES, PBX (PRIVATE BRANCH EXCHANGE) AND DIGITAL MUSIC PLAYER.**
2) **DESIGN, OUTSOURCING & SERVICE OF LCD TV AND LCD MONITOR.**
3) **MANUFACTURE OF INKJET MULTIFUNCTION (SCAN / FAX / COPY) PRINTERS AND INKJET PRINT HEADS.**

*Original Certification date:*
October 1st, 1999

*Place and date:*
Taipei, November 13th, 2006

*This Certificate is valid until:*
October 1st, 2008

*for the Accredited Unit:*
DNV CERTIFICATION B.V.,
THE NETHERLANDS

MGMT. SYS.
RvA C 024

*Compliance to the Standard in respect to the indicated scope is verified by the DNV approved registered Team Leader.*
Joseph Chu
*Lead Auditor*

Chen Yi
*Management Representative*

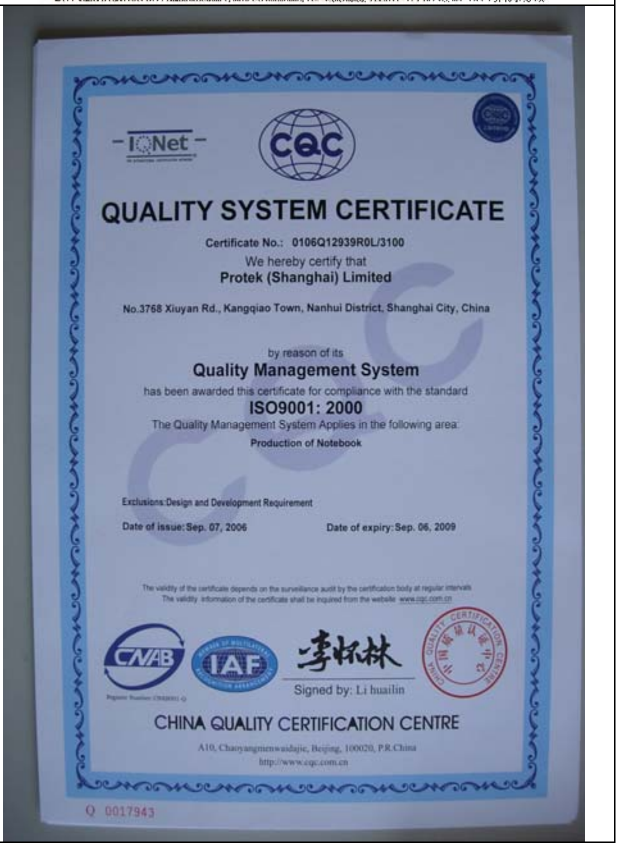
Lack of fulfilment of conditions as set out in the Appendix may render this Certificate invalid.

CERT-AQ-RvA

DNV CERTIFICATION B.V. Haastrechtstraat 7, 3079 DG Rotterdam, The Netherlands, TEL INT +31 10 2922 688 FAX +31 10 4790 798

**Certified in 2006:**

- ASUS Shanghai Factory, China



IQNet

CQC

QUALITY SYSTEM CERTIFICATE

Certificate No.: 0106Q12939R0L/3100

We hereby certify that
**Protek (Shanghai) Limited**

No.3768 Xiuyan Rd., Kangqiao Town, Nanhui District, Shanghai City, China

by reason of its
**Quality Management System**
has been awarded this certificate for compliance with the standard
**ISO9001: 2000**
The Quality Management System Applies in the following area:
**Production of Notebook**

Exclusions:Design and Development Requirement

Date of issue:Sep. 07, 2006

Date of expiry:Sep. 06, 2009

The validity of the certificate depends on the surveillance audit by the certification body at regular intervals
The validity information of the certificate shall be inquired from the website www.cqc.com.cn

CNAB

IAF

李怀林
Signed by: Li huailin

CHINA QUALITY CERTIFICATION CENTRE

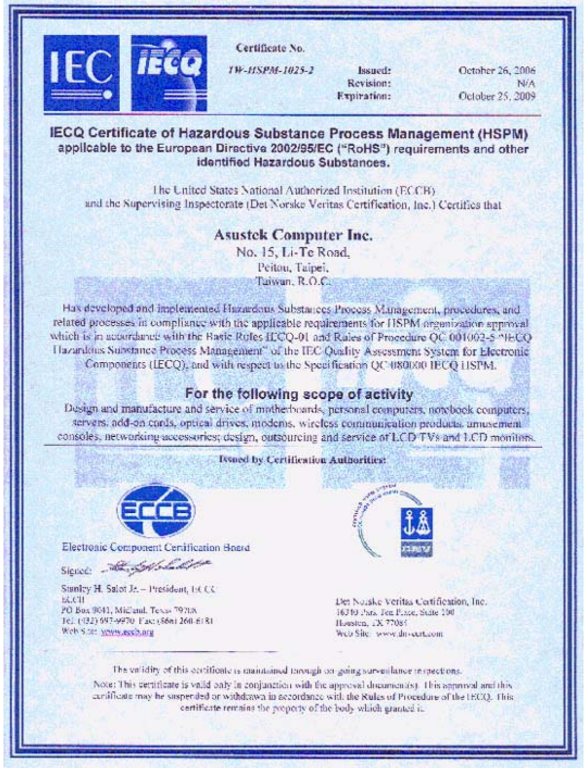
A10, Chaoyangmenwaidajie, Beijing, 100020, P.R.China
http://www.cqc.com.cn

Q 0017943

## 4. QC 080000:2005_Hazardous Substances Process Management System Certificate:

Certified in 2006:

- ASUSTeK Corporate Office, Taiwan;
- ASUS Taoyuan Factory, Taiwan;
- ASUS Suzhou Factory, China;
- ASUS Shanghai Factory, China;
- ASUS Czech Republic Factory, Europe;
- ASUS Mexico Factory, Mexico.



Certificate No.
*TW-HSPM-1025-2*

**Issued:** October 26, 2006
**Revision:** N/A
**Expiration:** October 25, 2009

**IECQ Certificate of Hazardous Substance Process Management (HSPM) applicable to the European Directive 2002/95/EC ("RoHS") requirements and other identified Hazardous Substances.**

The United States National Authorized Institution (ECCB) and the Supervising Inspectorate (Det Norske Veritas Certification, Inc.) Certifies that

**Asustek Computer Inc.**
No. 15, Li-Te Road,
Peitou, Taipei,
Taiwan, R.O.C.

Has developed and implemented Hazardous Substances Process Management, procedures, and related processes in compliance with the applicable requirements for HSPM organization approval which is in accordance with the Basic Rules IECQ-01 and Rules of Procedure QC 001002-5 "IECQ Hazardous Substance Process Management" of the IEC Quality Assessment System for Electronic Components (IECQ), and with respect to the Specification QC 080000 IECQ HSPM.

**For the following scope of activity**

Design and manufacture and service of motherboards, personal computers, notebook computers, servers, add-on cards, optical drives, modems, wireless communication products, amusement consoles, networking accessories; design, outsourcing and service of LCD TVs and LCD monitors.

**Issued by Certification Authorities:**

Electronic Component Certification Board

Signed:

Stanley H. Salot Jr. – President, ECCB
ECCB
PO Box 9041, Midland, Texas 79708
Tel: (432) 697-9970 Fax: (866) 260-6181
Web Site: www.eccb.org

Det Norske Veritas Certification, Inc.
16340 Park Ten Place, Suite 100
Houston, TX 77084
Web Site: www.dnv-cert.com

The validity of this certificate is maintained through on-going surveillance inspections.

Note: This certificate is valid only in conjunction with the approval document(s). This approval and this certificate may be suspended or withdrawn in accordance with the Rules of Procedure of the IECQ. This certificate remains the property of the body which granted it.

## Appendix 2 – 2007 Objectives/Targets and Managing Programs

### ■ ASUS Corporate Office

| Policy | No. | Objectives | Targets | Programs |
|---|---|---|---|---|
| Summon all employees to participate | 96-001 | "ASUS No-Smoking Working Environment" to be certified | 2007 ASUS to pass "No-Smoking Working Environment" | "ASUS No-Smoking Working Environment" program promotion and certification |
| Enable a company-wide promotion of corporate responsibility in social environment. | 96-002 | Initiating "Corporate Ethic Management Procedure" | April 2007 to be announced | "Corporate Ethic Management Procedure initiation" program |
| Abide by all environmental protection, labour, safety and health laws. | 96-003 | "Working Rule" to be reviewed by Department of Labour | June 2007 ready to send for reviewing | "Working Rule to be reviewed by Department of Labour" program |
| Satisfy customer requirements and become an entirely green enterprise | 96-004 | "Environmental Cost Accounting" program promotion and execution | Nov.2007 ready for collection of data and statistic numbers | "Environmental Cost Accounting" program |
| Satisfy customer requirements and become an entirely green enterprise | 96-005 | Green House Gas (GHG) reduction | Dec.2007 ready for phase I. planning | "Green House Gas (GHG) Reduction Plan" |
| Pollution Prevention | 96-006 | Enhance battery recycling rate | Battery recycling rates over 10% | "Battery Recycling Rate Enhancement Program" |
| Summon all employees to participate | 96-007 | Canteen employee satisfaction survey | Overall satisfaction rates over 70% | "Canteen Employee Satisfaction Survey Program" |
| Summon all employees to participate | 96-008 | Physical Exercise _ weight losing | Over 100 kgs | "Physical Weight Losing Program" |
| Pollution prevention & continuously improve | 96-009 | Energy Saving Plan | Saving rates over 5% | "Energy Saving Program" |
| Summon all employees to participate | 96-010 | Environmental, safety and fire-fighting poster selection | To be announced and reviewed by June 2007 | "Environmental, Safety and Fire-fighting Poster Selection Campaign" |
| Satisfy customer requirements and become an entirely green enterprise | 96-011 | Participating Oekom Environmental Rating | June 2007 to be announced | "Oekom Environmental Rating Program" |

## ■ ASUS Suzhou Factory

| Policy | No. | Objectives | Targets | Programs |
|---|---|---|---|---|
| Conserve all natural resources, and actively prevent pollution | MT07-001 | 5S improvement for the backside of heavy machinery area of plant 2, and outside carpentry room of plant 5. | Reconfirming the waste temporary depositing area and clean it in time | 5S improvement program for the backside of heavy machinery area of plant 2, and outside carpentry room of plant 5 |
| | MT07-002 | Reducing consumption of solder-absorbing belt. | Reducing 10% of unit consumption _ comparing to the amount in Jan. 2006 | Reducing consumption of solder-absorbing belt program |
| | MT07-003 | Reducing flux consumption in BB PD | Reducing 5% of unit consumption _ comparing to the amount in Feb. 2006. | Flux using improving program |
| | MT07-004 | Reducing monthly disposing rate for testing fixtures | Reducing 5% of monthly disposing rate | Reducing monthly disposing rate for testing fixtures |
| | MT07-005 | Reducing the waste of soldering paste | Reducing soldering paste consumption from 20% to 10% | Reducing soldering paste using program |
| | MT07-006 | Reducing the consumption of CD-R | Reducing the consumption of CD-R _ 24000pcs a year | HDD copy machine introducing program |
| Reduce environmental impact and safety risk | MT07-007 | Enhancing level III safety training for employees | 80% of new employees shall receive level III safety training within a month | Introducing level III safety training program for new employees |
| | MT07-008 | Drinking water sanitation | The passing rate of drinking water inspection by month | Drinking water machine maintenance and water quality inspection program |
| | MT07-009 | Increasing voluntary fire control team ability | Excellent grade for performance review | Enhancing fire control training to relevant personnel |
| | MT07-010 | Second level managers' safety education | 80% of departmental managers to complete 2 hours of safety training | Second level manager safety education program |
| | MT07-011 | Enhancing the preventive promotion for typical hazards | Per month | Promoting program for the prevention of typical hazards |
| | MT07-012 | Reducing the possible risks of fire for illumination system in warehouse | 0 case a year | Re-allocating fluorescent lamps program |
| | MT07-013 | Improving the management of labour protection articles | Allocation and usage for labour protection articles shall be 100% percent correct | Improving program for the allocation and usage for labour protection articles |
| | MT07-014 | Maintek extinguisher allocation and management improvement | Reasonable allocation for extinguishers, enhance relative application and process | Maintek extinguisher allocation and management improving program |
| | MT07-015 | Reducing accidents result from training facility breakdown | Accidents caused by facilities _ 0 case a year | Preventing accidents of facility breakdown program |
| | MT07-016 | To prevent fire accidents | Fire accidents _ 0 case a year | Fire accident prevention management program |
| | MT07-017 | Reducing professional accidents | 0 case a year | FMEA safety management program |
| | MT07-018 | Reducing forklift accidents | MMD/FG-WH forklift accidents ≦3 cases | MMD/FG-WH forklift operating program |

| | | | | |
|---|---|---|---|---|
| | MT07-019 | Reducing professional accident frequency | Hazardous accidents < 4 cases a year | Safety management program in FE & ME in MBA plant |
| | MT07-020 | Reducing the harm of professional accident | Death accident <=1 case a year | Internal OH&S management program in APN |
| | MT07-021 | Reducing fire accidents | Fire accidents _ 0 case a year | Internal OH&S checking program in APN |
| | MT07-022 | Reducing production professional accidents | production professional accidents 0 % | Production professional accidents reducing program |
| | MT07-023 | Reducing professional accident frequency | Hazardous accidents < 4 cases a year =0 case a year | Factory safety management preventing program |

## ■ ASUS Shanghai Factory

| Policy | No. | Objectives | Targets | Programs |
|---|---|---|---|---|
| 1. Abide by all environmental protection, labour, safety, and health laws. | CS07-001 | The safety staffs gets certification. | Full-time safety staff / full-time (or part-time) fire safety staff 100% gets certification. | The safety/fire training & certification plan |
| | CS07-002 | Implement occupational health files for harmful job | 100% establish occupational health files for the persons who do harmful work, such as X-ray, noise, high temperature, hazardous chemistry, power frequency, and so on. | The occupational health files management plan for the persons who do harmful work |
| | CS07-003 | Implement company-wide safety education courses for new comers | 100% implement company-wide safety education courses for new comers | Company-wide safety education courses |
| 2. Conserve all natural resources, and actively prevent pollution. | CS07-004 | Reducing paper consumption of company activities | 10% reduction of the unit paper consumption in MMD dept. | A4 photocopy paper recycling plan |
| | CS07-005 | | In 2007, 10% reduction of the paper consumption per-capita for company-wide office activities, compare to 2006 | Paper recycling plan |
| | CS07-006 | Rationally reuse the surplus tank water | 100% reusing the surplus tank water | The surplus tank water recycling plan |
| 3. Reduce environmental impact and safety risk. | CS07-007 | Improving the safety condition of the factory oil-bath. | Keep zero environmental pollution for the factory oil-bath. | Rebuilding the base of the factory oil-bath project |
| | CS07-008 | Improving the safety condition for the roof activities | Keep zero accident (eg: hitting, falling and stumbling) of any activities on the roof. | The project for setting bridges which span the roof covering pipeline. |
| | CS07-009 | Keep zero safety accident during 2007 | Keep the boiler operation with zero accident | The management project of the boiler operation |
| | CS07-010 | | Keep the 35kV substation operation with zero accident | The management project of the 35kV substation operation |
| | CS07-011 | Keep a safe dormitory environment | Keep zero fire accident during 2007 | The fire & safety emergency plan for the dormitories |
| | CS07-012 | Avoiding serious injuries of the forklift operation | Keep zero serious injury of the forklift operation | Training program for the forklift operation & maintenance |

| | | | | |
|---|---|---|---|---|
| | CS07-013 | Keep zero serious occupational injury during 2007 | (1) Keep zero death accident & zero occupational disease<br>(2) Keep zero serious injuries due to equipment disoperation<br>(3) Keep zero infection for the clinic staff | Serious occupational injury prevention program |
| | CS07-014 | Properly use the personal protective devices | 100% correctly use the personal protective devices | The personal protective devices management program |
| | CS07-015 | Implement risk management of hazardous chemicals | Non-illegal use of hazardous chemicals. | Hazardous chemicals management plan |
| | CS07-016 | | Zero serious occupational injury in QRE lab | Plan for properly use of hazardous chemicals in QRE lab |
| 4. Summon all employees to participate in the program and continuously improve it. | CS07-017 | Enhance all employees' fire emergency response abilities | Hold fire fighting training and drills at least twice a year | Fire emergency training program |
| | CS07-018 | Holding the annual healthy improvement activities | Hold health lecture or welfare health examination by quarterly basis. | Annual healthy improvement program |