

2003 FUJITSU GROUP SUSTAINABILITY REPORT

# Fujitsu Profile (as of March 31, 2003)

Company name

FUJITSU LIMITED

Address

Main Branch: 4-1-1 Kamikodanaka, Nakahara-ku, Kawasaki,

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Tel. +81-3-6252-2220

**Established** 

June 20, 1935

Sales

Fiscal year 2002 Consolidated ¥4,617,500 million

Unconsolidated ¥2,695,000 million

Financial year-end

March 31

Representative

Hiroaki Kurokawa, President (effective June 24, 2003)

**Business contents** 

The Fujitsu Group continues to conduct a total solutions business offering superior products and services supported by powerful (cutting-edge, high-performance, highly reliable) technologies.

#### Software services

System architecture (system integration services), support for system introduction and operations, consulting, full operation information system management (outsourcing, IDC services), provision of network environments required for information systems and various network-based services (network services, Internet services), various software, maintenance and monitoring services for information systems and networks, information system installation and network construction

#### **Platforms**

Various servers (global servers, UNIX servers, IA servers), peripheral devices associated with information systems (disc arrays, system printers), personal computers, memory devices (small magnetic disc devices, magneto-optical disc devices), dedicated terminal devices (ATMs, POS systems), cellular phones, switching systems (digital switching systems, IP switching nodes), transmission systems (optical transmission systems, optical seabed transmission systems), mobile communication systems (INT-2000 base station systems, PDC base station systems)

#### Electronic devices

Logic ICs (system LSIs, ASICs, micro controllers, FRAM mixed-loading logic), memory ICs (flash memory, FCRAM), LCD panels, semiconductor packages, compound semiconductors, SAW filters, components, plasma display panels

Capital

¥324,600 million (as of March 31, 2003)

**Employees** Conso

Consolidated 157,044 (as of March 31, 2003) Unconsolidated 34,690 (as of March 31, 2003)

#### pr.fujitsu.com/en/profile/profile.html

#### Scope of this report

The environmental burden data introduced in this sustainability report are for the 41 main manufacturing companies of Fujitsu and the Fujitsu Group (29 domestic companies, 12 overseas companies). The performance data concerning environmental communication and social contribution activities are for the main affiliated companies of the Fujitsu Group (198 companies worldwide: share ownership of 50% or above).

#### For inquiries, please contact:

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You may also contact us by using the fax questionnaire at the end of this report or visiting our environmental homepage.

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Senior authority for publication: Masamichi Ogura, Corporate Executive Vice-President

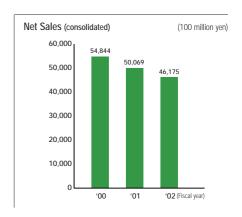
Planning & editing: Mitsugu Sato, General Manager, Sustainable Development Planning Division

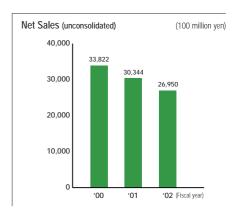
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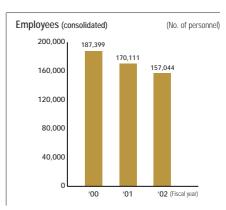
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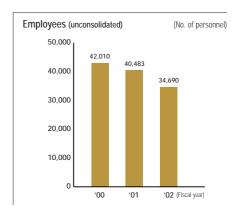
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#### eco.fujitsu.com/en/contact/











# —— Editorial policy ——

This Fujitsu Group Sustainability Report is compiled to disclose corporate information positively by describing the respective concepts and measures implemented in response to environmental, economic and social issues by the Fujitsu Group as a whole. It places particular stress on environmental activities in order to inform stakeholders of our environmental plans, goals and achievements in an easily comprehensible manner through detailed descriptions illustrated by graphs and flow charts. This report for the 2003 fiscal year focuses on the environmental burden imposed by Fujitsu Group operations, the activities we conducted to protect the environment, our R&D activities related to environmental technologies, the measures we have implemented to control environmental risks and the contents of analyses. Some actual results are limited to our organization in Japan, or Fujitsu alone, however, because the difficulties involved in collating such a broad range of data prevented indication of Group results in these cases. We are developing strategies to overcome these problems for future publications.

Efforts to ensure the reliability of the contents of this report included inviting an evaluation by a third party, Shin Nihon Environmental Management and Quality Research Institute, which has submitted an independent review report. We followed the guidelines below in compiling the report.

We hope the report will foster two-way communication between the Fujitsu Group and society at large concerning these and related issues. We plan to continue promoting this dialogue by publishing this environmental management report annually, working at the same time to make it increasingly easy to read and understand, so please share your opinions with us using the questionnaire at the end of this report.

#### [Scope]

The contents of this report focus on Fujitsu's environmental activities along with some of its activities in the economic and social spheres in fiscal 2002. The data are actual measurement values. Some concepts, measures and activity data are for the period up to June 2003.

#### [Guidelines]

- Sustainability Reporting Guidelines 2002 (GRI) www.globalreporting.org/guidelines/2002/gri\_2002\_guidelines.pdf
- 2000 Environmental Report Guidelines (Ministry of the Environment) www.env.go.jp/en/eco/erq2000.pdf
- 2002 Environmental Performance Indicator for Businesses (Ministry of the Environment) www.env.go.jp/en/rep/eco/epi2000.pdf
- 2001 Stakeholder-conscious Environmental Reporting Guidelines (METI) www.meti.go.jp/english/report/downloadfiles/g02EnGuie.pdf

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**Fujitsu Profile** 

# **Management Perspectives**



Naoyuki Akikusa Chairman CEO Fuiitsu Limited

Naojuki Alikusa

#### Conducting sustainability activities that treat environmental preservation, economic responsibility and social responsibility as a single concern

As a responsible member of the IT industry contributing to construction of the society of tomorrow, the Fujitsu Group devotes daily efforts to realizing its mission of reducing the environmental burden imposed by society at large. This means responding rapidly to the intensifying changes in society and raising production efficiency, not only by configuring customers' systems and providing them with services, but also by helping them optimize their use of their application assets.

We are especially concerned with conducting business guided throughout by two keywords, "customer focus" and "speed," in accordance with our customer prioritization policy. We are actively pioneering new global markets, promoting the evolution of broadband network infrastructure and forwarding the trend toward IT industry software and services in order to offer customers optimal solutions, and to grow with them as a corporation providing global-scale support in the areas of both hardware and software. It is our advanced IT technology and an environmental awareness fostered in every employee that make this possible.

We have come in recent years to recognize transparency and efficient management as key factors in ensuring a company's growth potential. "The FUJITSU Way" defines the Fujitsu Group's mission and the principles underlying its employees' actions centered on five designated indicators: "customers," "human resources," "quality," "environment" and "growth and profits." These guidelines were formulated to ensure that FUJITSU (Fujitsu and the Fujitsu Group) will continue to develop as a genuine international corporate body.

While pursuing its technological development unabated, the Fujitsu Group is proposing new information systems and cultivating the advanced practical introduction of IT. In the future, we will continue our quest for sustainable management that views environmental preservation, economic responsibility and social responsibility as a single concern in implementing measures for development of a sustainable society.



Hiroaki Kurokawa President COO Fujitsu Limited

Herochi Kurokawa

# Implementing unified Group measures to realize a sustainable society

Ten years have now passed since the Earth Summit in Rio de Janeiro. The Johannesburg Earth Environment Summit was then held in 2002 to bring to fruition the Earth Summit's Agenda 21 action plan for sustainable development, which has been implemented by national governments as well as state and local governments and industrial concerns. We formulated the "Fujitsu Group Environmental Policy," a complete revision of the decade-old "Fujitsu's Commitment to the Environment," based on a current grasp of appropriate environmental actions for the future and today's trends in global environmental activities.

Since its founding, the Fujitsu Group has conducted environmental activities from the perspective of "manufacturing conducted in harmony with nature" and passed them down to succeeding generations of management and employees. No matter to what heights technologies may reach, if the people who employ them to provide products and services fail to take the environment into consideration, they are certain to impose a heavy burden on Earth's environment. This is why we are working to preserve the environment from a global perspective, as well as from the Group and customer perspectives, throughout the product life cycle. To this end, we are taking full advantage of IT cultivated through the "value chain" created by our Sales, Platforms, Software Services and Electronic Devices business groups.

The "Fujitsu Environmental Protection Program" gives concrete form to the vision of the Fujitsu Group as a whole concerning environmental preservation and provides guidance for our activities. Our goals for the three years from fiscal 2001 to 2003, which represent the industry's highest standard, are elucidated in the "Fujitsu Environmental Protection Program (Stage III)," and we have so far achieved nearly all the goals presented there for fiscal 2001 and 2002. In fiscal 2003, the final year of the program, we are continuing to pursue activities aimed at achieving the program's goals.

In the months and years ahead, we will continue to work as a Group to satisfy all your expectations.



Masamichi Ogura Corporate Executive Vice-President Fujitsu Limited

Masamichi Ogura

#### Deploying IT as a unifying force for environmental preservation activities with global reach

Since its foundation, the Fujitsu Group has helped customers shape their dreams with "Fujitsu reliability and creativity" as our watchword. We have, at the same time, positioned global environmental issues as an important management concern, and we are promoting Group-wide environmental preservation activities in line with the slogan "Focused on the Green." We have adopted the new "Green Process" concept for environmental preservation activities in our plants, and have succeeded in reducing the environmental burden imposed by every production line. We are, moreover, tailoring our Group-wide business activities to reduce the environmental burden throughout the entire product life cycle by such means as making all the products we manufacture Green Products and offering environmental solutions employing the latest information technologies, based on the "Fujitsu Environmental

Protection Program (Stage III)".

We believe that our future environmental activities should be directed toward employing information technologies to reduce the environmental burden by enhancing the efficiency of work procedures and energy use and by minimizing the use of transportation facilities to transport people and goods. We have therefore committed ourselves to contributing to society as a whole by participating in national efforts to realize the e-Japan concept and eco-town business, and we have initiated business activities to this end.

We are reinforcing our "environmental communication" through disclosure of our environmental preservation activities, and we would be pleased to receive the opinions of a wide variety of people concerning our efforts.

# Corporate Governance and Organization, Vision, The FUJITSU Way

# Toward a new Fujitsu that can contribute further to society

We are reinforcing our offering of total solutions supported by high-quality products and services by striving to implement a management structure that assures transparency and quick responsiveness.

#### **Business vision**

As a core corporation in opening the broadband Internet era, FUJITSU (Fujitsu and its Group companies) currently defines its business orientation as "continuously offering total solutions supported by high-quality products and services, primarily to corporate and administrative customers, based on powerful advanced technologies characterized by high performance and reliability." We consistently pursue cuttingedge technological innovation and business activities from the customer's perspective in order to realize a society in which anyone can make full use of IT anywhere and anytime as expressed by the term "ubiquitous."

## Management Structure

We renovated our management structure in fiscal 2002, introducing a Corporate Executive Officer system and a business group system, with the aim of reinforcing our capabilities for realizing our business vision.

#### Reform of the Board of Directors and introduction of a Corporate **Executive Officer system**

We have separated the supervision function of management from the executive function by reforming our Board of Directors and introducing a Corporate Executive Officer system. The function of the Board of Directors is now concentrated on management supervision from the perspective of our stockholders and the Group as a whole. We have transferred significant authority to the operating officers (corporate officers), meanwhile, to accelerate the decision-making process and clarified management execution responsibilities while pursuing "speedy management." Under the system, major decisions concerning management execution are made by the Management Board, which is headed by the President and comprises management personnel such as business group and corporate center managers.

#### New business group system

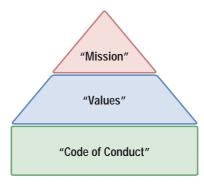
Our desire to conduct "organic management" making the most of the comprehensive power that is a major source of our corporate strength led us to the introduction of a business group system. Operation as business groups stresses mobility and mutual cooperation and assures flexible resources distribution and enhanced intra-Group synergism. Under the new system, Fujitsu and its affiliated companies are organized into four groups: the Sales, Software Services, Platforms and Electronic Devices business groups. Among these, the Platforms Business Group combines two divisions responsible for communications equipment and information-processing equipment. It is pursuing development of integrated network technology and computer technology products. These four business groups are supported by the Corporate Center, moreover, which takes responsibility for the shared concerns of the Group as a whole, reinforcing Group strategies and improving services within the Group.

**Management Board** Corporate Center Sales Group Software Services Business Group Platforms Business Group **Electronic Devices Business Group Independent Businesses** 

## The FUJITSU Way

Fiscal 2002 saw the introduction of "The FUJITSU Way," a statement communicating a shared awareness of proper actions as a corporation and as employees formulated to ensure that FUJITSU continues to develop as a genuinely international corporate group.

This new statement replaces the former "Fujitsu Corporate Action Guidelines." "The FUJITSU Way" presents the environment as the source of motivation for daily action by individual employees and as a set of values they all share. It thus positions the environment as the driving force behind our corporate strategy.



#### Mission

Clearly stated management philosophy FUJITSU will strive to realize the infinite possibilities of the network society while enhancing mutually beneficial relationships in our communities worldwide. To achieve this, we will continually create value by providing products, services, and solutions based on the most powerful technologies.

#### **Values**

The values that form the standards for activities in implementing FUJITSU's

• Customer Focus Make Our Customers' Dreams and Our Dreams Come True People Everyone Takes a Leadership

Pursue the Highest Levels of Quality Quality

 Sustainable Development

Focused on the Green

· Growth and Profit Increase Customer Trust and the Global Value of "FUJITSU"

#### Code of Conduct

Specific regulations regarding the conduct that should and should not be followed in implementing FUJITSU's business

- · Respect for Individual Rights
- · Adherence to Laws
- · Confidentiality
- · Respect for Intellectual Property
- · Business Integrity
- Fair Treatment of Consumers and Business

# The Fujitsu Sustainability Concept

# Aspiring to sustainable management to help realize a sustainable society in the environmental, economic and social spheres

The Fujitsu Group today is striving to implement sustainable management from the environmental, economic and social perspectives in order to fulfill its corporate responsibility to contribute to sustainable development of society. The advance from environmental management to sustainable management this entails represents the adoption of a new, more comprehensive perspective on our pursuit of business operations in harmony with the future.

# Why does the Fujitsu Group seek sustainable management?

It is essential for corporations today to respond appropriately to environmental issues. In the area of global warming prevention, in particular, the Kyoto Protocol adopted in Japan in 1997 clarifies the responsibility of advanced countries to reduce emissions of greenhouse gases such as CO<sub>2</sub>. In Europe as well as Japan, construction of a cyclical society has become a pressing issue.

Under these circumstances, the Fujitsu Group formulated the Fujitsu Environmental Protection Program (Stage III) in 2001, since which time it has promoted positive environmental activities, including implementation of energy-saving measures, Green Product development, product recycling and support for environmental NGO activities. During these years, we have sharpened our focus on conducting corporate business activities in harmony with economic responsibility and social responsibility as well as on environmental concerns. We consider it vital to apply corporate ethics to every activity in which we engage in relation to the environment, economy and society in addition to the provision of better products.

With the progressive globalization of the market economy, meanwhile, great numbers of products are being sold and used across borders in various countries and regions. We accept our social responsibility for assuring the security of the network society and common access to information that are specific concerns of IT corporations. We recognize the importance of achieving financial transparency and corporate growth, and we intend to contribute to formation of a sustainable society as well as to reduction of the environmental burden.

Thus, we are implementing measures as an advanced IT corporation reflecting a transition in perspectives from "environmental management to sustainable management."

## Fujitsu's pursuit of Sustainability

As an IT company, we work toward development of a sustainable society through activities contributing to positive development in the environmental, economic and social spheres.

- Emphasis on environmental preservation
- · Establishment of a cyclical society



- · Accurate response to global markets
- Corporate accountability and information disclosure
- · Compliance with laws
- Customer-oriented measures
- Human resources cultivation/support
- Positive participation in social activities

#### 4 years as a "leading sustainability company" on Dow Jones Sustainability Indexes

The esteem accorded us for our environmental activities, conducted in line with our "manufacturing in harmony with nature" concept, is reflected in our ranking as a "leading sustainability company" in the technology group on the Dow Jones Sustainability Indexes for four consecutive years. The index, compiled by Dow Jones & Company, Inc., of the United States, covers 2,500 companies in 34 countries. We were

also evaluated by the prestigious British stock index company FTSE Group for our performance in the three categories of "Environmental sustainability," "Upholding and supporting universal human rights" and "Developing positive relations with stakeholders" and honored by inclusion in its "FTSE4Good Global Index."



\* Dow Jones Sustainability Indexes: Dow Jones & Company, Inc., evaluates global corporations and provides indicators measuring their ability to develop into the future. The index has been published annually since 1999.



# **Environmental burden** reduction

#### **Environmental management policy**

- Environmental vision and strategy (Green Life 21)
- · Fujitsu Group environmental policy
- Promotional organizations
- Fujitsu Environmental Protection Program (Stage III)
- Grasping the global environmental burden

#### **Environmental Management System**

- ISO14001 certification acquisition
- · Management system enhancement
- Employee environmental awareness

#### **Environmental accounting**

- · Application of environmental accounting guidelines
- Results and transitions in environmental accounting (clear cost-and-effect indication)

#### **Environmental communication**

- Issuing of sustainability reports
- Provision of environmental information through environmental advertising and TV commercials
- Communication with stakeholders through environmental exhibitions, etc.
- Tie-ups with environmental NGOs/NPOs, educational institution
- Global social contribution activities

#### Performance

- Green process
- Environmental preservation in and around sites (reduction of atmospheric release and drainage)
- · Energy-saving measures
- Measures to reduce greenhouse gases
- Zero waste emission
- Reduction and management of chemical releases

#### **Environmental risk management**

- Measures for soil and groundwater protection
- Reponses to PCB, dioxin, environmental endocrine disrupters and ozonedepleting substances
- Environmental risk awareness education
- Reponses to past violations, penalties and lawsuits

#### **Eco-friendliness in products and services**

- Promotion of green procurement
- Disuse of harmful substances
- Technological development
- Green Product development
- · Environmental labeling
- Product recycling measures
- Reduction of burden through logistics
- · Disclosure of environmental indicators
- · Environmental burden reduction through software services
- Environmental solution product provision



# Corporate growth and contribution to economy

#### **Economic responsibility**

- Presentation of business vision
- · Actualization of management performance responsibilities

#### Accountability and information disclosure

- Management philosophy (The FUJITSU Way)
- Management structure
- Financial disclosure



# Fulfillment of corporate citizenship responsibilities

#### **Compliance with laws**

- · Organization for legal compliance
- Measures for legal compliance

#### Risk management

- Risk management structure/countermeasures
- · Natural disaster countermeasures

#### **Customer focus**

- Accessibility
- Provision of information for customers/consumers
- Inquiry window establishment

#### **Employee satisfaction**

- · Respect for human rights
- Performance evaluation Equal treatment —
- Cultivation of human resources
  - Support for career building
  - FUJITSU University
  - Environmental education
- Safety and health
- · Health support

#### Communication

- Communication with local community
- International exchange

#### **Social contribution**

- Support for social welfare activities (volunteer activities)
- Tie-ups with NGOs/NPOs
- Promotion of academics/education
- · Cultural/artistic activities

# **Contributions to the Global Environment**

(Green Life 21 — Focused on the Green)



# The Fujitsu Group contributes to the future of the global environment through "Green Life 21."

We are pursuing environmental activities aimed at realizing a sustainable society in every area of business based on "The FUJITSU Way" and the "Fujitsu Group Environmental Policy." The slogan "Green Life 21 — Focused on the Green" represents our core concept for promotion of these activities in the 21st century. We implement environmental management through activities in accordance with this concept to reconcile continuing business prosperity with environmental contributions. "What can we do for the future of the global environment?" — We are seeking answers to this question in connection with the following five themes.



#### **Green Management**

Reinforcing the environmental management support system

#### **Eco-friendly corporate management**

We have established an environmental management system in compliance with ISO14001 as the basis for all our activities. We are reinforcing this system to assure continuous improvement of our environmental performance and to enhance our communication with society and improve employee awareness.

- · ISO14001 certification receipt
- · Promotion of green procurement
- · Environmental accounting



### **Green Earth**

Environmental contributions by individual employees

#### Fostering ecology-conscious personnel

We encourage employee participation in the FUJITSU Eco Club environmental volunteer system and are working to expand our environmental education offering to prepare personnel to form the core of all our environmental activities.

- Establishment of FUJITSU Eco Club (Fujitsu Group environmental volunteer club) to encourage voluntary participation by employees in environmental activities
- Enrichment of environmental education and lectures
- Promotion of greenification by biotope creation and tree planting
- Cooperation with NGOs/NPOs and education organizations
- · Environmental communication



#### **Green Factories**

Pursuit of eco-friendly manufacturing

#### Eco-friendly business activities

We introduced eco-scenario planning\*1 in fiscal 2001 and are pursuing strategic environmental activities as advance responses to anticipated future environmental changes.

- · Realization of zero emission
- Reduction of the use of harmful chemical substances
- SCM (supply chain management) to promote energy saving and resources conservation by reducing stocks and transportation requirements
- Promotion of energy savings
- · Deepening of trust by society

#### **Green Life 21**



eco.fujitsu.com/en/info/eco2001greenlife21\_e.html



#### **Green Solutions**

Deploying IT to help realize a resources recycling society

# Offering eco-friendly software services

We are contributing to reducing the environmental burden imposed by society through positive use of IT to provide software services. We help reduce the environmental burden by improving our client companies' operating efficiency.

#### · Eco-society support

Provision of software services that promote resources conservation activities by reducing the use of paper, and introduction of measures to increase energy savings by improving the efficiency and flow of transportation.

e-declaration/e-settlement of taxes, e-commerce, e-government, e-application and e-completion of registration, ITS, etc.

#### Eco-corporation support

Provision of environmental management consulting to support effective environmental activities by corporations, and introduction of online and enhanced-efficiency systems to promote resources and energy savings.

#### · Eco-products support

Supply of eco-design tools and an LCA database to support eco-friendly product creation.



#### **Green Products**

Developing technologies appropriate to environmental preservation and recycling

#### Offering eco-friendly products

We are upgrading our eco-friendly design criteria to reinforce development of Green Products that impose a lower environmental burden. We take a proactive approach to disclosing environmental information concerning our products.

- Development and provision of eco-friendly Green Products
- Disclosure of environmental information concerning products (Eco-labels, etc.)

#### Eco-friendly product recycling

We take eventual reuse of products and parts into consideration beginning with the design process and promote recycling of all our products from the Reduce, Reuse and Recycle perspectives, in that order.

- Promoting reuse of maintenance parts
- The Fujitsu recycling system for efficient collection of post-use products

# Providing new eco-friendly technologies

We established the Materials & Environmental Engineering Laboratories in Fujitsu Laboratories in fiscal 2002 to develop optical catalysts and other new materials to support eco-friendly product creation. We are also creating eco-friendly software services systems.

- Creation of an environmentally sound ecosociety
- Development of new eco-friendly technologies and materials, including biodegradable resins that decompose in the soil, lead-free solder, halogen-free resin and optical catalysts

# **Fujitsu Group Environmental Policy: Environmental Promotional Organization/Council**



# An organization that makes the most of the Group's integrated strengths for environmental activities targeting sustainable social development

We conducted a complete review of our fundamental policy statement, "Fujitsu's Commitment to the Environment," and introduced the "Fujitsu Group Environmental Policy" to ensure a meaningful contribution to sustainable society development. The new policy regulates the conduct of environmental activities through an organization that draws on the knowledge and know-how of the whole Fujitsu Group.

# **Fujitsu Group Environmental Policy**

October 2002

#### **Philosophy**

The Fujitsu Group recognizes that environmental protection is a vitally important business issue. By utilizing our technological expertise in the IT industry and our creative talents, we seek to contribute to the promotion of sustainable development. In addition, while observing all environmental regulations in our business operations, we are actively pursuing environmental protection activities on our own initiative. Through our individual and collective actions, we will continuously strive to safeguard a rich natural environment for future generations.

#### **Principles**

- We strive to reduce the environmental impact of our products throughout the product lifecycle.
- · We are committed to conserving energy and natural resources, and practice a 3R approach (reduce, reuse, recycle) to create best-of-breed eco-friendly products.
- · We seek to reduce risks to human health and the environment from the use of harmful chemical substances or waste
- . Through our IT products and solutions, we help customers reduce the environmental impact of their activities and improve environmental efficiency.
- We disclose environment-related information on our business activities. products and services, and we utilize the resulting feedback to critique ourselves in order to further improve our environmental programs.
- · We encourage our employees to work to improve the environment, bearing in mind the impact of their business activities and their civic responsibilities.

Fujitsu Limited

President CEO & COO iitsu Limited

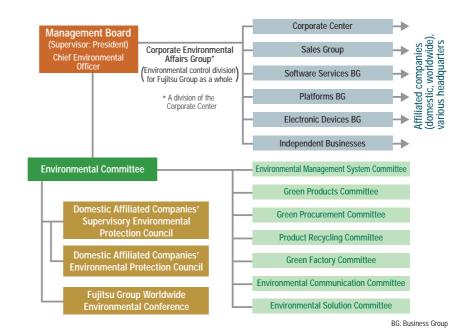
#### eco.fujitsu.com/en/info/fep\_e.html

#### **Environmental Promotion Organizations**

We have formed promotional organizations in conformity with the business group system to facilitate faster responses to directives from top management and to various other circumstances. To ensure environmental management responding to the reformation of our corporate environmental committee structure, we instituted the Green Factory Committee, the Environmental Communication Committee and the **Environmental Solution Committee to support** ongoing efforts to reinforce environmental activities contributing to the development of a sustainable society.

#### Integrated Group Efforts (Domestic Affiliated Companies' **Supervisory Environmental Protection** Council)

Meetings of the Domestic Affiliated Companies' Supervisory Environmental Protection Council are held to promote cooperation in environmental activities within the Fujitsu Group. The Domestic Affiliated Companies' Environmental Protection Council



centered on 37 consolidated manufacturing subsidiaries in Japan comprising executives with environmental responsibility also meets regularly, moreover, to discuss and approve action plans and proposals for achieving environmental protection program objectives (2 meetings in fiscal 2002, 20 overall).



A meeting of the Domestic Affiliated Companies' Supervisory Environmental Protection Council

# **Fujitsu Environmental Protection Program (Stage III)**



# Implementing environmental activities in every field of business through integrated Group efforts involving all personnel

The Fujitsu Environmental Protection Program puts the principles expressed in the "Fujitsu Group Environmental Policy" into action throughout the Fujitsu Group. We are also establishing an environmental action program in the area of services, moreover, to implement environmental activities in every business field in which the Fujitsu Group participates. This program is designed to expand our environmental efforts to involve the full Group and all its employees in environmental improvement under the banner, "Focused on the Green."

#### **Targets and Results**

Fujitsu Group (Fujitsu Japan and all its consolidated subsidiaries / affiliates)

Items		Fujitsu Group targets	Result (fiscal year 2002)	Evaluation
Green Products Product Development		All newly developed products to be "Green Products" by the end of fiscal 2003	Green Products accounted for 66.0% of newly developed products.	On the way
	Lead-free Solder	Abolishment of lead solder from products manufactured by Fujitsu Group must be achieved by the end of fiscal 2003	Lead-free solder employed by 62.3% of products manufactured by Fujitsu Japan	On the way
Green Procuremen	nt*1	Percentage of green materials and parts for products to be 99% or more of procurement money by the end of fiscal 2003	Procurement ratio of 93.2% was achieved for materials and parts for products	On the way
Product Recycling		Recycle system for collected waste products to be established by the end of fiscal 2003	Recycle system for collected waste products to be established in May, 2003	*
Energy-saving Mea		Sales-based energy (electricity, oil and gas) consumption per unit to be cut 25% by the end of fiscal 2003 based on fiscal 1990 results	14.3% reduction of energy consumption (electricity, oil and gas) per unit of sales based on fiscal 1990 results	On the way
Zero-Emissions		Name and a Waste to be cut 60% by the end of fiscal 2003 based on fiscal 1998 Reduction of waste disposal volume to 9,644 tons, 69.0% reductio		*
Reduction of Release of Chemicals		Release of main chemicals to be cut 30% by the end of fiscal 2003 based on fiscal 1998 results	84.2% reduction of main chemical emissions based on fiscal 1998 results	*

#### Fujitsu (unconsolidated)

Items		Fujitsu targets	Result (fiscal year 2002)	Evaluation
Green Products Product Development		All newly developed products to be "Green Products" by the end of fiscal 2002	Green Products accounted for 100% of newly developed products	
	Lead-free Solder	Abolishment of lead solder from products manufactured by Fujitsu Japan must be achieved by the end of December 2002	Lead-free solder employed by 95.5% of products manufactured by Fujitsu Japan	
Green Procuremer	nt*1	Materials and parts for products: Percentage of green materials and parts for products to be 99% or more of procurement money by the end of fiscal 2002	Percentage of green materials and parts procured for products raised to 99.4%	
		Office supplies: 100% of procured office supplies to be Green Products certified by public corporation or organization by the end of fiscal 2002	Percentage of green office supplies raised to 99.6%	
Product Recycling		Reuse and recycle rate for collected waste products to be 90% by the end of fiscal 2003	Reuse and recycling rate for collected post-use products raised to 85.1%	On the way
Energy-saving Measures against Global Warming		Sales-based energy (electricity, oil and gas) consumption per unit to be cut 40% by the end of fiscal 2003 based on fiscal 1990 results	29.7% reduction of energy consumption (electricity, oil and gas) per unit of sales based on fiscal 1990 results	On the way
Zero-Emissions		Zero-emissions to be achieved by the end of fiscal 2003	Reduction of waste disposal volume to 530 tons Plants achieving zero-emissions: Oyama Plant, Nasu Plant, Nagano Plant, Numazu Plant, Kumagaya Plant, Minamitama Plant, Akashi Plant, Mie Plant, Aizuwakamatsu Plant, Iwate Plant, Kawasaki Plant, Akiruno Technology Center, Fujitsu Laboratories (Atsugi)	*
Reduction of Release of Chemicals		Release of main chemicals to be cut 30% by the end of fiscal 2003 based on fiscal 1998 results	85.0% reduction of main chemical release based on fiscal 1998 results	*

E**valuation:** : Achieved 100% : Achieved 90% : Achieved 80% 🗴 : Achieved < 80% On the way : Target on the way 📩 : Achievement ahead of plan

# **Business Operations and Environmental Burden**



## Our environmental activities begin with determining the burden our operations place on the environment in numerical terms.

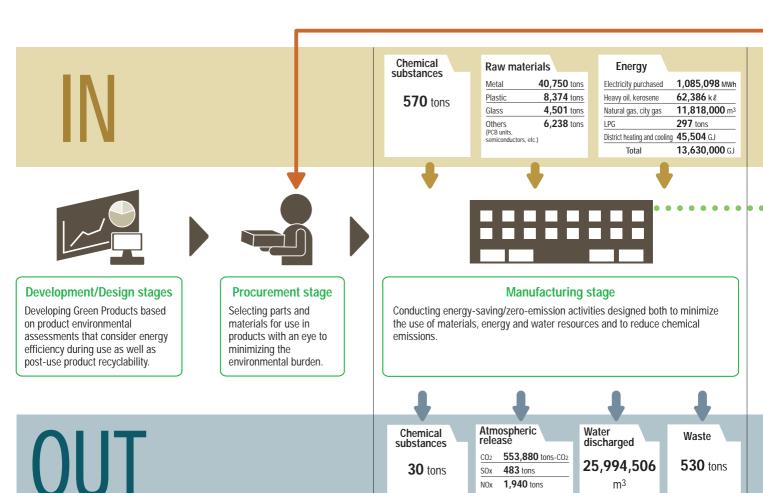
Every process we undertake in order to provide products and services — including materials and parts procurement and the use of energy and other resources such as electricity, water, metal and chemical substances — imposes a burden on the environment in one way or another. We have made it our mission to provide products and services with higher added value while calculating the amount of the overall environmental burden and continuing our efforts to reduce it.

Working in various ways to lower the environmental burden throughout the product life cycle

We consume energy and other resources in order to supply a wide range of products, from information-processing systems and personal computers to mobile phones and semiconductors. We are committed to

assessing the impact of all these business activities on the environment — and to following up by minimizing the environmental burden at every stage.

\* Range: Japan (Fujitsu Limited only)



Calculation methods

#### • Chemical substances Volume of PRTR Law target chemicals handled by plants/sites in fiscal 2002 Volume used in major products shipped in fiscal 2002 · Raw materials [Volume of raw material used per product Number shipped in fiscal 2002] \* Major products: Personal computers, cellular phones, servers, scanners, printers, magnetic optical discs, small magnetic discs, disc arrays, financial terminal products, distribution terminal products, IP network products, electronic devices Volume of electricity, gas and fuel consumed by plants/sites in fiscal 2002 Energy Chemical substances Measuring the concentrations of PRTR Law target chemical substances discharged by plants through drains and exhaust ports in fiscal 2002 and calculating by multiplication of the total volume discharged (nickel compounds, manganese compounds, etc.) or the total volume emitted (xylene, toluene, etc.), or calculating based on the balance of chemical substances (xylene and toluene). Atmospheric release CO2: CO2 discharge volume associated with energy consumption in plants/sites in fiscal 2002 [Energy consumption x CO<sub>2</sub> conversion factor] NOx, SOx: Calculated from emissions and concentration from vents (boilers, etc.) of plants/offices in fiscal 2002 · Water discharged Wastewater volume emitted from plants / sites to sewerage or rivers in fiscal 2002 Waste Volume of landfill disposal and simple incineration by plants/sites in fiscal 2002

Manufacturing



#### Cafeteria kitchen waste recycling

We are turning kitchen waste from our company cafeterias into fertilizer, providing it to farms and returning the agricultural products grown with it to our cafeteria tables. Eleven sites have introduced the system, and 306 tons, or 95%, of the total of 323 tons of kitchen waste generated at these sites in fiscal 2002 was turned into fertilizer.

Energy

Fuel

8,125 kℓ (Light oil)

#### **Distribution/Sales stages**

Minimizing the amount of energy consumed for product transportation and striving to diminish the volume of waste gases.



Atmospheric release

C<sub>02</sub> 21,449

tons-CO<sub>2</sub>

Distribution/Sales

# Energy

Calculated based on CO2 emissions per truck mile in fiscal 2002 using the coefficient 2.64 (kgCO<sub>2</sub>/ℓ) employed as the index for light oil by the Ministry of the Environment. Data are estimates

 Atmospheric CO<sub>2</sub> discharge volume per truck mile in fiscal 2002

[Truck mileage x Load weight x 0.35 kgCO<sub>2</sub>/t  $\cdot$  km(\*)] ("Basic CO<sub>2</sub> emission unit for freight transporters: From Ministry of the Environment Central Environment Council data released on April 26,

Energy

Electricity

8,799,038 MWh (86,490,000 GJ)



#### Use stage

We manufacture energy-efficient products and encourage their longterm use by maximizing their expandability and providing support



Atmospheric release

CO<sub>2</sub>

3,167,654 tons-CO<sub>2</sub>

#### Use

Energy

Volume of electricity consumption by major products shipped in fiscal 2002 (Assumed hours of use per product · Electricity consumption volume based on age x Number shipped in fiscal 2002)

• Atmospheric Volume of CO2 emissions during use of major products shipped in fiscal 2002

(Assumed hours of use per product • CO<sub>2</sub> emissions volume based on age x Number shipped in fiscal 2002)

Resources recycling rate 84.1%

> Collection volume **12,380** t

> > Collection Reuse Recycling

#### Collection/Reuse/Recycling stages

Curbing consumption of energy through activities aimed at promoting post-use product collection, reuse and recycling. As for treatment of industrial waste, disposal of some waste in landfills is unavoidable.

#### Collection/Reuse/Recycling

This is the weight ratio of recycled parts and recycled resources with respect to the processing volume of post-use products calculated according to the method of the Japan **Electronics and Information Technology Industries** Association. It excludes collected waste other than post-use electronic products, however.

# **Environmental Management System**



# Implementing our Environmental Management System in harmony with Fujitsu communities everywhere

We have established an Environmental Management System in accordance with ISO14001\*1 international standards and are promoting sustained, steady improvement of our environmental activities. We are making use of ISO14001 as an effective tool for reducing the burden our operations impose on the environment. Wherever our operations are located, they conduct environmental activities stressing harmony with their local community.

## **Environmental Management System Activities**

# ISO14001 certification acquisition results

#### Fujitsu Group

A total of 84 affiliated company sites worldwide (70 in Japan and 14 overseas) have received certification. (Fiscal 2002 yearend)

#### **Fujitsu**

As of fiscal 1997, all nine domestic manufacturing plants had completed acquisition.

A total of 7 principal development and service-related sites completed acquisition in fiscal 2002

Our domestic and overseas affiliates are also progressing steadily toward ISO14001 certification.

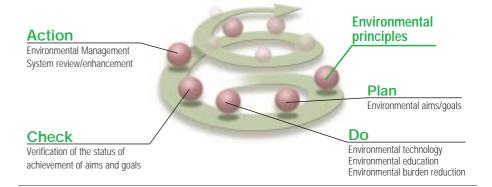


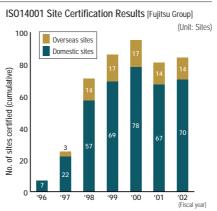
Main surveillance (Fujitsu Headquaters)



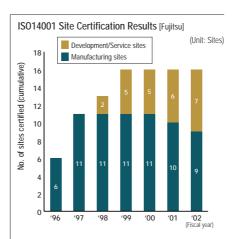
Main surveillance (Fujitsu Kyoto Office)

eco.fujitsu.com/en/info/eco20001023c\_e.html





Although subsidiaries of the Fujitsu Group's affiliated companies were included in this calculation through fiscal 2000, a difference has occurred in the number of certifications indicated in the results due to a change, effective fiscal 2001, limiting calculation to organizations whose shares are at least 50% Fujitsu-owned.



The results for manufacturing sites decreased by one site in fiscal 2001 and fiscal 2002 with the transfer of the Fujitsu Suzaka Plant to Fujitsu Media Devices (an affiliate) and the closing of the Kanuma Plant.

#### **Headquarters Divisions**

Our headquarters divisions (Corporate Strategy, Personnel, General Affairs, PR/IR, etc.) received certification. (March 2003)

#### Sales Division

The Kyoto office (including the Shiga branch) achieved certification for providing customers with eco-friendly products and contributing to environmental burden reduction. This marks the first time the Sales Division has achieved independent certification. (April 2003)

#### Surveillance audits

Surveillance audits\*2 of the 64 sites that had attained certification resulted in a total of 294 suggestions for improvement, 257 of which were addressed and 37 of which are now in the process of improvement.

<sup>\*2</sup> Surveillance audits are conducted annually to determine the effectiveness of EMS and identify possible improvements.

<sup>\*1</sup> Please refer to page 60 for definition.

## Primary Activities Planned by the Fujitsu Group

# Environmental Management System enhancement

We developed various systems and structures to support all our business functions — including development, product design and general business administration — in improving their environmental activities in the course of daily operations and put them into operation.

#### **Environmental lectures**

Employee awareness of environmental issues was raised by a total of 204 lectures conducted at plants and sites during the year. A variety of environmental seminars were held and consultants dispatched to present criteria for exchanging know-how with respect to EMS. (39 events)

#### **Environmental education**

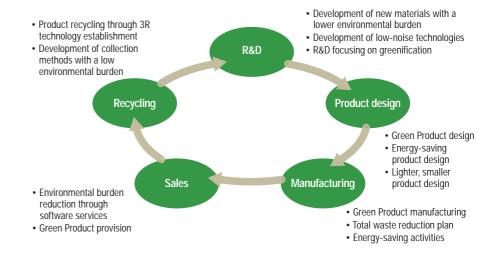
We conducted a revision of our environmental education courses to target specific business functions such as R&D, product design and general business administration, each with its own special concerns, and distributed the information to over 13,772 personnel by intranet.

We held 45 education sessions for internal environmental auditors. By educating 502 auditors through these sessions, we increased our staff of registered internal environmental auditors to 2,205.

#### Internal environmental audits

Internal environmental audits led to a total of 2,194 suggestions, 1,866 of which were addressed and 328 of which are now in the process of improvement.

Enhanced Environmental Consideration in the Business Cycle



#### **Emergency drills**

Efforts to improve disaster preparedness among personnel included holding a total of 171 emergency drills in 72 locations where emergencies might be expected to occur. (4,071 participants)

Staff used sandbags to prevent oil from flowing out of a machine oil drum dropped during transportation into a rain gutter.



Simulated outflow of machine oil into a rain gutter (Fujitsu Automation)

Participants were called on to prevent caustic soda from flowing into a rain gutter with sandbags, sediment to absorb the leaked caustic soda, etc., and to neutralize the remainder.



Simulated leakage of caustic soda during transportation to the tank yard (Yamagata Fujitsu)

#### Responding to suppliers

We asked 1,060 suppliers of product parts and materials and 720 suppliers of various services for their understanding and cooperation with our environmental activities.

#### **Principal Plans for Fiscal 2003**

# Plans for ISO14001 certification acquisition

#### **Domestic affiliates**

• Fujitsu Minami-Kyushu Systems Engineering • Shiga Fujitsu Software

#### **EMS Enhancement**

We are continuing efforts in fiscal 2003 to ensure responsive management of environmental information and to implement a comprehensive audit system supporting inter-site performance comparisons aimed at integrating EMS throughout the organization.

# **Environmental Accounting**



# Achieving more efficient environmental management through cost and effect evaluation of environmental activities

We have employed environmental accounting since fiscal 1998 to provide quantitative assessments of the costs and effects of our environmental protection measures. We have developed environmental accounting guidelines for the Fujitsu Group in conformance with guidelines published by the Japanese Ministry of the Environment, adding new components to the system as needed to enhance the efficiency of our environmental accounting. The introduction of environmental accounting has raised our employees' environmental consciousness, sharpened our focus on cost reduction efforts, and magnified the positive effects of environmental measures by inspiring greater cooperation among our plants and companies.

## **Environmental Accounting Measures**

## Objectives of the environmental accounting system

- Disclosure of information to clarify the company's position to
- Introduction of ongoing environmental preservation activities
- Enhancing the effectiveness of environmental investment

4(+1)

10 (0)

88 (-35)

4 (0)

5 (+1)

122 (+2)

15 (+1)

8 (+4)

210 (-33)

Activation of environmental preservation activities

#### Fiscal 2002 Environmental Accounting Results

(Unit: 100 million ven)

13, 14, 17, 43,

44, 52, 55 19~23, 35~38,

56, 57

49, 50

	Item		Scope	Fujitsu	Affiliated companies	Consolidated	See pages
	0 1 1	Pollution prevention costs*1	Costs incurred to prevent air pollution and water contamination (fees for water treatment facilities) and other activities	30 (-2)	31 (-4)	61 (-6)	28, 33, 34, 58
	Costs in business operations	Environmental protection costs	Costs of energy-saving measures, as well as costs of global warming reduction measures	9 (-1)	19 (+5)	28 (+4)	28~30
	operations	Costs of resources recycling	Costs incurred for waste reduction and disposal, as well as for water conservation, rainwater usage and other measures aimed at efficient resources usage	12 (-2)	25 (-2)	37 (-4)	31, 32
	Upstream/dow	nstream costs	Costs of lowering the environmental burden imposed upstream and downstream by manufacturing and service activities (costs incurred for recycling/reuse of waste products and packaging, Green Procurement, etc.)	2 (0)	7 (+1)	9 (+1)	18, 24~26
Costs	Management costs		Management-related environmental protection costs — including personnel expenses for environmental promotion activities and costs associated with acquiring and maintaining ISO14001 certification, measuring the environmental burden, greenification programs, environmental reporting and environmental publicity	21 (+11)	16 (+2)	37 (+13)	13, 14, 17, 43, 44, 52, 55
	R&D and solutions business costs		Environmental protection costs for R&D activities and costs of environmental solutions business activities (Green Product/environmental technology design and development costs, environmental solutions business costs, others)	3 (-1)	11 (-1)	14 (-2)	19~23, 35~38, 56, 57
	Social activities costs		Environmental protection costs stemming from participation in social activities, such as participation in organizations concerned with environmental preservation	0 (-2)	0 (-1)	0 (-3)	45~48
	Environmental restoration costs		Costs of environmental restoration operations (eliminating soil and groundwater contamination, environmental compensation, etc.)	2 (-1)	1 (0)	3 (-1)	49, 50
			Total	79 (+2)	110 (0)	189 (+2)	
	Effects on business Pollution preversible effects		Savings from avoidance of operating losses stemming from failure to observe environmental laws and regulations as well as contribution by environmental protection activities to value added in manufacturing	38 (-46)	49 (-6)	87 (-52)	28, 33, 34, 58
	operations	Environmental protection effects	Cost savings from reductions in electricity, oil and gas consumption	16 (+2)	10 (0)	26 (+2)	28~30
Effects		Resource recycling effects	Cost savings from reduction and effective use of waste	14 (+5)	42 (+4)	56 (+9)	31, 32
ĕ	Upstream/dow	nstream effects	Sales value of recycled and reused products	0 (-1)	10 (+3)	10 (+2)	24~26
=							

The numbers in parentheses indicate increases or decreases in comparison with the previous fiscal year

We indicate "0" for items whose value is less than 100 million ven

Efficiency enhancement through ISO14001 system implementation, effects of employee

Savings of compensation payments to residents for groundwater and soil contamination

Contribution to sales made by Green Products, other eco-friendly products and the

training, corporate image enhancement from environment-related publicity

environmental solutions business

eco.fujitsu.com/en/info/eco20001023a\_e.html

Management effects\*2

R&D/solutions business effects

Environmental restoration effects

<sup>\*1</sup> Since fees for water treatment utilities have been collated as pollution prevention costs since fiscal 2002, increases or decreases in monetary amounts compared with the previous fiscal year include fees for water treatment utilities in the previous fiscal year

<sup>\*2</sup> Since the value of corporate image enhancement by environment-related publicity has been collated as a management effect since fiscal 2002, increases or decreases in monetary amounts compared with the previous fiscal year include the value of corporate image enhancement from environment-related publicity in the previous fiscal year

## **Basic Environmental Accounting Principles**

# 1. Accounting Period

April 1, 2002—March 31, 2003

#### 2. Scope of Data Collation

Data from Fujitsu and all its domestic and overseas consolidated subsidiaries. (Data for a total of 91 companies are collated, but data for some sales, software and service-related consolidated subsidiaries have yet to be included.)

#### 3. Calculation Standards for Environmental Protection Costs

- (1) Method of depreciation cost collation: Calculated using the straight-line method for a use life of five years.
- (2) Rules for apportioning mixed costs: Only the portion related to environmental preservation is counted, employing the methods specified in 2002 Environmental Accounting Guidelines, Ministry of the Environment.

#### 4. Calculation Standards for Effects of Environmental Protection Measures

(1) Scope of economic effects:

Any actual, measurable effects generated by reductions in the environmental burden during use of any goods or services produced by operations, plus any reduction in the environmental burden at product disposal (taking estimated effects, including risk avoidance benefits and assumed effects, into account).

(2) Basis for accounting concerning timing of effects of investments:

Actual, measurable effects are made to coincide with the investment depreciation period (five years).

In cases of estimated effects, except those considered to have been fully realized within the fiscal year, the effects of environmental protection investments (contribution value, value from operating loss avoidance, etc.) are treated as extending over 12 months.

The basis for calculating the value of effects is as follows:

 Value contributed by environmental protection activities to the added value acquired through production activities

Value of effect = Added value X Ongoing operating costs / Total costs protection facilities / Total costs

 Value of avoidance of operating losses due to failure by operations to observe environmental laws and regulations

Value of effect =  $\frac{\text{Added}}{\text{value}}$  X Days of operation /  $\frac{\text{Estimated}}{\text{days lost}}$ 

 Value of contribution to corporate image enhancement by environment-related publicity

Value of effect = Costs of advertising X Number of insertions

# 5. Principal Changes in Basic Items during Fiscal 2001

- (1) The costs of greenification programs, environmental reporting and environmental publicity, collated as social activities costs until the previous fiscal year, have been collated as management costs in accordance with changes in the guidelines issued by Ministry of the Environment with which we comply.
- (2) Effects related to the changed effects item (value of corporate image enhancement from environment-related publicity) have also been collated as management costs in accordance with the change in the cost items mentioned in (1) above.
- (3) Measurement of the value of effects associated with basic research was initiated as R&D effects.
- (4) Measurement of the cost of educating personnel as an employee environmental education cost was initiated, as was measurement of the effects of environmental education based on educational hours.

## Characteristics of the Fujitsu Group's Fiscal 2002 Environmental Accounting

Our environmental accounting in fiscal 2002 involved collation of data from 91 companies in Japan and overseas. The costs totaled ¥18.9 billion, and the total value of related economic effects was ¥21.0 billion.

#### 1. Environmental Costs

The total environmental costs for plants decreased due to drastic changes in production systems and positive restraints on expenditures. Management costs increased dramatically, on the other hand, because of intensive advertising concerning Green Products in connection with

environmental measures.

Total costs consequently registered ¥18.9 billion, an increase of ¥200 million from the previous fiscal year.

#### 2. Economic Effects

Real measurable effects improved by ¥1,300 million as compared with the previous fiscal year due to measures implemented to limit global warming (environmental protection effects), reduce chemical substances, achieve zero waste emission (resources recycling effects) and improve the recycling ratio (upstream/downstream effects). Pollution prevention effects recorded a year-onyear decrease, and the total related economic effects for the Group as a whole held steady at ¥21.0 billion due to reductions in production. The ratio of the actual measurable effects, calculated based on the certain reduction of the environmental burden, to the actual measurable costs necessary to achieve these effects improved drastically from 1.08 in the previous fiscal year to 1.23 (=¥ 9,100 million/¥ 7,500 million).

#### 3. Future Measures

We are promoting environmental burden reduction activities (green process activities, etc.) in association with cost-cutting activities in the manufacturing process and reflecting the costs and effects in our environmental accounting. We are upgrading our environmental accounting evaluations to activate environmental activities in Green Product development and software services.

# Participation in UN Expert Working Group Meeting on EMA

In 1999, the United Nations Division for Sustainable Development initiated an exploratory project concerning the role of government in promoting environmental management accounting (EMA) by corporations. The UN Expert Working Group Meeting on EMA has convened six times, providing a forum for the exchange of information on the application of environmental accounting measures in countries worldwide and for the development of concepts. In December 2002, we participated as a representative of the Japanese corporate community in the 6th Expert Working Group Meeting on EMA, where we made a well-received presentation of measures in Japan for consideration.



6th Expert Working Group Meeting on EMA (Sweden)

Fiscal 2002 Environmental Burden Reduction Improvement Indicators (Fujitsu)

Item	Result
Environmental improvement (EI) indicator*1 [Ton-CO <sub>2</sub> /100 million yen]	329
Environmental efficiency (EE) indicator* <sup>2</sup> [100 million yen/Ton-CO <sub>2</sub> ]	0.050

# **Employee Environmental Awareness Activities**



Environment

# Promoting environmental activities in which every employee plays a "leading role"

We conduct a wide range of environmental awareness activities aimed at all our employees. Our objective is to raise the environmental awareness of individual employees, and to promote their participation in environmental preservation activities.

#### **Environment Month Events**

Designated as Environment Month by Japan's Ministry of the Environment, June provides the occasion for many environment-related events conducted by Fujitsu and the Fujitsu Group Companies.

#### **Environmental lectures**

Speakers from both inside and outside the company presented 20 lectures concerning environmental issues to audiences totaling 927 employees in fiscal 2002. The photo shows a lecture on zero waste emission.



An environmental lecture in progress (Fujitsu Wireless Systems)

#### Outdoor beautification activities

Employee volunteers at the Fujitsu Nagano Plant conduct joint clean-up activities in the vicinity of the plant and the adjacent Shinshu University Faculty of Education Attached Nagano Elementary and Junior High Schools with students from the junior high school as part of activities organized to contribute to the local community.

#### **Environmental exhibition**

Fujitsu Laboratories Atsugi Area held an exhibition of advanced environmental R&D projects, including exhibits of biodegradable plastics and halogen-free printed circuit board materials. Some 100 visitors attended the exhibition



An environmental exhibition corner (Fujitsu Laboratories Atsugi Area

#### **Environmental Contribution Awards/Environmental Contests**

Programs aimed at raising environmental awareness among employees of Fujitsu Group companies and at promoting their participation in environmental preservation activities include annual Environmental Contribution Awards and Environmental

Contests (with photo and volunteer segments). The contribution awards attracted 44 entries in fiscal 2002, the photo contest 269 entries and the volunteer contest 5 entries. An awards ceremony and reporting meeting were held for the top award winners.

#### Main award-winning themes

• Environmental Contribution Awards — Grand Prix Application of biodegradable resin to the cases of laptop PCs



**Environmental Volunteer Contest** Most Excellent Award

• Environmental Photo Contest -- Most Excellent Award



# **Agricultural Experience**

#### An agricultural experience event conducted on an organic farm

A number of employees and their families participated in an agricultural experience event at Kitasaku Horticulture, an organic farm in Nagano Prefecture which has introduced fertilizer recycled from kitchen waste generated by our cafeterias. The event enabled them to experience on-site production of vegetables, which they had often eaten, generally without paying much attention, in the employee cafeteria. The activities included harvesting fresh organic lettuce.



A hands-on experience in organic farming (Kitasaku Horticulture)

#### **FUJITSU Eco Club**

Our aim is to foster all our employees as "volunteers who think and act on their own initiative."

The FUJITSU Eco Club maintains an intranet venue for information exchange to support various volunteer environmental activities by employees. In addition to disseminating information concerning volunteer recruitment and various environmental topics, we provided coverage during the past year of various places in Japan that are attracting attention in connection with environmental concerns, such as Sanbanse and Isahaya Bay, and introduced issues and activities with the theme of "Eco Travel."

\* We would like to take this opportunity to thank all those who cooperated in the coverage



The Eco Travel homepage

#### **Green Procurement**



## Cooperating with suppliers in environmental activities

Green procurement, or the preferential purchasing of eco-friendly parts, materials and products, is essential to realizing the Fujitsu Environmental Protection Program we have developed based on the Fujitsu Group Environmental Policy. The entire Fujitsu Group is working with suppliers to promote continued progress in environmental preservation activities.

# Green procurement requirements for suppliers

(Green Procurement Criteria formulated in June 2001)

We have conducted activities in accordance with the target, "Percentage of green materials and parts for products to be 99% or more of procurement money by the end of fiscal 2003". We have formulated Green Procurement Criteria and limited procurement to suppliers who fulfill the following requirements:

- Development and implementation of EMS
- Elimination of prohibited substances specified by the Fujitsu Group from materials and parts production



Green Procurement Criteria

procurement.fujitsu.com/en/green-e.html

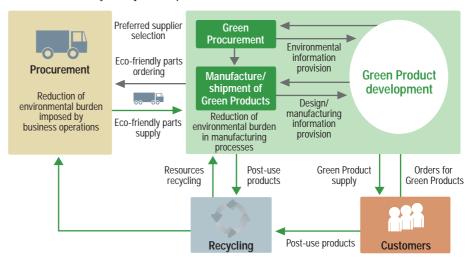
# Fujitsu activities

We investigated our suppliers' environmental responsiveness by means of the Fujitsu Group's unified survey form and requested those who were encountering difficulties in constructing an environmental management system in compliance with international standards to develop and implement an environmental management system determined by the Fujitsu Group. We held a total of 21 explanation meetings in connection with this request with the participation of 920 suppliers, including suppliers to Group companies. With the addition of individualized support for suppliers, moreover, we achieved a value of eco-friendly items as a proportion of all product parts and materials procured exceeding 99.4% as of the end of fiscal 2002.



A Green Procurement criteria explanation meeting in progress (Fujitsu Kawasaki Plant)

#### Green Procurement by the Fujitsu Group



## **Fujitsu Group activities**

In order to implement a Group-wide survey, we conducted investigations employing a unified survey form. Like Fujitsu, we asked suppliers who were having difficulty constructing an environmental management system in compliance with international standards to develop and implement an environmental management system determined by the Fujitsu Group. This enabled us to achieve a value of eco-friendly items as a proportion of the value of all product parts and materials procured in excess of 93.2% as of the end of fiscal 2002.



EMS development handbook and certificate of registration

# Eco-friendly purchasing of office supplies and equipment

We conducted activities in accordance with the target, "100% of procured office supplies to be Green Products certified by a public corporation or organization by the end of fiscal 2002." In fiscal 2002, we explained the main purposes of switching to Green Products to our suppliers at the time of selecting office supplies for purchase by the Group. We promoted green procurement of office supplies by including environmental characteristics in the procurement criteria in addition to price and specifications. As a result, 98.6% of the office supplies procured were Green Products.



#### **Principal Plans for Fiscal 2003**

 We are promoting green procurement activities in response to the situation concerning inclusion of prohibited substances as well as supporting EMS establishment by our suppliers.

# Reinforcing development of products featuring superior eco-friendliness throughout their life cycles Achieving "world's first" results in rapid succession

We apply the criteria elucidated in our internally developed Green Product Evaluation Standard throughout the Fujitsu Group to achieve the following: develop products that contribute to resources reduction, reuse and recycling; save energy; and reduce chemical emissions throughout the product life cycle, not only in the design and manufacturing stages. This development of Green Products featuring superior eco-friendly characteristics is accompanied by efforts to promote effective recycling. Our exertions to develop technologies that help to reduce the environmental burden have born fruit in terms of world's first results.

#### A recent development case

## Another world's first! Biodegradable plastic parts made from corn employed in notebook computers

#### Reduction of the environmental burden and oil consumption realized by use of vegetablederived material.

Fujitsu and Fujitsu Laboratories developed a technology for employing a vegetablederived biodegradable plastic with a lower environmental burden for the first time ever in the casing of notebook computers. The biodegradable plastic is currently used to make some of the parts in the FMV-BIBLO NB notebook computer, and plans call for extending its use to the entire case in fiscal 2004. The biodegradable plastic, developed by optimizing a polylactic acid composition\*1 derived from corn, realizes approximately the same strength and contraction rate as the PC/ABS resin\*2 used previously. Even if disposed of or buried in the ground, it will be decomposed into CO2 and water through the activity of soil bacteria and assimilated back into nature. Even when burned, moreover, the material does not discharge dioxin or other harmful chemical substances. Since the energy required for its manufacture is only approximately 40% as compared with consumption for production of conventional plastics, it contributes to reducing oil consumption for power plant operation as well. We are also promoting wide-ranging use of biodegradable plastics in other products, including LSI embossing tapes, protective bags for cellular phones and a portion of the shock-absorbing packing material for IA servers.

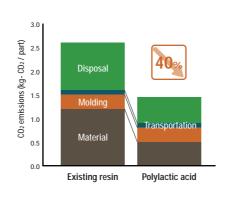
#### \*1 Polylactic acid: A vegetable-based biodegradable plastic employing lactic acid obtained from corn and potato starch, etc., as a material

\*2 PC/ABS resin: A polymer alloy consisting of polycarbonate and ABS resin (copolymer of acrylonitrile, butadiene and styrene). It is often used in notebook computer cases.

# Examples of biodegradable plastic applications



#### LCA Results (assumptions concerning biodegradable plastic case prototype)



40% reduction of environmental burden

#### Assumptions for calculation

Material: Existing resin is PC/ABS alloy Environmental burden from resources mining to resin synthesis (Note 1) In the case of polylactic acid, CO2 absorption during corn cultivation is deducted from the environmental burden resulting from agricultural production and resin synthesis. (Note 2) Manufacture: Environmental burden derived from electric power required for case

manufacturing (including metal mold production)

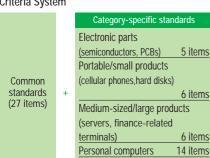
Disposal: Complete incineration assumed

Note 1: Report on Energy Analysis Investigations of Basic Materials, Chemistry and Economic Research Institute (1993) Note 2: From hearing data by Cargill Dow LLC

We have conducted original environmental assessments of products since fiscal 1993. Since 1998, we have also carried out strict evaluations based on the Green Product **Evaluation Standard comprising common** standards and product category-specific standards\*1. We strive to develop Green Products throughout, from parts selection to the introduction of LCA (life cycle assessment).

#### The Green Product Development **Process**





Printers (all sizes)

23 items

#### Revisions of Standards

We are constantly upgrading our environmental awareness standards to take various regulatory measures into account and to encourage development of a cyclical society and the establishment of eco-labeling systems.

Each consolidated subsidiary has established its own standards based on Fujitsu's Green Product Evaluation Standard.

# Report on Fujitsu Environmental Protection Program (Stage III) Results

Group-wide efforts to achieve our Green Products development targets in the Fujitsu Environmental Protection Program (Stage III) achieved the following results:

#### Fiscal 2002 Green Product Development Results

Green Products accounted for 66% of newly developed products in fiscal 2002. This represents 100% achievement of Fujitsu's targets.

#### Fuiitsu

(Cumulative total: 161 product categories, 57 product categories in fiscal 2002)

- Notebook computers Cellular phones
- IP switching nodes
- Micro-controllers
- Desktop PCs
- · Network servers
- FCRAM
- · Switching hubs
- ASIC
- Others

#### Consolidated subsidiaries

(Cumulative total: 50 product categories, 37 product categories in fiscal 2002)

- Industrial system controllers (PFU)
- VoIP (Voice-over IP networks) Gateway (Fujitsu I-Network Systems)
- · Media converter systems (Fujitsu Access)
- Slider attachment devices (Fujitsu Automations) • LCD units (Fujitsu Display Technologies)
- Automotive audio equipment (Fujitsu Ten)
- · Optical magnetic discs (Fujitsu Personals)
- · Plasma displays (Fujitsu Hitachi Plasma Display)
- Distribution/financial terminal products (Fujitsu Frontech)
- · Capacitors (Fujitsu Media Devices)
- Others



IP switching node GeoStream R940

Network server IPCOM150



Media converter system MC71-R



Micro-controller MB9F312

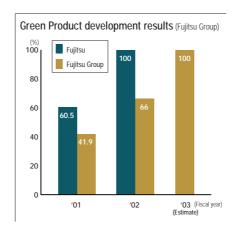
#### Fiscal 2002 Lead-free Solder Results

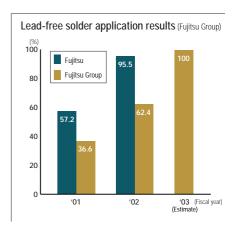
We completed development of lead-free solder joint technology and constructed a manufacturing system.

#### [Joint technology development]

Materials reliability evaluation/joint reliability evaluation/simulation technology/new material [Tin (Sn) - Zinc (Zn) -aluminum (Al)] development

- Although approximately 4.5% of printed-circuit boards are subject to joint reliability evaluation in mass-production operations, we plan to employ lead-free solder by the end of September 2003.
- Employment of lead-free solder will be introduced sequentially for portions for which it has been postponed due to insufficient heat resistance of parts mounted on the printed circuit boards.





<sup>\*1</sup> For details concerning the Green Product Evaluation Standard see Pages 56-57

## Examples of 3R (Reduce/Reuse/Recycle) Design

We are applying various technologies with an eye to post-use handling of products through our original product environmental assessments and Green Product evaluations. Consideration of the 3Rs — Reduce waste generation to the maximum; Reuse products, parts and materials; and Recycle whenever possible — is being extended to every aspect of our product manufacturing.

#### FMV-DESKPOWER CE Series

#### Conforms to Law Promoting Green Purchasing.

- Paperless computerized manual produced.
- Soy oil-based inks used for the container box.













Chrome-free steel plate Chrome-free steel plate containing no hazardous hexavalent chromium employed.

Recycled plastic Used since 1999.



## **Promotion of Energy Savings in Products**

We promote energy savings in products positively from the development stage in an effort to reduce global warming and make efficient use of Earth's limited resources.

#### Blade IA server "PRIMERGY BX300" with electricity consumption reduced to 1/5

Employing parts that consume less power a low-voltage Pentium® III processor (level 2 cache: 512KB) and 2.5-inch HDD — for the server blade\*1 enabled us to realize low electric power consumption approximately just 1/5 that of conventional 1U servers

\*1 A blade in the server body comprising the processor memory disc



#### Electricity consumption cut to 3.3 W in standby mode! Development of image scanner fi series (PFU)

The image scanners in the fi series also achieve superior performance from the standpoint of energy savings. All models in the series, noted for efficient paper use, are registered with the International Energy Star Program.

	Electricity consumption *2 in operation (unit performance reduction rate)	Product recycling rate
fi-4120C	70%	96.5%
fi-4220C	73.8%	97.7%
	Electricity consumption *2	
	Electricity consumption *2 in standby mode (reduction rate)	Product recycling rate
fi-4110E0X2	in standby mode (reduction rate) 52%	Product recycling rate 96.5%
fi-4110EOX2 fi-4340C*3		, ,

<sup>\*2</sup> Electricity consumption represents comparisons with our previous models

# MOS transistor capable of reducing electricity consumption to 1/100 or

Fujitsu Laboratories has developed a MOS transistor employing hafnium oxide (HfO<sub>2</sub>) gate insulating film with a high dielectric ratio. Use of this transistor reduces electricity leakage by at least 2 or 3 figures as compared with use of conventional silicone oxide film (SiO<sub>2</sub>), sharply reducing electricity consumption by the system LSI.

<sup>\*3</sup> Front runner among scanner products registered with the International Energy Star Program in fiscal 2001

#### Hazardous Chemical Substance Reduction Activities

We are eliminating hazardous chemical substances from all our products, beginning in the development and design stages, based on Fujitsu restricted chemical substance containment regulations.

#### Prohibited chemical substance containment

30 substances regulated in domestic and overseas laws and regulations, including polychlorinated biphenyls, asbestos and ozone-depleting substances

# Controlled chemical substance containment

155 substances such as heavy metals. greenhouse gas-releasing substances and halogenated compounds

#### Expanded lead-free solder application

We are expanding the application of lead-free solder in newly developed products in accordance with our lead solder elimination policy.

#### Products employing lead-free solder in fiscal 2002

Personal computers, cellular phones, hard discs, optomagnetic disk equipment, engine control units (Transtron, Shinano Fujitsu), DVD navigation devices (Fujitsu Ten), others

#### A world's first! Sn-Zn-Al lead-free solder developed

We have developed a new Sn-Zn-Al lead-free solder and begun applying it in our products.

#### [Features]

Can be easily introduced into the existing soldering process due to the successful lowering of its melting point (199°C). U.S. patent # US6,361,626

#### Products employing Sn-Zn-Al solder 15-inch LC display <VL-15VAW>

\* Production initiated December 2002 by Fujitsu Peripherals



#### Results of joint reliability test for Sn-Zn-Al solder on printed circuit boards

Test item	Test conditions	Results
MIL humidification cycle	MIL-STD-202F	Approved
High-temperature creep	80°C x 500 h	Approved
Temperature cycle	-30 ~ 80°C x 3,000 cyc	Approved
Vibration test	10 ~ 500 Hz, 1.5 mmP-P	Approved
Dropping test	Dropping in packaging	Approved
SO <sub>2</sub> exposure	20 ppm x 10 days	Approved
Electrolytic corrosion test	40°C/90% RH, 1,000 h	Approved

#### Example of product chemical reduction activities

(Fujitsu Media Devices)

Wide-ranging measures implemented to eliminate hazardous chemical substances include employing lead-free terminals (Sn-Bi family) and non-halogen family exterior

sleeves and avoiding use of environmental burden substances for products and packing materials in the functional polymer capacitor FPCAP-SE series.

#### Disclosure of environmental information

We provide informative environmental data concerning products at the point of purchase by means of eco-labels as well as on our homepage.

Law Promoting Green Purchasing\*1 (Law Concerning the Promotion of Procurement of Eco-friendly Goods and Services by the State and Other Entities) The Green Purchasing Network\*2 provides online information concerning the conformance of those among our targeted products, such as servers, workstations, personal computers, magnetic disks, displays, printers and scanners, with the Law on Promoting Green Purchasing

#### eco.goo.ne.jp/gpn/files/gpne/

\*2 Green Purchasing Network: A nationwide network of consumers, corporations and administrative bodies organized in Japan to promote green purchasing



Environmental details concerning products approved by third-party organization following voluntary application by the manufacturer



Eco-mark (certified by Japan Environment Association)

After becoming the first desktop PC manufacturer in Japan to receive Eco-mark certification in January 2001, Fujitsu has now acquired certification for displays as well. See the Japan Environment Association homepage for details.

www.jeas.or.jp/ecomark/english/index.html

Environmental details concerning products conforming to independent criteria determined by the manufacturer.



#### **Environmental Emblem**

The Environmental Emblem is employed in the catalogs and packaging for our Green Products. The Ministry of the Environment provides detailed information concerning the emblem in its "Database for Eco-labels, etc.

eco.fujitsu.com/en/info/emblem-e.html



# CLEAR 2005 Target standard for energy

Fujitsu's original environmental label. The target standard is used in our catalogs for products that have cleared the target standard values set for achievement by 2005 by the Law Concerning the Rational Use of Energy.

#### 3R eco-label for PCs

The label is used in product catalogs and packaging for PCs that satisfy the standards set by the Japan Electronics and Information Technology Industries Association.

#### www.jeita.or.jp/english



#### The International Energy Star Program

We have registered computers (PCs, workstations), displays, printers and scanners with the program and displayed the logo in the registered products' packaging and catalogs. The Energy Conservation Center, Japan, provides detailed information on its homepage.

www.eccj.or.jp/ene-star/index\_esu.html

International ecolabeling standards

ISO14020 Series

Quantitative environmental burden imposed by the product Type III indicated on the label.

EcoLeaf environmental label (certified by Japan Environmental Management Association for Industry) In May 2003, Fujitsu became Japan's first notebook PC manufacturer to receive EcoLeaf environmental label certification for its FMV-718NU/B model. The Japan Environmental Management Association for Industry provides detailed information on its homepage

www.jemai.or.jp/english/ecoleaf-e/default.htm



\*1 Please refer to page 60 for definition.



## LCA (Life Cycle Assessment)\*1 utilizing original evaluation tools

We design products with the aim of reducing the overall environmental burden by making full use of LCA measures to assess the environmental effect imposed by the products in the course of their life cycle. We are extending application of LCA to all Green Products by making LCA implementation a requisite part of Green Product evaluation.

#### **Evaluation tools**

Our originally developed VPS/ECODESIGN software is an LCA support tool that automatically calculates the environmental burden imposed by such processes as CO<sub>2</sub> generation in the design stage of the product life cycle by means of a materials database and environmental burden databases. It is also used to perform product degradability verification and degradation time calculations in association with 3-D CAD techniques





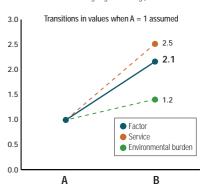
VPS/ECODESIGN evaluation screen

#### **Environmental Indicators**

We are currently studying the use of various factors as environmental indicators to assess environmental improvement effects quantitatively. The "factor X" environmental efficiency index, especially, is a breakthrough technique capable of expressing the environmental burden of products (denominator) and improvements in services such as functions and performance (numerator) by means of an old-new ratio. We began developing environmental indicators at an early date and became the first to suggest application of the indicators to PCs in a proposal to the METIsponsored Resource Productivity Examination Committee. We also proposed use of an environmental efficiency factor calculation method for scanners and cellular phones in fiscal 2002.

#### **Example: Application of environmental** efficiency factor to scanners

The environmental efficiency factor of product B, launched in spring 2002, increased 2.1 times compared with that of product A, launched in spring 1999. (Both models are compact A4 two-sided color document scanners weighing under 4 kg.)



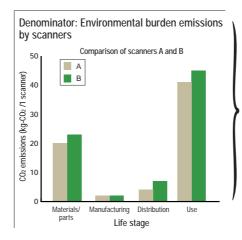
#### Method of environmental efficiency factor calculation

Service (ratio of new to old products) • • • • Environmental efficiency factor Environmental burden (ratio of new to old products)

#### Numerator: Quantification of scanner services

Function/perform	mance	Old/new ratio for fu	nction/performance	
Large items	Large items Small items		$=\{1/n \cdot \sum S^2\}^0.5$	
Optical performance	Evaluation item 1	2.000	3.808	
	Evaluation item 2	5.000	3.000	
Media-processing performance	Evaluation item 1	1	1.240	
	Evaluation item 2	1.440		
Data-processing performance	Evaluation item 1	1.500	1.500	

For calculating services, functions such as optical performance, media-processing performance and data-processing performance were digitalized. The values of the sums of the items were calculated by the square sum average method.





(B) / (A) = 1.16

The volume of CO<sub>2</sub> emitted throughout the product life cycle is treated as the environmental burden. The manufacturing stage covers the period through the final assembly and the distribution stage the period from final assembly to delivery to the user. Calculation of the use stage assumed operation 2 hours/day, 6 hours/day standby, 240 days/year for five years.

#### **Principal Plans for Fiscal 2003**

#### Reinforcement of environmental technology development

We added Materials & Environmental Engineering Laboratories and Environmental Materials Stations to our laboratory system in April 2002 for the purpose of promoting development and improving the quality of Green Products. We are making use of these organizations to strengthen our environmental technology development capabilities further.

## **Environmental Measures in Distribution**

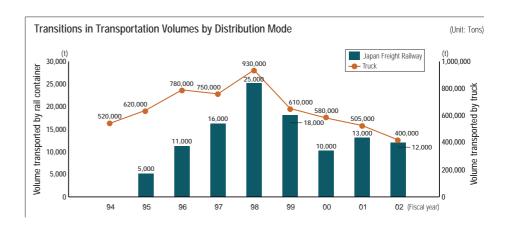
# Employing original technologies and devices to reduce the environmental burden imposed by distribution activities

The distribution activities that link production with consumers offer many opportunities for environmental improvement. Fujitsu Logistics, which handles distribution of products, parts, materials and recycled items for the Fujitsu Group, is developing various measures to reduce the environmental burden throughout the distribution process — from packaging design to product storage and transportation.

## Principal Environmental Measures and Status of Progress

#### Modal shift\*1 promotion

Since fiscal 1995, we have been shifting freight loads from road transportation alone to combined road and rail transportation as part of efforts to reduce emissions of CO<sub>2</sub>, NOx and SOx in the transportation process.



#### **New Efforts**

# Adoption of biodegradable plastic packaging

We formerly employed a soybean-shaped biodegradable plastic material for part of our general-purpose shock-absorption materials. Now we have developed and introduced biodegradable plastic bags and block-shaped shock-absorption materials for use in the packaging of PCs and cellular phones.

#### Biodegradable bags

#### [Feature]

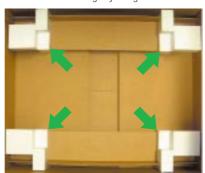
 Development of a retainer bag that meets the required performance standards for transparency and sheet intensity



## Biodegradable plastic block-shaped shockabsorption materials (indicated by arrow)

#### [Feature]

· Realized minimum usage by fitting into cardboard



#### Application of waterless printing\*

We were already using soy ink with reduced VOCs (volatile organic compounds) in printing packaging for PCs and cellular phones. We have now added waterless printing, which does not generate waste alkaline developer, for the magneto-optical disc printing process.

#### [Features]

- No hazardous waste liquid (corrosive liquid, IPA, etc.) generation
- Greater eco-friendliness achievable by concomitant use of this printing method with soy ink or recycled paper



\* Waterless printing is a printing method certified by the WPA (Waterless Printing Association), a worldwide environmental preservation organization. Increasingly widespread use of this printing method with a lower environmental burden is anticipated.

#### **Principal Plans for Fiscal 2003**

- We are promoting expanded application and new development of returnable containers that can be used repeatedly.
- We are expanding the applications for biodegradable plastics and air cushions designed to preserve the environment at the time of discharge and reducing the volume of shock-absorbent materials waste.
- We are striving to improve our accuracy in grasping the current status of CO<sub>2</sub> emissions, reflecting the results in such measures as modal shifting and promoting further CO<sub>2</sub> emissions reduction.

# **Product Recycling**

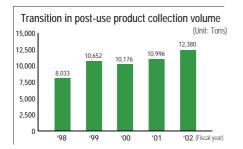


# Operating a nationwide network to convert post-use products into resources and pursuing development of new recycling technologies

Fully aware of our wide-ranging responsibilities as a producer (EPR),\*1 we are actively retrieving post-use products from corporations, promoting post-use product collection and converting these products back into resources. We have also developed original technologies for recycling waste plastics and magnesium alloy. Through this integrated approach, we are doing our part to contribute to establishment of a resources cyclical society.

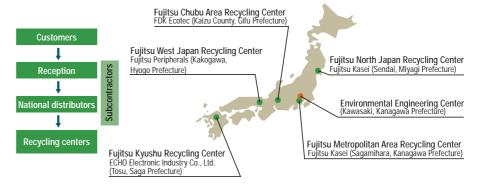
#### Overview of the Fujitsu Recycling System

Our recycling network in Japan, which is linked to our national distribution network, comprises five recycling centers organized to collect post-use products from corporations and convert them into new resources. We collected 12,380 tons of post-use products and achieved a resources reuse rate of 84.1% in fiscal 2002.\*2 This result represented a decline of 1% in the resources reuse rate compared with the preceding year owing to a rise in the volume of waste plastic comprising unidentified materials collected. We are installing more identification machines for waste plastic materials with the intention of raising the resources reuse rate.



- Environmental Engineering Center: System operation management
- and technical support

  Recycling centers (5 nationwide): Disassembly/separation and treatment of post-use products



Flow of the Fujitsu Recycling System

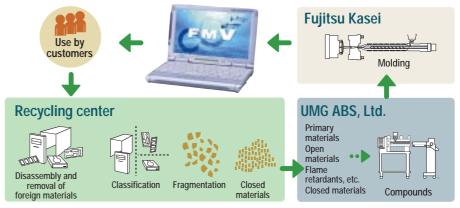


## **Recycling Technology Development**

Semi-closed recycling of waste plastics Industry first: Collection by maker itself of PC cases and recycling of resin for reuse in notebook computers Fujitsu, Fujitsu Kasei and Fujitsu Laboratories have developed a new recycling system for reuse of ABS resin from post-use PC bodies (cases) as a material for making new notebook PC cases in cooperation with UMG ABS, Ltd., a major materials maker conducting ABS resin production. Already applied in product manufacturing, the new recycling system is a semi-closed system combining closed recycling and open recycling.\*3 By blending and adjusting recycled resources collected by our recycling centers (closed materials) and recycled resources procured by UMG ABS, Ltd. (open

materials), we have succeeded in ensuring a level of performance that compares favorably with case manufacture using only primary materials. This represents another step forward in promoting reuse of resin from cases collected from customers

\*3 Closed recycling and open recycling Closed recycling is a recycling structure in which parts and materials from own-brand post-use products are reused to make parts and materials for new products of the same type. Open recycling, on the other hand, is a recycling structure in which a materials maker procures recycled materials for processing and resale



\*1, 2 Please refer to page 60 for definitions

# Reuse of in-house recycled magnesium alloy in notebook computers

# World's first: Realization of burden reduction, with a CO<sub>2</sub> conversion ratio approximately 1/5 that of the molding process used previously

The Fujitsu Group became the first in the world to achieve practical application of a technology for recycling magnesium alloy from the cases of notebook computers collected in-house and began employing the technology in product manufacturing in the autumn of 2002. We plan to extend the application of this technology, which reduces the CO<sub>2</sub> conversion ratio to approximately 1/5 that of conventional molding processes, to recycling of as many magnesium alloy cases as we can collect from customers.

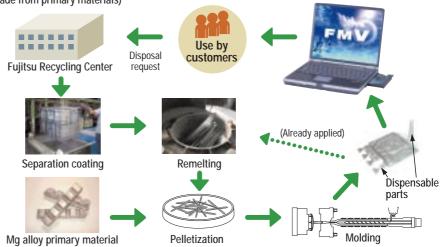
#### Customer data leakage prevention

Fujitsu prevents leakage of customer data, either by using software to erase the data or employing a special machine to destroy the disk physically. We have standardized these procedures and are educating operators in their full application. We have also established a system to respond to customer requests for physical destruction or complete erasure of data from memory media such as magnetic tapes and floppy disk drives.

#### Recycling of printer consumables

Fujitsu and Fujitsu CoWorCo have established a joint system for collection and recycling of all post-use consumables from corporate-use Fujitsu laser printers at no charge to the customer. Under the system, which is already in full-scale operation, toner cartridges are returned to a Fujitsu manufacturing plant after inspection and cleaning for incorporation into the production process.

Recycling of magnesium alloy cases (environmental burden reduction to approximately 1/5 that of cases made from primary materials)



Fujitsu Recycling Center







A machine for destroying floppy disk



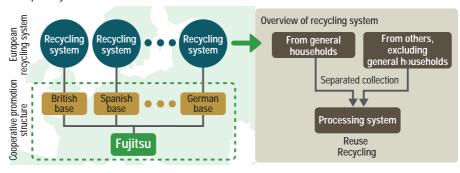
A machine for destroying magnetic tapes

#### European recycling system construction

The European Union member nations are currently developing legislation in response to the EU's Waste Electrical and Electronic Equipment (WEEE) instructions implemented in February 2003. Fujitsu and the Fujitsu Europe Group bases have moved ahead of the individual countries' legislation to develop an optimal structure for a European recycling

Concept of System construction

system and are currently cooperating in concrete preparations. We intend to pursue the system's construction, keeping in mind the necessity of maintaining information exchange with IT industry organizations in the various countries and making effective use of the know-how in recycling systems cultivated in Japan over the years.



#### **Principal Plans for Fiscal 2003**

- Since there are many waste plastics with an unidentified material makeup among those collected, we will install material identification machines in each recycling center and implement thorough separation and removal of impurities (metal, etc.) after dismantling to improve the resources reuse rate.
- Concrete efforts to establish an optimal recycling system for the various European countries

# **Green Process Activities**



# Introducing the IT industry's first measures to review product manufacturing processes and pursue resource conservation and energy savings to the very end

The Fujitsu Group's ideal vision of manufacturing activities can be summarized as follows: To realize eco-friendly plants in order to contribute to the construction of a sustainable society through which resources and energy circulate. To this end, we have led the industry in introducing new measures referred to as "Green Process" activities aimed at reducing the environmental burden at our manufacturing sites by cutting total resources input and energy consumption based on line-byline reviews of our manufacturing processes.

#### The Green Process Structure

#### What does Green Process mean?

Green Process refers to measures to eliminate the environmental burden in such areas as resources input, chemical substances use and energy consumption to the greatest extent possible from all the processes involved in manufacturing the Group's products.

#### Contents of activities

We establish environmental burden evaluation standards for materials, chemical substances and energy, input these into the various manufacturing processes and conduct continuous reduction activities with respect to them. In the trial at the semi-conductor plant in Mie, these environmental burden factors were extracted for every item, based on the evaluation standards and reduction activities conducted. We will develop these activities for every manufacturing site in the Group based on the actual results of the activities at the Mie Plant.

#### Merits of Green Process introduction Environmental burden reduction in materials input at plants

The burden imposed on the environment by manufacturing sites can be decreased through the efficient promotion of waste reduction, chemical substance reduction and energy savings through reduced input of materials, chemical substances and energy in upstream manufacturing activities.

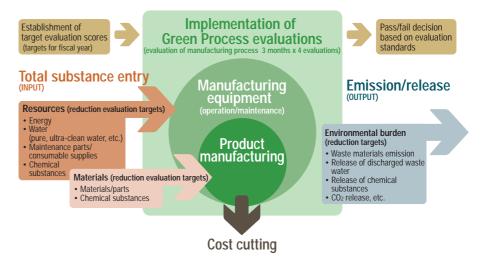
#### Reduction of costs for manufacturing activities

Management merits, such as manufacturing cost reductions, can be expected from grasping and reducing the total input volume of raw materials, chemical substances and energy.

## New evaluation indicator for manufacturing processes

New added value is produced by adding the

#### Example of the Mie Plant



environmental burden reduction, a new evaluation item, to the previously existing principal evaluation items for the manufacturing process, including cost reduction, quality improvement and punctual delivery. Each factory performs quarterly target establishment and evaluation of achievements for each production line and promotes Green Process activities continuously.

#### New evaluation indicators for the manufacturing process



#### Mie Plant trial results

We have developed original indicators we call "Cost Green (CG) indicators" to support our Green Process activities by extracting materials with measurably large effects from both the cost and environmental burden perspectives. The indicators are computed by multiplying three numerical values: the unit price, the volume used per unit product, and the degree of environmental influence determined in-house for every material, such as chemicals and gases. We use the resulting figures as a basis for environmental burden reduction activities. As a consequence of these activities, the actual results for our semiconductor production lines at the Mie Plant during the January to March 2003 period revealed a reduction of 6.9% in the volume of chemicals and gases used per unit product and a reduction of 16.5% in expenditures as compared with figures for before the introduction of Green Process.

#### **Principal Plans for Fiscal 2003**

• We plan to begin Green Process activities as necessary, beginning with our semiconductor plants, which use many chemicals in their various chemical processes, and to introduce Green Process at all manufacturing sites, including those of affiliated companies, by March 2004.

#### **Plant Environmental Preservation**

# Sparing no effort to preserve the site and surrounding environment

In order to reduce the environmental burden in and around sites, the Fujitsu Group closely monitors the effects of its manufacturing activities on such factors as water and air quality, noise and vibrations, and promotes improvement activities at all the sites. We are also continuing to make every effort to harmonize our manufacturing activities with the local environment.

#### Results for water and air

#### Fiscal 2002 data

Water usage volume (Input)

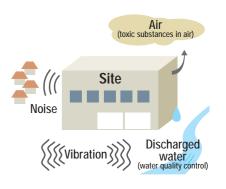
	Water supply usage volume	Industrial water usage volume	Underground water usage volume	Recycled water usage volume	Volume of water used
Fujitsu	5,998,759	6,659,122	597,763	2,760,301	13,255,644
Domestic manufacturing	5,698,958	1,915,464	4,491,165	6,840,751	12,105,587
Overseas manufacturing	737,881	1,655,346	304,714	1,374,562	2,697,941
Total for Group	12,435,598	10,229,932	5,393,642	10,975,614	28,059,172

#### Discharged water volume (Output)

	Total discharge volume	BOD	SS
Fujitsu	17,110,236	66	93
Domestic manufacturing	7,443,737	57	32
Overseas manufacturing	1,440,533	37	44
Total for Group	25,994,506	160	169

#### Emission to air

	NOx (tons)	SOx (tons)
Fujitsu	215	143
Domestic manufacturing	417	212
Overseas manufacturing	1,308	128
Total for Group	1,940	483



# Original control standard introduction (Japan)

We have established our own control standards that are stricter than those established by laws and regulations for purposes of environmental preservation.

#### Air Iwate Plant

Efforts to prevent our manufacturing activities from causing air pollution include determining the actual situations with respect to emissions into the air and scatter prevention by conducting measurements on our site as part of our atmospheric environment preservation activities.

Air item	Value	National standard	Prefectural standard	Internal standard
NOx	ppm	150	120	100
SOx	k value	17.5	14.5	10
Dust	g/Nm³	0.25	0.2	0.1

#### Noise and vibrations Minamitama Plant

Since the noise and vibrations generated in manufacturing activities cover a wide scope, they can easily attract complaints from local residents. We are striving to determine the levels generated and to reduce them to the greatest extent possible.

Noise item	National standard	Municipal standard	Control standard
Daytime	60~65	60	55
Morning/evening	55~65	55	50
Nighttime	50~55	50	45
Vibration item	National standard	Municipal standard	Control standard
Daytime	65~70	65	45
Nighttime	60~65	60	45

We employ the latest monitoring systems to monitor operations for accidents stemming from natural disasters or equipment 24 hours a day for purposes of environmental protection.

Site Management Situation

Monitoring operation system



The Management Room at the Akiruno Technology Center

#### Water quality (discharge water) Aizuwakamatsu Plant

Efforts continue to reduce the burden on rivers and sewerage at each of our sites.

Air item	Value	National standard	Prefectural standard	Internal standard			
Hydrogen ion concentration	рН	5.8~8.6	5.8~8.6	6.0~8.0			
Biochemical enzyme demand volume	BOD	160 (120) mg/ℓ	25 (20) mg/ l	20 (16) mg/ℓ			
Chemical enzyme demand volume	COD	160 (120) mg/ℓ	-	20 (16) mg/ℓ			
Suspended substance volume	SS	200 (150) mg/ l	70 (50) mg/ l	28 (20) mg/ l			
n-hexane extracted substance content	(Type of mineral oil)	5mg/ <b>ℓ</b>	1.0mg/ℓ	0.5mg/ <b>ℓ</b>			
n-hexane extracted substance content	(Animals and plants)	30mg/ <b>ℓ</b>	10mg/ℓ	3mg/ <b>ℓ</b>			
Type of phenol	Phe	5mg/ <b>ℓ</b>	1.0mg/ℓ	0.5mg/ℓ			
Copper	Cu	3mg/ <b>ℓ</b>	2.0mg/ℓ	0.1mg/ℓ			
Zinc	Zn	5mg/ <b>ℓ</b>	4.0mg/ℓ	0.5mg/ℓ			
Soluble iron	S-Fe	10mg/ℓ	10mg/ℓ	1.0mg/ <b>ℓ</b>			
Soluble manganese	S-Mn	10mg/ℓ	10mg/ℓ	1.0mg/ℓ			
Fluorine	F	8mg/ <b>ℓ</b>	8mg/ <b>ℓ</b>	7mg/ℓ			

#### **Emergency drills**

Each site conducts emergency drills for workplaces and activities with the potential for environmental pollution in emergencies to minimize effects on the environment



# **Energy-saving Measures** (Global Warming Prevention)



# Establishing strict targets for every site to combat global warming by reducing energy consumption

The reduction of energy and fuel consumption by plants and other sites is indispensable to preserving our limited energy resources and restraining CO<sub>2</sub> generation, which accelerates global warming. The Fujitsu Group has established exacting reduction targets for every site and is striving to curb emissions of greenhouse gases other than CO<sub>2</sub> as well.

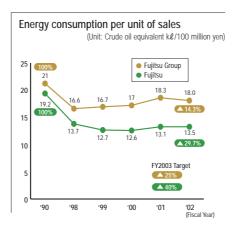
# **Energy-savings Results**

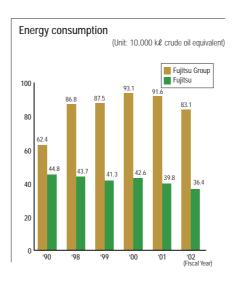
We have established energy-savings targets calling for the reduction of total electric power consumption per unit of sales by 25% for the Fujitsu Group as a whole and by 40% for Fujitsu Japan, relative to fiscal 1990 figures, by the end of fiscal 2003. The Fujitsu Group's fiscal 2002 energy consumption measured 18.0 kℓ per 100 million yen crude oil equivalent, or a 14.3% reduction relative to fiscal 1990. The corresponding figures for Fujitsu were 13.5 kℓ per 100 million yen crude oil equivalent, or a 29.7% reduction.

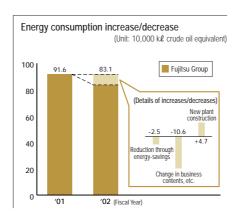
- \* Fujitsu Group: 23 Fujitsu sites / plants, 28 domestic affiliates (manufacturing) and 19 overseas affiliates (manufacturing)
- \* Targeted energy: Total of electricity, oil and gas consumed at plants/operations (crude oil equivalent ket)

#### Contents of activities/analysis for fiscal 2002

We have established a rough target of reducing the absolute value of energy consumption by about 1% a year through reduction activities conducted at plants and other sites (per unit of sales in the protection program). Accumulating various efforts focused on improving equipment operation and management during the past fiscal year enabled us to reduce energy consumption by approximately 25,000 kℓ crude oil equivalent. Additional decreases at some sites due to changes in the business structure resulted in total energy consumption of 85,000 kℓ, a year-on-year reduction of 9.2%. Energy consumption by the Group as a whole was 831,000 kl (31,240,000 GJ) crude oil equivalent.







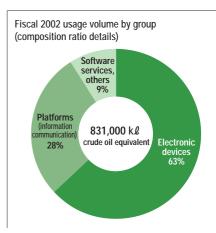
#### **Case Studies**

These examples show some of the latest energy-saving measures implemented at plants and other sites:

#### Measures to reduce energy consumption by optimizing facility operation

The graph below shows the energy usage ratios for the various businesses groups. The Electronic Devices Business Group, which engages in semiconductor manufacturing, accounts for some 60 percent of the total consumption. This business group conducted large-scale energy reduction activities at all its plants in fiscal 2002 and achieved energy savings of 8,000 kl crude oil equivalent. A breakdown of its energy-saving efforts shows 175 activities, including strict energy-saving diagnostic checks and optimization of equipment operating conditions without investment.

- Optimization of the number of refrigerating machines operated according to fluctuations in the burden
- · Optimization of air-conditioning and cooling water temperatures
- · Reduction of syringing room emission volume



# Introduction of an air pollution-free NAS battery system

(Fujitsu Akiruno Technology Center)

We introduced the world's first NAS battery system\* with a reduced environmental burden as a countermeasure to sudden electricity pressure droppages and power failures at our Akiruno Technology Center and began operating the system in July 2002. Use of a new high-density, high-safety NAS battery realized an electrical system that does not release any polluting substances into the atmosphere. The reduction effects are expected to be approximately 14,000 tons in CO<sub>2</sub> emissions and approximately 18 tons in nitrogen oxide (NOx) emissions as compared with a conventional gas-turbine system. We are committed to curbing CO2 emissions further and to employing nighttime electric power for stable production facility operation.

\* NAS battery
The sodium-sulphur battery is a secondary battery capable of storing
three times as much electric power as the lead secondary batteries
currently used in automobiles. Storing nighttime electricity in an NAS
battery and using it during daytime hours is an effective method of
evenly distributing electric power consumption.



#### Retarding-basin solar-power generation system (Fujitsu Numazu Plant)

We have set up a power generation system in a retarding basin for final release of sewage at our Numazu Plant. The system, which employs a solar battery module capable of double-surface power generation, is designed to generate power with reflected light from the water surface striking the lower surface as well as with sunlight striking the upper surface. The plant uses the power generated by the system to supply power to circulation pumps employed for such purposes as drainage purification and to the emergency discharge water intercept system. (Generating capacity: 5 kW or higher)



#### Measures Implemented to Reduce Greenhouse Gases

#### Results for CO<sub>2</sub> emission volumes

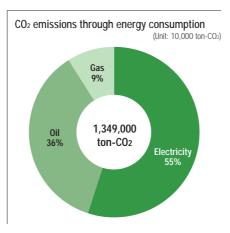
The approximate total fiscal 2002 CO<sub>2</sub> emissions from energy use were 1.349 million tons-CO<sub>2</sub> for the Fujitsu Group, a figure representing a decrease of 7.3% from fiscal 2001, and 0.554 million tons-CO<sub>2</sub> for Fujitsu Japan, a figure representing a decrease of 8.5% from fiscal 2001. The total volume for the Group has increased since fiscal 1990 due to business expansion.

\* These calculations substitute Japanese coefficients for crude oil equivalents and CO<sub>2</sub> emissions volumes at overseas companies.

## CO<sub>2</sub> emissions through energy consumption

(Unit: 10,000 ton-CO<sub>2</sub>)

	′90	′98	′99	′00	′01	′02
Fujitsu Group	98.5	132.0	138.7	146.2	145.5	134.9
Fujitsu	70.9	64.4	62.6	65.4	60.6	55.4



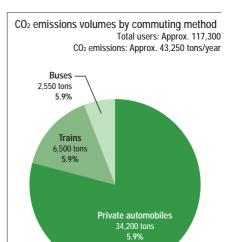
# Measures to reduce greenhouse gases other than CO<sub>2</sub>

Every company in the semiconductor industry has created an independent action plan to cut emissions of greenhouse gases besides CO<sub>2</sub>, including perfluorocompounds (PFCs), hydrofluorocarbons (HFCs), and sulfur hexafluoride (SF6). Fujitsu Japan, led by the Electronic Devices Division, has developed an in-house emissions control implementation plan in conformity with industry action plans and international targets. We are

continuously pursuing such activities as conversion to gases with a lower greenhouse coefficient and installation of specialized equipment on new production lines. Emissions related to semiconductor processing amounted to approximately 0.511 million tons in 2002.

# Estimation of CO<sub>2</sub> emissions during commuting

In a new activity introduced for purposes of  $CO_2$  emissions volume reduction, the Fujitsu Group is striving to determine the volume of  $CO_2$  emissions for which our employees are indirectly responsible at the time of commuting. The following data represent the results of trial  $CO_2$  emissions volume calculations for the employees of Fujitsu and 117 affiliated companies in Japan. We also conduct positive Group-wide activities aimed at reducing  $CO_2$  emission levels during commuting through strict enforcement of eco-friendly driving (idle shutdown).



(Note) Transportation distances include estimates to some extent.

#### **Principal Plans for Fiscal 2003**

- We are promoting energy savings by implementing such measures as bench marking and energy-saving diagnoses from the energy efficiency perspective and striving to enhance efficiency further by achieving targets.
- Efforts conducted to prevent global warming include measures aimed at strengthening every aspect of our business operations as well as developing emissions volume calculation techniques based on international standards.

# **Zero Waste Emission** (Waste Reduction Measures)



# Zero emission of waste achieved by 13 Fujitsu sites a year ahead of schedule

The Fujitsu Group continues to implement positive measures to realize zero emission at the earliest possible date based on our "3R" (Reduce, Reuse, Recycle) policy targeting every kind of waste generated by our operations. Thanks to the efforts of individual employees acting on their own initiative, we achieved zero emission of all categories of waste, including waste generated by employee life functions (cafeteria kitchen waste and restroom sewage) at our 13 domestic sites by the end of March 2003, one year ahead of schedule. Two Group company sites in Japan also achieved zero emission in fiscal 2002.

Fujitsu Group: 13 Fujitsu sites/plants, 28 domestic affiliates (manufacturing), 19 overseas affiliates (manufacturing)

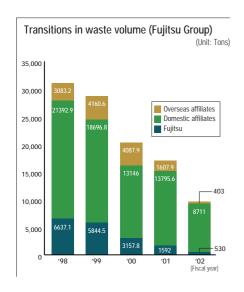
13 Fujitsu sites: Oyama Plant, Nasu Plant, Nagano Plant, Numazu Plant, Kumagaya Plant, Minami-Tama Plant, Akashi Plant, Mie Plant, Aizuwakamatsu Plant, Iwate Plant, Kawasaki Plant, Akiruno Technology Center, Fujitsu Laboratories (Atsugi Area)

#### **Waste Reduction Result**

We disposed of a total of 9,644 tons of waste in fiscal 2002, 69.0% less than in fiscal 1998. Of this total, waste disposed of by Fujitsu Japan in fiscal 2002 was 530 tons, down 66.7% from the previous fiscal year. We continue to make favorable progress in our waste reduction activities.

#### Fiscal 2002 analysis

The Group companies in Japan succeeded in reducing their waste volume dramatically in fiscal 2002 as compared with the preceding term. The achievement of zero emission by two Group companies (Yamagata Fujitsu, Fujitsu Ten) and the sharing of information concerning effective practices with other companies in the Group stand out as significant reduction factors.



#### Zero Emission Program

Thirteen domestic sites (Fujitsu) achieved the target — zero emission of every category of waste, including waste generated by human life functions — by the end of March 2003. The sites that already achieved zero emission have set a goal of reducing the total volume of waste generated (effective used volume: 19,254 tons) by 5% within three years of the fiscal year of achievement. In fiscal 2002, moreover, the total volume of waste generated (total waste volume including valuable materials such as metals) was 25.032 tons.

# Characteristics of zero emission at

# Promotion of in-house resources

We place the highest priority on resources

circulation, or use of waste generated by our sites as resources for in-house use.

#### Upgrading of 3R

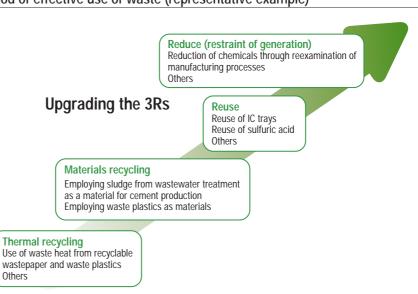
We are striving to improve our environmental burden reduction further, from recycle to reuse, from reuse to reduce.

#### **Environmental burden reduction** through a green waste logistics system

We are working to reduce CO<sub>2</sub> emissions in the process of collecting and transporting waste through implementation of a system to collect waste of the same type generated by neighboring sites together in order to minimize the number of collection vehicles employed.

\* Fujitsu's definition of zero emission: Zero landfill and zero simple incineration achieved through 100% effective use of all categories of waste

## Method of effective use of waste (representative example)



Zero emission achievement

Others

#### **Zero Emission Program Case Studies**

# Establishment of a "triple resources circulation system" for fertilizer generated from purification tank sludge (Fujitsu Numazu Plant)

The Fujitsu Numazu Plant has established a "triple resources circulation" system realizing extensive application of fertilizer generated from purification tank sludge within the plant as well as on local farms and farms in other prefectures. The Numazu plant improved the quality of the fertilizer through repeated cultivation experiments and fermentation experiments on the plant's experimental farm. After it became the first fertilizer produced by the electronic equipment industry to receive certification from the Ministry of Agriculture, Forestry, and Fisheries as a commercial fertilizer (sludge fermentation fertilizer), it was put into practical use over a wide area.

# Successful recycling of waste silicon wafers for solar batteries

We joined Taku Material Corporation and Toshiba Corporation in developing a technology for recycling waste silicon wafers from production lines for LSIs and other semiconductors as a material for solar batteries. We are making the material available to overseas solar battery makers. This technology permits reuse of waste wafers as single crystal silicon wafers for solar batteries by removing various membranes from the surface of the waste wafers. Expanding demand is expected in the solar battery market, and this technology has won accolades as a recycling method benefiting from the characteristics of high-grade, high-precision silicon wafers manufactured for semiconductors. The technology was honored with the Clean Japan Center Chairman's Award

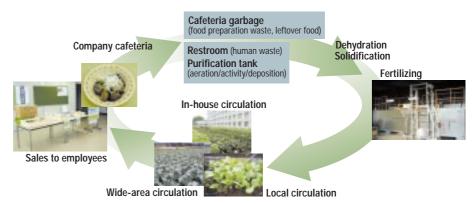


The CJC award ceremony

#### Triple resources circulation categories

In-house circulation: Using the fertilizer on the Numazu Plant's farm to produce vegetables for consumption by employees Local circulation: Providing the fertilizer to local farms to raise seedlings, which are then purchased by the Numazu Plant to raise vegetables on its own farm for consumption by employees

Wide-area circulation: Providing the fertilizer to large farms in other prefectures for use in raising vegetables for the general market



#### Zero emission achieved for first time by a Group company manufacturing division (Yamagata Fujitsu)

Yamagata Fujitsu announced its zero emission status in February 2003. The companywide efforts bore such fruits as reuse of the sludge generated in magneto-optical disc production to make cement, use of waste plastics as fuel, and intranet operation of emission/waste volume measurement systems by the various division. The division's zero emission achievement is the first by a manufacturing division of the Group companies.



# Zero emission of all categories of waste achieved for first time by a domestic research institute (Fujitsu Laboratories Atsugi Area)

Fujitsu Laboratories' efforts to recycle waste chemicals generated in its experiments at the Atsugi Area facility, one of its main bases, enabled the facility to become the first domestic research institute to achieve zero emission of all categories of waste through materials recycling. Reclamation of waste chemicals generated in experiments by research facilities was formerly outsourced to a specialized contractor. The Atsugi Area laboratory succeeded in recycling waste chemicals itself, however, by adopting a new processing technique to recycle them as material for iron and cement as well as by implementing a uniquely constructed chemical substance management system. We intend to promote development of these techniques and know-how throughout the Fujitsu Group.

# Reusing office furniture inside and outside the company

A substantial amount of office furniture had become unusable due to layout or size restrictions resulting from headquarters division relocations. We responded by developing a system to reuse this furniture at other sites or Group companies. In cases in which no place could be found to use office furniture, we distributed it to companies specializing in office furniture for auction for reuse by others.

## **Principal Plans for Fiscal 2003**

• We are upgrading our 3R activities further while maintaining zero emission of waste. We are striving to reduce the environmental burden by cutting CO<sub>2</sub> emissions in waste collection and transportation, moreover, by limiting the number of vehicles by combined collection of waste of the same category generated by neighboring sites and switching to train transportation.

## **Chemical Substances Reduction**

# Reinforcing chemical emissions reduction through comprehensive monitoring and proper management from the manufacturing process to discharging treatment

The Fujitsu Group achieved additional reductions of its chemical use and emissions through revision of its business plans. Despite operating in circumstances that made investment difficult, every Group company conducted thorough reviews of its manufacturing processes, its exhaust gas management and the operating condition of its wastewater treatment equipment. These reduction efforts enabled us to attain our targeted actual result values for fiscal 2002. We are also complying with the requirement to disclose revenue and expenditure information concerning targeted chemical substances at each company enforced in March 2002 under the PRTR Law\*1 (Law Concerning Reporting, etc., of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management). We are continuing our unitary management of chemical substances information making full use of IT and risk communication to obtain our customers' understanding of the Group's efforts in this area.

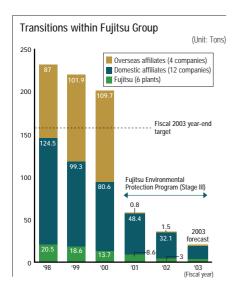
#### **Chemical Emissions Reductions Achieved**

Fujitsu Group: 6 Fujitsu sites/plants, 12 domestic affiliates (manufacturing) and 4 overseas affiliates (manufacturing)

#### Fiscal 2002 results

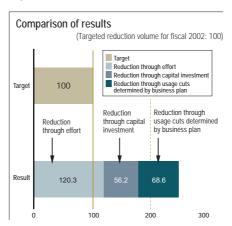
Under the provisions of the Fujitsu **Environmental Protection Program (Stage** III), Fujitsu Japan and the Fujitsu Group share the objective of cutting emissions of key chemicals by 30% relative to fiscal 1998 levels by the end of fiscal 2003. Group chemical emissions\*2 totaled 36.7 tons in fiscal 2002, down 195.5 tons (84.2%) with respect to fiscal 1998. Fujitsu's chemical emissions registered a total of 3.1 tons in fiscal 2002, a decrease of 85.0% from the fiscal 1998 total. These figures reflect the achievement of our objectives.

\*2 Methods of calculating chemical emissions reduction Values are calculated by multiplying the total volume of effluent (compounds of nickel or manganese and other chemicals) or atmospheric emissions (xylene, toluene and other chemicals) by the concentrations of relevant substances measured at the points o discharge from the site. Values for xylene, toluene and other chemicals may also be based on the amounts of chemicals purchased and used



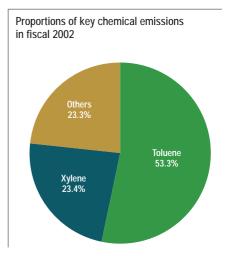
#### Fiscal 2002 analysis

The use and emission of chemicals decreased drastically relative to the target in accordance with a review of the Fujitsu Group's business plans. Six Fujitsu sites and 12 domestic affiliates achieved their targets for the period by implementing balanced measures to apply emissions reduction technologies and know-how accompanied by capital investment.



## Key chemical substances (17)\*3

- Xylene
- Manganese compounds
- Toluene
- · Lead compounds
- Nickel and related compounds Bromine compounds
- Copper compounds
- Cadmium compounds
- Formaldehyde
- Chromium compounds
- · Fluorine compounds
- · Arsenic compounds
- · Hydrazine derivatives
- · Cyanide compounds
- · Phenols
- Phosphine
- 3,3-dichloro-4,4-dimainodiphenylmethane
- \*3 The list excludes substances for which further reduction would be technically difficult (such as fluorine compounds in wastewater at Japanese sites, for example, where appropriate wastewater treatment measures are already in place).



#### Toluene reduction in the parts washing process (FDK)

FDK's Iwaki Plant employed a detergent with a lower ratio of toluene ingredients in the device parts washing process and, in addition, switched to washing equipment that can control discharges into the air. Toluene use was reduced by 8.8 tons as a result.



Parts-washing equipment at the FDK Iwaki Plant

### Measures Implemented for Compliance with the PRTR Law

#### Information disclosure in accordance with the PRTR Law

Although the PRTR Law requires that data concerning any of 354 Class I designated chemicals for which annual usage and processing exceed 5 tons be reported, we compile data on these substances based on a 0.1 ton minimum in addition to submitting the required reports to public administration offices. The Fujitsu Group used approximately 3,368.1 tons of chemicals in fiscal 2002, and Fujitsu used approximately 570.9 tons. We have educated every employee responsible for handling these chemical substances to use them in full awareness of their hazardous properties, moreover, such

as their eco-toxicity, carcinogenicity and exposure characteristics. We have also established a system for continuous risk communication to facilitate understanding of the issues by local residents and product users.

Results of Fiscal 2002 Fujitsu Group Survey Concerning PRTR Law Chemicals (Reported in volumes exceeding 0.1 ton)

(Unit: kg\*)

	Number of			Emission volu	Transfer	Volume			
Names of Class I chemicals*	Class I chemicals*	Use/processing volume	Emission into air	Emission into public area water	Emission into soil at site (except landfill)	Landfill at site	Transfer into sewerage	Transfer off-site (except into sewerage)	recycled/ removed/ consumed
Manganese and its compounds	311	995779.3	0.0	52.6	0.0	0.0	0.0	29345.3	966381.4
Copper aqueous salt (except complex salt)	207	811713.7	0.0	557.1	0.0	0.0	64.8	8037.0	803054.8
2-aminoethanol	16	477433.0	143.9	420.0	0.0	0.0	0.0	335612.8	141256.3
Xylene	63	313899.7	7861.5	0.0	0.0	0.0	0.0	23584.4	282453.9
Hydrogen fluoride and its agueous salt	283	214709.3	1442.3	32301.7	0.0	0.0	1024.3	127522.1	52419.0

- \* Refers to items for which reporting is required by the PRTR Law
- \* Totals differ slightly due to rounding off. 

  \* These survey results are for 14 Fujitsu sites (plants and sites) and 28 domestic and 10 overseas affiliates (manufacturing) that have compiled usage results.
- \* Refer to the Data Appendix (page 58) for results for all chemicals handled in volumes exceeding 0.1 ton by Fujitsu Group (manufacturing).

  \* Fujitsu Group's calculation method: We calculate volumes of substances and with more than 1% Class I Chemical Substances or containing more than 0.1% Specified Class I Chemical Substances and with more than 0.1 tons used. The Specified Class I Chemical Substances we are using are nickel compounds, arsenics and their inorganic compounds.

#### Calculation of PRTR-targeted substances by chemical management system (eco-HCMS for Internet)

We introduced a chemical management system to manage key chemical substances and PRTR-targeted substances in fiscal 2000. Since that time, we have collated MSDS data (constituents, handling methods, relevant laws, etc.) for approximately 5,000 substances to control the chemical usage status of each manufacturing plant and line and to maintain a total chemical balance, from purchasing and use to disposal.

#### Process of PRTR-targeted substance calculation





#### Example of PRTR target substance calculation results employing eco-HCMS for Internet

Period of calculation: April 2002 ~ March 2003 All divisions in Kawasaki area By control target: All reporters

(Unit: kg)

CAS number	Substance name	Volume handled	Emission into air (chimneys/ point source)	Emission into air (storage)	Emission into air (escape)	Emission into water area (public water)	Emission into water area (sewerage)		Emission into soil (others)	Transferred volume (intermediate treatment)	Transferred volume (isolated landfill)	Transferred volume (others)	Consumed volume	Removed volume (on-site incineration)	Removed volume (decomposition /reaction treatment)	Removed volume (others)	Remarks (recycled volume)	Remarks (controlled landfill)
75-05-8	Acetonitrile	11.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.6	0.0
62-53-3	Aniline	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
141-43-5	2-Aminoethanol	19.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.7	0.0
_	Antimony and its compounds	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
	polymer of 4,4'- isopropylidenediphenol and 1- chloro-2,3-epoxypropane; other name: bisphenol A type epoxy resin	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ethylbenzene	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
	Ethylene glycol	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.3	0.0
	Ethylene glycol monoethyl ether	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
	Ethylene glycol monomethyl ether	34.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.3	0.0

#### **Principal Plans for Fiscal 2003**

- We plan to expand our chemical substance usage reduction activities in the manufacturing process (see page 27) and to continue to cut the release of chemicals.
- Evaluation test for establishing new chemical release reduction goals for the next environmental protection program (Environmental burden = Use/processing volume of chemical substances x Evaluation of property hazardous to human body, etc.)

# **Software Services Contributing to the Environment**



# Solutions utilizing IT — New-style solutions provided by the Fujitsu Group for forming a sustainable society

By increasing the efficiency of various human, corporate and administrative activities, IT (information technology) can be highly effective in reducing the burden imposed on the environment by society at large. The establishment of electronic application systems that enable people to conduct the paperwork involved in changing their residence, for example, both eliminates the need to use public or private transportation for this purpose (energy reduction) and reduces the use of various paper forms (resources reduction). In addition to improving services for citizens, the environmental burden can be steadily reduced as a result. The Fujitsu Group provides leadership as holder of the No. 1 share of Japan's IT service market\* to contribute to formation of a sustainable society by providing customers with optimal IT solutions. (\* Source: Gartner Dataguest, March 2002)

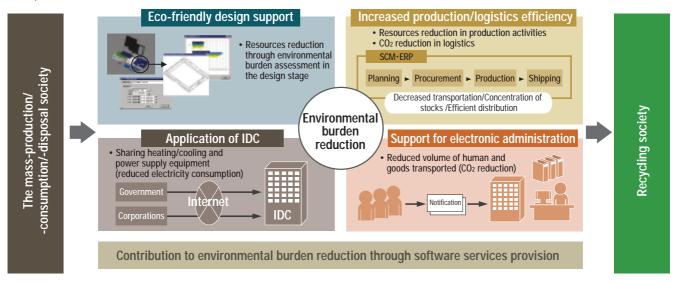
#### Exploring the relationship between software services and environmental burden reduction

Fujitsu contributes to environmental burden reduction by developing software services to support the formation of a cyclical society. We are helping customers overcome the

environmental issues confronting them one by one by providing solutions such as support for eco-friendly design, increased production/logistics efficiency, outsourcing

services through the Internet Data Center, and electronic administration support.

Relationship between software services and environmental burden reduction



#### **Environmental activities of the Software Services Business Group**

In July 2002, we instituted the Environmental Solutions Committee as a subcommittee of the Environmental Committee responsible for planning, consideration and determination of fundamental policies concerning companywide environmental activities and monitoring of activity situations. The Software Services Business Group has adopted the environmental activity theme of contributing to reduction of the environmental burden imposed by society and customers by applying environmental considerations in everyday business and the software services it offers its customers. It is currently pursuing investigations into establishment of targets

for software services under the Fujitsu Environmental Protection Program (Stage IV).

**Environmental activities of Software Services Business Group** 

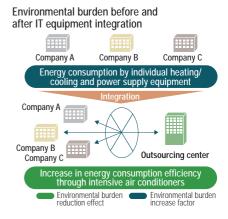


# Reducing the environmental burden through the IDC\*1 (Internet Data Center)

The progress of IT is expected to increase electricity consumption by customers operating various types of information systems equipment. Fujitsu is responding by pursuing measures aimed at helping customers save energy and other resources through the use of outsourcing services making use of IDC for intensive control of equipment such as servers, air conditioners and power supply facilities.

\*1 IDC: A data center ensuring an infrastructure for optimal Internet networking, equipment and operating environments to support Fujitsu-operated servers, networks and services.





# Case Study of Environmental Contribution through Software Services

# "Iwaki Green Project" —— A community-based business model for on-the-spot chemical emissions recycling

Fujitsu, Fujitsu Research Institute and Nippon Kasei Chemical joined in establishing a new community-based business model to contribute to formation of a cyclical society by recycling chemical emissions. This business model has the following objectives:

- To raise corporate value through activities that make a positive contribution to construction of a cyclical economic society.
- To stimulate local industry by using local resources to tap the potential of the new environmental industry frontier.
- To maximize benefits for the community as a whole through a partnership uniting the community's citizens, government, educational and research institutions, and corporations.

The business model is expected to create new industry in the community as well as to promote recycling into valuable commodities of chemical emissions and chemical compounds that were formerly discarded due to a lack of suitable separation or recovery methods.

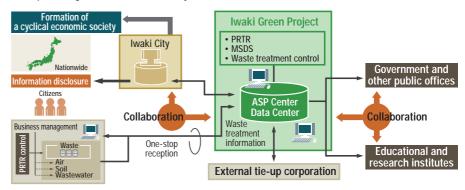
# Preferential nationwide promotion of the project through collaboration among the industrial, governmental and academic sectors

Determined to become Japan's first community to apply this business model, Iwaki City in Fukushima Prefecture obtained approval from the Iwaki City government, Fukushima National College of Technology and the other organizations and launched the "Iwaki Green Project Study Group" with the cooperation of the industrial, governmental and academic sectors. We participated in the project, which aimed at achieving zero

emission at the community level, as part of efforts to realize a sustainable society. This participation exemplifies our continued efforts to stimulate local economies by providing IT solutions for the administrative and private

sectors. In addition, the application of a new business model has enabled Fujitsu AMD Semiconductor (Aizuwakamatsu City) to recycle chemical emissions that it formerly had to incinerate.

### Conception diagram of "Iwaki Green Project"



# "Envisioning a future of cyclical community building by an activated local industry"



Perspective of Iwaki City's Mayor Keisuke Shike

It is my belief that, besides promoting cyclical community building, the development of environment-related industry will activate the local industry that supports our abundant lives. The Iwaki City "Home Town Iwaki 21" integrated plan has the potential to realize three visions of the community simultaneously: "a sustainable community based on circulation of resources"; "a community in which everyone can live safely and securely"; and "a community characterized by vitality and creativity." To these ends, Iwaki City will work energetically to promote and foster environment-related industry. We expect the lwaki City Green Project Study Group to act vigorously, consolidating the energies of various members of the industrial, academic and governmental sectors and thereby activating the community as a whole.

### **Principal Plans for Fiscal 2003**

- We plan to set up targets with respect to software services in conjunction with the Fujitsu Environmental Protection Program (Stage IV).
- We also intend to establish in-house systems to certify eco-friendly software services.

# @EcoVision



# @EcoVision — Consolidating the Fujitsu Group's environmental expertise A program supporting the "environmental management" and "environmental administration" today's world requires

The phrase "realization of a sustainable society through the use of IT" sums up the new image of 21st-century society the Fujitsu Group is striving to achieve through collective efforts. To realize this vision, the Group has developed @EcoVISION, a program of environmental solutions that supports customers with the latest IT by consolidating the systems and know-how concerning environmental action we have cultivated. @EcoVision offers optimal solutions for "environmental management" — the conduct of effective corporate activities that treat the environment as a new source of competitive power as well as reducing the environmental burden — and for "environmental administration" — the use of environmental communication to encourage community environmental preservation and awareness activities.

# A Look at 4 @EcoVision Solutions

To help realize a sustainable society, corporations and governmental organizations must pursue a wide range of activities, including eco-friendly product manufacturing, appropriate waste treatment, promotion of recycling, green procurement, continued improvement of environmental activities through acquisition of ISO14001 certification and environmental information disclosure. @EcoVision provides solutions in four categories to support these activities. Its introduction gives clients an accurate grasp of environmental information for use in business or administrative activities and for effective environmental burden reduction.

#### @EcoVision Solution Categories



# **Examples of the latest @EcoVision products**

# Environmental database management system [ECOSTAGE]

This system supports strategic application of environmental information throughout the product life cycle.

- · Displays calculation data concerning relevant chemical substance volumes by product or part.
- · When only certain substances can be used, parts and products that employ the relevant limited substances can be searched.
- Supports efficient green procurement. Controls the response environment by outputting survey forms for relevant substances in a standardized format.





### Environmental education system [Eco Teacher]

This system is ideal for creating educational contents on a Web browser and conducting online education over an intranet.

- Supports simultaneous on-screen contents creation and checking.
- · Permits those taking courses to study and take examinations at their own pace.
- · Allows more than one person to take a course or examination simultaneously.
- · Makes the learning environment for courses and examinations easily understandable.



# Environmental auditing support system

This system realizes Web-based environmental ISO14001 certification acquisition and post-acquisition maintenance management.

- Enables computerization of planning, auditing and correction reports.
- As a Web-based system, permits faster forwarding of moves, regardless of the base location.
- Indicates progress clearly by date and color designation.

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# Printing cost reduction system [PrintBarrier]

This system reduces printing costs and supports environmental burden reduction activities.

- Saves paper by printing multiple pages on a single page.
- Enables users to print data with different applications collectively on the same sheet.
- Limits number of printed sheets to improve cost consciousness.
- · Does not depend on any given printer model.



# Facilities management system V2 [EDRAS for Windows]

This system supports appropriate operations maintenance of equipment concerned with buildings' electrical and heating and cooling facilities.

- Permits integrated management of basic facility ledgers and various related documents.
- Handles hierarchical tree search, simple search and free search.
- Comes equipped with a simple CAD function responding to AutoCAD and JW-CAD direct reading.



# **@EcoVision Case Study**

# Introduction of consulting services taking both regional health and the environment into consideration ISO14001 certification acquisition by the Hachinohe City Integrated Health Examination Center

# Activities of the Hachinohe City Integrated Health Examination Center contributing to community health and the environment

In its commitment to making highly accurate health examinations and quick reporting of the results, the Hachinohe City Integrated Health Examination Center has acquired the latest equipment and the consequent ability to offer wide-ranging services to businesses and residents. The center has also implemented various environmental measures and contributed significantly to the local environment as well as to community health, moreover, in accordance with the beliefs that "there is a close relationship between protecting people's health and protecting the environment" and that "improving employees' awareness of environmental issues will result in improved service." Among its environmental activities, the center worked positively to gain ISO14001 certification and acquired it in November 2002.

# Supporting concrete action planning by calculating the environmental burden in a health center

The Hachinohe City Integrated Health Examination Center implemented consulting services for the acquisition of ISO14001 certification. It began by conducting an examination concerning its environmental burden from various perspectives in cooperation with Fujitsu. The center then implemented various environmental activities with concrete targets, including reduction of copy paper and electricity consumption based on the results of calculation of the current environmental burden, introduction of protective measures with respect to leakage of waste X-ray liquid, and confirmation of final treatment of medical wastes. It also formed "eco patrols" to monitor such practical activities as turning off PCs when not in use, and engaged all its employees positively in environmental activities. The significant results achieved, including a

9.1% reduction in electric power consumption and a 17.2% decrease in copy paper use, enabled the center to acquire ISO14001 certification. It is currently conducting such forward-looking activities as employee communication to encourage continued environmental awareness and periodic issuing of environmental activity reports.



Hachinohe City Integrated Health Examination Center

# "We continue to pursue environmental activities that help to promote health through cooperation among our employees."



Executive Director, Hachinohe City Integrated Health Examination Center Yutaka Suzuki

"We were determined to conduct health examinations imposing a minimal environmental burden based on the idea that human health and the environment are closely intertwined. We also anticipated that activities conducted in the spirit of ISO would lead our health examination operations in a better direction. Acquisition of ISO certification involves measurement of many items requiring a huge quantity of documentation. Introducing consulting services and holding workshops periodically gave all our employees a clear understanding of the importance of certification and communicated an immense volume of knowledge that cannot be obtained from books alone.

I should add that the regular and consistently reasonable proposals and guidance provided us gave us appropriate consulting in an atmosphere of mutual understanding and trust. We continue to pursue environmental activities that help to promote health through cooperation among our employees. We are also working to improve the overall management of our operations by applying the know-how we cultivated through ISO management.

# **Primary Financial Data**

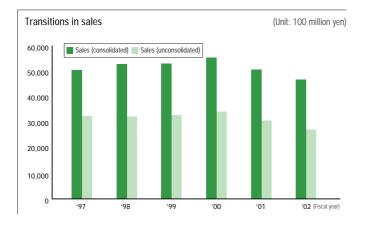


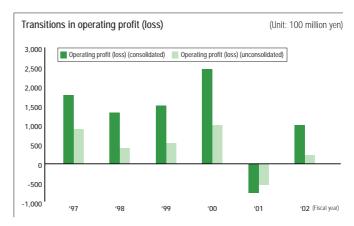
# Growing as the leader of the IT industry

The network society is expanding steadily today, extending its influence into every aspect of our lives. Although the IT industry is faced with a number of difficult temporary challenges in the current marketplace, it remains a key industry in terms of laying the foundation for the coming era. As the leader of the IT industry, the Fujitsu Group will continue to provide optimal solutions and to grow along with its customers.

Primary financial data (Unit: 100 million yen)

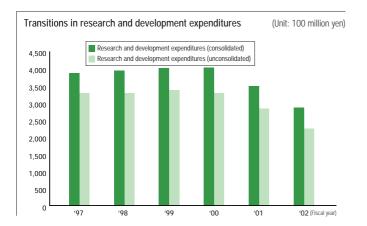
	Fiscal 1997	Fiscal 1998	Fiscal 1999	Fiscal 2000	Fiscal 2001	Fiscal 2002
Sales (consolidated)	49,853	52,429	52,551	54,844	50,069	46,175
Sales (unconsolidated)	32,290	31,911	32,512	33,822	30,344	26,950
Operating profit (loss) (consolidated)	1,773	1,322	1,499	2,440	(744)	1,004
Operating profit (loss) (unconsolidated)	893	398	538	1,002	(546)	218
Current net profit (loss) (consolidated)	55	(136)	427	85	(3,825)	(1,220)
Current net profit (loss) (unconsolidated)	509	(215)	136	466	(2,651)	(1,750)

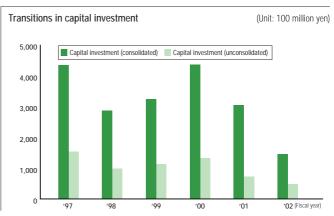




(Unit: 100 million yen)

	Fiscal 1997	Fiscal 1998	Fiscal 1999	Fiscal 2000	Fiscal 2001	Fiscal 2002
Research and development expenditures (consolidated)	3,871	3,950	4,010	4,034	3,498	2,857
Research and development expenditures (unconsolidated)	3,292	3,294	3,390	3,287	2,837	2,255
Capital investment (consolidated)	4.357	2,888	3,257	4,380	3,069	1,476
Capital investment (unconsolidated)	1,580	1,005	1,157	1,364	754	510





(Unit: 100 million yen)

	Fiscal 1997	Fiscal 1998	Fiscal 1999	Fiscal 2000	Fiscal 2001	Fiscal 2002
Total assets (consolidated)	50,562	50,256	50,197	52,000	45,958	42,253
Total assets (unconsolidated)	35,219	35,513	33,804	34,439	31,785	29,262
Shareholders' equity (consolidated)	11,184	10,786	11,765	12,143	8,537	7,023
Shareholders' equity (unconsolidated)	10,873	10,707	11,600	12,242	9,596	7,711

<sup>\*</sup> The scope of consolidated primary financial data is based on the financial accounting standards, differing from the collation scope of Fujitsu Group environmental accounting (pages 15-16)
\* For detailed financial data, please refer to our annual report, etc., at the following URL:

#### pr.fujitsu.com/en/ir/annual/

### Segment information by business type (sales to outside customers)

(Unit: 100 million yen)

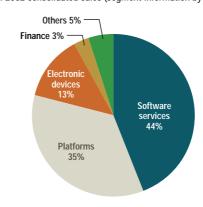
	(Gritti 100 trimion join)
	Consolidated sales
Software services	20,257
Platforms	16,120
Electronic devices	6,186
Finance	1,192
Others	2,418
Total	46,175

# Segment information by location (sales to outside customers)

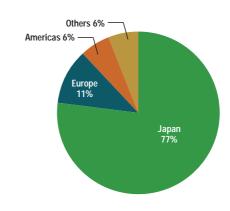
(Unit: 100 million yen)

	Consolidated sales
Japan	35,564
Europe	5,249
Americas	2,575
Others	2,786
Total	46,175

### Fiscal 2002 consolidated sales (segment information by business type)



Fiscal 2002 consolidated sales (segment information by location)



# Environmental accounting (summary) Reference

#### Transitions in costs/effects

(Unit: 100 million yen)

		Fiscal 2000	Fiscal 2001	Fiscal 2002
Fujitsu	Costs	82	77	79
	Effects	111	123	88
Affiliates	Costs	109	110	110
	Effects	135	120	122
Total	Costs	191	187	189
	Effects	246	243	210

### Breakdown of effects

(Unit: 100 million yen)

	Fiscal 2000	Fiscal 2001	Fiscal 2002
Actual effects	70	78	91
Estimated effects	176	165	119
Total	246	243	210

# Number of employees Reference

Transitions in number of employees

(Unit: Person)

	Fiscal 1997	Fiscal 1998	Fiscal 1999	Fiscal 2000	Fiscal 2001	Fiscal 2002
Employees (consolidated)	180,332	188,139	188,053	187,399	170,111	157,044
Employees (unconsolidated)	45,166	44,191	43,627	42,010	40,483	34,690

# Social Contribution Activities -Relationship with Community / Society

# Wide-ranging activities conducted in harmony with local communities and society as a good corporate citizen

We are motivated to live up to our responsibilities as members of the local communities in which we operate and of our global society. To this end, every plant and site promotes a variety of activities to strengthen communication with its local community and to promote international exchange, academic achievement and cultural pursuits. Maintaining harmonious relationships with our communities and society and contributing to their development are among the most meaningful missions of the Fujitsu Group.

# Communicating with the community

Each of our plants and sites participates in local clean-up activities and holds events such as charity concerts and sports competitions to foster communication with other members of the local community.

 Kawasaki Plant Spring Festival (former Cherry Festival) Held for the eighth time this year, the festival opened up the plant's garden and pond, technology exhibition room and observation deck on the upper story of the main building to employees and their families as well as to local residents (approximately 4,000 visitors), who took the opportunity to learn more about its corporate activities.



# Promotion of academic endeavors and education

We have conducted activities to promote academic and cultural pursuits for over three decades from a global perspective with an eye to development of the next generation. A few of these activities are introduced here.

 Japan America Institute of Management Science (JAIMS) (established 1972)

This institute was established as a nonprofit educational corporation approved by the State of Hawaii Department of Education to improve mutual understanding among businesspeople in Pacific Rim countries. It pursues education and research concerning management thinking and techniques with a focus on Japan and the **United States** 



· Foundation for International Information-Processing Education (FINIPED) (established 1972) This foundation was established by the Fujitsu Group to encourage human resources cultivation

concerning information processing in Japan and other countries. With the participation of a membership comprising approximately 170 companies in various fields, it provides assistance for students receiving education and training at JAIMS as well as at universities in Japan and overseas.

• Support for Mathematical Olympiad Foundation We support the activities of the International Mathematics Foundation and contribute to identifying and fostering human resources to help to shape tomorrow's society through creative work in mathematics. The Mathematical Olympiad Foundation of Japan selects and dispatches Japan's representatives to the International Mathematical Olympiad, the 44th of which will be held in Japan in 2003. Fujitsu provides full support as the organization's sole sponsor.



· Other promotional activities Donation support for education programs (Massachusetts Institute of Technology/Tokyo University School of Engineering/Tokyo University Faculty of Law/Keio Business School) Donation support for University of California at Berkley

# International exchange

We conduct an active program of exchange with overseas counterparts as a responsive member of global society.

· Fujitsu Asia Pacific Scholarship System (established 1985)

This scholarship program for students and businesspeople in the countries of Asia and the Pacific was founded at the time of the 50th anniversary of Fujitsu's foundation. Its aim is to provide them with opportunities to study management in Japan, the United States and China and to deepen their understanding of other nations' value systems.

- Fujitsu Cross-culture Center (established 1992) This is a training and accommodation facility for overseas trainees
- · We conduct various activities in support of international exchange programs conducted by Nippon Keidanren (Japan Business Federation)
- · We accept trainees from developing countries and conduct technological instruction at overseas training centers.

# **Activities in support of culture** and the arts

We co-sponsor a variety of cultural, art and sports activities to contribute to local community activation and support cultural development as well as to enhance our corporate image.

# Co-sponsorship of cultural, art and sports programs

- · Go/Shoqi competitions (World Go Championship Fujitsu Cup, Master's Game, others)
- Musical performances (Fujitsu Concert Series, others.)
- Sports events (Fujitsu Ladies Golf Tournament, others)

Official sponsorship of Kawasaki Frontale We co-sponsor Kawasaki Frontale, a sports culture development organization established in the city of Kawasaki in 1996 to train young athletes and encourage local sports development in line with the philosophy, "Contributing to the local community through sports and sports culture promotion." Since joining the J-League professional soccer league in 1999, Kawasaki Frontale has concentrated on the development of the professional soccer business as well as of other sports.



# Support for social welfare activities

We have established original support systems to promote volunteer activities by employees.

# Support for employee volunteer activities

- A leave system permitting employees to participate in Japan Overseas Cooperation Volunteers programs: Maximum 3 years
- Accrual leave system (since 1992): 5 days annually, accrual of up to 20 days

# Promoting volunteer activities with the proactive participation of employees

- Volunteer computer salon activities Activities in this category extend from OA consultation for the physically challenged to creation of Braille books and adding sound to books.
- PC and word-processing schools for the physically challenged

We have organized various programs to teach PC and word-processing skills, with our plants and branches playing a central role.

# Social Contribution Activities —

**Customer-focused** 



# Imbuing all our products and services with consideration for the individual customer

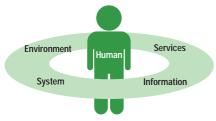
However fine a product's performances and functions, it is a failure if it does not take the customers who actually use it into consideration. Inspired by our vision of Universal Design, the Fujitsu Group develops products and services that are easy for anyone, including the elderly and physically challenged, to use. Creation of our products and services begins with an earnest gaze at the individual customer.

# **Fujitsu Group Accessibility Concept**

Developing products and services any customer can use easily based on a human-centered design concept

"Human-centered design" means that the Fujitsu Group always designs products and services with maximum concern for the customer's opinions and perspective. We consider it important for products and services to "consider Accessibility," \*1 which means employing Universal Design\*2 that makes them easy for anyone to use as well as offering superior functions and performance. The key to improving accessibility lies in four concepts we apply to the development of all the Group's products and services:

- 1. Providing a choice of various methods of operation so that decreased visual or hearing capabilities do not limit use of a product or service.
- 2. Determining the size, arrangement, operating method, control pressure, etc., to ensure that products respond flexibly to differences in users' constitutions, physical strength, mobility and posture and to the needs of wheelchair users as well as to minimize the burden and fatigue resulting from their use.
- 3. Ensuring easy presentation of information to avoid misunderstanding or incomprehension due to the user's degree of experience or knowledge or to differences in culture or language
- 4. Designing a highly utilitarian interface that increases the user's work safety, effectiveness, efficiency and satisfaction.
- \*1 Accessibility: The concept of making environments, facilities equipment, software and services easier for people, including the physically challenged and elderly, to use in various positions and
- defermining the degree of usability.
  \*2 Universal Design: Like Accessibility, a product design concept stressing usability by all sorts of people, or a design developed based on this concept.



**Human-centered Design** (Human-centered Design: Design with a central focus on people)

### Fujitsu Web Accessibility Guidelines

We are promoting measures to address the "digital divide" (information gap) associated with the use of information machines and equipment and the Internet at the national level. Our overseas bases in 27 countries make their homepages barrier-free and create homepages with Accessibility taken into consideration so that everyone, including the physically challenged and the elderly, can use them comfortably. We have developed and distributed an original set of Fujitsu Accessibility Guidelines clarifying the perspective on Accessibility to be adopted by homepage producers as part of efforts to extend Accessibility throughout society.

www.fujitsu.com/webaccessibility/

# Representative examples of **Universal Design**

# **Product and Services Accessibility** FACT-V

An ATM that is easy for anyone to use

### Rakuraku PC

A PC permitting secure operation by elderly people who are novice PC users

#### @Expansion Tool

A tool for increasing the font size when text on a PC screen is too small to read easily

#### Gannosuke

Software that supports unhindered Netsurfing by the visually challenged

#### Rakuraku Mail

e-mail software for the physically challenged and children

### Rakuraku Telephone

Everyone can enjoy cellular phone convenience with the F671iS, which can be used easily by anyone

#### Hiragana Navi

A tool for navigating the Internet using the Japanese hiragana syllabary

#### Fujitsu Office Machines

PC seminars for the elderly

### Fujitsu Learning Media

A "Senior IT Advisor" PC seminar for the elderly certification system

#### Fujitsu Social Science Laboratories

"Web Core," a web site construction tool for selfgoverning bodies

#### Eastech Corp.

A PC school for people with visual or hearing challenges

# Inquiry window

Inquiry window for Fujitsu personal products:

## 0120-950-222 (toll free)

Calls to the inquiry window concerning Fujitsu personal products are channeled to the appropriate service window, depending on the caller's consultation concern:

Before purchase, after purchase, malfunction/repair, service contract, peripheral equipment, printer, personal OASYS series,

Please refer to our homepage for information concerning Fujitsu services and products.

# Services & Product

globalservices.fujitsu.com/services

#### FMWORLD.NET

Personal customers:

www.fmworld.net/contact.html (only Japanese

#### Corporate customers:

fmworld.net/biz/contact.html (only J



# **Environmental Communications**



# Extensive sharing of information concerning environmental activities with society through interactive communications making optimum use of available media

The Fujitsu Group promotes environmental activities in every field of business aimed at realizing a sustainable society. We make positive use of many avenues to disseminate information concerning these activities as widely as possible, including information disclosure through environmental management reports and the Internet, production of newspaper advertisements and commercials, and participation in exhibitions. We also strive to communicate interactively by establishing reception windows for the opinions and ideas of people in widely varied segments of society.

# **Environmental report publication**

2002 Fujitsu Group Environmental Report presents details concerning the results achieved by the company in environmental protection programs conducted in fiscal 2001. It introduces and reports on the activities of the whole Group in a positive

effort to disclose information concerning our work to preserve the environment, thereby increasing the transparency of our corporate operations. We have issued environmental reports annually since 1995.

The Fujitsu Group continues to pursue its

positive disclosure of information by posting it on the Internet as well as by issuing the Environmental Report every year.

Subsidiaries and affiliates: Fujitsu Access, Fujitsu Support and Services, Fujitsu VLSI, PFU, Shinko Electric Industries, Fujitsu Ten, FDK Fujitsu: Kumagaya Plant, Nasu Plant



# Issuing the environmental brochure "Focused on the Green"

We issued "Focused on the Green," an environmental brochure containing a clear description of the Fujitsu Group's environmental measures, as a new environmental tool in fiscal 2002. Designed to gain the understanding of consumers and others concerning our environmental measures, this brochure presents clear descriptions supported by numerous photos and charts of measures taken in accordance with our "Green Life 21" concept for environmental activities. "Focused on the Green" is distributed by Fujitsu Group plants and sites in response to recipients' requirements. We also distribute it to

customers and others in the course of our daily sales activities as well as to user groups for distribution to their member companies.





# **Environmental print advertising**

We place environmental advertising in newspapers and magazines as well as on homepages to publicize our environmental activities. We also air environmental TV

commercials. We have received high accolades for creating a large number of ads to inform the public of our daily activities focused on the environment and the new

technologies that have been born to protect the environment in a clear manner from a familiar perspective.



A PC made from corn can be returned to the



We design products to know how much CO2 they will produce throughout their life cycle



We have a network that re-creates resources from products



Dow Jones Sustainability Indexes: Fujitsu top in environmental category 4 years running

# Participation in environmental exhibitions

Exhibitions offer ideal venues for introducing our measures in response to environmental issues and our ability to offer environmental solutions and products to customers in an easily understandable way. Again in fiscal 2002, we participated in exhibitions

throughout Japan to publicize our environmental operations and to promote environmental business. Some of these activities are described here. (40 exhibitions total in fiscal 2002)

Name	Sponsor
Environmental Solution Forum	Corporate Environmental Affairs Group, Fujitsu Limited
Shinshu Environment Fair 2002	Shinshu Environment Fair Organizing Committee
CEATEC JAPAN	Communications and Information Network Association of Japan,
	Japan Electronics and Information Technology Industries Association,
	Japan Personal Computer Software Association
CEPSI 2002 FUKUOKA	The Association of the Electricity Supply Industry of East Asia and the
(The 14th Conference of the Electric Power	Western Pacific (AESIEAP) / Kyushu Electric Power Co., Inc. / CEPSI
Supply Industry)	Fukuoka Organizing Committee
WASTEC2002	WASTEC Organizing Committee
Eco-style fair for the Earth and ourselves	Japan Environmental Management Association for Industry (JEMAI),
Eco-Products 2002	Nihon Keizai Shimbun, Inc.
Biwako Water Fair	The 3rd World Water Forum, Shiga Committee Secretariat, Executive
	Committee for Otsu City 21st-Century Commemoration Project
Junior Eco Club National Festival in Sasebo	Ministry of the Environment, Nagasaki Prefecture, Sasebo City, Japan
	Environment Association

### "Environment Pocketbook"

We created a booklet called the "Environment Pocketbook" in fiscal 2002 for staff of our business divisions to use when they talk about environmental issues with customers. The staff also use it in study meetings held by their divisions in connection with environmental issues.



# Community opinions and questions

Feedback from the community concerning our environmental practices included responses to our questionnaire and opinions and questions received by phone, e-mail and fax. The following are representative examples and responses:

"Since biodegradable plastic is decomposed in nature, we could just bury it in the ground instead of disposing of it as unburnable trash. If biodegradable plastic products came with easy instructions to consumers for disassembling and processing them, the volume of unburnable trash might be reduced."

We treat biodegradable plastic as a recyclable material and are making positive efforts to collect products made from it, rather than encouraging processing by consumers. Since the material decomposes into water and CO2, however, the environmental burden is reduced, even if it is inadvertently disposed of as trash.

"I'm looking for an easily understandable booklet to use in explaining the importance of environmental preservation to children."

Besides our environmental reports, we publish "Focused on the Green," an easily understandable brochure on environmental topics. We will send you a copy upon request.

"There's a strange sound coming from near the back gate of your plant. If it's caused by mechanical problems, please inform me when the repairs have been made."

We investigated and found that the sound was caused by a skid on a leftover food-processing machine in the cafeteria, which staff had forgotten to turn off. We stopped the operation, reported the situation to the neighbor concerned and received a grateful response.

# **Environmental Social Contribution Activities**

Economy



Society

# New measures to preserve our Green Earth conducted by caring employees

The Fujitsu Group's efforts to protect our irreplaceable Green Earth include promoting voluntary environmental activities, such as participation in greenification programs, among employees. Each of our sites also seeks opportunities to cooperate with the administration and citizens of its community. The scope of these activities has spread from various domestic regions to take in locations overseas as well, and new approaches employing the Internet and activities in cooperation with NGOs and educational institutions have also been adopted.

# Cooperation with NGOs and Educational Institutions

We have introduced new measures in cooperation with NGOs and educational institutions concerned with environmental issues. These include conducting joint research and employing a network game to support overseas forestation projects.

# Depicting the sustainable society 10 or 20 years hence: A joint research project conducted with Musashi Institute of Technology

As an intern training project, Fujitsu and Musashi Institute of Technology envisioned a sustainable society 10 or 20 years in the future from the perspectives of students and others, and conducted joint research to determine the courses corporations and other organizations should follow in the years ahead. In order to apply the results in future environmental activities, we sought to construct a mid-term environmental action plan for each category of business and to determine concrete measures.

The research began with projection of an image of 2020 society through extraction of the driving forces (promotional factors) and

analyses of the current environmental activities of companies selected from each business category. This led to proposal of an original "Universal Eco Connection" vision targeting formation of a global cyclical society. Comments by the participating students indicated an increased awareness of environmental issues and the role of companies in dealing with them. Examples of their remarks include, "I'm beginning to realize how much is involved in corporate environmental activities," and, "I understand now how difficult it is for companies to implement environmental measures and still try to make a profit."



A research presentation meeting

# **Exhibiting at Eco-Products 2002**

We publicized the results of the research by exhibiting panels summarizing the image of the future sustainable society depicted by our environmental scenario planning, and the project and its results were presented to customers by the participating students themselves. We also compiled the results of a follow-up survey concerning the recycling mechanisms we focused on in the joint research into a booklet and displayed non-recyclable materials (rubber, wire coatings, plastics without ingredient indications) in the hall.



Examining the Eco-Products exhibit

# Other activities conducted in cooperation with NGOs, educational institutions and corporations

2002 Fujitsu Group Environmental Solutions Forum featured exhibitions by OISCA-International and the Nippon Association of Consumer Specialists (NACS). We took advantage of the forum to introduce not only solutions for corporations but also contents applicable to other segments of society. We are also actively engaged in planning and conducting environmental study programs for educational institutions. These include

environmental courses conducted at the Waseda University School of Science and Engineering and environmental courses and facility tours held as a part of an integrated education and school excursion curriculum in cooperation with Japan Travel Bureau (JTB).



Research by students

# Providing support for OISCA-International's Children's Forest Program by sponsoring a network forestation game

We have joined Nifty Corporation and Photon, Inc., in providing the Rhythm Forest network game to support forestation projects promoted by OISCA-International. This program's use of a game to raise funds represents a new approach to forestation activities.

Rhythm Forest is a session game featuring exciting visual and sound content that is distributed as @nifty content by broadband Internet. If players repeat sessions in a cyber space stage featuring beautiful expanses of sea, earth and sky, the game world is transformed into a rich abundance of trees and flowers. The monetary equivalent of one seedling is donated from each player's monthly charges for this game to the "Children's Forest Program" forestation project promoted by OISCA-International. The program supports tree-planting by children in forestation areas centered in Southeast Asia. Thus, Rhythm Forest enables people to

cooperate in real-world forestation activities by playing a game in cyber space. Our participation in the project represents an experiment with a new approach to cooperation between an IT company and an international NGO in efforts to foster a better global environment.

**OISCA-International URL** 

www.oisca.org/e/index.htm

Photon URL

www.photon01.co.jp/reg/forest/



Seedlings planted with Rhythm Forest funds



The Rhythm Forest forestation game

© 2003 Photon



Forestation in "Rhythm Forest" (Ranong, Thailand)

# Bird watching in conjunction with the Wild Bird Society of Japan

A garden bird watching event was held at the Fujitsu Kawasaki Plant by the Wild Bird Society of Japan as part of the 2002 Fujitsu Group Environmental Solutions Forum. The event raised awareness among customers and employees of the birds that make their home in the plant's garden and of the natural environment that requires protection in the immediate vicinity.



A bird watching event in the Kawasaki Plant garden



# Participation in the activities of other organizations

Fujitsu participates actively in various organizations outside the company to add breadth to its environmental preservation efforts.

- Nippon Association of Consumer Specialists
- Environmental Issues Research Committee, Kanagawa Prefecture Business Association
- · Network of Environmental Reporting
- Nippon Environment Club

- Japan Environmental Management Association for Industry
- Environmental Preservation Committee, Communications and Information Network Association of Japan
- Environment and Product Safety Committee, Japan Electronics and Information Technology Industries Association
- Environmental Committee, Japan Electronics and Information Technology Industries Association

# **Environmental Social Contribution Activities**



Environment

# **Activities by Overseas Bases**

### **England**

Fujitsu Services Holdings (London) draws on its resources as an IT company in participating in community cooperation activities, such as sharing of network equipment and know-how with high schools, historical heritage conservation organizations and other non-profit institutions. It has been a major supporter since 1998 of Groundwork Manchester, for example, an organization engaged in environmental activities aimed at constructing a local community capable of sustainable development. The company's ongoing practical contribution activities include provision of IT-related equipment and business skills and safety and health advisory

### **United States**

In spring 2002, employees of Fujitsu Network Communications (Texas) joined the students in the environmental club of Big Springs Elementary School in Richardson, Texas, in a cleanup activity in the vicinity of the school. The company's partnership with this elementary school, which dates back to 1994, includes not only environmental activities but also donations of books to the school library, support for camping and music appreciation activities, and supply of personal computers.

# Hong Kong

Fujitsu Hong Kong participated energetically during fiscal 2002 in programs such as a forestation project sponsored by OISCA-International (a 5-year program begun in 2001) and Green Hiking, a charity event devoted to environmental education and nature preservation in the territory. It also conducted environmental activities involving such matters as use of public transportation, reduced use of paper and PET bottles, and adoption of cloth shopping bags in connection with Green Day in June in order to suggest and implement environmental activity voluntarily.



A forestation project in Hong Kong

# **Regional Voluntary Activities**

Every site conducted environmental volunteer activities as part of ongoing promotion of social contribution activities conducted jointly with local communities and governments.

# Culling flower ovaries at a prefectural park

(Tatebayashi Systems Center, etc.)

The Tatebayashi Systems Center, Kumagaya Plant and Kumagaya branch of the labor union play a central role in voluntary flower ovary culling at Gunma Prefectural Tsutsujigaoka Park to encourage fuller flower blooming the following year. Culling enables the remaining ovaries to obtain sufficient nutrition for the flowers produced by their ovules (seeds) to achieve full splendor. The manual culling is an annual event participated in by some 50 employees and their families.



er ovary culling in Tatebayashi

# Companywide efforts to promote social contribution activities (Fujitsu Support and Services)

Fujitsu Support and Services (Fsas) has adopted "Participation in social contribution activities by every section at least once a year" as a prioritized companywide activity theme. Every section responded by participating in such community activities as an Owada Beach clean-up in Chigasaki City, a castle cleaning at Himeji Castle and the Osaka Prefecture-sponsored OSAKA Cleanpic.



Participating in the Owada Beach clean-up

# Eco-friendly facility tours (Fujitsu Akiruno Technology Center)

The center conducts tours that present its eco-friendly facilities and equipment, such as its thinned-wood cafeteria tables, NAS battery equipment and kitchen waste composting equipment, in an interesting way. It also offers environmental education opportunities for local junior high school students as part of their social studies by involving them in converting kitchen waste into fertilizer.



A visit by members of the Oume Chamber of Commerce and Industry



Students at Nishi Junior High School prepare kitchen waste for conversion

#### Overseas Greenification Activities

Ongoing reforestation projects in Southeast Asia

For the past several years, the Fujitsu Group has been conducting reforestation projects from the perspective of bio-diversity greenification and ecosystem symbiosis in Southeast Asian countries such as Thailand, Vietnam and Malaysia that host Group company bases. In fiscal 2002, we opened the Fujitsu Group Malaysia Eco-Forest Park at Kinarut in the Malaysian state of Sabah (Borneo).

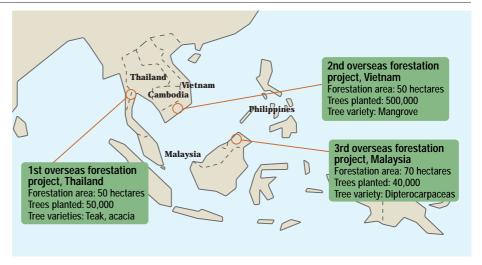
The Fujitsu Group will use employee donations to provide funds regularly over a period of two years and employ volunteers to conduct the forestation work. Once the forestation is completed, administration of the forest will be transferred to the Sabah Forestry Development Authority, which will designate it as an "eco-forest park" and administer it for such purposes as environmental studies and eco-tourism. A total of 55 volunteers, 31 from Japan and 24 from six of our Malaysian affiliates, participated in our second reforestation project, co-sponsored by the Fujitsu Labor Union, at the end of November, planting seedlings of native trees such as dipterocarpaceas.

In Vietnam, meanwhile, the first reforestation project initiated in fiscal 1999 was completed in August with the planting of 200,000 trees in the Fujitsu and Vietnam Friendship Forest. These reforestation project are estimated to have absorbed CO<sub>2</sub> approximately equivalent to the amount generated by 571 households in fiscal 2002.\*1

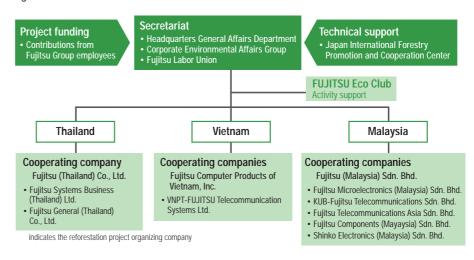
In fiscal 2003, we are beginning our third reforestation project, the Fujitsu Group Malaysia Eco-Forest Park project described above.

\*1 The calculation assumes a cumulative CO<sub>2</sub> absorption volume of 3,540 tons/year in fiscal 2002 and annual CO<sub>2</sub> emissions per household of 6.2 tons/year (volume x emission coefficient employed). (Reference: 2000 Consumer Energy Consumption Equipment

(Reference: 2000 Consumer Energy Consumption Equipment Efficiency Improvement Survey Report, Energy Conservation Center, Japan)



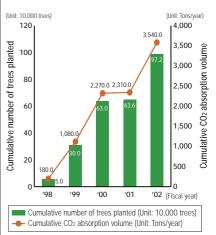
Organizational structure for overseas reforestation activities





Forestation work in Malaysia

# Cumulative number of trees planted and $CO_2$ absorption volume



\* We calculated the CO<sub>2</sub> absorption volume as 3.6 kg/year per tree (estimated value for a tree 14 cm in diameter and 8 m tall).

# New measures introduced to reduce all types of risk associated with corporate activities

We continue to strive to raise the consciousness and skills of all our employees and strengthen our risk management. To this end, we have united the Group in establishing a thoroughgoing system to respond to every kind of risk associated with corporate activities. Measures include a new educational program introduced in fiscal 2002 to reduce the risk of environmental degradation by raising employee awareness of environmental risks as well as of issues concerning products and services, natural disasters and accidents. (Range: Japan)

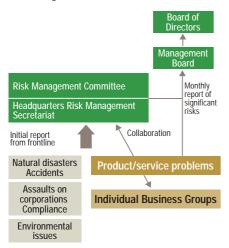
# Risk management systems and risk countermeasures

# Basic stance toward risk management

Efforts to cope with the various risk situations involved in corporate activities include establishment of the Risk Management Committee. Important matters are reported to the Management Board by those responsible for implementation and to the Board of Directors by those in charge of supervision, and appropriate responses are discussed between them. This approach has enabled us to strengthen our crisis management system throughout the Group.

### Risk management system

The Risk Management Committee represents management in centralizing information concerning such matters as problems involving products and services, natural disasters and accidents and implementing suitable responses. Depending on the level of urgency of a report, the committee strives to solve issues quickly by establishing a countermeasures headquarters and arranging for cooperation between the site and the Risk Management Secretariat.



#### Risk management education

The single most important aspect of risk management is speedy reporting of any occurrence of risk to prevent diffusion and expansion of damage as well as to prevent risk to the company or its customers. We are

consequently honing every employee's risk management capabilities by holding seminars and conducting e-education programs.

# Risk management seminar

We organize risk management seminars for members of the Board of Directors, division managers, general managers and presidents of our Group companies. We intend to add these seminars to our internal education curriculum and require all employees to participate in the future.

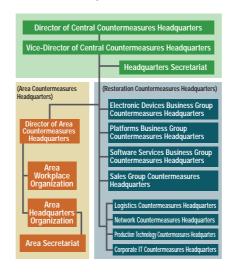
#### Information management education

We have been pursuing e-education since December 2002 as a means of thoroughly reinforcing awareness of information management regulations in connection with the introduction of in-house PKI\*1. We also disclose information concerning security-related texts by in-house intranet to implement their education application by every employee.

# **Natural Disaster Countermeasures**

# Earthquake Countermeasures

We have formed a Groupwide earthquake disaster prevention organization assuming the occurrence of major earthquakes. Our objective is to support customers who suffer damage appropriately by implementing advance measures to minimize material damage to our sites and establishing systems to facilitate early resumption of business operations in the event of an earthquake.



### Disaster prevention drills

We conduct annual disaster prevention drills centered on Disaster Drill Day (September 1) at every domestic site. The System Support Headquarters introduced helicopters as an emergency countermeasure for customers in 2002. We conducted a large-scale drill assuming the occurrence of a massive earthquake in the Tokai region to ensure our ability to respond appropriately to disasters.

# **Environmental Risk Countermeasures**

# Education to enhance environmental risk awareness

It is essential that we unify our efforts to tackle environmental risk management, because failures to manage environmental risks can be momentous, resulting in such consequences as soil and groundwater contamination and illegal waste disposal. For this reason, we introduced a new educational system in October 2002 designed to foster and enhance employee environmental risk awareness.

## Keystone of employee education

We educate employees concerning "risk prediction" and "suitable responses and solutions" to raise their risk awareness and give them appropriate skill training. The education is aimed at reinforcing employees' preparedness to counter environmental risks associated with production activities and to prevent the expansion and minimize the scale of damage in the event of problems.

#### Contents of employee education

- Environmental risk education: Lectures concerning environmental risk and methods of managing it based on concrete examples
- Explanation of the case analysis method: How to conduct a case analysis
- Case analysis (group)
- Case analysis (person)
- Confirmation of effect of the education

# Targets of the education



### Implementation status of the program

The program has been fully implemented and education conducted at 3 plants and 11 of their affiliates.



Classroom education

# Total elimination of dioxin\*1 generation and release

We had discontinued use of incineration facilities throughout the entire Group (5 Fujitsu plants and 10 affiliates with incineration facilities) as of January 2002. We continue to make every effort to prevent dioxin generation.

# Storage and treatment of polychlorinated biphenyl (PCB)

Each Fujitsu site and affiliated company that employs transformers, condensers and fluorescent lighting stabilizers containing PCB notified the prefectural governor of the number in storage in fiscal 2002 in compliance with the Special Measures Law on PCB.

The number of the transformers and condensers containing PCB totalled approximately 1,346. The PCB in storage awaiting detoxification is strictly monitored with quantitative ledger management, and the storage is conducted with extreme caution based on the management regulations in effect at the individual Fujitsu

	Storage volume							
	Transformers		Fluorescent lighting stabilizers					
Fujitsu	9	1,295	36,070					
Affiliates	0	42	508					
Total	9	1,337	36,578					

sites and their affiliated companies.

We are continuing to investigate the possibilities for detoxification of PCB, focusing on such areas as detoxification processing technologies, the progress in wide-area processing by Japan Environment Corporation, and the conditions concerning location and facility expenses. We

hope to use the results of these investigations to determine a PCB detoxification policy for the company and its affiliates within three years in order to minimize risk.

# Countermeasures concerning soil and groundwater

We investigated soil and groundwater contamination at two plants that had been abolished or merged based on in-house regulations (soil and groundwater study regulations). Since the investigation was initiated before the Soil Pollution Countermeasures Law went into effect, we considered how the law could be applied in the investigative method. The results of the study showed that, although a small area of the site surface slightly exceeded the standard values for contaminants, there was no problem below the surface or in groundwater. We reported these results to the administrative authorities. We also investigated the sites where buildings had been dismantled, moreover, and sealed all areas where contamination had occurred with seepage-proof pavement. We intend to decontaminate the polluted areas in fiscal 2003. We have conducted ongoing purification of volatile organic compounds, meanwhile, and are in the process of determining a target date for completion of this process. We also explained the regulations and future responses presented in the Soil Pollution Countermeasures Law to each Fujitsu site and affiliated company in May 2002 and February 2003 to obtain their full understanding of its contents and to ensure observance of the law and complete, proper



management of hazardous materials.

Conducting a soil drilling study (Fujitsu Kawasaki Plant)



Fuiitsu Kanuma Plan

# Measures to combat environmental endocrine disrupters

We are managing the usage volumes of 65 chemicals designated as exerting a potentially harmful effect on the human endocrine system with the aim of reducing their use at all the Group's plants and all our affiliated companies that employ the targeted chemicals. In fiscal 2002, the volume of environmental endocrine disrupters used by the Group was approximately 2,571.7 kg. The volume used by Fujitsu was approximately 82.3 kg, a 54.0% reduction compared with fiscal 2001.

Usage Status of Environmental Endocrine Disrupters
(Fujitsu Group Fiscal 2002)

Substance No.	Substance	CAS* No.	Amount used (kg)	Principal uses
36	Nonyl phenol	25154-52-3	519.2	Degreasing agent for painted parts
38	2-ethylhexyl phthalate	117-81-7	19.5	Adhesive for mounting electronic parts
39	Butyl benzyl phthalate	85-68-7	9.4	Used in PCB process
40	Di-n-butyl phthalate	84-74-2	1970.7	Adhesive for test items
59	Permethrin	52645-53-1	53.0	Insecticide for mites
	Total		2571.7	

- \* The results tallied here are for 11 Fujitsu sites and 26 domestic and 4 overseas affiliates.
- \* The usage status covers all substances used by Fujitsu and the Fujitsu Group.
- \* Substance number in the Ministry of the Environment publication "Strategic Programs on Environmental Endocrine Disrupters '98" (SPEED '98)

# Total elimination of ozone layer depletion substances

We have completely eliminated the use of substances that contribute to depletion of the ozone layer in our manufacturing operations. We have also taken measures to ensure that no CFC coolants used in air-conditioning or refrigeration equipment leak into the atmosphere. When renovating such equipment, we take the opportunity to replace the coolants with non-CFC alternatives.

## Results for ozone-depleting substance elimination

Ozone-depleting substance	Date of elimination
Cleaning CFCs (CFC-113, CFC-115)	1992 year-end
Carbon tetrachloride	1992 year-end
1,1,1-tricholoroethane	End October 1994
Substitute CFCs (HCFCs)	1999 year-end

# Contraventions, penalties and lawsuits

We were accused of no infringement of the law and were involved in no lawsuits or accidents during fiscal 2002.

# **Personnel and Education Systems**

# Nurturing "human resources" as our most valuable asset

We have introduced a new personnel system designed to enable employees to develop their individual capabilities to the full and to support them in their personal career formation by placing a priority on personal desires and volition. The Fujitsu Group continues to foster its human assets, moreover, through such means as the establishment of "Fujitsu University," a university operated within the company to develop human resources to international standards and conduct positive programs of employee environmental education.

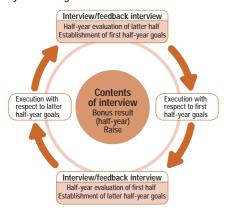
(Range: Japan)

# Personnel System

## Result evaluation system

Aware that reflecting employees' performance in their salaries is essential to maintaining their volition to work, we have introduced a system under which employees establish their own operating targets every half year. They are evaluated based on the results and processes and their compensation is determined by the evaluation. This performance evaluation system provides employees with a context in which to use their skills to build a career on their own terms based on their own capabilities.

#### System configuration



## In-house open recruitment

A system of recruiting people with the necessary skills for various projects through in-house intranet enables employees to apply to participate in projects of their choice and to shape their own careers. It is representative of efforts to create a more challenging corporate climate by expanding individual employees' job selection opportunities.

#### Free agency

A free agency system has been implemented to enable employees to apply for assignment to work locations or jobs of their choice. The work location among those selected is decided after an interview to determine the employee's skills and experience. We are

supporting employees' efforts to shape their careers by expanding the possibilities for staff reassignment according to their desires and personal volition as a means of encouraging development of skills, expertise and professionalism by every employee.

# Career management services

Independent-minded personnel who enjoy taking on greater challenges and new subjects are essential resources for operating in a rapidly changing business environment. This makes it important for employees to shape their careers on their own volition. We seek to encourage this kind of career development by individuals by conducting career design seminars and career counseling that support their self-actualization efforts.

### Other measures

Internship system, Achievement award system, Child-care leave system, Family member care leave system, Refreshment vacations, Study abroad system, "Nice life" seminars, Others

# **Human Resources Development** (Employee Education)

### **Fujitsu University**

Established in April 2002, Fujitsu University is organized to foster human resources from the long-term perspective of the Fujitsu Group as a whole. The University's mission is to "foster advanced human resources to provide leadership for the industry" based on the following three factors:

- Fostering of professionals who can provide customers with high added value
- Fostering of business leaders capable of resolute global business promotion
- · Reinforcement of the Fujitsu Group's baseline\*1 as a total provider
- \*1 Baseline: Refers to the mentality, sense of values, business techniques, etc., shared by all Fujitsu Group employees in every area of business

# Fujitsu University Structure



#### **Business College**

The college promotes reinforcement of the baseline by providing education emphasized by the company and education for each company level.

#### GKI (Global Knowledge Institute)

The college conducts education to foster business leaders who bring global awareness to competition.

### **Technology College**

This college gives the operating divisions' engineers the expertise, skills and capabilities they need to establish development topics and work out the solutions on their own.

#### Solution College

The college cooperates with the various divisions in equipping sales personnel and systems engineers with advanced professional skills and knowledge.

### Fujitsu NetCampus

This integrated Group-wide educational platform enables employees to search and enroll in appropriate courses from a selection of over 2,000 educational programs. They can also participate in e-learning\*2 under this system.



A NetCampus Web display

# **Employee environmental** education

We conduct a variety of environmental education and awareness activities to raise every employee's environmental consciousness and inspire activity implementation as a basis for promoting full-staff participation in environmental activities.

# Literacy education

This type of education, conducted in every division, communicates baseline knowledge concerning environmental issues according to a hierarchical construct. We conduct both classroom education and integrated education supported by e-learning teaching materials



e-learning teaching materials designed to educate new employees in

## Technical education

Offered according to field of expertise, technical education is organized to teach eco-friendly business practices tailored to the concerns of specialized divisions, including the design divisions, sales divisions, environmental management divisions and internal auditors. In addition to classroom education, we will promote adoption of elearning beginning in fiscal 2003.



An educational program for Environmental Management Division staff

# Sales of an environmental elearning course initiated for corporations and administrative bodies (developed jointly with E-Square environmental consultants)

Fujitsu and Fujitsu Learning Media have implemented in-house environmental elearning employing know-how accumulated through Fujitsu's advanced environmental activity procedures. We combined Fujitsu Learning Media's abundant experience and expertise in e-learning with the advanced knowledge of E-Square, a leading environmental consulting firm, to develop an integrated environmental e-learning course covering a full range of basic fields. We have started selling the course in association with the @EcoVision\*1 Fujitsu environmental solution program.

\*1 Please refer to pages 37-38 for EcoVision.

# Other educational programs

# Lectures by invited speakers

Eisuke Ishikawa, a writer and expert in Edo era studies, presented a lecture entitled "Learning from an 'environmentally-advanced nation': Japan in the Edo era" in November 2002.



Writer Eisuke Ishikawa describes traditional Japanese environmental awareness. (Fujitsu Kawasaki Plant)

# **Education at Group companies**

This education takes many forms. Shinko Electric Industries, for instance, conducts education based on a hierarchy, beginning with introductory education for new employees. It also conducts Web-based general education for domestic business office staff and promotes e-learning as well as classroom education.



w employee introductory education (Shinko Electric Industries)

#### Measures for overseas bases

Fujitsu Services conducts ISO14001 auditors education using e-learning materials, and manufacturing affiliates are promoting environmental education related to business.



Materials for education (Fujitsu Services)

# Safety and Health and Health Support

# Coordinated companywide efforts to ensure a safe working environment

We are introducing various measures to unite employer and employees in efforts to prevent occupational accidents, maintain an environment in which every employee can work comfortably, and conduct business smoothly to improve productivity. Our ongoing activities to secure safety and health are matched to the working environment at the company level as well as the plant or site level, as appropriate. We also provide a wide range of support for health self-management by offering employee mental health counseling and disease detection measures, supporting these efforts with Web-based information and health news publications.

(Range: Japan)

# Measures for improvement of safety and health

Company measures to enhance employee safety and health begin with a meeting of the Central Safety and Health Committee every June attended by employer and employee representatives elected by the various business groups. The committee determines policies for the company as a whole based on investigations of the situation with respect to disasters and planning of measures to prevent them. Each site holds safety and health committee meetings once a month under the auspices of its safety and health management organization to determine measures and policies suited to the characteristic of each site.



We hold health conferences once a year to reinforce our health management through discussions among the medical staff and section managers of each site. The exchanges of opinions on matters concerning companywide health management that take place at these meetings help to identify areas for improvement in our health management system.

## Safety commendation

Our corporate system to encourage safety and disaster preparedness includes recognition through special awards, the Safety Control Excellence Award and the Disaster-free Recognition Award. Plants and working places whose safety management is so superior as to provide a model for others are recognized with testimonials and prize money.

## Safety and health education and training

We make use of the Internet to provide education as part of our companywide employee education. The individual sites also conduct their own education, moreover, matched to their particular work environment.

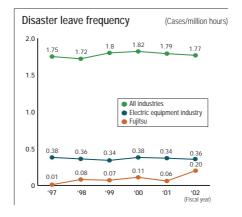


## Examples of implementation at individual sites

- Original creation by plants of educational videos matching their business contents (Mie Plant)
- Special education for employees who handle toxic substances (some sites)
- · Lectures by invited speakers on topics concerning health education (4 times, Kawasaki Plant)
- · Safety education for business partners who pay frequent visits to our plants and sites as an on-site disaster prevention measure (some sites)

# Disaster occurrences

Our Group members are achieving a steady numerical decrease in disaster occurrences compared with others in the same business category. The disaster occurrence ratio has increased from the previous year due to disasters such as violent falls resulting from carelessness. We continue to implement measures to reduce the disaster occurrence ratio, and execute safety and health activities.



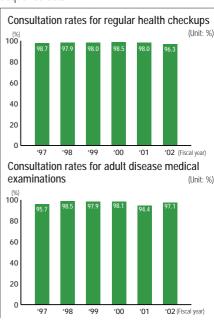
# Primary activities of the Health Promotion Division

# Health promotion activities

We have established health promotion centers at our main sites and health management offices at the other sites, including the Kawasaki Plant's Health Promotion Division. Health consultants (contract nursing professisonals) stationed at small sites, such as our branch offices and branches, conduct support activities focusing on health consultations.

# Health checkups

In addition to the annual health checkups (once a year) required by law, all employees aged 35 and over 40 undergo adult disease medical checkups (complete physical examinations) for early detection of chronic diseases and lifestyle amendment. We also conduct health checkups such as examinations to determine the health condition of employees posted overseas at the time of assignment, during temporary reassignment to Japan and after their final return. Industrial health staff such as occupational physicians and nurses explain the results of the health checkups, supporting their mental and physical assessments with time sequence data.



## Smoking countermeasures

A companywide action policy enacted in 1997 defines basic workplace smoking measures. Smoking countermeasure working groups have been established at each site, and 100% separation of smoking areas and non-smoking areas has been attained. Besides education for in-house separation of smoking areas, moreover, we provide nonsmoking support programs for employees who aspire to quit smoking.

## [Activity guidelines]

- Smoking areas are completely separated in workplaces
- · Smoking is prohibited in conference rooms and cafeterias.
- Efforts are made to educate employees to achieve complete in-house separation of smoking areas.

# Measures in response to HIV

We have responded positively to the HIV issue based on the following basic stances and have developed a system to protect employees from AIDS. We have also established an AIDS consultation window that provides consultation to anyone upon request, including the person concerned, superiors, colleagues or family (with the option of anonymity).

# [Basic stances]

- · We conduct thorough AIDS education and work to disseminate accurate information.
- · We do not conduct HIV antibody tests as part of our regular health checkups.
- · We do not treat AIDS victims unfairly or discriminate against them in personnel affairs. Moreover, we support employment of HIV carriers.
- · We protect the privacy of HIV carriers.

#### Health education

Each site conducts classes designed to raise health consciousness among its employees in accordance with its particular characteristics. We also conduct mental health education organized according to such hierarchical factors as the dates of joining the company, promotions and advancement to the executive ranks.

# **Examples of educational offerings** One-step

Experience in exercise programs that can be intergrated into daily life, such as exercises which we can do in the home or walking techniques with efficient energy consumption. (Kawasaki Plant)

#### Yoransho pub

Participants study nutrition in a virtual pub experience.

# Hygienic measures

Support for employee hygiene includes firstaid kits installed in the workplace and responses to the needs of employees traveling overseas on business or posted overseas (emergency medical supplies, vaccinations, etc., with types of measures varying according to the business trip/posting destination).

# Mental health services

Besides providing health consultations, we station special counselors (clinical psychologists) at sites to conduct counseling when mental health care is required. We also conduct mental health education, including executive employee education since 1966, education for people newly promoted to professional positions and introductory education for new employees since 1988. We have also held conferences of personnel responsible for health care since 1985, as well as conducting skill enhancement education to teach counseling techniques.

# **Emergency measures**

We have also prepared countermeasures for disasters and the occurrence of new types of diseases. When disasters (such as the September 2001 terrorist attacks in the United States) occur, health care divisions dispatch industrial physicians and counselors to the site to conduct medical consultations in cooperation with personnel section staff. When new diseases appear (such as the January 2003 SARS outbreak in Asia), we conduct medical consultations and information distribution by occupational physicians and nursing staff. We also take steps to protect staff and prevent secondary infections, such as distributing masks to employees on overseas assignment, traveling overseas on business trip and returning temporarily from overseas, and implement measures and provide information to prevent infection, as appropriate.

# Fujitsu Kawasaki Hospital

Although this hospital was founded in connection with public welfare, it is open to use by the public and Fujitsu employees. Equipped with such advanced equipment as MRI and multi-orbital tomographic equipment, it does everything possible to ensure that patients achieve the earliest possible recovery. (46 beds available)



# **Employee information**

"plus ONE," an information magazine concerning dietary life and health, is distributed to Group employees as part of our educational program. The magazine presents information concerning diet and medical and nursing care in an easily understandable style.



"plus ONE"

# **Environmental Performance Data**

# **ISO14001 Certification Acquisition Results**

The Fujitsu Group as a whole is working toward ISO14001 certification acquisition to promote Group-wide EMS operation.

# Results of ISO14001 Certification Acquisition (Total: 85 sites)

# Fujitsu Group [in Japan]

Certified plant/site	Date of certification
PFU	October 1996
Yamagata Fujitsu	May 1997
Fujitsu Ten (Headquarters Plant)	June 1997
(Nakatsugawa Plant)	August 1997
Shin-Etsu Fujitsu	July 1997
Fujitsu Tohoku Electronics	September 1997
(Headquarters)	
Kyushu Fujitsu Electronics	October 1997
(Kagoshima site)	
Fujitsu VLSI (Kozoji/Gifu areas)	December 1997
Shinko Electric Industries (Takaoka /Kyogase Plants)	March 1998
(Arai Plant)	March 1999
(Wakaho Plant)	July 1999
(Kouhoku Plant)	September 2002
Fujitsu I-Network Systems	April 1998
(Yamanashi Plant)	April 1998
Fujitsu Frontech (Niigata Plant)	April 1998
(Tokyo Plant)	October 1998
FDK (Sanyo Plant)	July 1998
(Kosai site)	October 1998
Fujitsu Components	July 1998
(Technical Development Center)	July 1998
(recrimed bevelopment center)	

Certified plant/site	Date of certification
Shinano Fujitsu	August 1998
Fujitsu Quantum Devices (Headquarters site)	August 1998
Fujitsu Access (FDS Shimodate Plant)	September 1998
(FDS Kyowa Plant)	November 1998
(FDS Sekijo Plant)	December 1998
(FDS Shimodate area integrated)	August 1999
(Headquarters site)	November 2000
Fujitsu Miyagi Electronics	November 1998
Fujitsu Hitachi Plasma Display	November 1998
Fujitsu Isotec	December 1998
Fujitsu Kasei (Headquarters/Yokohama Plant)	December 1998
Fujitsu Media Devices	
(Suzaka site)	September 1997
(Shin-Yokohama site, other)	February 1999
Fujitsu Automation (Headquarters)	March 1999
Shimane Fujitsu	March 1999
Fujitsu Network Solutions	March 1999
Fujitsu Nishi-Nihon Communication Systems	June 1999
Fujitsu FIP (Headquarters, other)	December 1999
Fujitsu Logistics	December 1999
(Tokyo Distribution Center)	December 1999
Fujitsu Support & Service	March 2000
Fujitsu Kyushu Digital Technology	March 2000

Certified plant/site	Date of certification	
Fujitsu CoWorCo	March 2000	
(Headquarters and main sites)	IVIAICII 2000	
Fujitsu Wireless Systems	April 2000	
Fujitsu Business Systems	July 2000	
(Support Services Headquarters)	July 2000	
Fujitsu Oita Software Laboratories	October 2000	
Fujitsu Display Technologies	February 2001	
Fujitsu Devices		
(Headquarters and Central Distribution Center)	March 2001	
(Kyoto Sales Office)	April 2003	
Fujitsu Kansai Systems (Headquarters)	May 2001	
Fujitsu Personal System (Headquarters)	August 2001	
Fujitsu AMD Semiconductor	March 2002	
(Kadota/Takaku Plant)	IVIdICII 2002	
Fujitsu Leasing (Headquarters)	March 2002	
Totalizator Engineering	September 2000	
Fujitsu Kochi Systems Engineering	August 2002	
Fujitsu Nagano Systems Engineering	January 2003	

# Fujitsu Group [Overseas]

Certified plant/site	Date of certification
Fujitsu ICL Espana (Malaga factory)	April 1998
Fujitsu Microelectronics Malaysia	May 1998
Fujitsu (Thailand)	May 1998
Fujitsu Quantum Devices Singapore	May 1998
Fujitsu Component Malaysia	July 1998
Fujitsu Computer Products Corporation	November 1998
of the Philippines	November 1998
Jiangsu Fujitsu Telecommunications Technology	December 1998
Fujitsu Network Communications	April 1999
Fujitsu Computer Products of Vietnam	October 1999
Fujitsu IT Holdings (FTSI-Batavia, Illinois)	June 2001
Xian Fujitsu Telecommunications Equipment	June 2001
Nantong Fujitsu Microelectronics	June 2001
Fujitsu Telecommunications Europe	
(Birmingham)	January 2002
(Cambridge)	January 2002

# Fujitsu

Certified plant/site	Date of certification
Numazu Plant (BS7750 certification acquisition)	September 1995
Shift to ISO14001	September 1996
Nasu Plant	March 1996
Iwate Plant	September 1996
Mie Plant	December 1996
Aizuwakamatsu Plant	February 1997
Nagano Plant	March 1997
Kumagaya Plant	June 1997
Akashi Plant	August 1997
Oyama Plant	November 1997
Fujitsu Laboratories (Atsugi area)	November 1998
Minami-Tama Plant	February 1999
Solution Business Group (Kyushu R&D Center)	February 2000
Kawasaki area (Kawasaki Plant, Akiruno TC,	
YRP Research & Development Center, others)	March 2000
Tatebayashi Systems Center	March 2000
Kansai Systems Laboratory	January 2002
Headquarters (corporate strategy, personnel, advertising, general affairs)	March 2003
Kyoto Branch Office / Shiga Branch	April 2003

# **Green Product Evaluation Standard**

Fujitsu began conducting product environmental assessments using 43 criteria in fiscal 1993 with the aim of designing new products to prevent pollution and lower the environmental burden. "Green Products" are those with superior environmental performance characteristics. To earn this designation, products must score at least 90 points on a product environmental assessment and conform to all the relevant Green Product Evaluation Standards the company has adopted as a global environmental measure.

### Common Standards Applicable to All Products

Major category	Characteristic		Common standards
Product environmental	Overall assessment		Overall score of at least 90 points, with no score of zero on any assessment criterion
assessment			
Resource conservation	Product durability	(1)	Ensuring expandable product structures that support functional or performance improvements
		' '	(Not applicable to electronic parts, portable products, unit products, customer-specified products)
	Product warranties	(2)	Extension of unconditional manufacturer's warranties on products sold in Japan by six months and of those for PC products by one year
		' '	(Not applicable to electronic parts, products for markets outside Japan, customer-specified products)
	Reduction in product weight, volume,	(3)	Achievement of at least one of the following criteria for product weight, volume and number of parts, plus substantial improvements in remaining criteria
	number of parts		relative to past products:
			1) 10% + reduction in product weight compared to past products, or 30% + reduction per unit of performance
			2) 10% + reduction in volume compared to past products, or 30% + reduction per unit of performance
			3) 10% + reduction in number of parts compared to past products, or 30% + reduction per unit of performance
	Ratio of recyclable or easily	(4)	Achievement of a usage ratio of recyclable or easily recyclable plastics of at least 90% for products with a minimum of 25 grams of plastic by weight
	recyclable plastics used		(Not applicable to electronic parts, PCBs inside products)
	Potential resource recyclability	(5)	Use of potentially resource-recyclable parts for a minimum of 75% of product weight; minimum use of 50% for portable products with LCD unit or monitor
			(Not applicable to electronic parts)
Recyclable design	Plastic parts	(6)	Labeling of all plastic parts (excluding packaging materials) weighing more than 25 grams and/or of parts with flat surface areas exceeding 200 mm <sup>2</sup> ;
			maximized labeling of materials irrespective of weight or surface area
			(Not applicable to electronic parts)
		(7)	Minimized painting or coating of any plastic parts weighing more than 25 grams
			(Not applicable to electronic parts)
		(8)	Elimination of PVC use in plastic parts
		(=)	(Not applicable to cable coatings, insulation materials for electronic parts)
	Primary/secondary batteries	(9)	Products whose batteries are changed by the user: adoption of structures permitting battery exchange or removal
		(10)	Products whose batteries are not changed by the user: adoption of structures permitting battery exchange or removal without complete PCB exchange
	Disassembly and separation capabilities	(11)	Permitting separation and disassembly into component materials or units (separated as devices, PCBs, cables, plastic parts, and metal parts) by hand or
			with general-purpose tools
			(Not applicable to electronic parts, equipment with automatic movement features, artificial satellites, undersea relay devices, Defense Agency
		(1.0)	products, wireless equipment covered by radio spectrum-related legislation)
		(12)	Creation of manuals for equipment disassembly
Limitation of	Use of PBB, PBBO or	(13)	(Not applicable to electronic parts, secret components)  Freedom of plastic parts from PBB (polybrominated biphenyl), PBBO (polybrominated biphenyl oxide), or chlorinated hydrocarbons
chemicals contents	chlorinated hydrocarbons	(14)	Freedom of printed circuit boards from PBB (polybrominated biphenyl), PBBO (polybrominated biphenyl) oxide) or chlorinated hydrocarbons
CHEITHCAIS COINCEINS	Lead	(15)	Freedom of in-house manufactured products from lead solder
Prevention of	LCA	(16)	Assessment of product carbon dioxide emissions
global warming	Eort	(10)	755557111 of product carbon district clinicality
Energy saving	Energy-saving function	(17)	Products to be equipped with an energy-saving function
		(,	(Not applicable to electronic parts, customer-specified products, equipment for which an energy-saving function is not permitted)
	Power consumption	(18)	Reduction in average power consumption per unit of product performance from previous products
Environmental information	<u> </u>	(19)	Inclusion in product documentation of information on waste product collection and recycling system
disclosure			(Not applicable to electronic parts, customer-specified products)
Manual	_	(20)	All documents for external use to be produced using a minimum of 70% recycled paper; elimination of plastic coatings from cover sheets
Packaging	Resource conservation	(21)	Use of a minimum of 70% recycled paper in cardboard
		(22)	Minimized use of packaging materials: over 5% reduction in packaging materials compared with previous products, or reduction of empty space to less
			than 30%
	Recyclable design	(23)	Elimination of all kinds of plastic attachments that prevent recycling from paper materials
		(24)	Compliance of labels on packaging and plastic parts with the following standards:
			1) Labeling of all plastic parts weighing more than 20 grams (more than 10 grams in case of plastic foam)
			2) Location of labels in easy to see positions
		(25)	Elimination of PVCs from plastic materials used in packaging
		(26)	Use of only easily recyclable plastics or paper as protective bag materials
	Hazardous chemical restrictions	(27)	Freedom from PBB (polybrominated biphenyl) or PBBO (polybrominated biphenyl oxide)

# Category-specific Standards (Electronic Parts)

3 7 1	,		
Major category	Characteristic		Category-specific standards
Environmental ISO	All electronic devices	(1)	Establishment and operation of EMS meeting ISO14001 standards or similar EMS at all manufacturing and related sites
Chemical substances	LSIs	(2)	Ability to issue usage-free certificates for any chemicals whose use in a given product is prohibited
information disclosure		(3)	Ability to label products with the amounts of compounds containing any of the following chemicals: arsenic, halogens, antimony, organic phosphorus, nickel
Chemical substances	LSIs	(4)	Ability to use lead-free solder in manufacturing
composition regulations			
Packaging materials	Recyclable design	(5)	Restriction of use of expanded plastic foam in packaging materials to maximum of 20% of total packaging weight

# **Environmental Performance Data**

# Category-specific Standards (Portable/compact products weighing less than 3 kg)

Major category	Characteristic		Category-specific standards	
Resource	Recycled plastics/reused parts	(1)	Use of at least one or more recycled plastic or reused part for product parts	
conservation	(magnetic disk devices, scanners)			
Energy saving	Compliance with the Energy	(2)	Inclusion in product catalogs of a display based on the Energy Saving Law, plus attainment of target standards for fiscal 2005	
	Saving Law (magnetic disk devices)		(top runners) specified in the Energy Saving Law	
	Compliance with the International	(3)	Attainment of restraint values for the low-electricity mode specified in the International Energy Star Program and completion of	
	Energy Star Program (scanners)		application for registration	
Chemical substances	LCD units and products	(4)	Assessment of mercury content in LCD fluorescent pipes	
composition regulations	employing them	(5)	Restriction of mercury content in LCD fluorescent pipes to 5 mg or less per pipe	
Packaging materials	Recyclable design	(6)	Restriction of use of plastic foam in packaging materials to maximum of 10% of total packaging weight	

### Category-specific Standards (Medium-sized/large products weighing 3 kg or more)

Major category	Characteristic		Category-specific standards
Resource	Recycled plastics/reused parts	(1)	Use of at least one or more recycled plastic or reused part for product parts
conservation	(electronic calculators, magnetic disk devices, scanners)		
Energy saving	Compliance with the Energy Saving Law	(2)	Inclusion in product catalogs of a display based on the Energy Saving Law, plus attainment of target standards for fiscal 2005
	(electronic calculators, magnetic disk devices)		(top runners) specified in the Energy Saving Law
	Compliance with the International Energy Star	(3)	Attainment of restraint values for the low-electricity mode specified in the International Energy Star Program and completion of
	Program (electronic calculators, scanners)		application for registration
Chemical substances	LCD units and products	(4)	Assessment of mercury content in LCD fluorescent pipes
composition regulations	employing them	(5)	Restriction of mercury content in LCD fluorescent pipes to under 5 mg per pipe
Packaging materials	Recyclable design	(6)	Restriction of use of plastic foam in packaging materials to maximum of 10% of total packaging weight

# Category-specific Standards (Personal computers)

Major category	Characteristic		Category-specific standards
Resource	Maintenance parts supply	(1)	Guaranteed supply of maintenance parts for a minimum of 5 years after completion of manufacture
conservation	Recycled plastics/reused parts	(2)	Use of at least one or more recycled plastics or reused parts for product parts
	Ratio of reused resources	(3)	Completion of calculation of resources reuse ratio for the following machinery based on the Effective Resources Use Promotion Law
			Desktop PCs, main body: 50 % or more
			Notebook PCs: 20% or more
			• CRTs/LCDs: 55% or more
Recyclable design	Plastic parts	(4)	Use of polymers (homo-polymers, co-polymers) or polymer alloys for any plastic parts of products weighing 25 grams or more
		(5)	Elimination of metal implants (types of inserts) for any plastic parts of products weighing 25 grams or more (not applicable to metal implants allowing
			disassembly with general-purpose tools)
Chemical substances	Primary/secondary batteries	(6)	Freedom from cadmium, mercury and lead
composition regulations	CRT	(7)	Freedom from cadmium
Energy saving	Compliance with the	(8)	Inclusion in product catalogs of a display based on the Energy Saving Law, plus attainment of target standards for fiscal 2005
	Energy Saving Law		(top runners) specified in the Energy Saving Law
	Compliance with the International	(9)	Attainment of electricity consumption values during low-power mode operation and in the deep sleep display mode specified in the
	Energy Star Program		International Energy Star Program and completion of application for registration
	Guaranteed operation after	(10)	Normally operational after four or more weeks without power supply
	long-term neglect		(with disappearance of such timer data as date and time not considered a fault)
Environmental	_	(11)	Inclusion in product documentation of information on long-term use
information		(12)	Inclusion in product documentation of information on cadmium, cyanogens, lead, chromium, arsenic, mercury, fluorine, boron, selenium and antimony, if included in the product
disclosure		(13)	Inclusion in product documentation of information on energy consumption (power on/off status, maximum and minimum electricity consumption, ways to
			minimize energy consumption)
Packaging materials	Recyclable design	(14)	Satisfaction of the below standard values for plastic foam use
			Restriction of use of plastic foam in packaging materials for main PC bodies to maximum of 10% of total packaging weight
			· Restriction of use of plastic foam in packaging materials for displays to maximum of 20% of total packaging weight

### Category-specific Standards (Printers/Large-format printers)

Major category Characteristic			Category-specific standards					
Resource	Maintenance parts supply	(1)	Supply of maintenance parts guaranteed for a minimum of 5 years after completion of manufacture					
conservation	Recycled plastics/reused parts	(2)	Use of recycled plastics or reused parts in product parts					
Recyclable design Plastic parts		(3)	Use of polymers (homo-polymers, co-polymers) or polymer alloys for any plastic parts or large cases weighing 25 grams or more					
		(4)	Use of maximum of four types of separable polymers (homo-polymers, co-polymers) or polymer alloys for any plastic part or case weighing 25 grams or more					
	Ease of separation/decomposition	(5)	Easy identification of product joints required for separation					
		(6)	Provision of grip points and manipulation space for dismantling tools in products					
Chemical substances	Plastic	(7)	No use of lead or cadmium in plastic parts comprising cases or case parts					
composition	Primary/secondary batteries	(8)	Freedom from cadmium, mercury and lead					
regulations	Toner, ink, ink ribbons	(9)	Freedom from R-number substances cited in German government hazardous substances ordinance §4a					
		(10)	Freedom from carcinogens (TRGS905, TRGS900: Care.Cat1, 2, 3 in EC category or MAK value list 1, 2, 3]					
			Freedom from mutagenic substances (TRGS905, TRGS900: Mut.Cat1, 2, 3 in EC category or M1, 2, 3)					
			Freedom from level 1, 2A, 3B carcinogens in classification of IARC (International Agency for Research on Cancer)					
		(13)	Freedom from cadmium, mercury, lead and hexavalent chromium and its compounds					
		(14)	Freedom from cadmium, mercury and lead					
Chemical substances usage regulations	Manufacturing process	(15)	Freedom from ozone-depleting substances (substances listed in appendix tables A, B, C of Montreal Protocol) in manufacturing process					
Energy saving	Compliance with International Energy Star Program	(16)	Attainment of electricity consumption values in the low-electricity mode specified in the International Energy Star Program and completion of application for registration					
	With power OFF	(17)	Power consumption of 2W or below when power OFF					
	Guarantee of proper operation after long-term neglect	(18)	Normal operation assured after four weeks or more out of use with power cord unplugged					
Environmental information provision		(19)	Description of information concerning energy consumption (power OFF status, maximum consumption electricity, method of minimizing energy consumption) in					
			documents provided with products					
Collection/recycling systems	Toner cartridges	(20)	Collection and recycling of toner cartridges					
Printing paper	Use of recycled paper	(21)	Ability to use paper recycled from wastepaper for printing					
	Reduction of usage volume	(22)	Inclusion of functions to reduce volume of paper used in printling (two-sided printling, reduced printling, underprint, etc.)					
Packaging materials	Recyclable design	(23)	Restriction of use of plastic foam in packaging materials to maximum 20% of total packaging weight					

	Nousbanas	Use/ processing volume	Emission volume				Transferr	Volume	
Name of Class I designated chemicals	Number of Class I designated chemicals		Emission into air	Emission into public area water	Emission into soil at site (except landfill)	Landfill at site	Transfer into sewerage	Transfer off-site (except into sewerage)	recycled/ removed/ consumed
Zinc compounds (water-soluble)	1	6589.4	0.0	0.0	0.0	0.0	0.0	0.0	6589.4
2-aminoethanol	16	477433.0	143.9	420.0	0.0	0.0	0.0	335612.8	141256.3
Antimony and its compounds	25	418.0	0.0	0.0	0.0	0.0	0.6	9.0	409.0
4,4'-Polymer of 4,4'-isopropylidenediphenol and									
1-chloro-2,3-epoxypropane	30	7818.6	240.0	0.0	0.0	0.0	0.0	4998.1	2580.5
(or bisphenol A type epoxy resin)									
Ethylene glycol	43	19319.2	14.9	403.0	0.0	0.0	0.0	8037.4	10864.0
Ethylene glycol monoethyl ether	44	7273.8	875.4	0.0	0.0	0.0	0.0	5402.4	996.0
Ethylene glycol monomethyl ether	45	774.6	0.0	0.0	0.0	0.0	0.0	774.6	0.0
Xylene	63	313899.7	7861.5	0.0	0.0	0.0	0.0	23584.4	282453.9
Silver and its water-soluble compounds	64	458.0	0.0	0.0	0.0	0.0	0.6	8.8	448.6
Chlorodifluoromethane (or HCFC-22)	85	1442.4	144.24	0.0	0.0	0.0	0.0	0.0	0.0
Cobalt and its compounds	100	4443.0	0.0	0.0	0.0	0.0	0.0	61.0	4382.0
2-ethoxyethyl acetate	101	1984.0	5.3	0.0	0.0	0.0	0.0	1978.7	0.0
(or ethylene glycol monoethyl ether acetate)	101	1904.0	3.3	0.0	0.0	0.0	0.0	1970.7	0.0
Inorganic cyanide compounds (except complex salts and cyanates)	108	38630.8	0.0	20.0	0.0	0.0	0.0	12.6	38598.2
o-dichlorobenzene	139	18989.2	5146.8	0.0	0.0	0.0	0.0	13842.4	0.0
Dichloropentafluoropropane (or HCFC-225)	144	250.0	250.0	0.0	0.0	0.0	0.0	0.0	0.0
Copper salts (water-soluble, except complex salts)	207	811713.7	0.0	557.1	0.0	0.0	64.8	8037.0	803054.8
Trichlorofluoromethane (CFC-11)	217	104.6	104.6	0.0	0.0	0.0	0.0	0.0	0.0
1,3,5-trimethylbenzene	224	4216.4	161.8	0.0	0.0	0.0	0.0	0.0	4054.6
Toluene	227	19864.5	13688.1	7.0	0.0	0.0	0.0	766.5	5402.9
Lead and its compounds	230	191263.8	0.0	28.8	0.0	0.0	0.2	9591.6	181643.2
Nickel	231	59318.8	0.0	576.5	0.0	0.0	8.0	202.6	58531.7
Nickel compounds	232	106607.8	0.0	594.5	0.0	0.0	2.2	2196.2	103814.9
Nonylphenol	242	518.6	18.7	0.0	0.0	0.0	0.0	499.9	0.0
Arsenic and its inorganic compounds	252	158.8	0.0	0.0	0.0	0.0	12.1	69.0	77.7
Hydrazine	253	1208.0	489.6	0.1	0.0	0.0	0.0	612.0	106.3
Hydroquinone	254	381.3	0.0	0.0	0.0	0.0	0.0	202.6	178.7
Pyrocatechol	260	12985.0	0.0	0.0	0.0	0.0	0.0	12985.0	0.0
Phenol	266	9094.1	2370.0	0.0	0.0	0.0	0.0	6590.7	133.4
Hydrogen fluoride and its water-soluble salts	283	214709.3	1442.3	32301.7	0.0	0.0	1024.3	127522.1	52419.0
Boron and its compounds	304	28277.7	0.0	5200.0	0.0	0.0	0.0	5206.5	17871.2
Poly(oxyethylene) alkyl ether (alkyl C=12-15)	307	2908.0	1.9	18.0	0.0	0.0	0.0	2809.0	79.1
Poly(oxyethylene) nonylphenyl ether	309	468.0	0.0	94.0	0.0	0.0	0.0	0.0	374.0
Formaldehyde	310	8019.4	0.0	0.0	0.0	0.0	0.0	20.0	7999.4
Manganese and its compounds	311	995779.3	0.0	52.6	0.0	0.0	0.0	29345.3	966381.4
Methacrylic acid	314	360.0	0.0	360.0	0.0	0.0	0.0	0.0	0.0
2-(diethylamino)ethyl methacrylate	317	265.5	0.0	0.0	0.0	0.0	0.0	0.0	265.5
Molybdenum and its compounds	346	252.0	0.0	0.0	0.0	0.0	0.0	8.0	244.0
Total	340	3368198.4	34257.1	40633.3	0.0	0.0	1112.2	600986.1	2691209.7

#### Effects on the Ecology and Standards for Emissions by Plants of the Main PRTR-targeted Substances Used by the Fujitsu Group

	Number of Class I designated chemicals		Ministry of the Environment Ecological Toxicity [Unit: $mg/\ell$ ] *2							Standard air pollution value (Standard for plant emissions)		Standard water pollution value (Standard for discharge from plant)		
Name of Class I designated Chemicals			Algae		Water fleas			FISH			value under Law on Air Pollution	internal management value	value under Law on Water	Fujitsu internal
wante of class ruesignated chemicals			Growth prevention		Acute swimming prevention Breeding prevention				management standard					
			72hr ~ EC50	72hr ~ NOEC	48hr ~ EC50	21day ~ EC50	21day ~ NOEC	96hr ~ LC50	14day ~ LC50	14day ~ LC50			Pollution Prevention	(reference)
Manganese and its compounds	311	Liquid	-	-	-	-	-	-	-	-	-	-	10mg/ℓ	1mg/ℓ
Copper salts (water-soluble, except complex salts)	207	Liquid	-	-	_	-	_	_	-	-	-	-	10mg/ℓ	1mg/ℓ
2-aminoethanol*1	16	Liquid (organic solvent)	2.8	1	97	2.5	0.85	>100	>100	100	-	-	-	-
Xylene	63	Liquid (organic solvent)	-	-	-	-	-	-	-	-	-	100ppm	-	5mg/ℓ
Toluene	227	Liquid (organic solvent)	43.3	9.7	4.13	2.35	1.17	25.4	10.5	0.72	-	50ppm	-	5mg/ℓ

- \*1 2-aminoethanol is used primarily in the electronic parts washing process within a closed system. It is then refined for reuse or collected without being discharged into air or water areas as waste.

  \*2 Ministry of the Environment Ecology Toxicity

  Agae growth prevention test: Effect on growth and breeding of algae during exposure to chemical substances for 72 hours, targeting algae (unicellular green algae) that are producers in the water system food chain (50% growth prevention effect concentration: NOEC).

  Water flea acute swimming prevention effect concentration: EC 50).

  Water flea acute swimming prevention effect concentration: EC 50).

  Water flea breeding prevention test: Effect on water flea breeding activity during exposure to chemical substances for 48 hours, targeting water fleas (crustaceans) that are primarily consumers in the water system food chain (50% breeding prevention effect concentration: EC 50).

  Water flea breeding prevention test: Effect on water flea breeding activity during exposure to a chemical substance for 21 days, targeting water fleas (crustaceans) that are primarily consumers in the water system food chain (50% breeding prevention effect concentration: EC 50).

  Fish acute toxicity test: Effect on fish during exposure to chemical substances for 96 hours, targeting fish (Japanese killifish) that are upper-level consumers in the water system food chain (50% lethal concentration: LC 50).

  Fish extended toxicity test: Effect on fish during exposure to a chemical substance for 14 days, targeting fishes (Japanese killifish) that are upper-level consumers in the water system food chain (50% lethal concentration: LC 50).

  Fish concentration: NDEC).

  ECSO: Concentration of a tested substance calculated when the effect is annarent in 50% of tested organisms compared with a control group (group not oversed to the bested substance). Escaped this bested substance to the bested substance to the lethal substance to the lethal substance to the lethal substance to the lethal substance to the le
  - ECSD: Concentration of a tested substance calculated when the effect is apparent in 50% of tested organisms compared with a control group (group not exposed to the tested substance). For algae, this is the concentration at which the cell density decreases to 50% in 72 hours.

    NOEC: The highest test concentration at which the effect on tested organisms does not indicate significant differences compared with a control group.

    LC50: Concentration of tested substance calculated at a level causing death to 50% of tested organisms.

# **History of Fujitsu**

# Our history dates back 68 years to a time when our plant was located in a natural, park-like setting

Since its establishment, the Fujitsu Group has consistently placed a priority on conducting business in harmony with nature and society. Today, we continue to advance on the cutting edge of IT, while remaining fully aware of the need to contribute to a sustainable future for society. Our activities, conducted in consideration of the relationship among the environment, economy and society, will continue to bear rich fruit in the future as well.

#### 1935

- · Park-style design adopted for the Kawasaki Plant at the suggestion of Fujitsu's founder, President Yoshimura.
- · Fuji Tsushinki Seizou Co., Ltd. established.

 Japan's first relay computer, FACOM 100, developed.

• FACOM 222 large-scale general-purpose computer using transistor developed

#### 1967

· Corporate name changed to Fujitsu Limited.

#### 1972

· Environmental control sections established at each plant.

#### 1980

 Japanese word processor OASYS 100 introduced.

#### 1981

Personal computer FM-8 launched.

#### 1987

- · Ozone Layer Protection Committee
- Business PC FMR Series launched.

# 1989

• Environmental Committee established

#### 1990

· Environmental management evaluation system implemented.



#### 1991

· Environmental Engineering Center established.

#### 1992

- Fujitsu's Commitment to the Environment formulated.
- · Use of CFCs and carbon tetrachloride for cleaning eliminated.

#### 1993

- Fujitsu Environmental Protection Program (Stage I) formulated.
- Product Environmental Assessment Guideline formulated.
- · Domestic Affiliated Companies' Environmental Protection Council established.

#### 1994

- First issue of Eco-Plaza environmental bulletin published.
- Use of 1,1,1-trichloroethane eliminated.
- · Fujitsu Environmental Emblem designed.
- · All-in-one model personal computer FMV DESKPOWER released.

#### 1995

- · Recycling system established and implemented.
- Fujitsu Group Worldwide Environmental Conference established.
- · New GS8000 series global server employing the world's fastest CMOS general-purpose processor and concurrent processing technology launched.
- · World's first 42-inch color plasma display panel (PDP) marketed.
- · World's first 3.5-inch two and four gigabyte magneto-optical disks developed.

### 1996

- Fujitsu Environmental Protection Program (Stage II) formulated.
- · First Environmental Report published.

# 1997

- Environmental homepage established.
- All domestic manufacturing sites certified ISO14001 compliant.

### 1998

- · Forestation activities conducted in Thailand.
- · Green Product program launched.
- UNIX server GP7000F Family launched.

- · Environmental accounting introduced.
- · Forestation activities conducted in Vietnam.
- @nifty Internet service provider with 3.5 million subscribers launched.



# 2000

- · Four development and service sites in Japan certified ISO14001 compliant.
- · Corporate Environmental Affairs Group established
- · First desktop PC awarded Eco-mark.

#### 2001

- Fujitsu Environmental Protection Program (Stage III) formulated.
- · Calendar using paper from sustainable forest published.
- Forestation activities conducted in Malaysia.

#### 2002

- A world's first: Tin-zinc-aluminum lead-free solder developed.
- A world's first: Biodegradable plastic parts with lower environmental burden employed in notebook computers.
- · Fujitsu Group Environmental Policy established.
- · A world's first: Magnesium alloy recycled inhouse applied in notebook computers.

# 2003

- · Support for reforestation activities employing Rhythm Forest reforestation network game
- · Zero waste emission achieved by all 13 plants in Japan.

# **External Awards List / Glossary of Terms**

# Commendation for our commitment to environmental protection

# **External Awards List**

Award name	Date received	Sponsor/supporter/cooperation	Achievement recognized
2001 Environmental Preservation Premier Recognition	June 2002	Sponsor: Niigata Prefecture Environmental Preservation Joint Association	Recipient: Fujitsu Kiden Niigata Plant Positive participation in environmental activities by local corporations and administration; promotion of in-house environmental preservation activities
Letter of Gratitude in the 5th Thermal Storage Meeting	July 2002	Sponsor: Heat Pump & Thermal Storage Technology Center of Japan	Recipient: Fujitsu In recognition of contribution to energy saving and environmental preservation through active introduction of thermal storage system
Sustainability Group Index 1st place in environmental field	September 2002	Sponsor: Dow Jones SAM Sustainability Group	Recipient: Fujitsu Named a "leading sustainability company" in the three areas of environment, society and economy, marking the fourth consecutive top placement in the environmental field
2002 Waste Reduction Premier Label	October 2002	Osaka City Environmental Business Office	Recipient: Fujitsu Kansai System Laboratories Presented to owners of large buildings contributing to promotion of reduction and appropriate treatment of waste from business operations
Eco Circle Gold Ranking	October 2002	Sponsor: Nagano City Eco Circle	Recipient: Shinko Electric Industries Kouhoku Plant In recognition of sites positively promoting waste reduction and recycling
34th Flower Contest: Excellent Award	November 2002	Sponsor: Fukushima Minyu Shimbun	Recipient: Fujitsu AMD Semiconductor Greenification contest in workplaces/local organizations
Hanazono Contest: Most Excellent Award	November 2002	Sponsor: Citizens' Charter Promotion Committee, Aizuwakamatsu City	Recipient: Fujitsu AMD Semiconductor Greenification contest in workplaces/local organizations
Hanazono Contest: Excellent Award	November 2002	Sponsor: Citizens' Charter Promotion Committee, Aizuwakamatsu City	Recipient: Fujitsu Aizuwakamatsu Plant
2002 Excellent Cutting-edge Site Award	November 2002	Sponsor: Nihon Keizai Shimbun	Recipient: Fujitsu Akiruno Technology Center In recognition of such measures as introduction of NAS batteries with lower environmental burden
Top 10 Workplaces in Philippines Region IV	December 2002	Sponsor: Department of Health	Recipient: Fujitsu Computer Products Corporation of The Philippines Commended as one of the top 10 workplaces in region IV
2002 Agency of Natural Resources and Energy Secretary's Award Electricity category	February 2003	Sponsor: Ministry of Economy, Trade and Industry	Recipient: Joji Fujii, Fujitsu IT Products In recognition of significant improvement and awareness activities concerning electric power savings
2002 Excellent Energy Management Plant: Chugoku Bureau of Economy, Trade and Industry Chairman's Award Electricity category	February 2003	Sponsor: Chugoku Bureau of Economy, Trade and Industry	Recipient: Shimane Fujitsu In recognition of improved energy management
2002 Excellent Energy Management Plant: Kanto Bureau of Economy, Trade and Industry Chairman's Award Electricity category	February 2003	Sponsor: Kanto Bureau of Economy, Trade and Industry, Natural Resources and Energy Division	Recipient: Fujitsu Nasu Plant In recognition of electric power use rationalization
2002 Resources Circulation Technology and System Recognition Clean Japan Center Chairman's Award	March 2003	Sponsor: Clean Japan Center	Recipient: Fujitsu, Toshiba, Taku Material In recognition of establishment of advanced recycling business for reuse of waste silicon wafers in solar batteries
FTSE4Good Global Index	June 2003	Sponsor: FTSE Group	Recipient: Fujitsu Evaluated in the three categories of "Environmental sustainability," "Upholding and supporting universal human rights" and "Developing positive relations with stakeholders" and included in "FTSE4Good Global Index"

# **Glossary of Terms**

Eco scenario planning (page 8\*1)
This approach involves creating stories about multiple future environments. We use it to clarify causality by discussing the future condition of the earth's environment and social trends, the manner in which this future will unfold and the factors promoting its development. This enables us to anticipate changes in the social structure intuitively and respond in advance and in a flexible

Green Procurement (page 10\*1)
Purchasing that places a preference on products with a low environmental burden.

ISO14001 (page 13\*1)
The standard set by the International Organization for Standardization for environmental management systems (EMS). It certifies that a company's organization and systems take the environment into consideration, and that the systems are designed to ensure ongoing reduction of the environmental burden of the company's operations.

Environmental improvement (EI) indicator (page 16\*\*) A measure of the environmental burden reduction effect per unit cost (unit Ton-CO<sub>2</sub> ¥100 million). The EI indicator shows the effect of money spent (in this case, ¥100 million) on environmental measures in terms of the consequent reduction in the environmental burden as measured by the weight of CO<sub>2</sub>. It permits comparison of the effectiveness of environmental measures in different periods and segments.

Environmental efficiency (EE) indicator (page 16\*2) A measure of total sales relative to the environmental burden (unit: ¥100 million/Ton-CO<sub>2</sub>). The EE indicator shows the value added in terms of sales by reduction of the environmental burden. It permits evaluation of the direct environmental burden resulting from business activities

Law on Promoting Green Purchasing (page 22\*1)

Formal name: Law Concerning the Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities, enforced April 2001. Under this law, national organizations, municipalities such as prefectures, cities, towns and villages, entrepreneurs, citizens and manufacturers strive to construct a sustainable society by promoting procurement/purchasing of ecofriendly goods (eco-marked goods, etc.) that achieve a reduced environmental burden.

Life-cycle Assessment (LCA) (page 23\*1)
A method of analyzing a product's burden on the environment quantitatively throughout its life cycle.

Modal shift (page 24\*1)
A concept of shifting freight shipments from road transportation, such as trucking, to transportation modes such as rail or sea that can handle larger freight volumes per trip. This contributes to environmental conservation by reducing CO2 and NOx emissions

Extended Producer Responsibility (EPR) (page 25\*)
EPR, an abbreviation for "extended producer responsibility," is a concept concerning extension of the producer's responsibility for products to the disposal/recycling stages in addition to the manufacturing, use and distribution stages. This is presented clearly in "The Basic Law for Establishing the Recycling-based Society" enforced in June 2000.

Resources Reuse Rate (page 25\*²)

Volume ratio of recycled parts and resources to discarded used products based on the calculation method introduced by the Japan Electronics and Information Technology Industries Association.

# PRTR Law (page 33\*1)

A law passed in Japan in March 2000 requiring companies to report the amounts of chemical substances released or transferred into the environment as emissions or waste, based on the idea that enforced public disclosure will help to reduce the environmental risks associated with chemicals and other pollutants. PRTR stands for Pollutant Release & Transfer Register.

PKI (page 49\*1)
A system of constructing information infrastructure based on public key code technology to oppose these threats. It is equipped with functions to authenticate personal identities by electronic signature using the public key system and to perform encryption to protect information in communications such as e-mail.

**Dioxins** (page 50\*1)
A class of chlorinated organic compound variants of the chemical compound 2378TCDD that are among the most toxic non-naturally occurring chemical compounds known. Well-documented as potential causes of cancer and birth defects, they vary in toxicity depending on  $% \left( x\right) =\left( x\right) +\left( x\right) +\left($ the number and position of chlorine atoms in their triple-ring structure.

Soil Pollution Countermeasures Law (page 50\*2)

A law enacted by the Ministry of the Environment in May 2002 to cope with soil pollution by harmful substances. The law places responsibility for investigating and reporting the situation with respect to pollution on the owners of potentially contaminated lands, such as former plant sites or sites at which harmful substances were handled.

e-learning (page 51\*²)
Although this term is used in reference to general education and training employing IT, including remote learning by videoconferencing, it is also applied in many cases to on-line remote education conducted by accessing a server on which teaching materials are prepared and using a Web browser

# **Independent Review Report**

To ensure the reliability and transparency of this report, we have obtained an independent review report from a third party (Shin Nihon Environmental Management and Quality Research Institute) concerning last year's edition.

Independent Review Report on the " 2003 Fujitsu Group Sustainability Report"

July 2, 2003

Mr. Hiroaki Kurokawa President and Representative Director Fujitsu Limited

#### Purpose and Scope of our Review

We have reviewed the "Environmental Performance", the "Environmental Accounts" and the "Descriptive" information presented in the "2003 Fujitsu Group Sustainability Report" (the "Report") of Fujitsu Limited (the "Company") and its principal subsidiaries by performing certain procedures as described below. The Report is the responsibility of the Company's management. Our responsibility is to report the findings based on our review.

Our work does not constitute an audit or examination. We therefore do not express an opinion on the Report.

#### 2. Procedures Performed

We have performed the following review procedures agreed upon with the Company.

- (1) We reviewed the procedures performed by the Company and the methods of accounting that were followed in the preparation of the "Environmental Performance" and the "Environmental Accounts"
- (2) We compared the "Environmental Performance" and the "Environmental Accounts" information presented in the Report with the respective supporting documents and verified the accuracy of the calculations on a sample basis.
- (3) We compared the "Descriptive" information, other than the "Environmental Performance" and the "Environmental Accounts" information presented in the Report, with the respective supporting documents and verified the accuracy of the descriptions on a sample basis.
- (4) We made inquiries to the individuals that are responsible for the Company's factories and subsidiaries, which were selected on a sample basis, conducted on-site inspections of these sites and reviewed the decision-making process at each location.

#### 3. Results of the Procedures Performed

As a result of the procedures which we performed:

We are not aware of any material modifications that should be made to the "Environmental Performance", the "Environmental Accounts" and the "Descriptive" information presented in the Report, in order for them to comply with the Company's policies for gathering and reporting such information.

Yasuo Kurihara

Representative Director

Shin Nihon Environmental Management and Quality

y. Kurihara

Research Institute

# To: Corporate Environmental Affairs Group, Fujitsu Limited

Thank you for reading our 2003 Fujitsu Group Sustainability Report. We hope you will spare us a few more minutes to fill in this questionnaire and fax it to us to help us in preparing next year's report. We will send a copy of our 2004 Fujitsu Group Sustainability Report, scheduled for publication in June 2004, to everyone who sends us a completed fax questionnaire.

Q1.	How did this report compare with the 200	02 Environmental Report?		
	Better	Same	Worse	
Q <b>2</b> .	Did you know anything about Fujitsu's su	stainability activities before reading it?		
	Yes	A little	Nothing	
Q <b>3</b> .	What is your impression of this report?			
	Good	Average	Not good	
Q4.	Which sections of this report interested y	ou most? (Please select one or more sectio	ns.)	
05.	Management Perspectives Corporate Governance and Organization, Vision, The FUJITSU Way The Fujitsu Sustainability Concept Contributions to the Global Environment (Green Life 21 — Focused on the Green) Fujitsu Group Environmental Policy: Environmental Promotional Organization/Council Fujitsu Environmental Protection Program (Stage III) Business Operations and Environmental Burden Environmental Management System Environmental Accounting Employee Environmental Awareness Activities  Please use the space below to communicate and	Green Procurement Green Product Development Environmental Measures in Distribution Product Recycling Green Process Activities Plant Environmental Preservation Energy-saving Measures (Global Warming Prevention) Zero Waste Emission (Waste Reduction Measures) Chemical Substances Reduction Software Services Contributing to the Environment @EcoVision Primary Financial Data	Social Contribution Activities — Relationship with Community / Society Social Contribution Activities — Customer-focused Environmental Communications Environmental Social Contribution Activities Risk Management Personnel and Education Systems Safety and Health and Health Support Environmental Performance Data	
Q6.	From what perspective did you read this	report?		
o <b>7</b> .	Fujitsu product user General consumer Student Environmental specialist Resident of Fujitsu facility neighborhood  How did you learn about the existence of	Media representative Shareholder Financier or investor Corporate buyer/purchaser Corporate environmental staff member	Environmental NGO/NPO member Government official/bureaucrat External research organization member Other (	)
<u>~7.</u>	Newspaper Magazine Advertisement Homepage	Public relations office Fujitsu Group employee Fujitsu Group sales representative Plant tour	Environmental NGO/NPO Friend Exhibition Other (	)
Thank y	you for your cooperation. Please also be kind enough	n to fill in the following:		
Name:				
Mailing	address (for 2004 report):			
Occupa	ation (employer):	Department/position:		



