THE POSSIBILITIES ARE INFINITE FUJITSU

2002 Fujitsu Group Environmental Report

Focused on the Green

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Editorial Policy

The Fujitsu Group Environmental Report is compiled to inform all our stakeholders about our environmental plans, goals and achievements in an easily comprehensible manner by describing them in detail and illustrating them with graphs and flow charts, etc. This report for 2002 focuses on the environmental burden imposed by Fujitsu Group operations, our activities to protect the environment, our R&D activities related to environmental technologies and the measures we are taking to control environmental risks. We hope it 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 report each June, working at the same time to make the environmental report much easier to read.

We refer in this report to various guidelines, including the *2001 Environmental Report Guidelines* issued by Japan's Ministry of the Environment, the *Environmental Reporting Guidelines* issued by Japan's Ministry of Economy, Trade & Industry (METI), and the *GRI Guidelines*.

* ***2000 Environmental Report Guidelines*** **(Ministry of the Environment)..... www.env.go.jp/en/eco/erg2000.pdf**
Environmental Reporting Guidelines **(METI) www.meti.go.jp/english/report/downloadfiles/g02EnGuie.pdf**
GRI Guidelines**..... www.globalreporting.org/GRIGuidelines/June2000/JapaneseA4.pdf**

Fujitsu Group Profile (as of March 31, 2002)

FUJITSU Group

Main businesses: Fujitsu and the Fujitsu Group companies operate a total solutions business in the IT (information technology) field, with superior products and services supported by powerful, cutting-edge technologies characterized by high performance and quality. We conduct development, manufacture and sales of information-processing platforms, telecommunications systems and electronic devices and provide services employing them.

Sales: ¥5,006,977 million (as of March 31, 2002)

Financial year-end: March 31

Employees: 170,000 (as of March 31, 2002)

Group companies: Consolidated subsidiaries: 494
Affiliates (applied equity method): 28

FUJITSU

www.fujitsu.com/about/

Company name: FUJITSU LIMITED

Address: *Main Branch:*
1-1 Kamikodanaka 4-chome, Nakahara-ku, Kawasaki, Kanagawa 211-8588, JAPAN

Office Headquarters:
Marunouchi Center Bldg., 6-1, Marunouchi 1-chome, Chiyoda-ku, Tokyo 100-8211, JAPAN

Representative: *Naoyuki Akikusa*, President

Established: June 20, 1935

Main businesses: Manufacture and sales of software and services, computers and information-processing platforms, telecommunications systems, semiconductors and electronic devices

Sales: ¥3,034,437 million (as of March 31, 2002)

Capital: ¥324,624 million (as of March 31, 2002)

Financial year-end: March 31

Employees: 40,483 (as of March 20, 2002)

Scope of the Report

The environmental burden data introduced in this environmental report are for the 47 main manufacturing companies of Fujitsu and the Fujitsu Group (28 domestic companies and 19 overseas companies). The performance data concerning environmental communication and social contribution activities are for the main affiliated companies of the Fujitsu Group (196 companies worldwide: shares of 50% or above).

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You may also use the fax questionnaire at the end of this report, visit our environmental homepage or contact us by e-mail.

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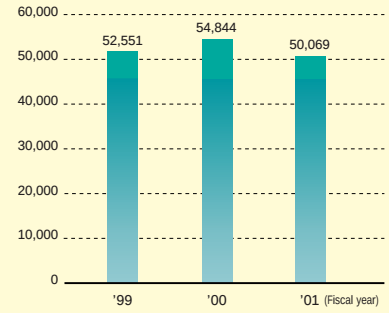
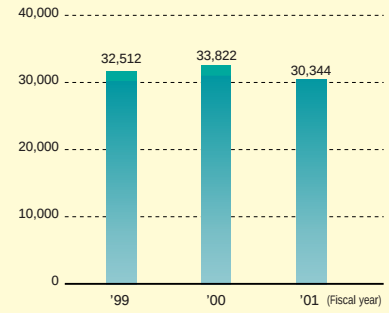
Planning & editing: *Shouji Kunugi*, Director, Management Planning Department of SD Planning
Publisher: Management Planning Department of SD Planning, Corporate Environmental Affairs Group, Fujitsu Ltd.

eco.fujitsu.com/en/contact/

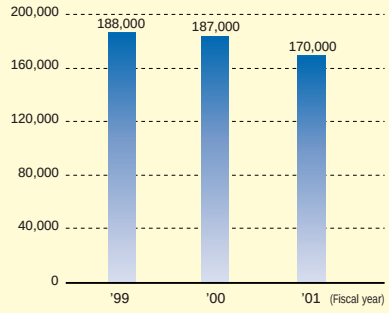
Net Sales (consolidated) (100 million yen)



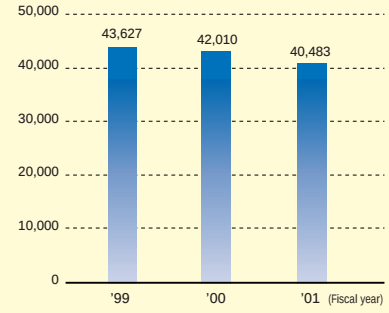
Net Sales (unconsolidated) (100 million yen)



Employees (consolidated) (No. of people)



Employees (unconsolidated) (No. of people)



Management Messages

Aspiring to Remain a Corporation Vital to the 21st Century

Preservation of Earth's environment is among the most pressing issues we all face as members of the human race. Ten years have passed since the Earth Summit in Rio de Janeiro awakened the world at large to the issues involved, during which period various organizations have initiated positive efforts toward environmental improvement. Although long-term countermeasures must be implemented to maintain or recover the earth's environment, I believe society's awareness concerning environmental issues is growing steadily.

The relationship of corporate activities to the environment is also changing, from the conventional "contribution-making" to "actions essential to corporate existence." We of the Fujitsu Group are practicing environmental management in our day-to-day operations based on the recognition that responding to environmental issues is a prerequisite for management. In doing so, we are shifting our focus from environmental countermeasures to environmental strategies.

Further, while reduction of the environmental burden generated in our business activities is, of course, vitally important, we recognize that it is also necessary to contribute to the environment through our products and services themselves, and we are making active efforts to achieve this. We realize, in particular, that IT can play a major role in solving environmental problems.

In the end, however, I firmly believe that the essence of environmental management comes down to actions taken by individual employees based on their own environmental awareness as citizens of Earth. This is why, as one of the five pillars of "The FUJITSU Way" guidelines we formulated this year to acquaint employees with Fujitsu's mission and action principles, we included clearly defined environmental measures and positioned the environment as the source of action for every single Fujitsu employee.

It is also imperative that we report the results of our environmental activities fully, regardless of their success or failure. We intend to reinforce our environmental communication in the future based on a desire to inform to all our stakeholders about our activities.

In accordance with the Fujitsu tradition, we will continue to conduct activities that contribute to the Earth's environment in order to ensure that we remain a corporation from which people expect only the best.

Naoyuki Akikusa
President, Fujitsu Limited

Attuning Our Business Activities, Products and Services to a Sustainable Society

Through the manufacture and sales of telecommunications and information-processing systems and electronic devices and the provision of related services, Fujitsu and Fujitsu Group have adopted "shaping our customers' dreams" as our corporate mission.

As concerns environmental measures, meanwhile, our approach is expressed by "Focused on the Green," which means striving to contribute to the Earth's environment through eco-friendly activities conducted in every aspect of our business operations, products and services. We have recently established the Fujitsu Environmental Protection Program (Stage III) as a major step forward in our environmental activities. We are implementing measures to make every product a Green Product, to purchase eco-friendly parts and materials, to recycle waste products and to reduce resources use, energy consumption and waste generation throughout Fujitsu and the Fujitsu Group.

I believe that the objectives of our next environmental activities will be to offer products characterized by reduced environmental burden and risk and higher added value, which is to say solutions that enhance environmental friendliness, in product services that offer our customers greater convenience and increased efficiency.

These activities will lead, in my opinion, to an "environmental industrial development scenario" involving progress from things to functions and away from materials through advances in such service industries as leasing and rentals and the adoption of IT," which the fiscal 2002 edition of the Environmental White Paper and the Cyclical Society White Paper describe as characterizing the cyclical society toward which we should strive.

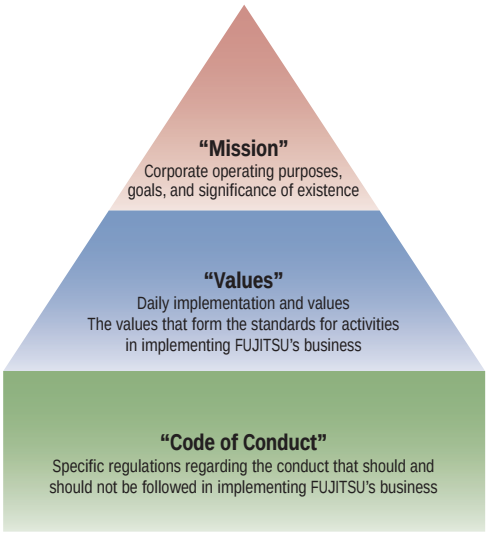
We consequently wish to contribute to realization of a cyclical society by formulating an environmental action plan with respect to services within this fiscal year, and by conducting environmental activities in every product and services field throughout the business operations of Fujitsu and the Fujitsu Group.

I ask that you inform us frankly of any opinions you may have concerning our activities, whether introduced in this report or through other means.

Akira Takashima
Executive Vice-President, Fujitsu Limited

The FUJITSU Way

In 2002, "The FUJITSU Way", which communicates a shared awareness of proper actions as a corporation and as employees, was newly established in order that FUJITSU (Fujitsu and Group companies) can continue development as a genuinely international company. It replaces the former "Fujitsu Corporate Action Guidelines".
"The FUJITSU Way" presents the environment as providing the motivation for daily action by individual employees and as representing a shared set of values, thus positioning the environment as a driving force for corporate strategy.



Business Purposes and Goals and Reasons for Existence

Specification of the shared mission that Fujitsu and the Fujitsu Group companies must pursue to forward their development as genuine international corporations.

Values Providing Standards for Action in Business Operations

- Customer Focus — Make Our Customers' Dreams and Our Dreams Come True
- People — Everyone Takes a Leadership Role
- Quality — Pursue the Highest Levels of Quality
- **Sustainable Development — Focused on the Green**
- Growth and Profit — Increase Trust and Global Value of "FUJITSU"

Concrete rules identifying proper and improper actions in business operations

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

Fujitsu Group Environmental Policy

Philosophy

As a global leader in the Information Technology industry, the Fujitsu Group recognizes that environmental efforts to promote the sustainable development of society are vitally important to our business. We will continuously pursue environmental activities "on a groupwide basis as well as at the individual level" aimed at ensuring a rich natural environment for future generations.

Principles

Decrease the environmental burden throughout the product lifecycle

- We strive to control the environmental burden throughout every stage of the product lifecycle and, by implementing a 3R approach (Reduce, Reuse, Recycle), to create eco-friendly products.
- In our production activities, we seek to prevent risks to human health and the environment from the use of harmful chemical substances or waste generated in the manufacturing process. We are also committed to conserving energy and resources.

Utilize IT to contribute to sustainable development

- We provide software and services to help customers reduce the environmental impact of their activities and improve environmental efficiency, as well as offer them IT products and solutions to support more efficient environmental management.

Communicate thoroughly with stakeholders

- We share with our stakeholders our plans and results with respect to environmental measures involving our business activities, products and services. In addition, we seek to deepen mutual recognition and understanding about our environmental achievements by cooperating with people outside the company and through verification of our environmental performance by third party auditors. In so doing, we strive to improve our environmental activities by reflecting such outside opinions.
- We encourage our employees to play an active environmental role both within our business and through voluntary activities in society generally. In this way, we seek to foster partnerships with our stakeholder communities and society at large.

Raise the environmental awareness of each and every employee

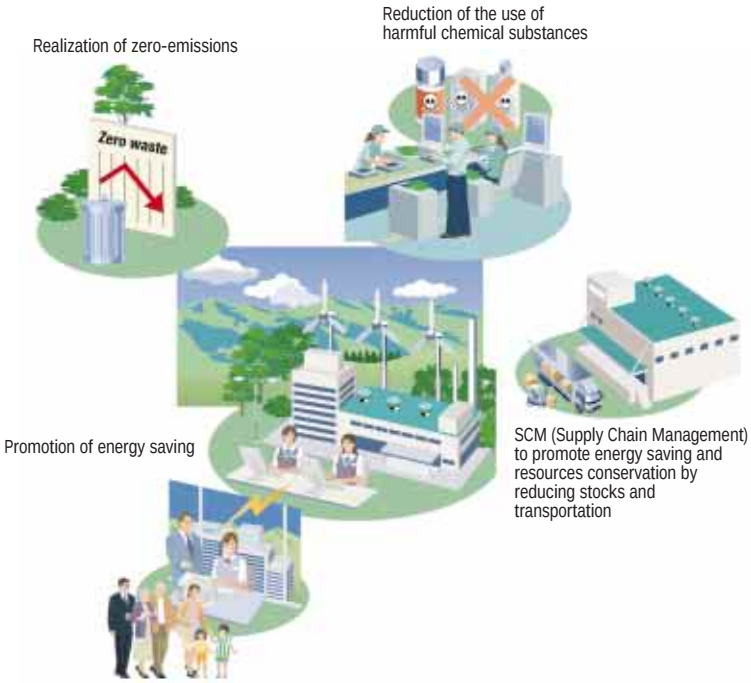
- We are committed to ensuring that all of our employees are aware of the direct connection between their business activities and the environment, and that they constantly work to improve the efficiency of energy and resource consumption. In addition, by making sure that employees thoroughly understand these policies and raising their environmental awareness as global citizens, we seek to improve the corporate culture of the Fujitsu Group.
- Not only do we observe all environmental regulations governing our business operations, but we also adopt the best environmental practices on our own initiative.

eco.fujitsu.com/en/info/fep_e.html

Contribution 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 conducting environmental activities aimed at realization of a sustainable society in every business field based on "The FUJITSU Way" and "Fujitsu's Commitment to the Environment." The slogan "Green Life 21 — Focused on the Green" serves as our core concept for promotion of these activities in the 21st century. We implement environmental management through activities based on this concept in order to reconcile ongoing business prosperity with environmental contribution. "What can we do for the future of the global environment?" We are pursuing answers to this question in accordance with the following themes.



Green Factories

Pursuing eco-friendly production activities

Eco-friendly business activities

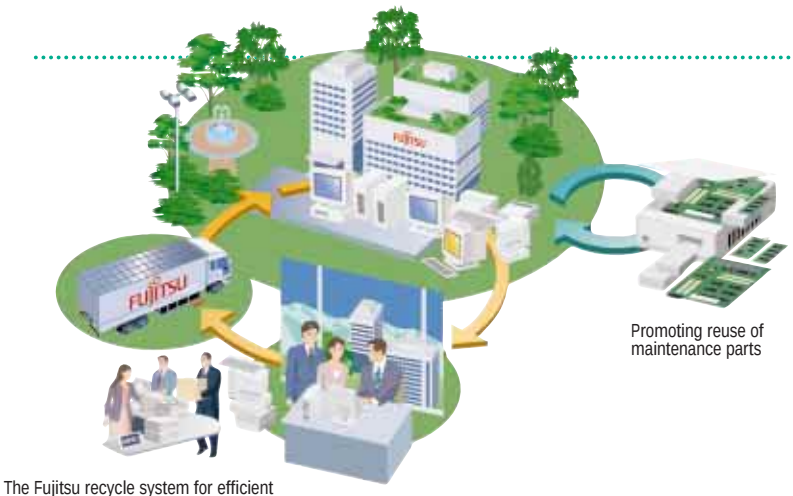
Fujitsu introduced eco-scenario planning*1 in fiscal 2001. We are promoting environmental activities strategically in order to respond in advance to anticipated future environmental changes.

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 improve our communication with society and our educational systems.



The Fujitsu recycle system for efficient collection of post-use products

Eco-friendly product recycling

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

*1 Please refer to page 52 for definition.

Promotion of greenification by biotope and tree planting

Formation of FUJITSU Eco Club (Fujitsu Group volunteer club) to encourage employees' voluntary participation in environmental activities

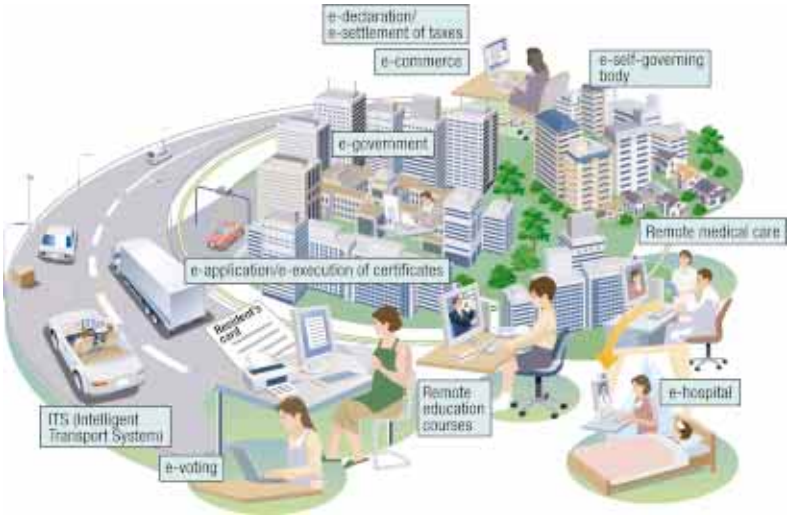
Enrichment of environmental education and lectures

Green Earth

Environmental contributions by individual employees

Fostering ecology-conscious people

We are promoting an environmental volunteer system among our employees (the FUJITSU Eco Club) and expanding our environmental education offering to prepare people to form the core of all our environmental activities.



Eco-society support
Offering software services to promote resources conservation activities by reducing the use of paper; and promoting energy-saving by introducing measures to improve the efficiency and flow of transportation.

Eco-corporation support
Offering environmental management consulting to support effective corporate environmental activities, and introducing online and enhanced-efficiency systems to promote resources and energy-saving operations.

Green Solutions

Deploying IT to help realize a cyclical society

Offering eco-friendly software services

We are contributing to reduction of the environmental burden in society by making positive use of IT to provide software services. In fiscal 2001 we began introducing countermeasures in the software service division, where we are supporting reduction of the environmental burden by improving our client companies' operating efficiency.

Eco-products support
Providing eco-design tools or an LCA database to support eco-friendly product creation.

Green Products

Promoting the development of technologies that are appropriate for environmental preservation and recycling

Offering eco-friendly products

By upgrading our eco-friendly design criteria, we are reinforcing development of Green Products that impose a lower environmental burden. We are also positively disclosing environmental information concerning our products.

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

Offering new eco-friendly technologies

We established the Materials/Environmental Technologies Laboratory in Fujitsu Laboratories in fiscal 2002 and are developing new materials, including optical catalysts, that support eco-friendly product creation. We are also promoting the creation of systems for eco-friendly software services.

Creation of an ecologically friendly eco-society

Development of new eco-friendly technologies and materials, including biodegradable resin which can be returned to the soil, lead-free solder, halogen-free resin and optical catalysts

Fujitsu Environmental Protection Program (Stage III)

From plant-centered activities to full-staff involvement. Achieving progress through the participation of every Fujitsu Group company and employee.

The Fujitsu Environmental Protection Program puts the principles expressed in "Fujitsu's Commitment to the Environment" into action in the Fujitsu Group. Following the achievement in March 2001 of the goals of the second stage of this program, which was formulated in April 1996, we entered the third stage, a three-year program scheduled to end in March 2004. Conducted in accordance with the slogan, "Focused on the Green," our environmental activities have expanded to include every Fujitsu Group employee around the world.

Targets

Fujitsu Group

Items		Fujitsu Group targets (Fujitsu Japan and all consolidated subsidiaries/affiliates)	Result (Fiscal year 2001)
Green Products	Product Development	All newly developed products to be "Green Products" by the end of fiscal 2003	Green Products accounted for 41.9% of newly developed products
	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 36.6% of products manufactured by Fujitsu Japan
Green Procurement*1		Percentage of green materials and parts for products to be 99% or more of procured money by the end of fiscal 2003	Green survey was executed for materials and parts for product, and full-scale activities will be executed from fiscal 2002
Product Recycling		Recycle system for collected waste products to be established by the end of fiscal 2003	Response measures promoted through good use of the Fujitsu Recycle System
Energy-saving Measures against Global Warming		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	12.9% reduction of energy consumption (electricity, oil and gas) per unit of sales based on fiscal 1990 results
Zero-Emissions		Waste to be cut 60% by the end of fiscal 2003 based on fiscal 1998 results	Reduction of waste disposal volume to 16,995 tons, 45.4% reduction based on fiscal 1998 results
Reduction of Release of Chemicals		Release of main chemicals to be cut 30% by the end of fiscal 2003 based on fiscal 1998 results	75.0% reduction of main chemical emissions based on fiscal 1998 results

Fujitsu

Items		Fujitsu targets	Result (Fiscal year 2001)
Green Products	Product Development	All newly developed products to be "Green Products" by the end of fiscal 2002	Green Products accounted for 60.5% 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 in 57.2% of products manufactured by Fujitsu Japan
Green Procurement*1		• Materials and parts for products: Percentage of green materials and parts for products to be 99% or more of procured money by the end of fiscal 2002 • 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 materials and parts procured for products raised to 87.2% Percentage of green office supplies raised to 70.0%
Product Recycling		Reuse and recycle rate on 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%
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	31.8% reduction of energy consumption (electricity, oil and gas) per unit of sales based on fiscal 1990 results
Zero-Emissions		Zero-emissions to be achieved by the end of fiscal 2003	Reduction of waste disposal volume to 1,592 tons Plants achieving zero emissions: Iwate Plant, Minami-Tama Plant, Kumagaya Plant, Numazu Plant, Akashi Plant
Reduction of Release of Chemicals		Release of main chemicals to be cut 30% by the end of fiscal 2003 based on fiscal 1998 results	57.8% reduction of main chemical release based on fiscal 1998 results

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

*1 Please refer to page 52 for definition.

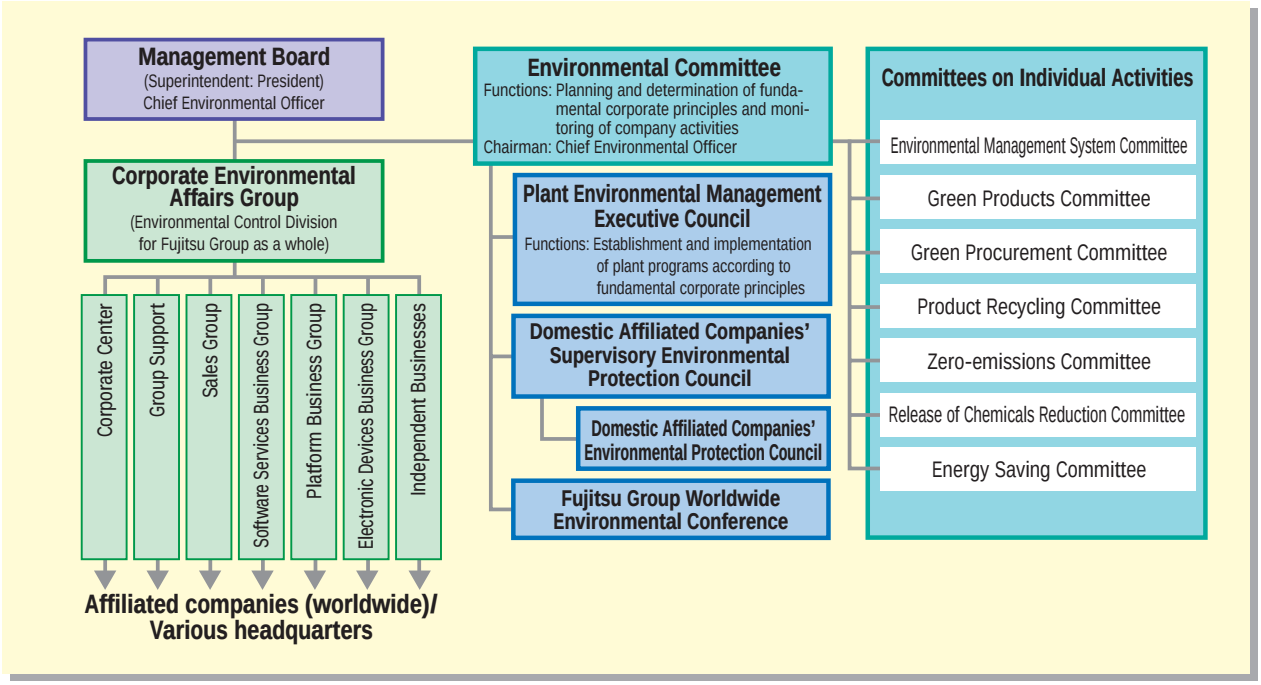
Organization/Council for Integrated Group-wide Environmental Promotion Efforts

A promotional organization and initiative system that makes the most of our integrated group strengths in environmental activities.

The Fujitsu Group has established the following system of organizations to steadily implement its Environmental Protection Program. These organizations break down the actual contents of Environmental Protection Program promotion as the basis for their activities.

Reorganization under a Business Group System

The various Fujitsu head offices and affiliates, which formerly operated their businesses separately, made the most of mobile systems and mutual cooperation to introduce a business group system in April 2002, and began pursuing "organic management" drawing on their integrated strengths. In the area of environmental activities, we are benefiting from the ability of the business group system to respond quickly to notices of decisions by top management and reports to top management on challenges facing individual business groups. The Corporate Environmental Affairs Group is reinforcing and supporting environmental activities throughout the Fujitsu Group.



Integrated Group Efforts

Domestic Affiliated Companies' Environmental Protection Council

This is comprised of executives with environmental responsibility from 36 affiliates, primarily Japanese consolidated manufacturing subsidiaries. In order to promote environmental activities by the Fujitsu Group as a whole, the council meets to discuss and approve implementation proposals for the environmental protection program (meetings: 2 in fiscal 2001, 18 overall).

Domestic Affiliated Companies' Environmental Protection Council

Committees on Individual Activities

Affiliated companies of the Fujitsu Group also gather to discuss action plans focusing on individual issues. Each committee assesses performance status relative to the measures and targets specified in the Fujitsu Environmental Protection Program Stage III, and report their findings. The groups also act as a forum for the exchange of environmental technologies and expertise.

(Committees on individual activities)

- Environmental Management System Committee
- Green Products Committee
- Green Procurement Committee
- Product Recycling Committee
- Zero-emissions Committee
- Release of Chemicals Reduction Committee
- Energy Saving Committee

The Relationship between Business Operations and the Environment

Obtaining a clear view of the effects of our operations on the environment. Making this the starting point for our environmental activities.

All the processes we have undertaken in the provision of products and services — such as materials and parts procurement and the use of resources such as electricity, water and gas — exert an environmental effect of one kind or another. Our mission is to provide products and services with higher added value while continuing efforts to reduce the overall environmental burden. Our business activities also include contributing to realization of a cyclical society by offering solutions to reduce the environmental burden imposed by society as a whole.

Conducting various activities to lower the environmental burden throughout the product life cycle

We consume energy and other resources to supply a broad variety of products, including information-processing systems, personal computers, mobile phones and semiconductors. We aim to assess the effect of all these business activities on the environment and to follow up by minimizing the environmental burden at each stage.

Offering IT-based solutions is another important business field. In a pilot development project under way in Iwaki, Fukushima Prefecture, for instance, we are pioneering use of a new IT-based business model for chemical waste recycling in cooperation with industry, academic and public sector organizations. We are promoting this with a view to nationwide development. We believe that this kind of business will contribute to creating the infrastructure of a cyclical society committed to using energy and other resources efficiently, as well as to improving customer convenience and adding efficiency to business operations.

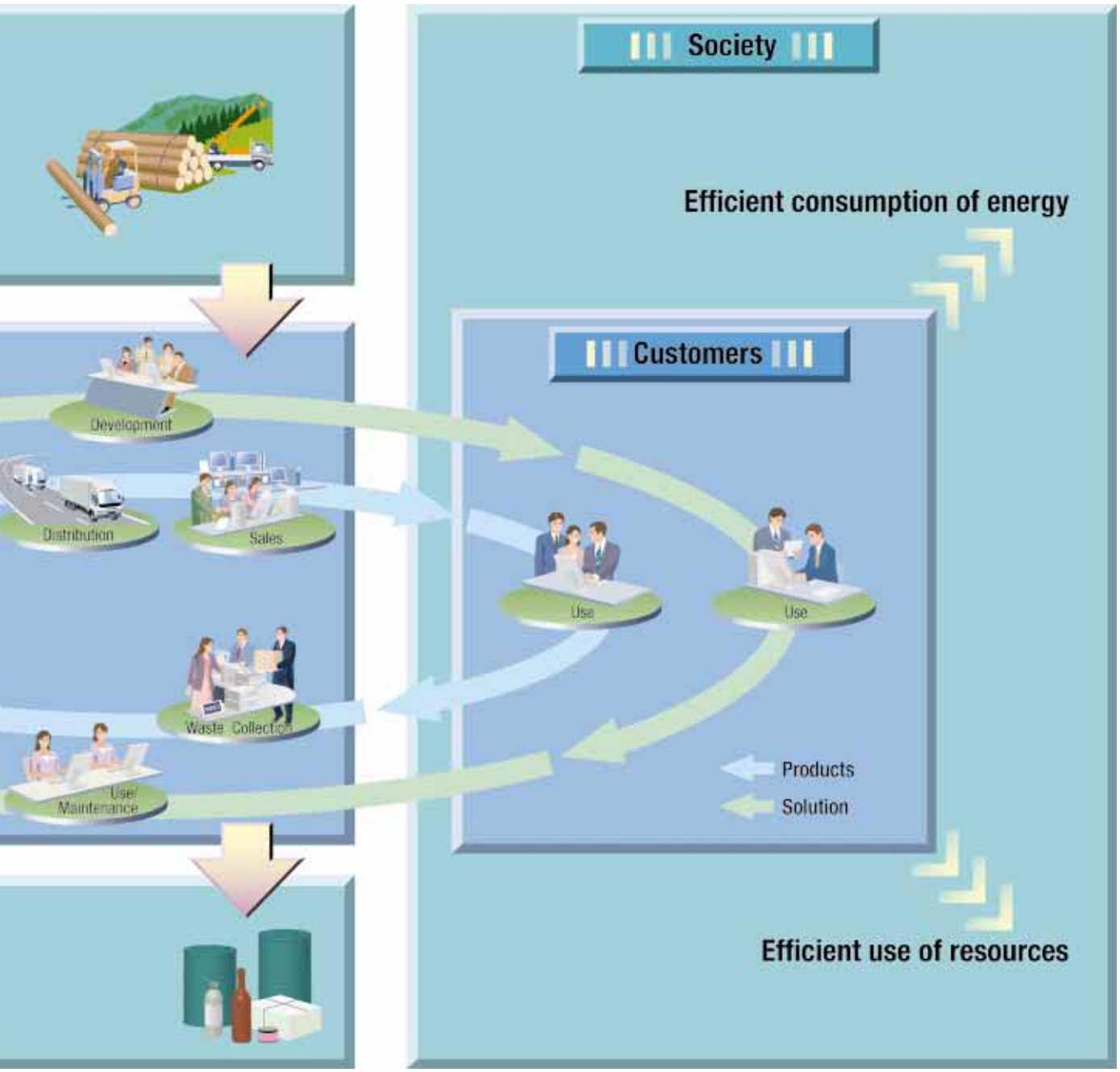
We conduct eco-friendly business activities in every field, maintaining an ongoing commitment to supporting customers and society at large in their efforts to reduce the environmental burden imposed by their activities as well as our own.

Overview of Fujitsu Environmental Burden

Please refer to the Data Appendix beginning on page 42 for environmental burden factors and individual results.

Main Efforts Concerning Product Life Cycles

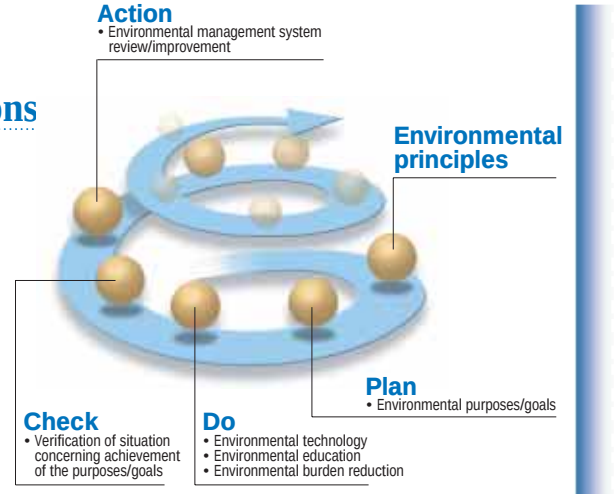
Development/Design stage	Procurement stage	Manufacturing stage	Distribution/Sales stage	Collection/Reuse/Recycling stage
Conducting product environmental assessment that takes both energy efficiency during use and post-use product recyclability into consideration in developing Green Products.	The parts and materials employed in products are selected to minimize environmental burden.	Conducting energy-saving/zero-emission activities to minimize the use of materials, energy and water resources, as well as to reduce chemical emissions.	Minimizing consumption of energy generated during transportation of products and working to reduce emissions of waste gases into the atmosphere.	Minimizing consumption of energy in activities promoting post-use product collection, reuse and recycling. Although effective use of industrial waste is promoted, some is unavoidably sent to landfill.



Environmental Management System

Environmental management system: harmonizing with all local Fujitsu operations

We have established an environmental management system in accordance with ISO14001*[1] international standards and are promoting both gradual and continuous improvement in our environmental activities. We are making effective use of this system as a tool for reducing our environmental burden. We establish organizations wherever our operations are located to conduct environmental activities in harmony with the local community. We also make an effort to achieve improvement in each stage of the Plan/Do/Check/Action cycle.



Environmental Management System Activities

Our goals and achievements with respect to ISO14001 certification are as follows:

Fujitsu Group

- A cumulative total of 77 affiliated company sites (63 in Japan and 14 overseas) have achieved certification.

Fujitsu Microelectronics and Atsugi Technical Center planned to acquire certification in fiscal 2001, but these plans were suspended pending a review.

Fujitsu

- All 10 domestic manufacturing plants completed acquisition in fiscal 1997.
- A total of 6 principal development and service-related sites completed acquisition in fiscal 2001. EMS comprises the basis for Fujitsu's environmental management, and it is essential that it be applied in all Fujitsu Group members' activities. Our domestic and overseas affiliates are also making progress in achieving ISO14001 certification.

Conducting a surveillance audit (Shinko Electric Industries)

Development and Service Operations

The Software & Services Division of Kansai System Laboratories obtained certification in 2001.

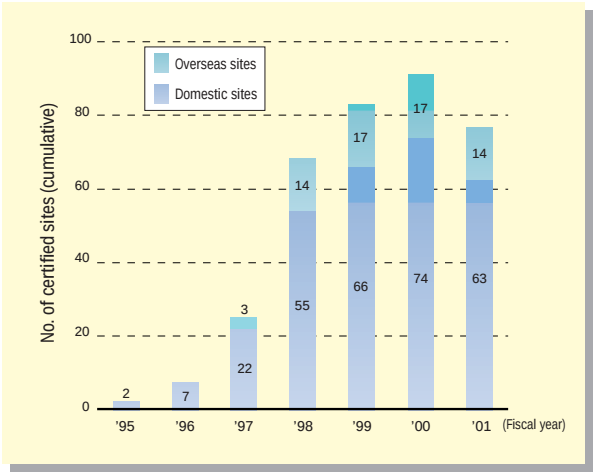
Surveillance audits

Surveillance audits* conducted at the 61 sites that had already obtained certification produced a total of 226 suggestions for improvement — all of which were acted upon.

* A surveillance audit is conducted every year to check EMS effectiveness and determine possible improvements.

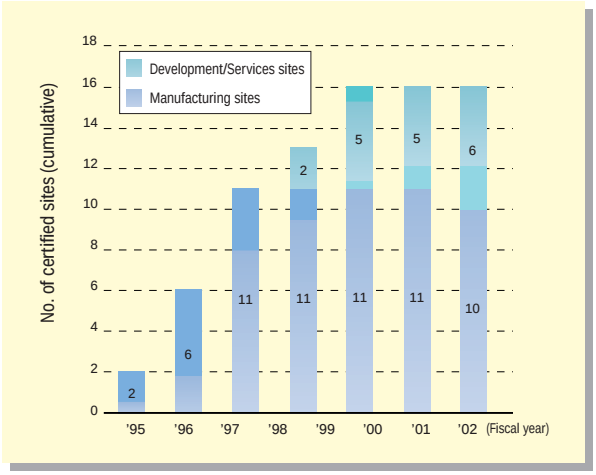
eco.fujitsu.com/en/info/eco20001023c_e.html

Results for ISO14001 Site Certification [Fujitsu Group] (Sites)



Although subsidiaries of the Fujitsu Group's affiliated companies were included in the calculation through fiscal 2000, a difference has arisen in the number of certification acquisitions in the results due to a change in the calculation range to a shareholding rate of 50% or above beginning in fiscal 2001.

Results for ISO14001 Site Certification [Fujitsu] (Sites)



The results for manufacturing sites decreased by one site in fiscal 2000 due to the transfer of the Fujitsu Suzaka Plant to Fujitsu Media Devices (a consolidated subsidiary).

*1 Please refer to page 52 for definition.

Main activities targeted for the Group as a whole

Improved environmental management system

• We developed systems and structures to enable all our business functions, including development, product design and general business administration, to implement improved environmental activities in the course of daily operations.

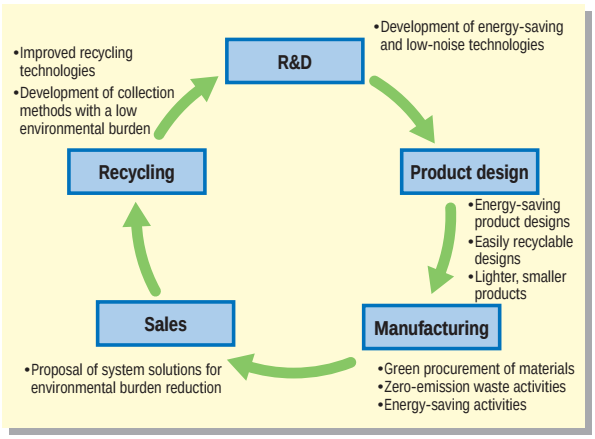
Environmental lectures

• A total of 218 lectures were conducted during the year at plants and offices to establish employee awareness of environmental issues.

• Various environmental seminars and consultation exercises were conducted and assorted criteria were offered to exchange know-how concerning EMS (total 18 instances).

• Fujitsu conducted an open panel discussion on ISO-based environmental management that was attended by representatives of other industries, including government organizations, certification bodies, consulting firms, construction companies and machinery makers (68 participants).

Environmental Consideration at Every Stage of Business



Environmental education

• We completely revised our environmental education courses to target individual business functions (such as R&D, product design and general business administration) with specific content, distributing the information via company intranet* to over 15,580 personnel.

* Intranet distribution offers the advantage of enabling personnel to access and use the educational materials at their own convenience.

• A total of 44 education sessions were held to educate our internal environmental auditors. The education of 678 auditors under this system raised the total number of registered internal environmental auditors to 2,386. We also conducted follow-up education sessions to improve the skills of internal auditors.

Internal environmental audits

• Internal environmental audits were conducted, and 2,142 points for improvement identified in the process were addressed.

• Rating standards for non-compliance in internal environmental audits were created to eliminate discrepancies between ratings and points for improvement (Fujitsu Kawasaki area sites*).

* The sites in the Fujitsu Kawasaki area include the Kawasaki Plant, Nakahara Building, Kosugi Building, Musashi-Kosugi Tower Place, SSI Building, Suenaga Branch Office, Cross-Culture Center, Fujitsu Kawasaki Hospital, Akiruno Technology Center and Fujitsu Laboratories Ltd.

Emergency drills

• A total of 131 emergency drills were conducted in 41 locations where emergencies might be expected to occur to prepare personnel for various disasters (2,193 total participants).

Kyushu Fujitsu Electronics

Emergency drill for hypothetical kerosene spill

Construction of fence to prevent dispersal of oil

Fujitsu Miyagi Electronics

Emergency drill for hypothetical spill of fluorocarbon refrigerants

Placement of sandbags along the upper part of a wastewater ditch to prevent drainage into sewers

Responding to suppliers

• We asked 1,222 suppliers of materials and product parts and materials and 590 suppliers of various services for their understanding and cooperation with our environmental activities.

Plans for ISO14001 Certification Acquisition

Domestic and overseas affiliates: 3 sites

- Shinko Electric Industries (Kouhoku)
- Fujitsu Nagano Systems Engineering
- Fujitsu Kochi Systems Engineering

EMS Improvements

Further efforts will be directed to achieving timely management of environmental information and to creating a comprehensive audit system to support inter-site performance comparisons with the aim of achieving companywide EMS integration in fiscal 2002.

Environmental Accounting

Enhancing environmental management efficiency by evaluating environmental activities from the cost and effect perspectives.

We have been employing an environmental accounting system since fiscal 1998 to provide quantitative assessments of the costs and effects of environmental protection measures. We developed environmental accounting guidelines for the Fujitsu Group in accordance with guidelines published by Japan's Ministry of the Environment, at the same time adding new items to the system with the aim of achieving more efficient environmental accounting. We are also developing a system to deploy IT to gather information with no delay from sites (plants, offices, etc.) throughout the world. The system's introduction has had several results: our employees' environmental consciousness has been raised; our focus on cost reduction efforts has been sharpened; and the positive effects of environmental measures have been magnified by greater internal cooperation among our plants and companies.

Environmental Accounting Measures

Purposes of introducing environmental accounting

- To disclose information to clarify the company's position to its stakeholders
- To implement ongoing environmental preservation activities
- To raise the effectiveness of environmental investments
- To activate environmental preservation activities

Fiscal 2001 Environmental Accounting Results

(Unit: 100 million yen)

	Item		Scope	Fujitsu	Affiliated companies	Total	See pages
Costs	Costs in business operations	Pollution prevention costs	Costs of preventing air/water pollution and soil contamination and other activities	27	32	59	31, 32, 47, 48, 49
		Environmental protection costs	Costs incurred through energy-saving measures, plus costs of measures to combat global warming	10	14	24	27, 28, 33, 46
		Resource recycling costs	Costs of waste reduction and disposal, plus costs of efficient resource usage measures, such as water conservation and rainwater use	14	27	41	29, 30, 46
		Wastewater treatment fees	Fees for water treatment utilities	5	3	8	—
	Upstream/downstream costs		Costs of lowering upstream/downstream environmental burden of manufacturing and service activities (recycling/re-use costs for waste products and packaging, costs of Green Procurement, etc.)	2	6	8	24〜26, 41, 45
	Management costs		Management-related environmental protection costs (personnel expenses for environmental promotion activities,costs of gaining/maintaining ISO14001 certification, costs of measuring environmental burden, etc.)	10	14	24	11, 12, 15, 16, 43, 49
	R&D/solutions business costs		Environmental protection costs for R&D activities and costs associated with environmental solutions business (design/development costs for Green Products and environmental technologies, environmental solutions business costs)	4	12	16	19〜23, 35〜38 44, 45
	Social activities costs		Environmental protection costs of social activities (costs of greenification programs, environmental report production and environmental publicity)	2	1	3	17, 18, 39
	Environmental clean-up costs (Risk avoidance)		Costs of environmental clean-up operations (costs of eliminating soil/groundwater contamination, environmental compensation, etc.)	3	1	4	33, 34
	Total			**77**	**110**	**187**	
Effects	Effects in business operations	Pollution prevention effects	Savings from avoiding losses from plant closure due to failure to observe environmental laws and regulations, plus contribution of environmental protection activities to the value added by manufacturing activities	84	55	139	31, 32, 47, 48, 49
		Environmental protection effects	Cost savings from reductions in consumption of electricity, oil and gas	14	10	24	27, 28, 33, 46
		Resource recycling effects	Cost savings from reductions and effective use of waste	9	38	47	29, 30, 46
	Upstream/downstream effects		Sales value of recycled and re-used products	1	7	8	24, 25, 26
	Management effects		Efficiency improvements due to ISO14001 systems, effects of in-house employee training	2	3	5	11, 12, 15, 16, 43
	R&D/solutions business effects		Sales contribution of Green Products, other eco-friendly products and environmental solutions business	10	4	14	19〜23, 35〜38, 44, 45
	Social activities effects		Value of corporate image enhancement from environment-related publicity	1	1	2	17, 18, 39, 50
	Environmental pollution prevention effects (Risk avoidance)		Savings from avoiding compensation payments to residents for groundwater and soil contamination	2	2	4	33, 34
	Total			**123**	**120**	**243**	

eco.fujitsu.com/en/info/eco20001023a_e.html

Basic Principles for Environmental Accounting

1. Accounting Period

April 1, 2001–March 31, 2002

2. Scope of Data Collation

Data from Fujitsu and all its domestic/overseas consolidated subsidiaries (Data for a total of 95 companies are collated, although the scope of collation does not yet encompass some sales, software and service-related consolidated subsidiaries.)

3. Calculation Standards for Environmental Protection Costs

(1) Collation method for depreciation costs: Calculated using the straight-line method for a useful life of five years

(2) Only the portion related to environmental preservation is counted, based on methods specified in *Toward the Establishment of Environmental Accounting Systems*, 2000 edition.

4. Calculation Standards for Effects of Environmental Protection Measures

(1) Scope of economic effects: any real, measurable effects generated by reductions in the environmental burden while any goods or services produced by operations are being used, plus any reductions in environmental burden at the time of product disposal (with estimated effects, including risk avoidance benefits, taken into account).

(2) Basis for accounting regarding timing of effects from investments: See item 5 (2) below for real, measurable effects. In the case of estimated effects, except those considered fully realized within the fiscal year, the effects of environmental protection investments (contributory values, value of operating loss avoidance, etc.) are considered to extend over 12 months.

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

- Value contributing to environmental preservation activities based on the added value gained from production activities

  Value of effect = added value x ongoing operating costs of all environmental protection facilities / total costs generated

- Value of avoidance of any operating losses caused by the failure of operations to observe environmental laws and regulations

  Value of effect = added value / days of operation x days lost

- Value of effects of environmental public relations activities

  Value of effect = costs of press advertising x number of insertions

5. Principal Changes in Basic Points during Fiscal 2001

(1) The scope of data collation on operating costs was made stricter from the perspective of environmental protection (mainly in connection with co-generation systems introduced to cope with power cuts).

(2) The data collation period for measurement of benefits from investments was made consistent with the depreciation period (5 years).

(3) Measurement of the value attached to product reuse was initiated.

(4) Collation of data on ecology-related research contracting costs borne by Fujitsu Laboratories was transferred to Fujitsu Laboratories.

Our Basic Principles for Environmental Accounting are presented in detail on our homepage. (See URL at bottom of page 13.)

Characteristics of Fujitsu Group Environmental Accounting for Fiscal 2001

Our environmental accounting involved the collation of data from 95 companies in fiscal 2001. Costs totaled ¥18.7 billion, while the total value of related economic effects was ¥24.3 billion — both of which figures are similar to the fiscal 2000 results.

(1) Environmental Costs

- Pollution prevention costs (32%) and resources recycling costs (22%) accounted for the bulk of the costs. Maintenance and operation expenses for environmental preservation equipment accounted for a major portion of the pollution prevention costs, and waste disposal fees for a major portion of the resources recycling costs.
- Global environment preservation costs decreased by 38% compared with the previous fiscal year due to the rationalization of environmental factor cost distribution. R&D costs increased by 60% because of our promotion of Green Products development.

(2) Economic Effects

- Economical effects account for 32% of the actual effects and 68% of the assumed effects. A breakdown of the actual effects (32%) includes the global environmental preservation effect (30%), resources recycling effect (59%) and upstream/downstream effect (11%). The energy-saving effect accounted for a major portion of the global environmental preservation effect and the water-saving/chemical substances reduction effects for a major portion of the resources recycling effect.
- The global environmental preservation effect increased by 50% due to the expansion of energy-saving activities and introduction of equipment.

Transitions in costs/effects

(Unit: 100 million yen)

		1999	2000	2001
Fujitsu	costs	85	82	77
	effects	103	111	123
Affiliated companies	costs	82	109	110
	effects	119	135	120
Total	costs	167	191	187
	effects	222	246	243

Breakdown of effects

(Unit: 100 million yen)

	Actual effects	Estimated effects	Total
Fujitsu	23	100	123
Affiliated companies	55	65	120
Total	78	165	243

Fiscal 2001 Environmental Burden Reduction Improvement Indicators

(Fujitsu)

Item	Result
Environmental improvement (EI) indicator*1 [Ton-CO_2/100 million yen]	355
Environmental efficiency (EE) indicator*2 [100 million yen/Ton-CO_2]	0.051

Fiscal 2001 Environmental Burden Reduction Effect (reference)

(Fujitsu)

Effect [Ton-CO_2]
27,335*

* This value shows the fiscal 2001 environmental burden reduction effect achieved through energy savings (lower consumption of electricity, oil and gas), and waste reduction (reduced disposal of wastepaper, waste plastic, waste oil and wood chips).

*1, 2 Please refer to page 52 for definitions.

Environmental Education & Awareness Activities

Giving every Fujitsu Group employee a “leading role” in environmental activities.

Ongoing and repeated education is essential to enhance employee awareness of the roles individuals play in Fujitsu’s environmental protection activities. We are conducting a wide variety of environmental education and awareness activities aimed at all our employees.

Environmental Education Activities

Sales Departments

We conducted environmental education for our sales personnel in May 2001 in response to activation of an eco-friendly green purchasing movement in the public sector. The 32 participants engaged in animated question-and-answer exchanges.

A sales department education session (Fujitsu headquarters)

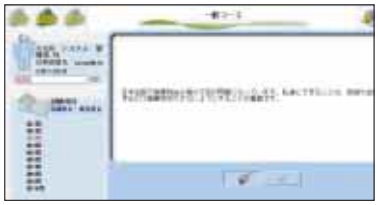
Management Training

We also conduct environmental education courses for management personnel, including plant managers, responsible for environmental control. In 2001, eight new managers attended a series of lectures on the topics of environmental management, Green Products and environmental activities at manufacturing sites.

Web-based educational activities

Employees in the Fujitsu Kawasaki area and at the Fujitsu Mie Plant can use local intranets to educate themselves concerning environmental issues. We plan to make this type of facility available throughout the Group in fiscal 2002.

The system in use in the Kawasaki area



Groupwide System

Environmental Lectures

- Fujitsu Laboratories
  Fujitsu Laboratories invited an external lecturer to discuss the ideal makeup of tomorrow’s cyclical society and conduct opinion exchanges with employees.

An Environmental Lecture (Fujitsu Laboratories)

- Fujitsu Telecommunications Europe
  All 170 employees attended an environmental lecture aimed at raising consciousness and improving future efforts to deal with environmental issues.

Lecture Materials (Fujitsu Telecommunications Europe)

Environmental Awareness Activities

Environment Month Events

The Ministry of the Environment has designated June as Environment Month in Japan. The month has become the focus of many environment-related events in Fujitsu and the Fujitsu Group companies.

Environmental Lectures/Seminars

We conducted 36 lectures, involving speakers from both inside and outside the company, with a total attendance of 1,844 in fiscal 2001. A lecture concerning measures for green purchasing and Green Products was conducted at FDK, and the Fujitsu Kawasaki Plant hosted panel discussions involving Green Product developers from other companies in the same industry as panelists. The lively discussions at these and other events led to widespread appreciation of these opportunities to benefit from frank and fascinating exchanges of opinion.

Panel discussion
(Fujitsu Kawasaki Plant)

An Environmental Lecture
(FDK)

Recycling Center Experience Tour

Employees were invited for the first time in fiscal 2001 to tour. Fujitsu Metropolitan Area Recycle Center. The 18 participants received a guided tour of the facility, where they experienced equipment disassembly.

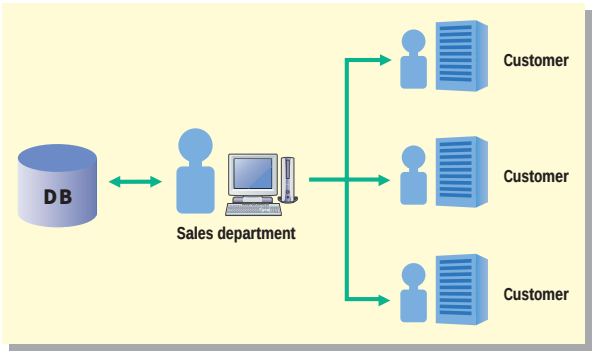
The participants took notes enthusiastically and asked detailed questions, exhibiting a renewed commitment to recycling.

Recycling Center Experience Tour
(Fujitsu Metropolitan Area Recycle Center)

Online Magazines for Customers

Our sales departments have begun tapping into the growing eco-consciousness among consumers by sending targeted information bulletins to Fujitsu customers, principally by e-mail. A special homepage for sales departments serves as a source of environment-related information for these e-magazines.

An illustration of the database



An online magazine targeting customers

Environmental Communications

Sharing information on our environmental activities with society through various media.

We publicize the Fujitsu Group's environmental activities extensively by publishing annual environmental reports, using the Internet to disseminate environmental information and participating actively in a variety of environmental exhibitions. We seek the opinions and ideas of a wide range of people by providing them with windows for quick responses.

Issuing of the Environmental Report

The 2001 Environmental Report detailed the results achieved by the company's various environmental protection programs conducted in fiscal 2000 (Japanese print run 20,000; English print run 5,000). Additional environmental reports have been published by our subsidiaries and affiliates and by local plants.

Subsidiaries and affiliates: Fujitsu Denso., Shinko Electric Industries., FDK, PFU, Fujitsu Ten, Fujitsu VLSI, Fujitsu Peripherals, Fujitsu Support & Service, Fujitsu Computer Products of Vietnam, Fujitsu ICL Espana, Fujitsu Telecommunications Europe.
Fujitsu: Mie Plant

eco.fujitsu.com/en/info/eco20001023b.html

The 2001 Environmental Report

Main Responses to Fax/Web Questionnaire (We received a total of 53 completed questionnaires. Some of the responses are introduced here.)

PC model changes tend to be quarterly — Fujitsu and the rest of the industry should reduce this to perhaps twice a year.

We conduct design with long-term use taken into consideration, and we also offer exchange services for CPUs and HDDs.

The distinction between "essential" and "common" criteria in the Green Product Evaluation Standard is confusing.

More details are provided in the data appendix to the 2002 report.

Concerns such as these will be reflected in our future activities. Thank you.

Participation in Exhibitions

Fujitsu participates actively in environmental exhibitions throughout Japan. We took part in a total of 29 exhibitions in fiscal 2001.

Exhibition name	Sponsor
Utsukushima Future Expo	Utsukushima Future Expo Association
Shinano Environmental Fair 2001	Shinano Environmental Fair 2001 Organizing Committee
Nagoya Eco-Campus	Environmental Partnership Club, Meijo University
2001 Environment Festival & Citizens' Life Exhibition	Aizuwakamatsu City
Iwate Environment Festival 21	Iwate Environment Festival 21 Organizing Committee
Fukuoka Citizens' Exhibition on Global Warming Prevention	Fukuoka Citizens' Association on Global Warming Prevention
Eco-Products 2001	Japan Environmental Management Association for Industry

Others

Environmental Press Advertisements

Fujitsu places environmental advertisements in newspapers and magazines and on homepages. The advertisements convey down-to-earth messages concerning the environment, focusing on daily environmental activities that strike a chord with everyone.

This series of press advertisements appeared in the *Nihon Keizai Shimbun* newspaper between May 2001 and March 2002.

Nikkan Kogyo Shimbun newspaper in August 28, 2001.

This ad appeared in *Nikkei Ecology* in June 2001.

Exchange with educational institutions or NGOs

We dispatch lecturers to environmental lectures hosted by NGOs and educational institutions, including universities, and accept people for comprehensive education, school excursions and corporate training. We also participated in a lecture organized by the Nippon Association of Consumer Specialists and environmental lectures at the Makuhari System Laboratory in the Dome Theatre.

Responses to opinions/questions

The Fujitsu Group as a whole received a total of 2,583 questionnaires, opinions and inquiries by e-mail and telephone. Some of them are introduced here.

Why were the trees on a construction site cut down? It shows a lack of consideration.

There were some places in which tree cutting was necessary to reduce the impact on the environment of construction machinery to the greatest extent possible. We held several explanation meetings before the construction to acquire the neighborhood residents' understanding. We plan to reforest the site after the completion of construction.

Waste bearing the Fujitsu logo was disposed of illegally.

We collected the waste and treated it appropriately. We subsequently conducted an investigation and discovered that we were not involved in the illegal disposal. We provided our business partners with guidance concerning disposal.

Concerns such as these will be reflected in our future activities. Thank you.

Green Product Development

We are working to develop products with superior eco-friendly characteristics throughout their life cycle, from design to collection.

We are employing internally developed "Green Product Evaluation Standard" criteria that are applicable throughout the Fujitsu Group to: develop products that help to save energy; reduce, reuse and recycle resources; and reduce chemical emissions throughout the product life cycle — rather than only in the design and manufacturing stages. We accompany this development of products featuring superior eco-friendly characteristics with efforts to promote recycling as well. Each Green Product contributes in its own way to lowering the environmental burden.

Product Life Cycle

Development/Design stage → Manufacturing stage → Customer use stage → Collection/Recycling stage

Development/ Design

We have designed and developed Green Products since 1998, based on internal criteria specified in the internal "Green Product Evaluation Standard." The process is now integrated to include activities from the selection of eco-friendly parts to conducting of product LCAs.

Green Product Development

Process for Developing Green Products:

Process for Developing Green Products:

Step 1: Product environmental assessment (43 criteria)

↓ Total number of points evaluated: over 90

Step 2: Evaluation based on Green Product Evaluation Standards: common standards and product category-specific standards

↓ Product meets all relevant criteria.

Green Product — Environmental Emblem

Criteria

Common standards (27 items)	+	Category-specific standards	
		Electronic parts (semiconductors, PCBs):	5 items
		Portable/small products (mobile phones, HDDs):	6 items
		Midsize/large products (servers, finance-related terminals):	6 items
		Personal computers:	14 items
		Printers (all sizes):	8 items

Revisions of Standards:

We have upgraded our standards in recent years to take into account various regulatory measures to encourage a cyclical society and the establishment of eco-labeling systems.

[Main Points]

1. Extension of CO_2 emission assessment criterion to all Green Products (common standard)
   - Obligatory assessment by LCA of full life-cycle CO_2 emissions for all products with possible global warming effect
2. Addition of new criteria related to eco-friendly stipulations in the Law on Promoting Green Purchasing*1 concerning recycled plastics and use of reusable parts (category-specific standard)
   - Obligatory use of recycled plastics or reusable parts in all newly developed products, effective April 2002
   - Application to electronic calculation devices (including PCs), magnetic disks, printers and scanners
3. Extension of standards to cover products regulated due to presence of mercury-containing LCD fluorescent tubes (category-specific standard)
   - Previously applied only to Fujitsu-developed LCD units, the standards have been extended to procured products in consideration of trends in EU chemical regulation.

Consolidated subsidiaries must comply with all Fujitsu Green Product evaluation standards. Please refer to the appendix for details concerning the Green Product evaluation standards.

Green Product Development Results

The Fujitsu Environmental Protection Program (Stage III) extends Green Product development to the entire Fujitsu Group. In fiscal 2001, the list of Green Products was expanded to include electronic devices and telecommunications equipment. The number of products developed as Green Products totaled 265.

Fujitsu (234 models)

Information equipment

- Notebook computers
- Desktop PCs
- LCD/CRT displays
- Disk arrays
- Opto-magnetic disks
- UNIX servers
- Data communications terminals
- Totalizator system
- Printers
- No-break power generator unit
- ATMs/finance-related terminals
- Printed circuit boards
- Small magnetic disks
- Scanners
- Pen notebook computers
- Semiconductor disk equipment
- LCD units
- Storage management processors

Telecommunications equipment

- Routers
- Mobile phones
- Photonic IP nodes
- WDM undersea signaling equipment
- VoIP gateways
- MPMs (mobile packet modules)
- Security
- Image transmission equipment (Video co-decks)
- FOMA mobile phone handsets
- Optical transmission systems
- IP image monitoring/distribution systems

Electronic device products

- Flash memory

Consolidated subsidiaries (31 models)

PFU

- Scanners
- Card processors
- Information service stations
- Panel computers

Fujitsu Ten

- AV navigation equipment
- Operating environment simulation systems
- Audio playback decks
- ECUs

Fujitsu Media Devices

- Performance polymer capacitors

Fujitsu CoWorCo

- ZEBO series


Scanner F1-4340C (PFU)


AV navigation equipment AVN5501D (Fujitsu Ten)


Security FW-P


Performance polymer capacitor FPCAP RE series (Fujitsu Media Devices)


UNIX server PRIMEPOWER650

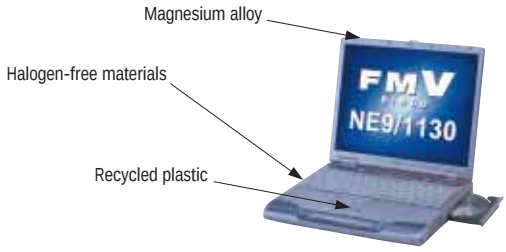

Pen notebook computer PenNote Model TI

*1 Please refer to page 52 for definition.

Examples of Eco-friendly Products

Recycling Technology

- Use of biodegradable plastic parts in notebook computers
  Since spring 2002, we have used biodegradable plastic for small notebook computer parts. Made from a polylactic acid derived from corn, the plastic is broken down into just carbon dioxide and water by bacteria in soil.
- Recycled plastic
  We have employed recycled plastic in PCs since 1998.



FMV-BIBLO NE-series

- Recyclable paint
  We have employed recyclable paint to coat desktop PCs since 1999.
- Magnesium alloy
  We have developed technology to recycle unused parts from assembly processes that use computer casings made of magnesium alloy. We have employed such recycled materials since 1999 in the production of notebook PCs (manufactured by Fujitsu Kasei).

FMV-DESKPOWER C-series

Reductions in Chemicals

- Lead-free solder
  Our goal is to eliminate the use of lead solder from all our products. All new products use lead-free solder varieties.

New lead-free solder applications in fiscal 2001

Model name	Starting term
Desktop PCs (FMV-SL series, FMV-CL series)	April 2001
Notebook computers (LOOX-T series, S series, LIFEBOOK MC series, LS series)	May 2001
Mobile terminals (mobile phones)	June 2001
HDDs (2.5-inch, 3.5-inch)	July 2001
Opto-magnetic disk equipment	September 2001
Telecommunications-use onboard power supplies (Fujitsu Denso)	January 2002
Routers (Si-R150)	March 2002

Types of solder used Sn-3.0Ag-0.5Cu

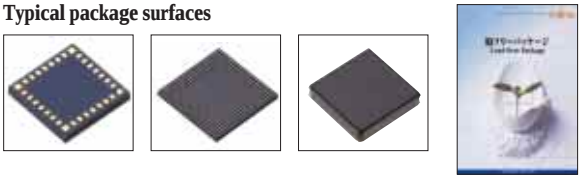
Application of lead-free solder in electronic devices

We introduced lead-free solder in LSI products in October 2000. By the end of 2001, the number of LSI products employing lead-free solder shipped had topped 50 million units.

Technology development

- New lead-free soldering materials use tin, silver, copper and bismuth (Sn-Ag-Cu, Sn-Bi-Ag, Sn-Bi)
- Surface-mount reliability testing (thermal cycle, adhesive strength, PCB repetitive bending/dropping tests)
- Enhanced package thermal durability (assessment of thermal durability, plus improvements in materials and pattern designs)

Typical package surfaces



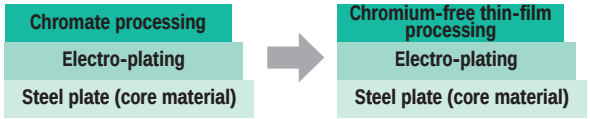
edevice.fujitsu.com/fj/CATALOG/PDF/a81000044c.pdf

Development of medium-temperature lead-free soldering material

We developed a new medium-temperature solder from an alloy of tin, zinc and aluminum (m.p. of 199) to use as a lead-free alternative in PCB unit production. Patents have been filed in eight countries, including Japan, and a U.S. patent has already been approved.

- Introduction of non-chrome steel plate
  We have employed a special type of non-chrome steel plate containing no hexavalent chromium compounds in the production of desktop computer casings and panels.

Steel plate cross-section



Conventional product Chrome-free product

- Use of halogen-free materials
  We use only phosphorus-based flame retardants made from halogen-free resins in the plastic casings of our notebook computers.
- Use of soy oil-based inks in packaging materials
  We have switched to the use of eco-friendly soy oil-based inks (with the permission of the American Soybean Association) for printing the cardboard packaging employed for PCs and other products. These biodegradable inks impose a smaller environmental burden. The change also helps to restrict atmospheric pollution by VOCs (volatile organic chemicals) used in conventional printing inks.

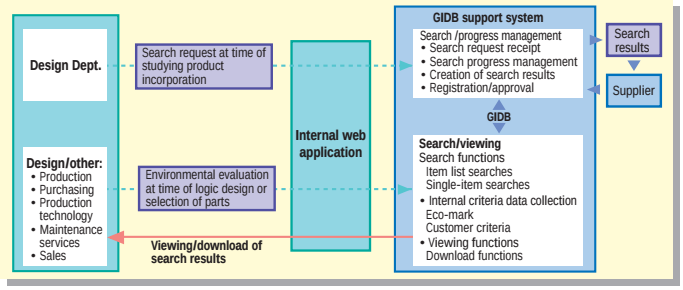
Packaging printed using soy oil-based inks

Green Product Development

Promoting purchasing and use of eco-friendly parts

We have begun compiling a database (GIDB, the Green Information Database) of environmental information on procured parts to use in building eco-friendly characteristics into products at the development/design stage. In fiscal 2001, we examined approximately 36,000 parts in conjunction with the parts use commissioning system and design information system.

GIDB/support system development



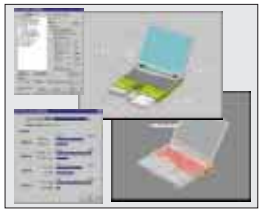
LCA*1 (Life Cycle Assessment)

We design products with the prevention of global warming in mind by promoting the use of LCA to assess the environmental burden imposed by products throughout their life cycle. In fiscal 2001, we extended LCA to all Green Products, standardizing the application of LCA-based assessment criteria.

Products Currently Covered by LCA (41 models)

- Disk arrays
- Notebook computers
- Routers
- Desktop PCs
- CRT/LCD displays
- Opto-magnetic disks
- Printers
- VoIP gateways
- LCD units
- Servers
- Distribution terminals
- FOMA mobile phone handsets
- Security devices

• Evaluation tools
We employ an original VPS software that enables us to assess CO_2 emissions in real time in conjunction with 3-D CAD techniques as an LCA support tool for designers.



Example of evaluation using VPS/ECODESIGN software

Furthermore, as a new trial, we selected other environmental burdens besides CO_2 emissions and conducted LCA in connection with notebook PCs in order to develop products from the perspective of overall reduction of the environmental burden, including global warming, resources consumption, acidification and eutrophication as well as prevention of global warming.

Environmental burden assessment for a notebook PC model (FMV-6750NA8/L)

Consumption burden	Energy (MJ)	7.92E + 02	8.61E + 01	6.75E – 05	2.80E + 03	– 5.72E + 01
	Water (L)	3.57E – 03	2.07E + 01	—	—	– 4.72E + 02
	Life Cycle Stage	Production (materials)	Production (product)	Distribution	Use	Disposal/recycling
Emission burden	CO_2 (g)	4.61E + 04	5.45E + 03	4.76E – 03	1.24E + 05	– 4.04E + 03
	COD (g)	3.15E – 01	2.50E – 01	—	—	5.00E – 03

Consideration for Customers

Promotion of Energy Saving in Products

Our entire line of personal computers now conforms to the energy-saving performance standards for fiscal 2005 as stipulated in Japan's Law Concerning Rational Use of Energy.

- We mark all products that have cleared the energy-saving standard with a special logo.

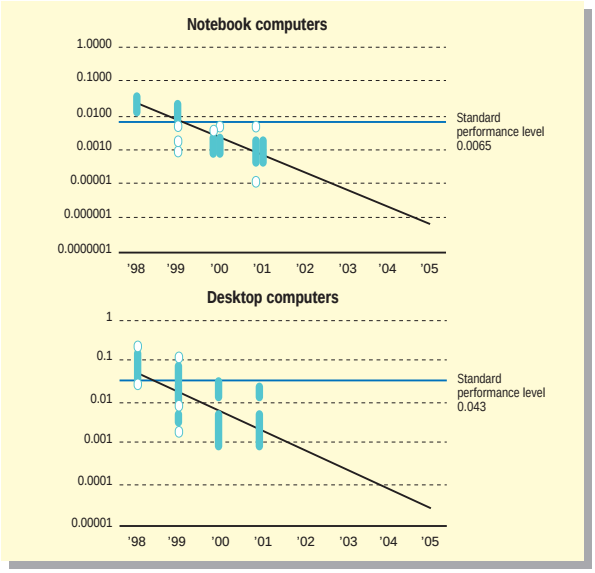
CLEAR 2005
省エネ法目標達成！

- All these products also conform to the joint U.S.-Japan standard for standby-mode energy consumption specified in the International Energy Star Program.

Number of products registered with the International Energy Star Program in fiscal 2001 (550 models)

Electronic calculators	499	Displays	26
Printers	21	Scanners	4

Energy consumption efficiency by personal computers:



*1 Please refer to page 52 for definition.

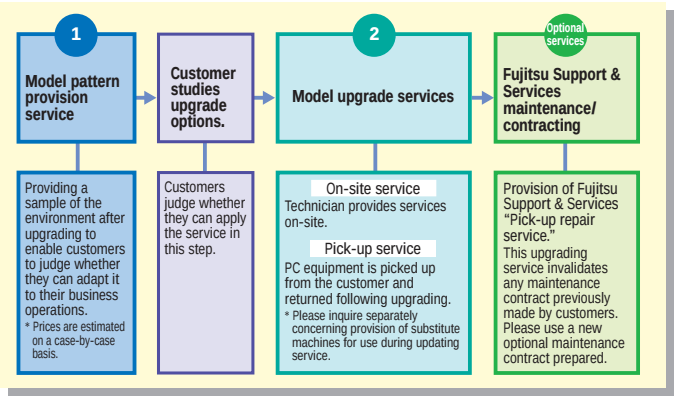
Services Targeting Long-term Customer Use

PC upgrade services by Fujitsu Support & Services

Fujitsu Support & Services provides exchange and installation services to upgrade old PCs with new memory, HDDs or CPUs. This enables customers to receive a faster computer without purchasing a completely new machine.

- Service flow:
  ❶ Customers are provided with a model pattern for service provision to construct a sample of the environment after upgrading, which they use to judge whether they can adapt it to their business operations. ❷ Upgrading service is provided.

PC upgrading services (Fujitsu Support & Services)



Disclosure of Environmental Information

We seek to provide customers with useful environmental data concerning products at the point of purchase by means of eco-labels in accordance with accepted labeling systems certified by third-party organizations.

Products conforming to the Law on Promoting Green Purchasing

The Green Purchasing Network, a Japan-wide network of consumers, corporations and administrative bodies organized to promote green purchasing, provides online information concerning products such as servers, workstations, desktop PCs, notebook PCs, magnetic disks and printers conforming with the Law Concerning the Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities (Law on Promoting Green Purchasing), implemented in April 2001.

Eco-mark (Type I)

In January 2001, Fujitsu became the first desktop PC manufacturer in Japan to receive Eco-mark certification from the Japan Environmental Association for its FMV series desktop PCs. A number of models have since been approved for this eco-label.

FMV Desktop Series
Type: FMV6MLB120, etc.
Certification number: 00119005

FMV-BIBLO Series
Type: FMVLT553W3
Certification number: 01119002

FMV-LIFEBOOK Series
Type: FMV8NA4BC0, etc.
Certification number: 01119006

LCD
VL-Series
Type: VL-1700SS, etc.
Certification number: 01119009

eco.fujitsu.com/en/news/2001/eco20010115_e.html

Environmental Emblem (Type II)

This is a Fujitsu Group-approved eco-label we have used in Green Product catalogs and packaging since November 1998 to signify that such products have superior eco-friendly features.

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

3R eco-label for PCs (Type II)

The Japan Electronic Information Technology Association has introduced a special eco-label for personal computers to certify compliance with comprehensive environmental measures, including eco-friendly design, manufacturing and recovery, reuse and recycling of post-use products. We have sought certification to attach the labels to our PCs since mid-2001.

Concept
- Eco-friendly in the design and manufacturing stages
- Targeted recovery, reuse, recycling and appropriate treatment levels for post-use products
- Appropriate information disclosure concerning environment

Fujitsu status
Company assessment successfully completed (September 2001)

Product assessment continuing (since October 2001: registered models 156)

Products covered by JEITA assessments
- Desktop PCs
- Portable notebook computers
- CRT/LCD single-unit PCs
- CRT/LCD monitors

JEMAI pilot program (Type III)

This eco-labeling, certified by the Japan Environmental Management Association for Industry (JEMAI), is accorded to products that display the environmental effect caused by products throughout their life cycle. In September 2001, Fujitsu disclosed information concerning the FMV-BIBLO LIFEBOOK NA notebook computer series (FMV-6750NA8/L).

Registration form

Eco-labeling

Type I: Environmental details concerning products approved by third-party organization following voluntary application by the manufacturer.
Type II: Environmental details concerning products conforming to independent criteria determined by the manufacturer.
Type III: Eco-labeling based on third-party certification (as with Type I), with the quantitative environmental burden imposed by the product indicated on the label.

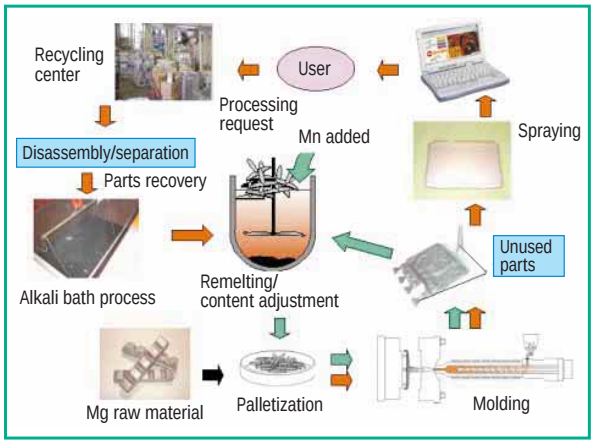
Green Product Development

Environmental Technology Development

We are developing proprietary technologies to further lower the environmental burden imposed by our products. A few of them are introduced here.

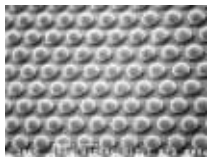
Total recovery and recycling of magnesium

We have developed technology that enables us to recover and recycle the used painted magnesium alloys from PC casings.



AP Bump (advanced printing bump)

It is possible to form minute lead-free solder droplets at lower cost.



AP Bump

pr.fujitsu.com/en/news/2001/12/12-1.html

World's first opto-catalyst eliminates viruses and unpleasant odors with high efficiency.

Working in conjunction with the Research Center for Advanced Science and Technology, The University of Tokyo, we have developed an efficient opto-catalyst*1 by enriching calcium hydroxyapatite*, a substance with excellent absorbency, with titanium ions. This has doubled the efficiency of its catalytic disintegration, which eliminates unpleasant odors and viruses. This new catalyst has potential uses in air-conditioning unit filters and information-processing equipment.

* A type of calcium phosphate, calcium hydroxyapatite is excellent for the specific absorption of organic materials, such as proteins, in inorganic surroundings, such as the bones or teeth of humans and other vertebrates.

Environmental Indicators

We are currently studying the use of environmental indicators. Environmental performance improvement factors assess the total improvement of products by considering the resources input, environmental burden imposed and changes in service performance. We are planning to use the indicators to measure improvements in our PCs' environmental performance and are currently participating in the METI-sponsored Resource Productivity Examination Committee to study their use. We plan to examine which quantitative service changes are necessary for calculating the factors for individual products and to promote expansion of the range of products to which we apply the indicators.

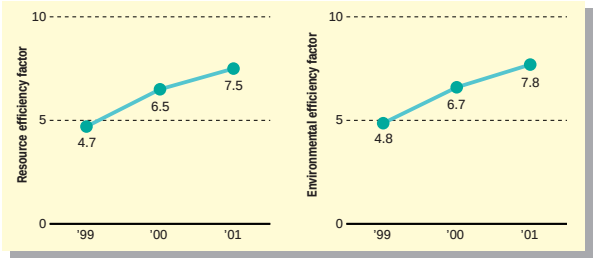
Environmental performance improvement factors

We measure the relative improvement in our new products' resources use and environmental efficiency with respect to earlier products.

- Factor definitions:
  Resources efficiency factor = Service (ratio of new products to old products)/resources input amount (ratio of new products to old products)
  Environmental efficiency factor = Service (ratio of new products to old products)/environmental burden amount (ratio of new products to old products)

- Calculation methods for PCs
  For these calculations, product mass is used as the "resource input amount" and CO_2 emissions over the entire product life cycle as the environmental burden amount." For PC-related "services," quantities such as hardware (CPU) performance or operating software performance (such as HDD capacity) are used.

Example of calculation for PC (FMV-BIBLO LIFEBOOK NA)



These figures indicate that, compared with the original series (1998 products), the resource and environmental efficiencies factors of the 2001 products in the FMV-BIBLO LIFEBOOK NA PC models are 7.5 and 7.8, respectively.

We plan to pursue making every product a Green Product and environmental information disclosure.

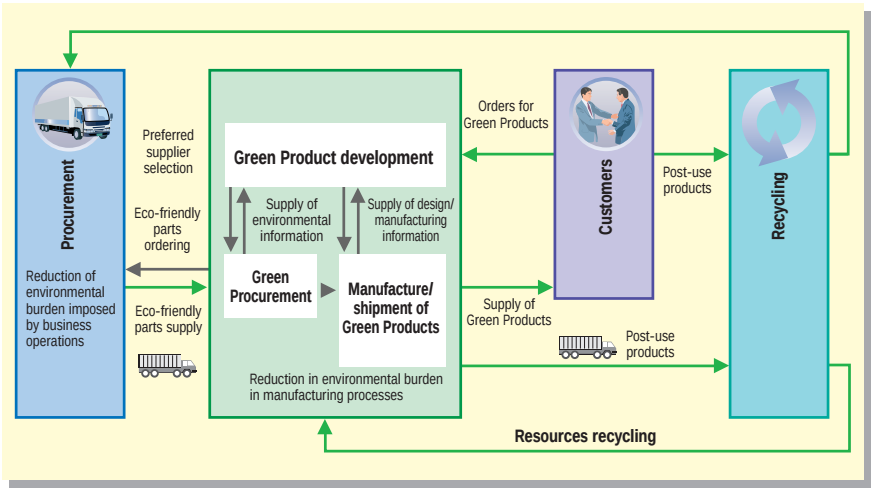
*1 Please refer to page 52 for definition.

Green Procurement

Cooperating with suppliers to make progress with respect to environmental issues.

Green Procurement — preferential purchasing of eco-friendly parts, materials and products — is an essential element in the Fujitsu Environmental Protection Program. The Fujitsu Group as a whole is working with suppliers to promote continued progress with respect to environmental preservation activities.

Green Procurement by the Fujitsu Group



Green Procurement Requirements for Suppliers

We have formulated Green Procurement criteria for Fujitsu Group companies to distribute among their suppliers in June 2001. The primary supplier requirements encouraged by our Green Procurement policies are as follows:

- Construction and implementation of EMS
- Elimination of prohibited substances specified by Fujitsu from materials/parts production

Green Procurement Criteria

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

Fujitsu Activities

- The value of eco-friendly items as a proportion of the value of all procured product parts and materials has already exceeded 87.2% (the rate targeted for fiscal 2001 year-end).
- We held an explanation meeting concerning Green Procurement activities in May 2001 and requested the cooperation of our suppliers. And we held another meeting to explain our Green Procurement criteria to our suppliers in January 2002, with 140 suppliers in attendance. We have sought their cooperation in implementing the procurement criteria.

A Green Procurement criteria explanation meeting (Fujitsu Kawasaki Plant)

- Call for proposals on eco-friendly materials
  As part of the Green Procurement program, we have been proactive in seeking out proposals from suppliers concerning eco-friendly materials, parts, products and manufacturing facilities.

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

- Eco-friendly purchasing of office supplies and fittings
  We are working to attain our goal of ensuring that 100% of the office supplies we procure are certified eco-friendly by public corporations or organizations by the end of fiscal 2002. This ratio already exceeded 70% as of the end of fiscal 2001.

Fujitsu Group Activities

We plan to increase the value of eco-friendly items as a proportion of the value of all product parts and materials procured to above 99% by the end of fiscal 2003.

Principal Plans for Fiscal 2002

We are promoting activities in accordance with the situation concerning inclusion of prohibited substances as well as supporting establishment of EMS.

Product Recycling

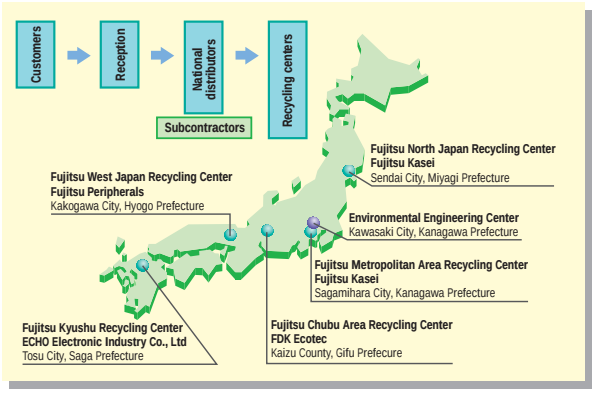
Developing a nation-wide recycling network to create resources from post-use products.

Accepting our extended responsibilities as a producer (EPR)*[1], we are actively accepting post-use products from corporations, promoting post-use product collection and converting these products into new resources. Our integrated approach is contributing to efforts to orient society as a whole toward recycling.

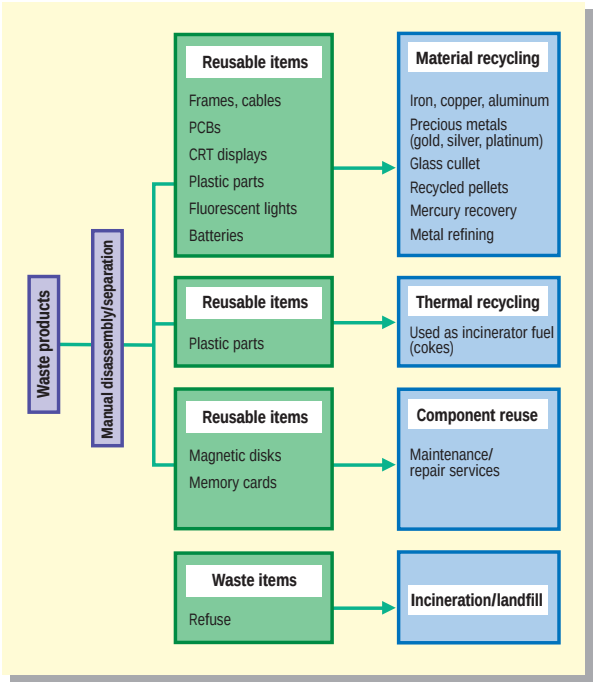
Overview of the Fujitsu Recycling System

Our recycling network, 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. In fiscal 2001, we collected 10,996 tons of post-use products and raised our resources reuse rate*[2] to 85.1%.

- Environmental Engineering Center (in Fujitsu Kawasaki Plant): Providing system operation management and technical support
- Recycling centers (5 in Japan): disassembly/separation and treatment of post-use products

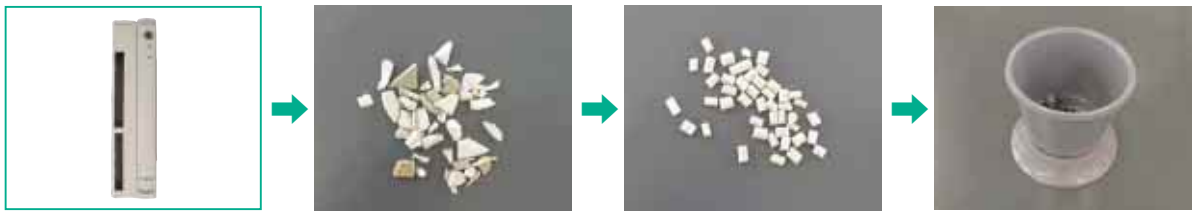


Flow of the Fujitsu Recycling System



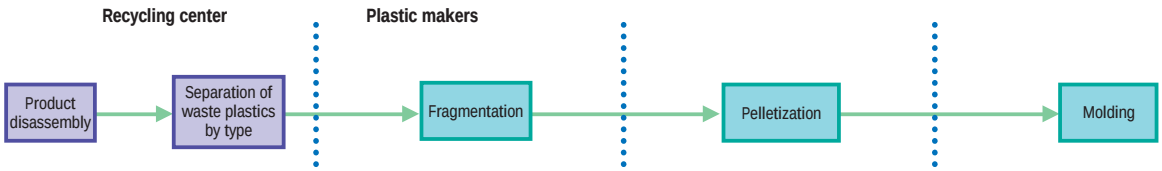
Material recycling of waste plastics

We have initiated recycling of waste plastic — for use as materials for plant pots — as well as recycling of iron and non-ferrous metals.



Waste plastics | Fragmentation of waste plastics | Recycled pellets | Plant pots

Process flow chart



*1,2 Please refer to page 52 for definitions.

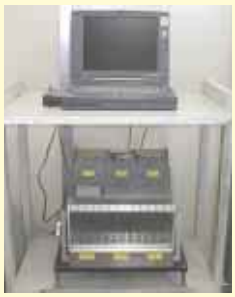
Prevention of Customer Data Leaks

The Fujitsu recycling system prevents leakage of customer data. We use either software to erase the data or a special machine to destroy the disk physically. We have standardized these procedures and are educating operators in their full application. We have, moreover, prepared a system to meet customer demands for physical destruction or complete erasure of data from memory media such as magnetic tapes and floppy disk drives.

Examples from the Metropolitan Area Recycling Center

A data erasure room


A machine for destroying HDDs

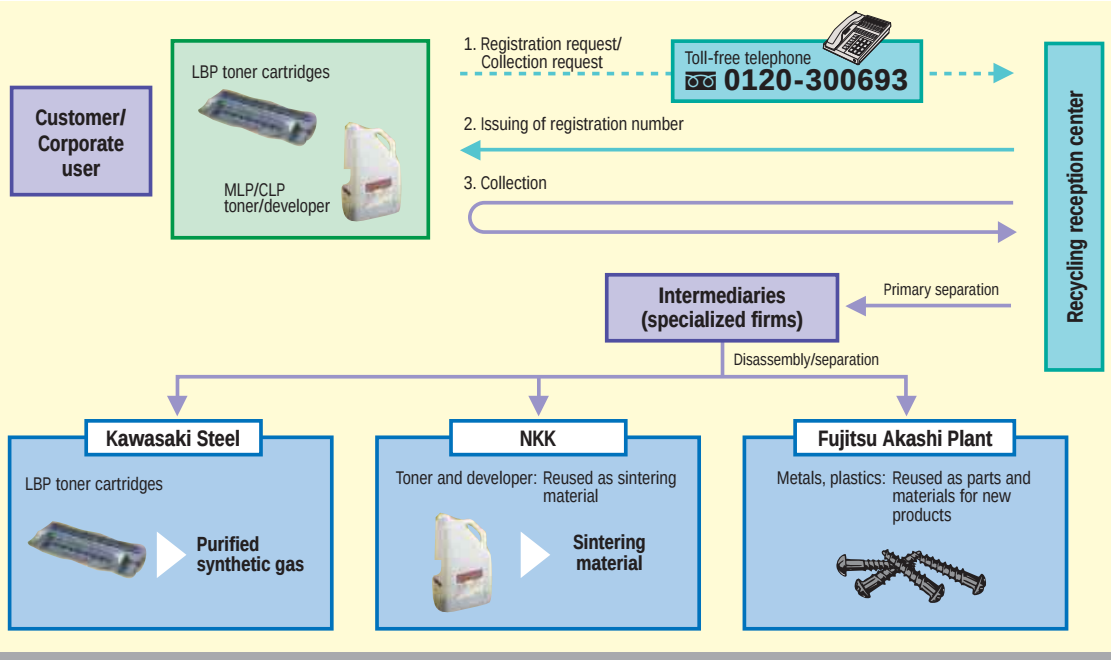

A machine for destroying floppy disk drives


A machine for destroying magnetic tapes

Recycling of printer consumables

Fujitsu and Fujitsu CoWorCo have jointly established a free-of-charge collection and recycling system that covers all post-use consumables for Fujitsu laser printers designed for corporate use. The system has commenced full-scale operation. Following inspection and cleaning, all toner cartridges are returned to a Fujitsu manufacturing plant for incorporation in the production process.

Recycling System for printer consumables



We will make preparations for introducing a collection and resource recycling system for individual customers' PCs in 2003.

Energy-Saving Measures (Against Global Warming)

Helping to combat global warming by reducing energy consumption.

Reducing electric power and fuel consumption at manufacturing and other sites helps to restrict CO_2 emissions as well as to protect energy resources, thus contributing directly to efforts to combat global warming. The Fujitsu Group has expanded the range of its energy-saving countermeasures and reinforced its efforts further in this area. We are establishing strict site-by-site goals as targets for achievement. We implemented measures in fiscal 2001 primarily to improve equipment operation and management, and examined and developed new themes to promote reduction of energy consumption.

* Fujitsu Group : 23 Fujitsu sites / plants, 28 domestic affiliates (manufacturing) and 19 overseas affiliates (manufacturing)

Energy-saving Results

We have set an energy-saving goal of reducing 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 results, by the end of fiscal 2003. The Fujitsu Group's energy consumption in fiscal 2001 was 18.3 kℓ per 100 million yen crude oil equivalent, or a 12.9% reduction relative to fiscal 1990 results. The corresponding figure for Fujitsu was 13.1 kℓ per 100 million yen crude oil equivalent, or a 31.8% reduction. We are continuing to work toward meeting our fiscal 2003 year-end targets.

- Targeted energy: Total of electricity, oil and gas consumed at plants/operations (crude oil equivalent kℓ)

Results for CO_2 Emission Volumes

Approximate total energy consumption in terms of CO_2 emissions volumes was 1.46 million ton-CO_2 for the Fujitsu Group in fiscal 2001, the same as the preceding term, and 606,000 ton-CO_2 for Fujitsu Japan, down 7% from fiscal 2000. The amount has increased since fiscal 1990 for the Group, due to its business expansion.

* These calculations substitute Japanese coefficients for crude oil equivalents and CO_2 emissions volumes at overseas companies.

Analysis for Fiscal 2001

We have established reduction of the absolute value of energy consumption by about 1% every year as a rough target for reduction activities at plants and offices (per unit of sales in the Protection Program).

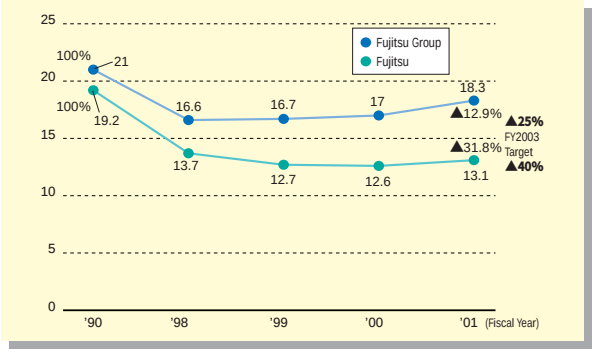
In light of the economic situation, we conducted mainly investment-free activities in fiscal 2001, and reduced energy consumption by 25,000 kℓ crude oil equivalent (about 40,000 tons-CO_2 measured in terms of CO_2 emissions).

- Improvement of operation/management (corresponding to temporary clean-room shutdowns)
- Examination and development of important measures by individual work groups (5 themes)
- Group energy-saving committees, etc.

Energy consumption by some companies decreased, due to changes in business content. Total energy consumption, decreased by 1.6% (15 thousand kℓ) compared with the previous fiscal year as a result of new plant construction.

Energy Consumption per Unit of Sales

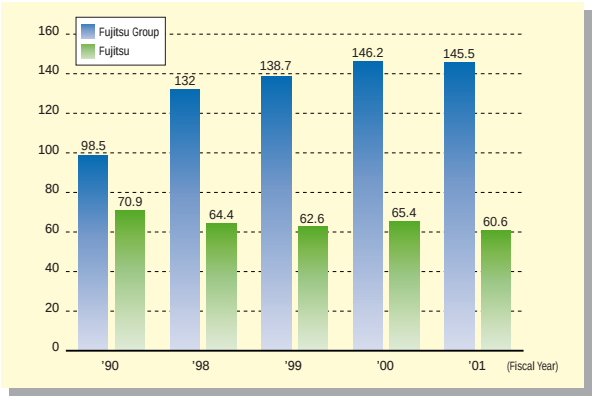
(Unit: Crude oil equivalent kℓ/100 million yen)



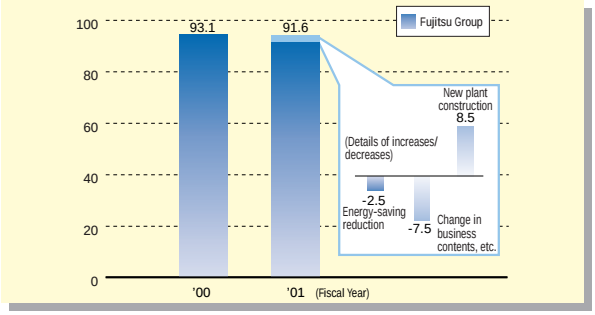
Energy Consumption (Unit: Crude oil equivalent 10,000kℓ)

	1990	1998	1999	2000	2001
Fujitsu Group	62.4	86.8	87.5	93.1	91.6
Fujitsu	44.8	43.7	41.3	42.6	39.8

CO_2 Emissions by Energy Use (Unit: 10,000 ton-CO_2)



Increase/decrease in Energy Consumption (Unit: Crude oil equivalent 10,000kℓ)



Case Studies

The following are some examples of energy-saving measures implemented at manufacturing and other sites.

Thermal Storage Air-conditioning System (Fujitsu Mie Plant)

An advanced air-conditioning system introduced at the Mie Plant stores energy during daytime operation and transfers its use to the night shift. This process, employing a 4,000-ton water reservoir as a heat sink, can transfer some 1,000 kW of energy per day. Shifting of the energy consumption peak translated into a reduction of about 5% in total electric power consumption at the plant. The use of nighttime electricity realizes an approximately 260 MWh energy-saving effect and an approximately 190 tons-CO_2 reduction effect each year. (This type of system was also introduced at the Akashi Plant.)

Reservoir as a heat sink (Fujitsu Mie Plant)

Power Storage System (Fujitsu Akiruno Technology Center)

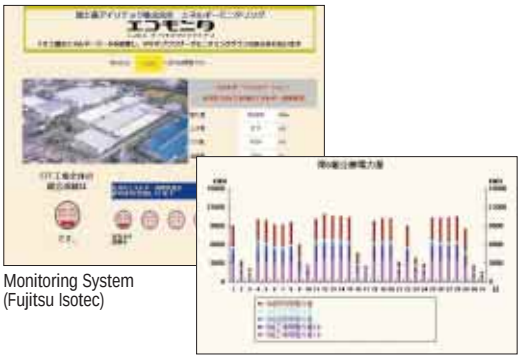
We are constructing one of the world's first large-scale power storage systems at our Akiruno Technology Center. Scheduled to become operational in June 2002, the system stores electric power at night for release during the day. Besides shifting the power supply, the system can also protect semiconductor production facilities from sudden drops in voltage. Its use of nighttime electricity plays the dual roles of power supply stabilization and energy conservation.

Installation of Inverter Compressors*1 (Fujitsu Kanuma Plant)

Energy-saving inverter units installed in the compressors at the Kanuma Plant supply compressed air to the PCB production lines. Since the compressors account for about 20% of the total power consumption at the site, however, this move promises to generate substantial energy savings of approximately 360 MWh per year.

Energy Monitoring Services by IT (Fujitsu Isotec)

Fujitsu Isotec has begun operating a monitoring system for each workplace to help control energy consumption. The service measures consumption of electricity by area and makes the information available in real time on an intranet. This helps to raise the employees' energy-saving consciousness and supports analysis and improvement of current conditions.



Monitoring System (Fujitsu Isotec)

Measures Implemented to Reduce Greenhouse Gases

The Japanese semiconductor industry has established self-action plans to reduce emissions of potentially harmful greenhouse gases such as perfluorocarbons (PFCs), hydrofluorocarbons (HFCs).
The Electronic Devices Division is leading our efforts at Fujitsu to apply the voluntary code of conduct formulated by the Japanese semiconductor industry, as well as relevant international standards. Specific measures include the following:

- Use of substitutes for liquid PFCs
- Application of emission reduction technology to new production lines
- Survey/measurement of emission levels
- Support for R&D programs focusing on substitution, collection and reuse technologies

Further improvements in energy management and CO_2 emissions reductions remain necessary in response to revisions in the Principles and Law on Promoting Countermeasures against Global Warming and the Law Concerning Rational Use of Energy. Despite the current difficult economic conditions, we are taking measures as a Group, including deployment of an ESCO*2 business system (energy service) and investigations concerning the introduction of clean energy.

*1,2 Please refer to page 52 for definitions.

Zero Waste Emissions (Waste Reduction)

Targeting Zero Emissions through the 3R Policy.

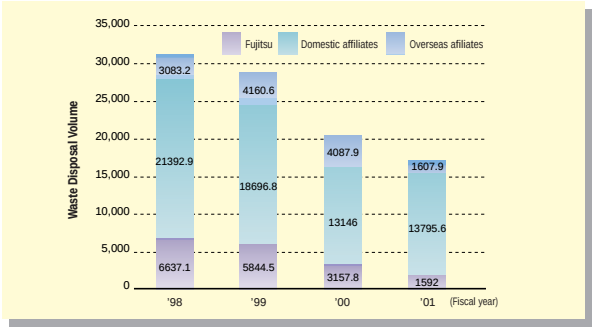
We are moving positively to implement measures aimed at early realization of zero emissions. We are targeting every kind of waste generated by our operations (since fiscal 2001 including waste generated in the process of living) based on our "3R" (Reduce, Reuse, Recycle,) policy. Our waste reduction results far surpassed our targets in fiscal 2001, as the Fujitsu Iwate Plant, for example, achieved zero emissions two years ahead of schedule. Overall, the activities have resulted in greater-than-anticipated success. Individual Group employees are participating in various ways, including efforts to reduce and reuse waste and to realize zero paper-waste emissions by promoting thorough separation in the administration offices.

* Fujitsu Group : 14 Fujitsu sites / plants, 28 domestic affiliates (manufacturing) and 19 overseas affiliates (manufacturing)

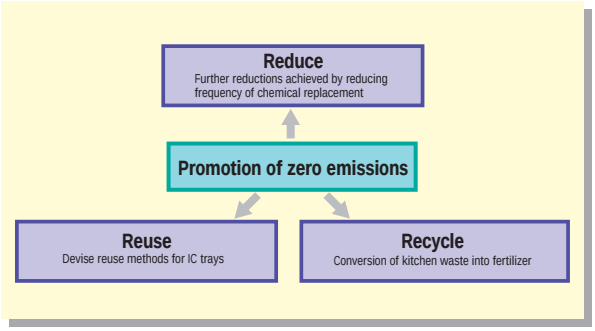
Results Achieved in Waste Reduction

We disposed of a total of 16,995 tons of waste in fiscal 2001, a reduction of 45.3% since fiscal 1998. Of this total, the volume of waste disposed of by Fujitsu alone in fiscal 2001 amounted to 1,592 tons, a reduction of 50% from the previous fiscal. Our waste reduction activities are making favorable progress.

Transitions in Waste Volume (Unit: tons)



3R Policy



Zero-Emission Program

We are working to achieve zero emissions of waste, including waste generated in the process of living (kitchen waste and purification vat sludge). These efforts include activities aimed at achieving zero emissions at 14 Fujitsu sites by the end of fiscal 2003. The Fujitsu Minami-Tama Plant and the Fujitsu Iwate Plant achieved zero emissions in fiscal 2001. Plants that have already achieved zero emissions are now targeting further reductions in reusable waste volumes equivalent to a reduction of 5% over three years, beginning the year following achievement of zero emissions.

Fiscal 2001 Analysis

The overseas Group companies achieved a reduction in waste in fiscal 2001 due to changes in their business contents, but the domestic group companies registered a slight increase because of the construction of new plants. Fujitsu recorded an overall reduction in waste due to the achievement of zero emissions. The main measures contributing to the reduction included the introduction of kitchen waste processors and effective use of sludge.

Manufacturing Plants Achieving Zero Emissions (Fujitsu)

- Fiscal 1999: Numazu Plant, Akashi Plant
- Fiscal 2000: Kumagaya Plant
- Fiscal 2001: Minami-Tama Plant, Iwate Plant

Definition of Zero Emissions

100% effective use of all output waste (with no waste sent to landfill or incinerated)

Targeted Zero-Emission Waste

(Purification vat sludge and animal/vegetable matter [kitchen waste] have been targeted since the beginning of Stage III of the Fujitsu Environmental Protection Program.)

- Waste acids and alkalis
- Waste plastics
- Sludge
- Waste oil
- Waste glass
- Wood chips
- Wastepaper
- Metal scraps
- Purification vat sludge
- Animal/vegetable matter (kitchen waste)

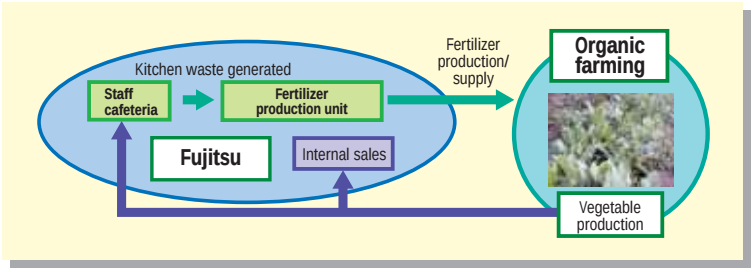
Zero-Emission Program Case Studies

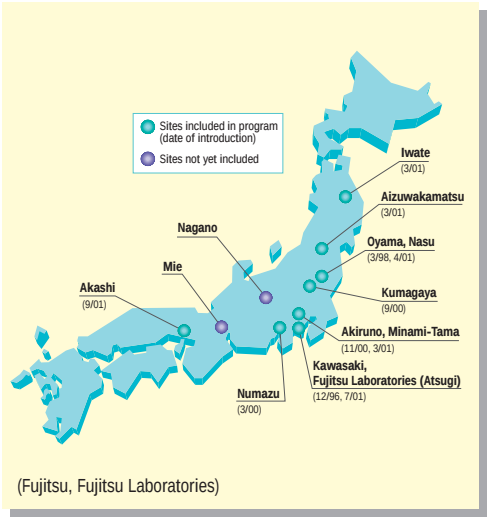
Reuse of Kitchen Waste in Organic Fertilizer

We produce organic fertilizer using kitchen waste from our staff cafeterias as raw material and supply it to organic farms. These farms supply organic vegetables to Fujitsu site cafeterias as well as selling them to our employees.

Fiscal 2001 Results

- Introduction of fertilizer production at 6 sites (total of 11 sites)
- Operation of a circulatory system (from kitchen waste to fertilizer to vegetables) at 2 sites (total of 3 sites)
- Vast expansion of volume of vegetables purchased from participating farms
  4 tons in fiscal 2000 → 44 tons in fiscal 2001
- Immense reduction in kitchen waste disposal
  270 tons in fiscal 2000 → 46 tons in fiscal 2001
  (recycling rate: 88%)





(Fujitsu, Fujitsu Laboratories)

First Semiconductor Plant to Achieve Zero Emissions (Fujitsu Iwate Plant)

The Fujitsu Iwate Plant has become the first semiconductor manufacturing facility in the industry to achieve zero emissions (including kitchen waste and purification vat sludge) — an unusual achievement for a Japanese plant. With kitchen waste, non-aqueous sludge, waste acids and waste oils all taken into account, the Iwate site formerly produced an annual volume of approximately 3,000 tons of waste. It achieved zero emissions through the establishment of recycling systems to convert waste into saleable products, accompanied by more efficient internal use. Processing costs have also been reduced by about 11% compared with fiscal 1993.

- Conversion of waste disposal facilities
  The toxic chemicals used in semiconductor production were formerly processed at on-site waste disposal facilities. These have now undergone conversion, with unpolluted areas assigned to other uses and the remainder undergoing clean-up.


Disassembly at a manufacturing facility (Fujitsu Iwate Plant)

- Reduction in waste chemicals volume
  Semiconductor manufacturing typically produces large volumes of waste liquid chemicals such as sulfuric and nitric acid. We formerly disposed of these as waste, but we have now introduced a recycling facility for sulfuric acid and reused recycled sulfuric acid at our plants.


A sulfuric acid recycling facility (Fujitsu Iwate Plant)

Promotion of Waste Recycling (Fujitsu Isotec)

Fujitsu Isotec is undertaking various recycling initiatives to reduce the volume of waste. The company's recycling facility separates waste into 52 varieties, 27 of which are converted into saleable products. Their recycling efforts cover an extensive range of factors.

- Resource recycling with polyethylene bags, films and air caps
  We formerly recycled such waste by sending it to steel makers for use as blast furnace reduction agents (as a substitute for coke). We have now introduced a waste plastic recycling facility that turns them into saleable plastic pellets suitable for use in plastic artificial wood materials.


Separated film


Volume reduction


Pelletization

Sale


Recycling polyethylene as an artificial wood material

- Use of sludge as cement raw material
- Processing of waste plastic into solid fuel
- Development of purification vat sludge processing technology
- Expansion of program of converting kitchen waste into organic fertilizer

Chemical Emission Reduction

Achieving assured reductions in chemical emissions through technological development by Group companies and a management system making effective use of IT.

Influenced by the worldwide recession in the IT industry, we revised our business plans in fiscal 2001, reducing its chemical use and emissions accordingly. Even under these conditions, the Group companies continued to pursue positive efforts to reduce chemical emissions and achieved their targets for fiscal 2001.

We have deployed a Fujitsu chemicals management system for integrated management by intranet of chemical handling methods, information on relevant law and the chemical usage and emissions situations of the various plants, departments and production lines.

We have also implemented a stricter management system based on our own standards to handle chemical pollutants in accordance with Japan's new PRTR (Pollutant Release & Transfer Register) Law.*1

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

Chemical Emission Reductions Achieved

Fiscal 2001 Results

Under the Fujitsu Environmental Action Protection Program (Stage III), Fujitsu Japan and the Fujitsu Group share the goal of cutting emissions of key chemicals by 30% by the end of fiscal 2003 relative to fiscal 1998 results. Group chemical emissions*2 totaled 57.9 tons in fiscal 2001, a reduction of 174.3 tons (74%) from the fiscal 1998 total. Fujitsu's chemical emissions totaled 8.6 tons in fiscal 2001, a reduction of 57.9% from the fiscal 1998 total. Our goals has have thus been achieved.

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

Fiscal 2001 Analysis

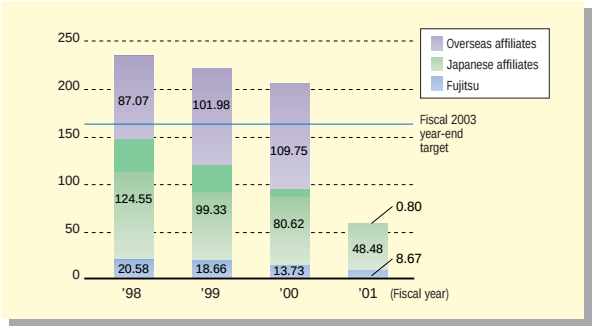
The usage and emissions of chemicals decreased with respect to targets in line with a review of the Fujitsu Group's business plans. In addition, positive efforts by the various Group companies to promote the exchange of technologies and know-how with respect to emissions reduction enabled six Fujitsu sites and 12 domestic affiliates, with the exception of four overseas sites, to achieve their targets for fiscal 2001. We are continuing to work to achieve our reduction goals through focused improvement efforts.

Targeted Chemical Substances (17)*3

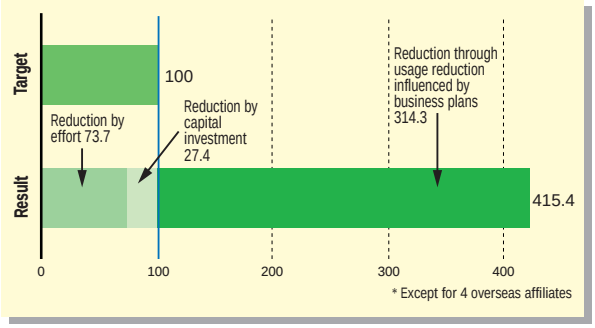
- Xylene
- Toluene
- Nickel and related compounds
- Copper compounds
- Formaldehyde
- Fluorine compounds
- Hydrazine derivatives
- Phenols
- 3,3-dichloro-4,4-diaminodiphenylmethane
- Manganese compounds
- Lead compounds
- Bromine compounds
- Cadmium compounds
- Chromium compounds
- Arsenic compounds
- Cyanide compounds
- Phosphine

*3 The figures exclude emissions of substances in cases where further reduction would be technically difficult (such as fluorine compounds in wastewater at Japanese sites, for example, where appropriate reduction measures are already in place).

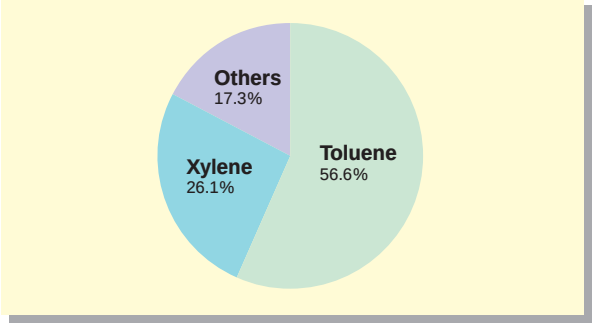
Transitions in Fujitsu Group (Unit: tons)



Comparison of Results (Targeted reduction volume for fiscal 2001 : 100)



Proportion of Key Chemical Emissions in Fiscal 2001



*1 Please refer to page 52 for definition.

Active measures for chemical emissions reduction through capital investment and efforts

Principal Measures Undertaken

- Reduction of 1 ton of toluene and xylene emissions by cutting paint use through replacement of coated materials with stainless steel materials at the Fujitsu Oyama Plant (reduction through efforts)
- Reduction of 0.8 ton of xylene emissions by proper management of the exhaust recirculation system (managing the ability of xylene absorption materials, etc.) at the Fujitsu Iwate Plant (reduction through efforts)
- Reduction of 0.5 ton of toluene emissions by cutting use of developer chemicals that include toluene through a change in PCB development processing by Shinko Electric Industries (reduction through efforts)

Use of stainless steel materials to replace coated parts at the Fujitsu Oyama Plant

Measures for PRTR Law Compliance

Although the PRTR Law requires reporting of data on any of 354 Class I designated chemicals for which annual usage/processing exceeds 5 tons, we are compiling survey data and issuing reports regarding these substances based on a 0.1-ton minimum as well as submitting the required reports to public administration offices. As concerns chemical emissions with effects on health and the plant environment, meanwhile, we are conducting risk communication to deepen understanding of toxicity and the accompanying dangers, and introducing prevention measures. Chemical use by the Fujitsu Group in fiscal 2001 was approximately 6039.6 tons. Chemical use by Fujitsu, meanwhile, was approximately 1285.6 tons, an increase of 68% compared with fiscal 2000. This rise was due to a reduction in the target value for examination from over 1 ton to over 0.1 ton.

Survey Results for Chemicals Covered by the PRTR Law in Fiscal 2001

Fujitsu Group

(Unit: kg)

Name of Class I designated chemicals*	Number of Class I designeted chemicals*	Use/processing volume	Emission volume*				Transferred volume*		Volume recycled/ removed/ consumed (kg)
			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)	
Manganese and its compounds	311	3006264.6	11.7	56.3	0.0	0.0	0.0	77159.8	2929036.9
Copper aqueous salt (except complex salt)	207	1047642.9	14.7	1225.9	0.0	0.0	14.7	131033.9	915353.8
2-aminoethanol	16	417961.3	474.0	1256.7	0.0	0.0	0.0	293543.3	122687.3
Xylene	63	317961.8	13456.4	0.0	0.0	0.0	0.0	40830.4	263675.1
Chlorodifluoromethane (HCFC-22)	85	230000.0	2300.0	0.0	0.0	0.0	0.0	227.7	227472.3

* Refers to items required for reporting by the PRTR Law
* Totals differ slightly due to rounding off.
* These survey results are for 11 Fujitsu sites (plants and offices) and 26 domestic and 4 overseas affiliates (manufacturing).
* Please refer to the Data Appendix (pages 47-48) for results for all chemicals handled in volumes exceeding 0.1 ton by Fujitsu and the Fujitsu Group (manufacturing).

Chemical Management System (eco-HCMS for Internet)

From fiscal 2000, Fujitsu has deployed a chemical management system to collate MSDS data (constituents, handling methods, relevant laws, etc.), of about 4,000 substances to control the chemical usage status of each manufacturing plant and line and to maintain a chemical balance totally from purchasing and use to disposal. This system also serves as a support tool for chemical balance reporting in accordance with the PRTR Law. The system can be accessed from every plant through terminals connected to the internal intranet. Similar measures are currently being implemented throughout the Fujitsu Group.

eco-HCMS Internet chemical management system

Based on our fiscal 2001 results and analysis of those results, we will reduce chemical emissions by implementing the following countermeasures, recognizing the fact that trends in business activities (product manufacturing) significantly influence increases and decreases in chemical use.

- Introduction of green processes for manufacturing products with the least possible use of chemicals from the development/design stage onward.
- Horizontal expansion of the various companies' technologies & know-how whose effectiveness for chemical emissions reduction is recognized Group-wide.

Plant Environmental Control (Environmental Risk Countermeasures)

Implementing risk-reduction measures to protect the environment.

We are conducting a variety of risk-reduction measures to protect the environment in and around our manufacturing sites. Besides purifying the soil and groundwater, we are working to restrict emissions of dioxins and environmental endocrine disrupters and to totally eliminate use of substances that contribute to depletion of the ozone layer. As always, our overall aim is to achieve the most harmonious possible balance between our manufacturing activities and the global environment.

Fujitsu was again involved in no legal violation, lawsuit or accident concerning the environment in fiscal 2001.

Soil and Groundwater Purification

Soil purification efforts aimed at removing volatile organic compounds continue, as in the previous year, at certain sites of Fujitsu and affiliated companies where concentrations exceed regulatory limits. We conducted soil surveys on the sites of three of our demolished company operations and one operation to be demolished, based on ordinances and internal standards (regulations concerning soil and groundwater surveys) to confirm the soil pollution conditions. One of the sites is now conducting soil purification treatment, and the results of the survey based on ordinances have already been reported to the prefectural governor. We take the Bill against Soil Pollution*1 into consideration in our plant surveys and conduct evaluations of contamination to determine whether measures are required. We also survey flooring materials from demolished buildings for contamination in order to determine the contamination conditions and introduce countermeasures when required to prevent the spread of any contamination to the environment.

Purification equipment (Fujitsu Kawasaki Plant)

Dioxin Emission Prevention Measures

The Fujitsu Group as a whole (5 Fujitsu plants and 10 affiliates with incineration facilities) has discontinued use of its incineration facilities and is continuing efforts to prevent generation of dioxins. Among the plants concerned, the Fujitsu Numazu Plant completed demolition of its incineration facility in March 2001, in accordance with the provisions of a Notice Concerning Prevention of Health Damage from Dioxins*2 upon Waste Incineration Facility Demolition (Urgent Measure) issued by the (former) Ministry of Health and Welfare in September 2000.

Demolition of an incinerator chimney interior (Fujitsu Numazu Plant)

Total Elimination of Ozone-depleting Substances

We have completely eliminated the use of ozone-depleting substances 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 equipment of this type is renovated, we make use of the opportunity to replace the coolants with non-CFC alternatives.

Results Concerning Ozone-depleting Substance Elimination

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

eco.fujitsu.com/en/info/eco20010215a.html

*1,2 Please refer to page 52 for definitions.

Environmental Facility Status Surveys

Since fiscal 2000, we have conducted surveys of all the Fujitsu Group manufacturing and R&D facilities. These surveys, which are based on internally developed standards, assess the environmental maintenance and management status at these sites. The aim of the program is to improve the levels of environmental facility maintenance to prevent accidents and achieve stable plant operation.

Main Survey Criteria

- Reporting system for environmental facility management status
- Overview of each facility (capacity, processing systems)
- Facility operation management status (daily supervision, maintenance, emergency countermeasures)
- Degradation countermeasures (checks on degree of aging, renovation plans, etc.)
- Survey/countermeasure status for environmental risks
- Measures for waste product management and energy saving

Anticipated Program Benefits

- Accident prevention
- Stable plant operation
- Improvement in ongoing supervision levels
- Exchange of information and views among those responsible for environmental facility management within Fujitsu Group

Results of Fiscal 2001 Surveys

Fujitsu facility management surveys: 4 sites
Domestic affiliates: 3 companies

Working Toward Paperless Operations

We are promoting reductions in paper consumption through initiatives such as the use of PC networks and online manuals. In fiscal 2001, we cut paper use by approximately 50 million A4 sheets.

Paper Use Reduction Results (Estimated A4-sheet Equivalents) (Unit: million sheets)

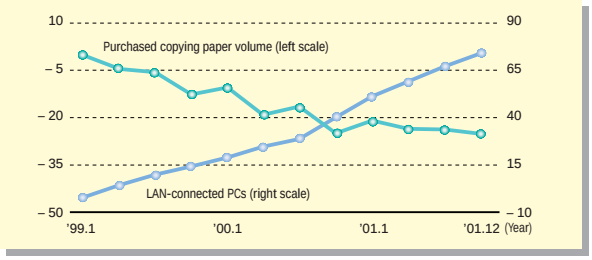
Fiscal 2000 use	750
Fiscal 2001 use	700
Reduction achieved	50

Fujitsu and domestic affiliates

An internal survey has demonstrated a clear trend toward a decline in the volume of paper purchased as the number of computers linked to company networks has risen. We believe this to result from the conversion of internal documents and administrative procedures to electronic formats. Future plans call for increased electronic formatting of sales communications to promote further reductions.

The Relationship between LAN Systems and Paper Purchasing Volumes

(Unit: %)



Measures against Environmental Endocrine Disrupters

We are evaluating annual usage by our manufacturing plants and R&D facilities of 65 chemicals designated as exerting a potentially harmful effect on the human endocrine system to facilitate future reduction. We are managing the usage volume even of particles of these substances at all our plants and affiliates. In fiscal 2001, the volume of environmental endocrine disrupters used by the Group was approximately 90,613 kg. The volume used by Fujitsu was approximately 183.1kg, an 11.4% reduction compared with fiscal 2000.

Usage Status of Environmental Endocrine Disrupters

(Fujitsu Group Fiscal 2001)

Substance	Substance number*	Amount used (kg)	Principal uses
Bisphenol A	37	83469.3	Raw material for resins
Di-n-butyl phthalate	40	6589.2	Shaping agent
Alkyl phenol (from C5 to C9) Nonyl phenol, 4-octylphenol	36	534.1	Degreasing agent for painted parts
2-ethylhexyl phthalate	38	20.2	Adhesive for affixing electronic parts
Permethrin	59	0.4	Insecticide for mites
Total		90613.1	

Usage Status of Environmental Endocrine Disruptors (Fujitsu Fiscal 2001)

Substance	Substance number*	Amount used (kg)	Principal uses
Alkyl phenol (From C5 to C9) Nonyl phenol, 4-octylphenol	36	91.5	Degreasing agent for painted parts
Di-n-butyl phthalate	40	73.0	Adhesive for test items
2-ethylhexyl phthalate	38	17.1	Adhesive for affixing electronic parts
Bisphenol A	37	1.6	Raw material for resins
Total		183.1	

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

eco.fujitsu.com/en/info/eco20010814_e.html

Water/Air/Noise/Vibration Quality Countermeasures

Nineteen Fujitsu Group and five Fujitsu sites exceeded our internal standards for control of air, noise, vibration and water quality conditions in fiscal 2001. None of them violated relevant laws or ordinances.

Main countermeasures

Violations of Internal Standards

Violations of internal standards	Countermeasures
Noise generation by dust removal equipment (58 dB internal standard 55 dB)	Constructed a soundproofing wall.
Fluorine value exceeding the internal standard	Added new removal equipment.
Excessive volume of n-hexane extraction	Checked kitchen grease traps and standardized the service manual.

Environmental Contribution through Software Services

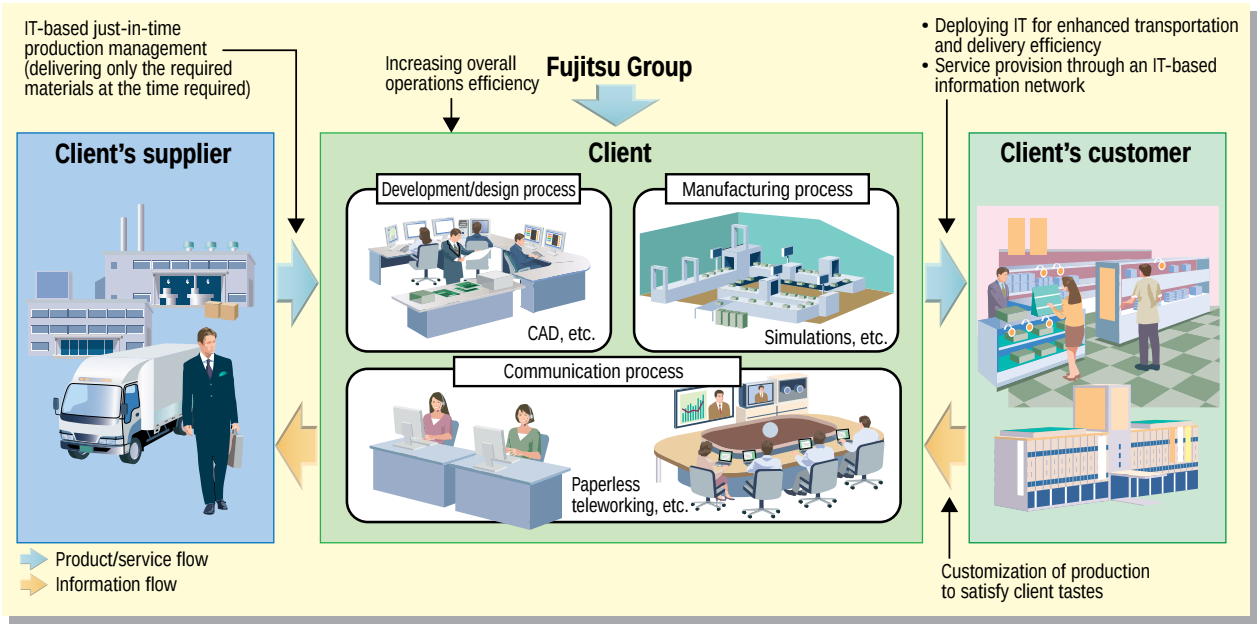
"IT can contribute to the global environment..." This desire is shaping the Fujitsu Group's vision in various ways.

IT (information technology) can be highly effective in reducing the environmental burden imposed by society as a whole, by increasing the efficiency of human and materials transportation and production activities. Besides working hard to respond to the needs of the environment in its own business activities and products, the Fujitsu Group is helping to reduce resources and energy consumption by providing software services that make full use of IT (IT solutions) to enhance clients' operating efficiency. Our vision of contributing to the global environment through IT has already begun to bear rich fruit.

The relationship between software services and environmental burden reduction

Various effects, such as the curbing of resources and energy consumption through increased efficiency in the areas of production, transportation and delivery, can be viewed as environmental contributions achieved through the provision of software services to clients. The following is a summary of the relationships supporting such effects.

The relationship between software services provision and environmental burden reduction



Introduction of software services assessments

In fiscal 2001, we began introducing software services assessment and conducting trials aimed at provision of eco-friendly software services. These assessments facilitate quantitative calculation of the environmental effects exerted throughout the life cycle of the software services we offer clients.

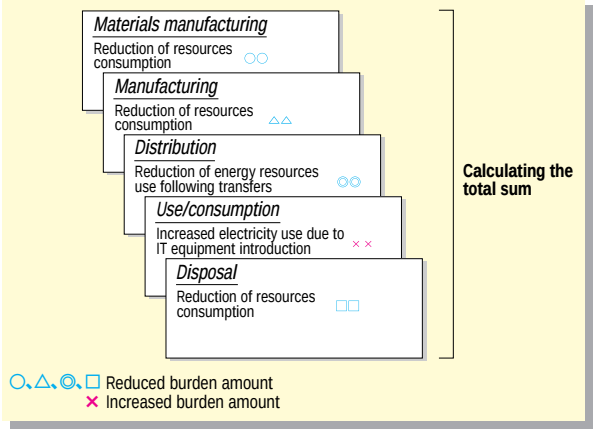
Assessment Overview

(1) Identifying factors contributing to environmental burden reduction (reduction of resources consumption, reduction of energy resources following transfers, etc.)
(2) Calculating factors that contribute to increasing/decreasing the burden in various life cycle stages (materials manufacturing/ production/distribution/use or consumption/disposal) where any effects of the factors in item (1) occurred.
(3) Calculation of the total sum of the effects when the effects occurred in multiple stages.

* We employed CO_2 in calculating the index for fiscal 2001.

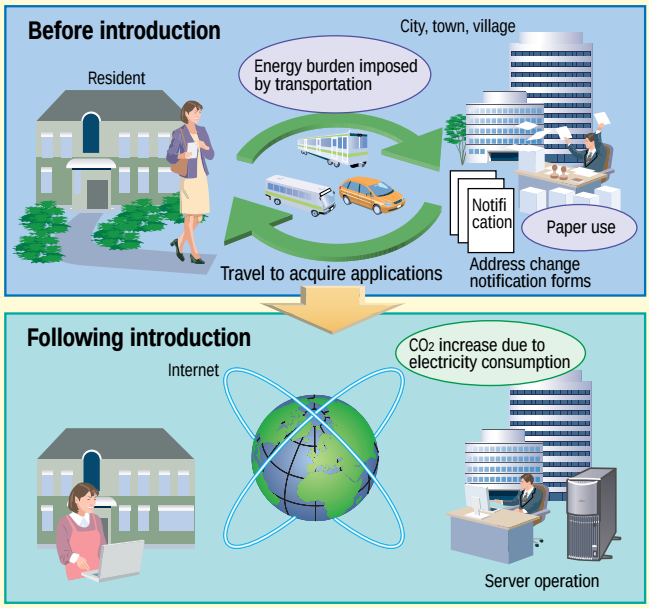
We employ this approach in an effort to provide software services that increase our clients' resources and energy efficiency further.

Calculating the overall environmental burden reduction effect



Cases of Software Services Assessment

The environmental effect of processing address change notifications electronically (Fujitsu test calculations)



[Effect]

Electronic notification of address changes produces various environmental burden reduction effects, including reduced use of transportation to local government offices (energy saving) and a reduced need for various notification forms (resources saving). These benefits are accompanied by the generation of such new environmental burden factors as increased electric power consumption stemming from the introduction of servers. We have calculated the overall effects as follows with all these factors taken into consideration.

CO_2 reduction by eliminating paper use
(Factor reducing the environmental burden)

+

CO_2 reduction by eliminating transportation use
(Factor reducing the environmental burden)

+

CO_2 increase resulting from server use
(Factor increasing the environmental burden)

=

CO_2 reduction volume: 30%

netCommunity (Model room for electronic administration)

We are employing the netCommunity to introduce various examples of environmental burden reduction through the practical deployment of IT. The netCommunity is a model room permitting actual experience of the electronic society under the e-Japan Plan*1 being promoted by the Japanese government. The degree to which the environmental burden imposed by society as a whole can be reduced through such administrative solutions as IT-based electronic application and bidding is being introduced through easily understandable demonstrations. Please refer to the following URL for details concerning the netCommunity and its applications.

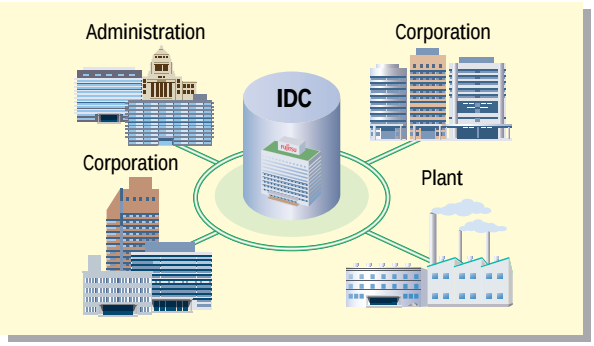
Electronic administration model room

salesgroup.fujitsu.com/journal/250e/sp1.html

IDC (Internet Data Center) support for resources and energy savings

The information systems our clients construct make extensive use of equipment resources such as servers and air conditioners and consume large amounts of electric power. Fujitsu's outsourcing services utilizing the IDC* contribute to clients' resources- and energy-saving efforts by enabling sharing of servers, air conditioners and power equipment. In the future, the IDC will pursue greater resources and energy consumption efficiency in its operation as well as implementing measures concerning advances in equipment security and safety to offer optimized client support.

* IDC: A data center assuring optimal Internet networking, equipment and operating environments as infrastructure supporting the servers, networks and services Fujitsu operates.



salesgroup.fujitsu.com/journal/252e/sp1_2.html

- Establishing goals for software services in the Fujitsu Environmental Protection Program
- Establishing an internal system to certify eco-friendly software services

*1 Please refer to page 52 for definition.

Environmental Solutions

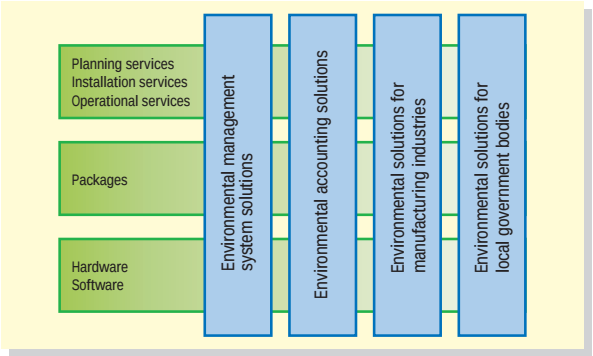
@EcoVision: Eco-friendly solutions supporting the transition to a cyclical society making use of know-how in environmental management cultivated over the years.

The Fujitsu Group's desire "to contribute to the global environment by making optimal use of IT" has been concentrated in @EcoVision. Corporations, and local government bodies are expected to lead society today in the creation of a new cyclical model. This includes activities such as manufacturing of eco-friendly products, proper waste treatment, promotion of recycling, green procurement, ongoing improvement through ISO14001 certification acquisition and public disclosure of environmental information. @EcoVision comprises environmental solutions backed by the accumulated experience of the Fujitsu Group and designed to help customers address such environmental management issues. We provide accurate support for business activities in the 21st-century Environmental Era.

Overview of @EcoVision

@EcoVision solution packages bring together the accumulated experience of the Fujitsu Group and provide customers with up-to-date technical information employing the latest technology. @EcoVision solutions, which fall into four main categories, add value in two primary ways: accurate assessment of environmental information can help in effectively lowering the burden imposed by business operations; and successful implementation of effective environmental management practices reinforces new sources of competitiveness.

@EcoVision Solution Types



Environmental Management System Solutions

These consist of consulting and operations support services designed to help customers construct an environmental management system prior to ISO14001 certification acquisition.

- EVERSLIM: EMS support systems
- SLIMOFFICE: Environmental performance management systems
- PRODocument: Document management systems, etc

An EVERSLIM EMS support systems

Environmental Accounting Solutions

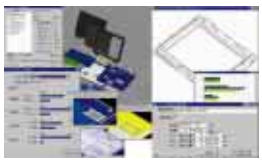
Fujitsu was one of the first Japanese companies to introduce environmental accounting and disclose quantitative costs and effects. We offer services based on our environmental accounting expertise to support other firms in both the planning and implementation phases.

Environmental Accounting System

Environmental Solutions for Manufacturing Industries

We offer system planning, construction and operations management services to help companies create environmental information systems to support their operations at every stage, from design/development and procurement, to production, sales/maintenance and recycling.

- Environmental database management systems
- VPS/Eco Design eco-friendly design support systems
- LCASLIM: LCA support systems
- eco-HCMS for Internet chemical substances management systems
- Manifest for Windows and other waste management systems



A VPS/Eco Design eco-friendly design support system

Environmental Solutions for Local Government Bodies

We provide support services covering the planning, construction and operation of environmental administration systems capable of handling tasks such as waste management and other environmental protection activities for environmentally conscious local government bodies.

- NEW FEINS: Environmental information management packages
- CLENALIFE waste collection information management systems

A CLENALIFE waste collection information management systems

An @EcoVision Case Study

We worked with foods producer Fujiya Co., Ltd., to introduce an EMS support system for analysis and evaluation of the environmental burden imposed by all of the company's manufacturing facilities, and to help it to gain ISO14001 certification.

Fujiya's Efforts to Become a More Eco-Friendly Corporation

Popular among Japanese for its Peko-chan mascot character and committed to a business philosophy of providing only foods with a positive effect on health, Fujiya was seeking to minimize the environmental burden of its various operating activities. It also wished to promote a more eco-friendly image, and had published its own environmental charter. As part of this overall initiative, Fujiya began working to gain ISO14001 certification. To date, its Fuji-Susono Plant, Hiratsuka Plant and Hadano Plant have all succeeded in acquiring certification.

Fuji Susono Plant

Plant Eco-Burden Assessment and Plan Development Support

Fujiya invited us to serve as consultants for its ISO14001 certification acquisition process. We helped the company assess the environmental burden imposed by its operating activities and formulate an action plan to improve the situation through the provision of the EVERSLIM @EcoVision EMS support system. Once a plant's overall environmental burden and factors concerning the environment are input, the EVERSLIM system calculates numerical data on the degrees of impact imposed to produce an objective, comprehensive analysis/evaluation. Fujiya used the results provided by the new system to construct a detailed action plan with clear performance goals and acquired ISO14001 certification with the cooperation of all the parties concerned. The process is continuing at the company's Nogi Plant, which produces confectioneries.

Fujiya Co., Ltd.
Vice President & Chairman, Environmental Countermeasures Committee
Hiroshi Hasegawa

Achieving enhanced employee awareness of environmental issues and more effective management

As a maker of confectioneries and other foods, Fujiya depends on the bounty of nature for its main raw materials, which are mostly agricultural produce and livestock products. Environmental protection is consequently of critical importance to us. We have always been conscientious in abiding by environmental regulations. The goal of acquiring ISO14001 certification required us to construct an environmental management system (EMS).

As a result of introducing @EcoVision solutions, awareness of environmental issues among individual employees has risen noticeably. We have reduced waste and eliminated losses. The objective analysis of the environmental burden of our activities has yielded efficiency gains. Not only have we installed an EMS, but we have also instituted a continuous cycle of improvement. Next, we plan to broaden our activities by introducing environmental accounting and publishing environmental reports.

Environmental Social Service Activities

Enlisting every employee as a volunteer to protect our green Earth.

We promote greenification activities at our manufacturing and office sites, both in Japan and overseas, to keep Earth green. Employees participate in these activities on a voluntary basis as a personal contribution to their community, sometimes in collaboration with local government organizations or citizens' groups. We continue to promote opportunities for all our employees to join together to protect the Earth's environment.

Overseas Greenification Activities

Malaysia

In January 2002, we undertook a forestation project in Malaysia with the support of various organizations, including the Malaysian government, the Japanese consulate in Kota Kinabalu, JICA (Japan International Cooperation Agency) and JIFPRO (Japan International Forestry Promotion & Cooperation Center). Desertification and loss of forest are becoming serious issues in Malaysia, as slash-and-burn farming techniques and commercial logging increase. To promote planting of a new forest, we gathered project participants and donations from throughout the Fujitsu Group and planted 1,000 or more trees (such as Dipterocarpaceas) in an area of approximately 7 hectares, referred to as the "Fujitsu Group Malaysia Eco-Forest Park," in Kinarut in the state of Sabah.

Thailand

Fujitsu Thailand was awarded First Prize in the King of Thailand 50th Anniversary Planting Competition, and its president was acknowledged by the Princess of Thailand in March 2002. These honors were in recognition of the company's second tree-planting activity (planting of 80,000 trees on 80 hectares) in Uthaithani in 2000.

eco.fujitsu.com/en/info/eco20010222a_e.html

Domestic Greenification Activities

As part of a program to promote local biodiversity, the Fujitsu Oyama Plant established an on-site biotope*1 in March 2001. This has served several useful purposes. Besides providing a calm oasis for employees, it helps to purify the local aquatic environment by providing a space for reeds, rushes, grasses and other marine plants to grow. It also supports monitoring of the health of local fish (including several varieties of carp) swimming in the plant wastewater run-off that flows into a local river. The biotope is a good example of the vision of Fujitsu's founder to build plants that harmonize with their natural surroundings.

Biotope (Fujitsu Oyama Plant)

Volunteers planting trees in the forestation project (Malaysia)

Paper from Sustainable Timber Supplies Used in 2002 Calendar

To help conserve our forests and contribute to measures against global warming, we switched to paper stock obtained from sustainable timber supplies for production of the 2002 company calendar (with a print run of about 500,000). Oji Paper supplied approximately 200 tons of paper stock from specially planted acacia forests in Papua New Guinea for production of the calendar.

Sustainable forest management in Papua New Guinea (Photo courtesy of Oji Paper)

Cooperation with External Organizations

Fujitsu is an enthusiastic contributor to activities conducted by various organizations outside the company, including the following:

- Nippon Association of Consumer Specialists
- Environmental Issues Research Committee, Kanagawa Prefecture Business Association
- Network for Environmental Reporting
- Nippon Environment Club
- Japan Environmental Management Association for Industry
- Environmental Preservation Committee, Communications Industry Association of Japan
- Environment and Product Safety Committee, Japan Electronics and Information Technology Industries Association
- Environmental Committee, Japan Electronics and Information Technology Industries Association

*1 Please refer to page 52 for definition.

FUJITSU Eco Club

This organization was established in June 2001 to help employees promote and organize voluntary environmental activities. Operating on a company intranet, it connects affiliates, divisions and other groups and individuals and allows them to exchange information and views. Volunteers can sign up for activities announced on bulletin boards. The FUJITSU Eco Club provides firm support for all our greenification activities and other voluntary environmental activities at home and abroad.

The FUJITSU Eco Club homepage

Cases of Volunteer Environmental Activities

Every site organizes environmental volunteer activities that contribute to the local environment. Many of these activities are conducted in cooperation with local residents or governmental organizations.

Participation in Local Clean-Up Activities

Employees of the Fujitsu Minami-Tama Plant participate with local residents each year in a voluntary clean-up campaign of the nearby Tama River sponsored by the Ministry of Land, Infrastructure & Transport and the City of Inagi.

Voluntary clean-up Campaign at the nearly Tama River

Participation in Local Volunteer Reforestation Activities

Every year since fiscal 1999, employees of the Kanagawa Branch of Fujitsu Support & Services have taken part in volunteer projects sponsored by a local government organization in Kanagawa Prefecture and organized to promote reforestation.

Participation in Volunteer Tree Planting Activities

Employees of Fujitsu Hong Kong and their families participated in a “Let’s Rebuild the Forest Together” volunteer tree-planting activity in Sai-kung Park hosted by the OISCA NGO in September, 2001. Fifty participants planted about 300 trees.

Volunteer tree-planting activities

Participation in Volunteer Kitchen Garden Activities

Employees of the Fujitsu Numazu Plant, along with colleagues from affiliates and their families, have begun a new kind of volunteer activity involving the planting of kitchen gardens on the site premises. These activities currently involve 35 regular participants. The plots are producing a variety of vegetables, including eggplants and potatoes (registration continuously open).

Volunteer kitchen garden activities

Distribution & Environmental Protection

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

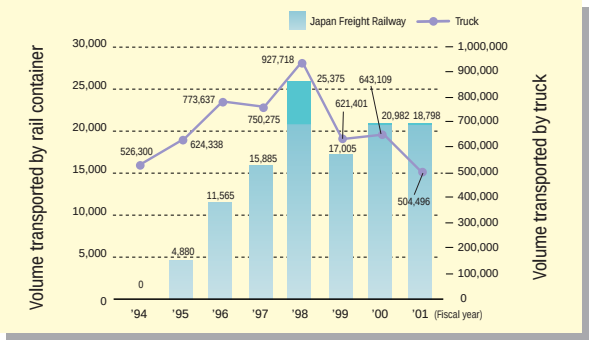
The distribution activities linking production with consumers offer opportunities for environmental improvement. Fujitsu Logistics, which handles the distribution of products, parts, materials and recycled items for the Fujitsu Group, endeavors to reduce the environmental burden of the distribution process as a whole — from packaging design to product storage and transportation. We will continue to develop and implement a variety of measures in this area.

Principal Environmental Measures and Progress Status

Promotion of Modal Shift*1

To reduce emissions of CO_2, NOx and SOx in its transportation processes, Fujitsu Logistics has been shifting freight loads from road transportation alone to combined road/rail transportation since fiscal 1995.

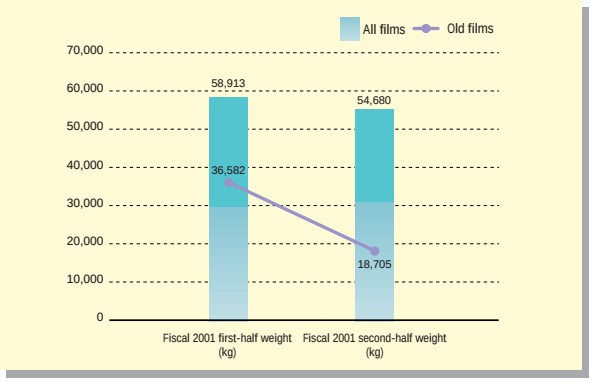
Transportation Volumes by Distribution Mode (Unit: tons)



Reduction in Use of Stretch Film

As part of its EMS-related activities, the Tokyo Distribution Center of Fujitsu Logistics is working to reduce the amounts of stretch film used to prevent damage to loads during transit. The heavy-duty film used previously has been replaced with a lighter, thinner film since the second half of fiscal 2001. The use of special band- or belt-type tools for deliveries between certain locations has also dramatically reduced purchasing of new film (Converted to amounts).

Changes in the Volume of Old Stretch Films Purchased (Unit: kg)



New Distribution-related Initiatives

Reduced Use of Wood through Introduction of Paper Pallets

To protect our forests and eliminate the need for wood sterilization (by fumigation), Fujitsu Logistics is replacing the wooden packing cases used for exports of HDDs and PCs with pallets made from recyclable paper.

Features

- Use of newly developed pallet material (recyclable, waterproof reinforced cardboard)
- Used paper employed for majority (53.4%) of the cardboard raw materials
- Fumigation unnecessary (responding to more stringent European quarantine regulations for wooden packaging)
- Reduction of pallet weight (by 11~12 kg compared with wooden pallets)

A paper pallet

Development of Fall Testing Simulation Technology

Because they are easy to recycle and impose a lower environmental burden, we are applying paper-based shock-absorption materials more extensively as shipping packaging for mobile PCs. As a part of these activities, we established a highly accurate packaging structure simulation technology for cardboard boxes with a margin of error of only 10% compared with the results of actual fall tests. These results made it possible to secure the shock-absorption performance of paper-based shock-absorption materials and design structures. The technology is enabling us to find many more applications for the materials.

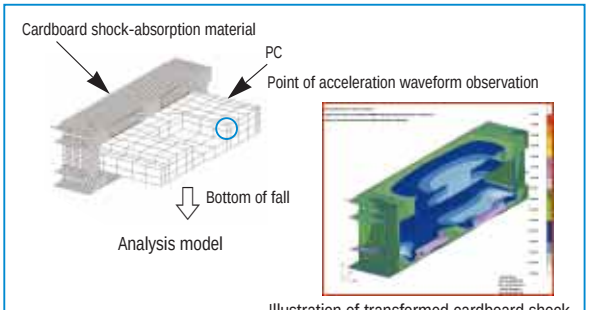


Illustration of transformed cardboard shock-absorption material at 4 ms after start of fall

*1 Please refer to page 52 for definition.

2002 Fujitsu Group Environmental Report

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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

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 (Headquarters)	September 1997
Kyushu Fujitsu Electronics (Kagoshima site)	October 1997
Fujitsu VLSI (Kozoji/Gifu area)	December 1997
Shinko Electric Industries (Takaoka Plant)	March 1998
(Arai Plant)	March 1999
(Wakaho Plant)	July 1999
Fujitsu I-Network Systems (Yamanashi Plant)	April 1998
Fujitsu Kiden (Niigata Plant)	April 1998
(Tokyo Plant)	October 1998
FDK (Sanyo Plant)	July 1998
(Kosai site)	October 1998
Fujitsu Components (Technical Development Center)	July 1998
Fujitsu Peripherals (Headquarters Plant)	August 1998
Shinano Fujitsu	August 1998
Fujitsu Quantum Devices (Headquarters site)	August 1998
Fujitsu Denso (Shimodate area)	September 1998
(Headquarters area)	November 2000
Fujitsu Miyagi Electronics	November 1998
Kyushu FHP	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 Sinter (Iwaki Plant)	March 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 (Tokyo Distribution Center)	December 1999
Fujitsu Support & Service	March 2000
Fujitsu Kyushu Digital Technology	March 2000
Fujitsu CoWorCo (Headquarters and main sites)	March 2000
Fujitsu Wireless Systems	April 2000
Fujitsu Business Systems (Support Services Headquarters)	July 2000
Fujitsu Oita Software Laboratories	October 2000
Yonago Fujitsu	February 2001
Fujitsu Devices (Headquarters and Central Distribution Center)	March 2001
Fujitsu Kansai Systems (Headquarters)	May 2001
Fujitsu Personal System (Headquarters)	August 2001
Fujitsu AMD Semiconductor (Kadota/Takaku Plant)	March 2002
Fujitsu Leasing (Headquarters)	March 2002

Fujitsu Group [Overseas]

Certified plant/site	Date of certification
Fujitsu ICL Espana (Malaga factory)	1998/04
Fujitsu Microelectronics Malaysia	1998/05
Fujitsu (Thailand)	1998/05
Fujitsu Quantum Devices Singapore	1998/05
Fujitsu Component Malaysia	1998/07
Fujitsu Computer Products Corporation of the Philippines	1998/11
Jiangsu Fujitsu Telecommunications Technology	1998/12
Fujitsu Network Communications	1999/04
Fujitsu Computer Products of Vietnam	1999/10
Fujitsu IT Holdings (FTSI-Batavia,illnois)	2001/06
Xian Fujitsu Telecommunications Equipment	2001/06
Nantong Fujitsu Microelectronics	2001/06
Fujitsu Telecommunications Europe	
(Birmingham)	2002/01
(Cambridge)	2002/01

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
Kanuma Plant	December 1997
Fujitsu Laboratories (Atsugi area)	November 1998
Minami-Tama Plant	February 1999
Western-Japan Regional Sales Group (In Kyushu R&D Center)	February 2000
Kawasaki area (Kawasaki Plant/Akiruno TC, other)	March 2000
Tatebayashi Systems Center	March 2000
Kansai Systems Laboratory	January 2002

Total: 77 sites

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. These standards are revised periodically to take into account changes in the regulatory environment, moves to encourage a cyclical society and the establishment of eco-labeling systems.

Common Standards Applicable to All Products

Major category	Characteristic	Common standards	
Product environmental assessment	Overall assessment		Overall score of at least 90 points, with no score of zero on any assessment criterion
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, number of parts	(3)	Achievement of at least one of the following criteria for product weight, volume and number of parts, plus substantial improvements in remaining criteria 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 easily recyclable and recyclable plastics used	(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 (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^2; 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 products, wireless equipment covered by radio spectrum-related legislation)
		(12)	Creation of manuals for equipment disassembly (Not applicable to electronic parts, secret components)
Limitation of chemicals contents	Use of PBB, PBBO or chlorinated hydrocarbons	(13)	Freedom of plastic parts from PBB (polybrominated biphenyl), PBBO (polybrominated biphenyl oxide), or chlorinated hydrocarbons
		(14)	Freedom of printed circuit boards from PBB (polybrominated biphenyl), PBBO (polybrominated biphenyl oxide) or chlorinated hydrocarbons
	Lead	(15)	Freedom of in-house manufactured products from lead solder
Prevention of global warming	LCA	(16)	Assessment of product carbon dioxide emissions
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 disclosure	—	(19)	Inclusion in product documentation of information on waste product collection and recycling system (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)

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 information disclosure	LSIs	(2)	Ability to issue usage-free certificates for any chemicals whose use in a given product is prohibited
		(3)	Ability to label products with the amounts of compounds containing any of the following chemicals: arsenic, halogens, antimony, organic phosphorus, nickel
Chemical substances composition regulations	LSIs	(4)	Ability to use lead-free solder in manufacturing
Packaging materials	Recyclable design	(5)	Restriction of use of expanded plastic foam in packaging materials to maximum of 20% of total packaging weight

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

Major category	Characteristic		Category-specific standards
Resource conservation	Recycled plastics/reused parts (magnetic disk devices, scanners)	(1)	Use of at least one or more recycled plastics or reused parts for product parts
Energy saving	Compliance with the Energy Saving Law (magnetic disk devices)	(2)	Inclusion in product catalogs of a display based on the Energy Saving Law, plus attainment of target standards for fiscal 2005 (top runners) specified in the Energy Saving Law
	Compliance with the International Energy Star Program (scanners)	(3)	Attainment of restraint values for the low-electricity mode specified in the International Energy Star Program and completion of application for registration
Chemical substances composition regulations	LCD units and products employing them	(4)	Assessment of mercury content in LCD fluorescent pipes
		(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 3kg or more)

Major category	Characteristic		Category-specific standards
Resource conservation	Recycled plastics/reused parts (electronic calculators, magnetic disk devices, scanners)	(1)	Use of at least one or more recycled plastics or reused parts for product parts
Energy saving	Compliance with the Energy Saving Law (electronic calculators, magnetic disk devices)	(2)	Inclusion in product catalogs of a display based on the Energy Saving Law, plus attainment of target standards for fiscal 2005 (top runners) specified in the Energy Saving Law
	Compliance with the International Energy Star Program (electronic calculators, scanners)	(3)	Attainment of restraint values for the low-electricity mode specified in the International Energy Star Program and completion of application for registration
Chemical substances composition regulations	LCD units and products employing them	(4)	Assessment of mercury content in LCD fluorescent pipes
		(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 conservation	Maintenance parts supply	(1)	Guaranteed supply of maintenance parts for a minimum of 5 years after completion of manufacture
	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 composition regulations	Primary/secondary batteries	(6)	Freedom from cadmium, mercury and lead
	CRT	(7)	Freedom from cadmium
Energy saving	Compliance with the Energy Saving Law	(8)	Inclusion in product catalogs of a display based on the Energy Saving Law, plus attainment of target standards for fiscal 2005 (top runners) specified in the Energy Saving Law
	Compliance with the International Energy Star Program	(9)	Attainment of electricity consumption values during low-power mode operation and in the deep sleep display mode specified in the International Energy Star Program and completion of application for registration
	Guaranteed operation after long-term neglect	(10)	Normally operational after four or more weeks without power supply (with disappearance of such timer data as date and time not considered a fault)
Environmental information disclosure	—	(11)	Inclusion in product documentation of information on long-term use
		(12)	Inclusion in product documentation of information on cadmium, cyanogens, lead, chromium, arsenic, mercury, fluorine, boron, selenium and antimony, if included in the product
		(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

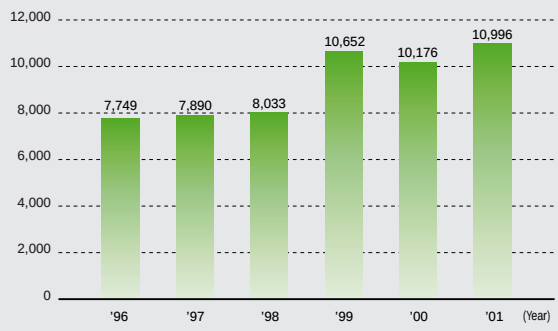
Category-specific Standards (Printers/large printers)

Major category	Characteristic		Category-specific standards
Resource conservation	Maintenance parts supply	(1)	Guaranteed supply of maintenance parts for a minimum of 5 years after completion of manufacture
	Recycled plastics/reused parts	(2)	Use of at least one or more recycled plastics or reused parts for product parts
Recyclable design	Plastic parts	(3)	Use of polymers (homo-polymers, co- polymers) or polymer alloys for any plastic parts of products weighing 25 grams or more
		(4)	Use of maximum of four kinds of separable polymers (homo-polymers, co-polymers) or polymer alloys for any plastic parts of cases weighing 25 grams or more
Chemical substances composition regulations	Primary/secondary batteries	(5)	Freedom from cadmium, mercury and lead
Energy saving	Compliance with the International Energy Star Program	(6)	Attaianment of electricity consumption values in the low-electricity mode specified in the International Energy Star Program and completion of application for registration
Collection/recycling systems	Toner cartridges	(7)	Collection and recycling of toner cartridges
Printing paper	—	(8)	Ability to use recycled paper from waste paper for printing
Packaging materials	Recyclable design	(9)	Restriction of use of plastic foam in packaging materials to maximum of 20% of total packaging weight

Post-use Product Collection Results

Changes in collection volume: We are striving to recycle post-use products effectively Group-wide through the Fujitsu Recycling System with the aim of achieving effective use of global resources and a cyclical economic society system.

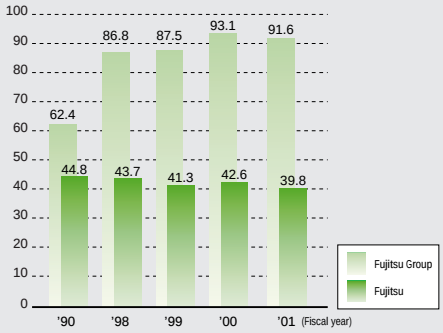
Changes in Collected Post-use Products (Unit: tons)



Energy Used Volume Results

Changes in Energy Usage Volume: We are introducing equipment such as co-generation systems and improving our facilities' operating efficiency in an effort to save electric power, which accounts for 70~80% of our energy use. We are working at the same time to reduce our use of oil and gas.

Energy Usage Volume (Unit: crude oil equivalent, 10,000 kℓ)



Details for Fiscal 2001

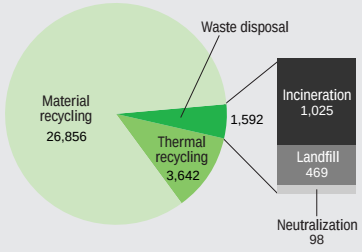
	Fujitsu	Domestic Manufacturers	Overseas Manufacturers	Fujitsu Group
Electricity (10,000 MWk)	119.1	103.7	32.6	255.5
Heavy oil, kerosene (thousand kℓ)	67.4	82.4	39.1	188.9
LPG, LNG (1,000 tons)	0.3	18.0	0.8	19.1
Natural gas, city gas (million m^3)	13.3	9.5	0.5	23.3
Other (1,000 GJ)	46.9			46.9
Total crude oil equivalent (10,000 kℓ)	39.8	39.0	12.7	91.6

(These calculations substitute Japanese coefficients for crude oil equivalent for energy use by overseas companies.)

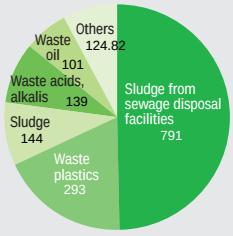
Waste Reduction Results

Changes in Waste Disposal Reduction: Sludge from sewage disposal facilities accounts for half our waste volume. We are continuing to reduce it by establishing treatment technologies.

2001 Breakdown of Waste Volume (Fujitsu)
(Unit: tons)

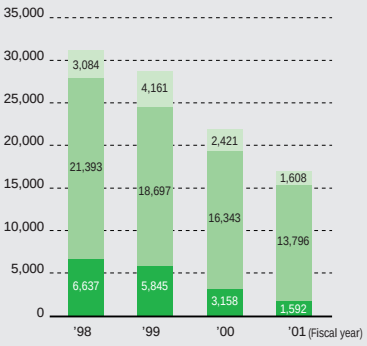


Breakdown of Disposal

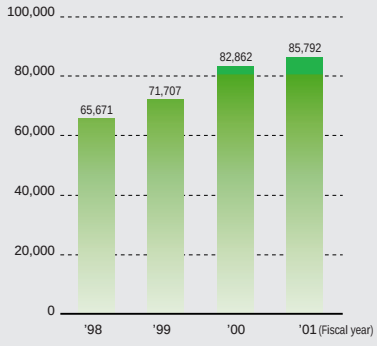


Breakdown of Waste Material

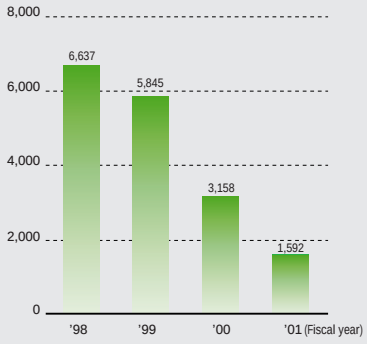
Waste Disposal Volume (FujitsuGroup)
(Unit: tons)



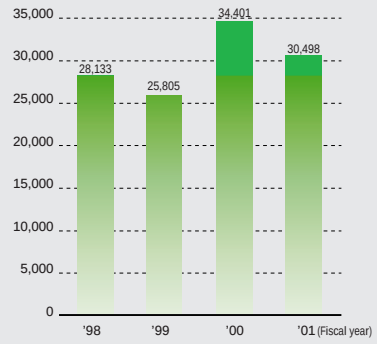
Effective Usage Volume (Fujitsu Group)
(Unit: tons)



Waste Disposal Volume (Fujitsu Japan)
(Unit: tons)



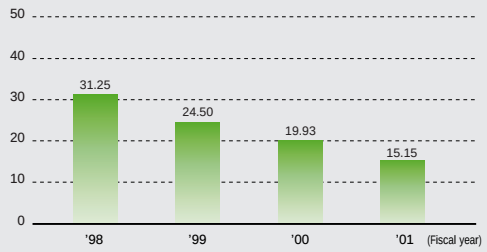
Effective Usage Volume (Fujitsu Japan)
(Unit: tons)



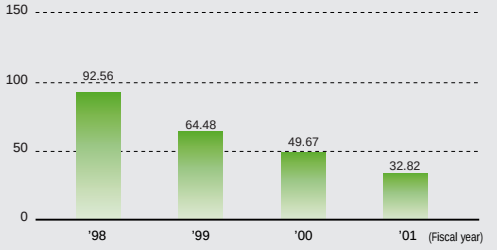
Chemical Substances Emission Results

Changes in Chemical Substances Emission Volume: We are reducing our use of chemical substances through ongoing efforts in such areas as usage volume reduction, adoption of substitutes, review of our production processes and conversion of our manufacturing facilities.

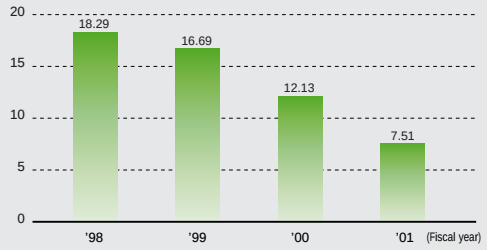
Xylene Emissions (Fujitsu Group) (Unit: tons)



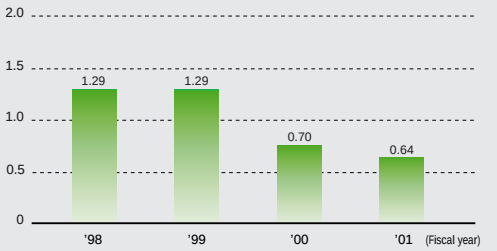
Toluene Emissions (Fujitsu Group) (Unit: tons)



Xylene Emissions (Fujitsu) (Unit: tons)



Toluene Emissions (Fujitsu) (Unit: tons)



PRTR Transfer/Emission Results

Changes in PRTR Transfer/Emission Volumes: We are complying with the PRTR Law by conducting appropriate management of chemical substances, from purchase to disposal, and calculating the transferral/disposal of chemical substances.

Fujitsu (Unit: kg)

Name of Class I designated chemicals	Number of Class I designated chemicals	Use/ processing volume	Emission volume				Transferred volume		Volume recycled/ removed/ consumed
			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	
2-aminoethanol	16	372505.0	465.0	0.0	0.0	0.0	0.0	253534.0	118506.0
Asbestos	26	5149.0	674.0	0.0	0.0	0.0	0.0	0.0	4475.0
4,4'-Polymer of 4,4'-isopropylidenediphenol and 1-chloro-2,3-epoxypropane (or bisphenol A type epoxy resin)	30	415.5	0.0	0.0	0.0	0.0	0.0	0.5	415.0
Ethylene glycol	43	1297.3	58.0	0.0	0.0	0.0	0.0	1216.3	23.0
Ethylene glycol monoethyl ether	44	745.4	0.0	0.0	0.0	0.0	0.0	745.4	0.0
Ethylene glycol monomethyl ether	45	684.5	0.0	0.0	0.0	0.0	0.0	684.5	0.0
Ethylenediamine	46	126.0	13.0	0.0	0.0	0.0	0.0	110.0	3.0
Xylene	63	45764.3	7498.3	0.0	0.0	0.0	0.0	25887.4	12378.7
Silver and its water-soluble compounds	64	2.9	0.0	0.0	0.0	0.0	0.0	2.9	0.0
2-ethoxyethyl acetate (or ethylene glycol monoethyl ether acetate)	101	1262.9	239.0	0.0	0.0	0.0	0.0	804.9	219.0
Inorganic cyanide compounds (except complex salts and cyanates)	108	5189.0	0.0	32.0	0.0	0.0	0.0	5157.0	0.0
Copper salts (water-soluble, except complex salts)	207	462662.0	0.0	850.1	0.0	0.0	14.7	123569.7	338227.5
1,3,5-trimethylbenzene	224	23.9	1.0	0.0	0.0	0.0	0.0	22.1	0.8
Toluene	227	693.6	212.4	0.0	0.0	0.0	0.0	478.4	2.8
Lead and its compounds	230	12392.1	0.0	21.0	0.0	0.0	0.0	858.4	11512.7
Nickel	231	2111.0	0.0	0.0	0.0	0.0	0.0	9.3	2101.7
Nickel compounds	232	5988.0	0.0	310.0	0.0	0.0	0.0	290.0	5388.0
Arsenic and its inorganic compounds	252	607.0	0.0	0.0	0.0	0.0	0.0	0.0	607.0
Hydrazine	253	19804.0	0.0	0.1	0.0	0.0	0.0	880.0	18923.9
Hydroquinone	254	387.0	0.0	0.0	0.0	0.0	0.0	30.0	357.0
Piperazine	258	150.0	0.0	0.0	0.0	0.0	0.0	150.0	0.0
Phenol	266	441.6	88.2	0.0	0.0	0.0	0.0	0.0	353.4
Hydrogen fluoride and its water-soluble salts	283	169468.2	490.9	22594.2	0.0	0.0	652.3	122464.7	23266.0 0
Boron and its compounds	304	4331.0	0.0	88.8	0.0	0.0	0.0	4240.0	2.2
Poly(oxyethylene) nonylphenyl ether	309	8.3	0.3	0.0	0.0	0.0	0.0	8.0	0.0
Formaldehyde	310	157264.4	0.0	0.0	0.0	0.0	0.0	588.0	156676.4
Manganese and its compounds	311	16074.1	0.0	48.2	0.0	0.0	0.0	15807.9	218.0
317) 2-(diethylamino)ethyl methacrylate	317	131.0	0.0	0.0	0.0	0.0	0.0	0.0	131.0
Molybdenum and its compounds	346	6.6	0.1	0.0	0.0	0.0	0.0	6.0	0.5
Total		1285685.7	9740.2	23944.4	0.0	0.0	667.0	557545.5	693788.6

Fujitsu Group

(Unit: kg)

Name of Class I designated chemicals	Number of Class I designated chemicals	Use/ processing volume	Emission volume				Transferred volume		Volume recycled/ removed/ consumed
			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	
Zinc compounds (water-soluble)	1	7104.6	0.0	0.0	0.0	0.0	0.0	207.8	6896.8
2-aminoethanol	16	417961.3	474.0	1256.7	0.0	0.0	0.0	293543.3	122687.3
n-alkylbenzenesulfonic acid and its salts (alkyl C=10-14)	24	200.0	200.0	0.0	0.0	0.0	0.0	0.0	0.0
Antimony and its compounds	25	1867.5	0.0	0.0	0.0	0.0	0.6	808.0	1058.9
Asbestos	26	5149.0	674.0	0.0	0.0	0.0	0.0	0.0	4475.0
4,4'-Polymer of 4,4'-isopropylidenediphenol and 1-chloro-2,3-epoxypropane (or bisphenol A type epoxy resin)	30	9375.1	227.5	0.0	0.0	0.0	0.0	18.5	9129.1
Ethylbenzene	40	301.0	298.0	0.0	0.0	0.0	0.0	3.0	0.0
Ethylene glycol	43	17930.3	69.7	404.4	0.0	0.0	0.0	9678.4	7777.7
Ethylene glycol monoethyl ether	44	14972.2	1507.8	1600.0	0.0	0.0	0.0	10595.4	1269.0
Ethylene glycol monomethyl ether	45	2661.3	413.5	82.0	0.0	0.0	0.0	859.5	1306.3
Ethylenediamine	46	126.0	13.0	0.0	0.0	0.0	0.0	110.0	3.0
Xylene	63	317961.8	13456.4	0.0	0.0	0.0	0.0	40830.4	263675.1
Silver and its water-soluble compounds	64	1381.1	0.0	6.5	0.0	0.0	2.0	20.9	1351.7
Chromium and chromium (III) compounds	68	2315.4	0.0	0.0	0.0	0.0	0.0	909.6	1405.8
Chlorodifluoromethane (or HCFC-22)	85	230000.0	2300.0	0.0	0.0	0.0	0.0	227.7	227472.3
Cobalt and its compounds	100	3228.0	0.0	0.0	0.0	0.0	0.0	31.0	3197.0
2-ethoxyethyl acetate (or ethylene glycol monoethyl ether acetate)	101	2750.7	246.4	0.0	0.0	0.0	0.0	969.9	1534.4
Inorganic cyanide compounds (except complex salts and cyanates)	108	50507.0	1674.0	80.5	0.0	0.0	0.0	5647.0	43105.5
Cyclohexylamine	114	270.0	110.0	0.0	0.0	0.0	160.0	0.0	0.0
2,2-dichloro-1,1,1-trifluoroethane (or HCFC-123)	124	540.0	540.0	0.0	0.0	0.0	0.0	0.0	0.0
o-dichlorobenzene	139	17000.0	4300.0	0.0	0.0	0.0	0.0	12700.0	0.0
Dichloropentafluoropropane (or HCFC-225)	144	4782.0	2651.0	0.0	0.0	0.0	0.0	1746.0	385.0
N,N-dimethylformamide	172	25.9	25.9	0.0	0.0	0.0	0.0	0.0	0.0
Styrene	177	9580.0	8622.0	0.0	0.0	0.0	0.0	0.0	958.0
Thiourea	181	2205.4	0.0	0.0	0.0	0.0	31.0	0.0	2174.4
Copper salts (water-soluble, except complex salts)	207	1047642.9	14.7	1225.9	0.0	0.0	14.7	131033.9	915353.8
1,3,5-trimethylbenzene	224	23.9	1.0	0.0	0.0	0.0	0.0	22.1	0.8
Toluene	227	35390.5	24410.6	0.8	0.0	0.0	0.0	3260.1	7719.0
Lead and its compounds	230	142688.6	0.0	30.2	0.0	0.0	0.3	67026.5	75631.7
Nickel	231	30726.0	0.0	9.1	0.0	0.0	0.0	589.3	30127.6
Nickel compounds	232	43460.6	151.6	516.0	0.0	0.0	49.0	1258.0	41486.0
Nonylphenol	242	420.0	15.0	0.0	0.0	0.0	0.0	400.0	5.0
Arsenic and its inorganic compounds	252	807.0	0.0	0.0	0.0	0.0	13.0	75.0	719.0
Hydrazine	253	21293.0	98.0	3.9	0.0	0.0	150.0	880.0	20161.2
Hydroquinone	254	517.0	6.0	0.0	0.0	0.0	0.0	154.0	357.0
Piperazine	258	150.0	0.0	0.0	0.0	0.0	0.0	150.0	0.0
Phenol	266	8699.4	2088.2	0.0	0.0	0.0	0.7	6100.0	510.4
Di-n-butyl phthalate	270	5192.0	350.1	0.0	0.0	0.0	0.0	870.0	3971.9
Hydrogen fluoride and its water-soluble salts	283	216323.0	1007.4	24638.2	0.0	0.0	1263.3	161444.7	27969.3
Boron and its compounds	304	20631.0	11.7	3848.6	0.0	0.0	0.0	10506.8	6263.9
Poly(oxyethylene) alkyl ether (alkyl C=12-15)	307	248.0	0.0	48.0	0.0	0.0	0.0	200.0	0.0
Poly(oxyethylene) nonylphenyl ether	309	8.3	0.9	0.0	0.0	0.0	0.0	8.0	0.0
Formaldehyde	310	192602.6	304.6	121.3	0.0	0.0	0.0	951.0	191225.6
Manganese and its compounds	311	3006264.6	11.7	56.3	0.0	0.0	0.0	77159.8	2929036.9
Methacrylic acid	314	4.0	0.0	0.0	0.0	0.0	0.0	0.4	3.6
2-(diethylamino)ethyl methacrylate	317	131.0	0.0	0.0	0.0	0.0	0.0	0.0	131.0
Methyl-1,3-phenylene diisocyanate (or m-tolylene diisocyanate)	338	146032.0	0.0	0.0	0.0	0.0	0.0	0.0	146032.0
Molybdenum and its compounds	346	233.4	0.1	226.8	0.0	0.0	0.0	6.0	0.5
Total		6039684.5	66274.3	34155.2	0.0	0.0	1684.6	840959.1	5096611.4

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

Substance name/ Classification	PRTR substance number	Status when in use	Ministry of the Environment Ecological Toxicity [Unit: mg/l] *2								Standard air pollution value (Standard for plant emissions)		Standard water pollution value (Standard for discharge from plant)	
			Algae		Water fleas			Fish			Standard value under Law on Air Pollution Prevention	Fujitsu internal management value (reference-standard)	Standard value under Law on Water Pollution Prevention	Fujitsu internal management standard value (reference)
			Growth prevention		Acute swimming prevention	Breeding prevention		Acute toxicity	Extended toxicity					
			72hr～ EC50	72hr～ NOEC	48hr～ EC50	21day～ EC50	21day～ NOEC	96hr～ LC50	14day～ LC50	14day～ LC50				
Manganese and its compounds	311	Liquids	–	–	–	–	–	–	–	–	–	–	10mg/ℓ	1mg/ℓ
Copper salts (water-soluble, except complex salts)	207	Liquids	–	–	–	–	–	–	–	–	–	–	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

- Algae 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: EC 50; no-effect concentration: NOEC).
- Water flea acute swimming prevention test: Effect on water flea swimming activity during exposure to chemical substances for 48 hours, targeting water fleas (crustaceans) that are primarily consumers in the water system food chain (50% swimming 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; no-effect concentration: NOEC).
- 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; no-effect concentration: NOEC).
- EC50: 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.

Water Use Volume Results

To promote effective use of water, for example, the Nagano Plant is reusing wash water in the printer board manufacturing process and converting fresh water to water for industrial use.
It has also installed facilities such as a garden and biotope that support plants and animal life. Fujitsu's circulating water usage volume was 47,423,000 tons in fiscal 2001.

Fiscal 2001 Data (Plants/sites)

Volume of Water Used	Fujitsu	Domestic manufacturing	Overseas manufacturing	Group total
Volume of water used (m^3)	18,300,000	12,960,000	2,973,000	34,233,000
(Details)				
Water supply usage volume (m^3)	8,170,000	5,742,000	584,000	14,496,000
Industrial water usage volume (m^3)	8,683,000	2,030,000	2,084,000	12,797,000
Underground water usage volume (m^3)	1,447,000	5,188,000	305,000	6,940,000
Circulating water usage volume (m^3)	43,573,000	3,671,000	179,000	47,423,000

Volume of Water Used	Fujitsu	Domestic manufacturing	Overseas manufacturing	Group total
Total emission volume (m^3)	16,259,000	9,736,000	2,421,000	28,416,000
BOD emission volume (t)	107	89	181	377
COD emission volume (t)	90	27	428	545

Volume of Water Used	Fujitsu	Domestic manufacturing	Overseas manufacturing	Group total
Nitrogen oxide emission volume (t)	147	474	6,371	6,992
Sulfur oxide emission volume (t)	243	297	1,565	2,095

Water, Air, Noise, Vibration Management Based on Internal Standards

We have established our own standards for control of water, air, noise and vibrations which are stricter than those established by Japanese governmental, prefectural or city ordinances for purposes such as water quality preservation.

Fujitsu AMD Semiconductor

(Unit: mg/ℓ)

Water Quality Item		National standard	Prefectural standard	Environmental agreement	Internal standard	Maximum (at least)	Average value
Hydrogen ion density	pH	5.8〜8.6	5.8~8.6	5.8~8.6	6.0〜8.0	7.8	7.3
Biochemical oxygen demand	BOD	160 (120)	25 (20)	20 (16)	16 (13)	4.1	2.6
Chemical oxygen demand	COD	160 (120)	160 (120)	160 (120)	16 (13)	4.6	2.2
Suspended solids	SS	5	70 (50)	70 (50)	28 (20)	1.2	0.44
Volume of n-hexane extraction included	Mineral oil	30	1	1	0.5	<0.5	<0.5
Volume of n-hexane extraction included	Animals and plants	30	10	10	3	<0.5	<0.5
Number of colon bacillus group		3000	3000	3000	300	44	4
Volume of nitrogen included		120 (60)	120 (60)	120 (60)	77 (38)	7.1	4.6
Volume of phenol included		5	1	1	0.1	<0.1	<0.55
Volume of fluorine included		15	10	10	8	<0.2	<0.2
Volume of phosphorus included		16 (8)	16 (8)	12.8 (6.4)	8 (4)	2.7	0.7

(Unit: dB)

Noise/Vibration Item	National standard	Prefectural standard	Internal standard	Maximum (at least)	Average value
Daytime	–	60	59	49	47.5
Morning/evening	–	55	54	49	46.1
Nighttime	–	50	49.5	49	46.5

(Plural particular facilities)

Air Item		National standard	Prefectural standard	Environmental agreement	Internal standard	Maximum (at least)	Average value
Nitrogen oxide	ppm	150	150	144	120	52	47.5
Sulfur oxide	Nm^3/h	K value: 17.5	K value: 10	K value: 6.42	K value: 5.12	K value: 0.1	K value: 0.06
Dust	g/Nm^3	0.25	0.25	0.25	0.2	0.002	0.002

Fujitsu Nagano Plant

(Unit: mg/ℓ)

Water Quality Item		National standard	Prefectural standard	Internal standard	Maximum (at least)	Average value
Hydrogen ion density	pH	5.8〜8.6	5.8〜8.6	6〜8.2	6〜8	7.2
Biochemical oxygen demand	BOD	160	30	25	25	13.6
Suspended solids	SS	150	30	25	25	5
Copper	Cu	3	2	0.7	0.69	0.24
Resolvable iron	Fe	10	10	4	1.46	0.22
Zinc	Zn	5	3	0.7	0.65	0.05
Manganese	Mn	10	10	3	0.54	0.04
All chromium	All Cr	2	1	0.2	0.06	0.01
Lead	Pb	0.1	0.1	0.07	0.07	0.02
Cadmium	Cd	0.1	0.05	0.01	0	0
Fluorine	F	15	15	7	8.7	2
All cyanogen	CN	1	0.5	0.1	0.08	0.03

(Unit: dB)

Noise/Vibration Item	National standard	Prefectural standard	Internal standard	Maximum (at least)	Average value
Daytime (noise)	50〜60	60	59	58.8	55.5
Morning/evening (noise)	45〜50	50	49.5	49.3	48
Night time (noise)	50〜60	50	49.5	46	45
Daytime (vibration)	50〜60	65	60	38	33.8
Nighttime (vibration)	50〜60	60	55	33.2	29.6

(Plural particular facilities)

Air Item		National standard	Prefectural standard	Internal standard	Maximum (at least)	Average value
Nitrogen oxide	ppm	180	180	90	40	13
Sulfur oxide	Nm^3/h	8.4	8.4	4.0	3.8	3.2
Dust	g/Nm^3	0.3	0.3	0.03	0.02	0.006

* Please see our homepage for results for the various Fujitsu plants with respect to water, air, noise and vibrations.

eco.fujitsu.com/en/

External Awards/Evaluation

Our commitment to environmental protection has earned commendation from society.

The evaluation of our environmental efforts and technologies in fiscal 2001 led to the receipt of various external awards. Encouraged by these, we continue to promote positive environmental activities.

External Award/Evaluation Results

Award name	Date received	Sponsor/Patron	Achievements recognized
4th Environmental Report Award: Excellence Award	May 2001	Sponsor: Toyo Keizai, Green Reporting Forum	Recipient: Fujitsu In recognition of a sincere attitude toward explanation of the environmental burden
Corporate Social Contribution Award (Fiscal 2001)	May 2001	Sponsor: Asahi Newspaper Culture Foundation	Recipient: Fujitsu Ltd. In recognition of early establishment of a clear environmental concept and translation into concrete action
Recognition as "Earth-Friendly Corporation"	June 2001	Sponsor: Ibaraki Prefecture	Recipient: Fujitsu Denso In recognition of acquisition of ISO 14001 certification and positive efforts to reduce energy consumption, waste and use of paper forms, etc., throughout the Ibaraki Plant
Receipt of Recycling Promotion Certification [Environmental Management/Audit Division]	June 2001	Sponsor: Nagano Prefecture Cyclical Society Creation Promotion Conference	Recipient: Shin-etsu Fujitsu In recognition of waste reduction and recycling activities
20th National Plant Greenification Promotion Convention Japan Greenification Center Chairman's Award	October 2001	Sponsor: Japan Greenification Center Supporting bodies: Ministry of the Environment; Ministry of Economy, Trade and Industry; Ministry of Agriculture, Forestry and Fisheries; others	Recipient: Fujitsu Nasu Plant In recognition of environmentally harmonious plant greenification considering the four seasons
Third consecutive 1st lace in the environmental field sustainability stock index	September 2001	Sponsor: Dow Jones SAM Sustainability Group	Recipient: Fujitsu Ltd. The company was evaluated as a highly sustainable corporation in the three areas of the environment, society and economics. Its activities in the environmental field received a high evaluation for three consecutive years. It also placed first for three years in a row in the computer field.
2001 Hanazono Contest: Excellence Award	November 2001	Sponsor: Citizens' Charter Promotion Committee, Aizuwakamatsu City	Recipient: Fujitsu Aizuwakamatsu Plant In recognition of contribution to city beautification through planting of flower beds showcasing flowers of the four seasons
2001 Hanazono Contest: Excellence Award	November 2001	Sponsor: Citizens' Charter Promotion Committee, Aizuwakamatsu City	Recipient: Fujitsu AMD Semiconductor
34th Flower Contest: Excellence Award	November 2001	Sponsor: Fukushima Minyu Shimbun	Recipient: Fujitsu AMD Semiconductor
40th Japan Industrial Journal Industrial Advertising Award: Environmental Advertising Special Award	November 2001	Sponsor: Japan Industrial Journal	Recipient: Fujitsu Ltd.
2001 Ishikawa Green Corporation Governor's recognition	January 2002	Sponsor: Ishikawa Prefecture	Recipient: PFU In recognition of ISO 14001 certification and leadership in environmental preservation activities, with results including electricity consumption reduction, waste reduction and rainwater use
2001 Energy Management Excellent Plant (Electricity category): Agency of Natural Resources and Energy Secretary's Award	January 2002	Sponsor: Ministry of Economy, Trade and Industry	Recipient: Yonago Fujitsu In recognition of specially conspicuous results in energy use rationalization
2001 Excellent Energy Management Plant (Electricity category): Chubu Bureau of Economy, Trade and Industry Chairman's Award	February 2002	Sponsor: Ministry of Economy, Trade and Industry	Recipient: Fujitsu VSLI In recognition of especially conspicuous results in rationalization of energy use
2001 Electricity-Usage Rationalization Encouragement Award	February 2002	Sponsor: Tama Area Electricity-Usage Rationalization Committee	Recipient: Fujitsu Minami-Tama Plant In recognition of efforts toward rationalized, efficient electricity use
2001 Electricity Management Superior Chugoku Region Electricity-Usage Rationalization Committee Chairman's Recognition	February 2002	Sponsor: Chugoku Region Electricity-Usage Rationalization Committee	Recipient: Shimane Fujitsu In recognition of increased efficiency of electrical equipment circuits and their use
King of Thailand's 50th Anniversary Planting Competition: 1st Winner	March 2002	Sponsor: Ministry of Agriculture of Thailand	Sponsor: Fujitsu Thailand In recognition of a tree-planting project conducted in southwest Bangkok since 1998

Others

Japan Greenifiation Center Chairman's Award (Fujitsu Nasu Plant)

Agency of Natural Resources and Energy Secretary's Award (Yonago Fujitsu)

King of Thailand 50th Anniversary Planting Competition, 1st Award (Fujitsu Thailand)

eco.fujitsu.com/en/info/eco20001116_e.html

History of Environmental Activities

Our environmental activities date back 67 years, to the location of a plant in a natural, park-like setting.

Since its establishment, the Fujitsu Group has consistently placed a priority on conducting business activities in harmony with nature. Our desire to achieve environmental preservation will continue to bear rich fruit in the future as well.

2001
- Fujitsu Environmental Protection Program (Stage III) formulated.
- Calendar using paper from sustainable forest published.
- Forestation activities conducted in Malaysia.

1999
- Environmental accounting introduced.
- Forestation activities conducted in Vietnam.

2000
- Four development and service sites in Japan certified ISO14001 compliant.
- Corporate Environmental Affairs Group established.
- First desktop PC awarded Eco-mark.

1998
- Forestation activities conducted in Thailand.
- Green Product program launched.

1997
- Environmental homepage established.
- All domestic manufacturing sites certified ISO14001 compliant.

1996
- Fujitsu Environmental Protection Program (Stage II) formulated.
- Environmental Engineering Center homepage placed on intranet.
- Chemical Emissions Reduction Committee established.
- First Environmental Report published.

1995
- Environmental Management System Committee established.
- Recycling system established and implemented.
- Fujitsu Group Worldwide Environmental Conference established.

1994
- First issue of Eco-Plaza environmental bulletin published.
- Use of 1,1,1-trichloroethane eliminated.
- 1st Fujitsu Group Environmental Technology Exhibition held.
- Fujitsu Environmental Emblem designed.
- Overseas Environmental Information Network begins operation.

1993
- Product Recycling Committee established.
- Waste Control Committee established.
- Fujitsu Environmental Protection Program (Stage I) formulated.
- Product Environmental Assessment Guideline formulated.
- Domestic Affiliated Companies' Environmental Protection Council established.
- Environmental Information Service (FJ-CUG) opened.

1992
- Fujitsu's Commitment to the Environment formulated.
- Use of CFCs and carbon tetrachloride for cleaning eliminated.
- Energy Saving Committee established.

1991
- Environmental Engineering Center established.

1990
- Environmental management evaluation system implemented.

1989
- Environmental Committee established.

1987
- Ozone Layer Protection Committee established.

1972
- Environmental control sections established at each plant.

1935
- Park-style design adopted for the Kawasaki Plant at the suggestion of Fujitsu's founder, President Yoshimura.

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Glossary of Terms

Eco scenario planning (page 5*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 to in advance and in a flexible manner.

Green Procurement (page 7*1)
Purchasing that places a preference on products with a low environmental burden.

ISO14001 (page 11*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 14*1)
A measure of the environmental burden reduction effect per unit cost (unit Ton-CO_2 ¥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_2. It permits comparison of the effectiveness of environmental measures in different periods and segments.

Environmental efficiency (EE) indicator (page 14*2)
A measure of total sales relative to the environmental burden (unit: ¥100 million/Ton-CO_2). 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 19*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 eco-friendly goods (eco-marked goods, etc.) that impose a reduced environmental burden.

Life-cycle Assessment (LCA) (page 21*1)
A method of analyzing a product's burden on the environment quantitatively throughout its life cycle.

Catalyst (page 23*1)
A substance that can markedly alter the rate and selectivity of thermodynamically possible reactions when used in small amounts without being consumed itself in the process.

Extended Producer Responsibility (EPR) (page 25*1)
EPR, an abbreviation for "extended producer responsibility," is a concept concerning extension of the producers' 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.

Inverter compressor (page 28*1)
A compressor for controlling the revolution frequency depending on the load. This machine can supply the minimum necessary pressure stably at any time with no waste power consumption by automatically controlling the revolution frequency depending on the volume of compressed air used.

ESCO (page 28*2)
An abbreviation for "energy service company," ESCO refers to a business that provides clients with the comprehensive services required to improve energy savings, including technology, equipment, personnel and finance, and receives a portion of the client's energy-saving benefits in exchange. This approach to energy savings developed in the United States following the first oil shock. Its spread to Japan is anticipated as an effective means of realizing energy savings.

PRTR Law (page 31*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.

Bill against Soil Pollution (page 33*1)
With soil pollution by toxic substances increasing in recent years, the Ministry of the Environment has submitted the Bill against Soil Pollution to the 154th ordinary session of the Diet (January 21~June 29, 2002). Intended for enforcement in January 2003, the bill would require owners of former sites of factories or operations in suburban areas to take responsibility for investigation and purification of soil pollution.

Dioxins (page 33*2)
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 the number and position of chlorine atoms in their triple-ring structure.

e-Japan Plan (page 36*1)
Cooperatively conducted by the Japanese government and citizens, this program involving IT measures is being promoted by the IT Strategy Meeting with the Prime Minister as Director-General for the stated purpose of making Japan "the world's most advanced IT nation by 2005."

Biotope (page 39*1)
A composite term formed from the Greek "bio" (life) and "topos" (place), a biotope is a small, uniform environment occupied by various living organisms.

Modal shift (page 41*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 CO_2 and NOx emissions and saving energy.

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 " 2002 Fujitsu Group Environmental Report"

June 10, 2002

Mr. Naoyuki Akikusa
President and Representative Director
Fujitsu Limited

1. Purpose and Scope of our Review

We have reviewed the "2002 Fujitsu Group Environmental Report" (the "Report") of Fujitsu Limited (the "Company") and its principal subsidiaries, published by the Company who is responsible for its contents. The review consisted of performing certain procedures as described below in relation to the collection, compilation and calculation of the information included in the Report.

Our work does not constitute an audit or examination. We therefore do not express an opinion on the accuracy or completeness of the information or data bases used to compile the information or the representations made by the Company in 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 followed in the preparation of the "Environmental Performance" and the "Environmental Cost and Effect" information.
(2) We compared the "Environmental Performance" and "Environmental Cost and Effect" information presented in the Report on a sample basis 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 Cost and Effect" information presented in the Report with the respective supporting documents and verified the accuracy of the descriptions.
(4) When deemed necessary, we made inquiries to the responsible individuals at the Company's factories and subsidiaries, 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,

(1) We are not aware of any material modifications which should be made to the "Environmental Performance" and the "Environmental Cost and Effect" information presented in the Report in order for them to comply with the Company's policies for gathering and reporting such information.

(2) We are not aware of any material modifications which should be made to 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 Research Institute

Fax Questionnaire

FAX : +81-44-754-3326

To: Corporate Environmental Affairs Group, Fujitsu Limited

Thank you for reading our 2002 Fujitsu Group Environmental 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 2003 Fujitsu Group Environmental Report, scheduled for publication in June 2003, to everyone who sends us a completed fax questionnaire.

Q1. How did this report compare with the 2001 Environmental Report?

☐ Better ☐ Same ☐ Worse

Q2. Did you know anything about Fujitsu's environmental protection activities before reading it?

☐ Yes ☐ A little ☐ Nothing

Q3. What is your impression of this report?

☐ Good ☐ Average ☐ Not good

Q4. Which sections of this report interested you most? (Please select one or more sections.)

- ☐ Management Messages
- ☐ The FUJITSU Way/The Fujitsu Group Environment Policy (Summary)
- ☐ Contribution to the Global Environment (Green Life 21 — Focused on the Green)
- ☐ Fujitsu Environmental Protection Program (Stage III)
- ☐ The Relationship between Business Operations and the Environment
- ☐ Environmental Management System
- ☐ Environmental Accounting
- ☐ Environmental Education & Awareness Activities
- ☐ Environmental Communications
- ☐ Green Product Development
- ☐ Green Procurement
- ☐ Product Recycling
- ☐ Energy-Saving Measures (Against Global Warming)
- ☐ Zero Waste Emissions (Waste Reduction)
- ☐ Chemical Emission Reduction
- ☐ Plant Environmental Control (Environmental Risk Countermeasures)
- ☐ Environmental Contribution through Software Services
- ☐ Environmental Solutions
- ☐ Environmental Social Service Activities
- ☐ Greenification Activities
- ☐ FUJITSU Eco Club
- ☐ Distribution & Environmental Protection
- ☐ Data Appendix (Consolidated/Unconsolidated)

Q5. Please use the space below to communicate any comments or requests you may have concerning Fujitsu's environmental activities.

Q6. From what perspective did you read this report?

- ☐ Fujitsu product user
- ☐ General consumer
- ☐ Student
- ☐ Environmental specialist
- ☐ Resident of Fujitsu facility neighborhood
- ☐ Media representative
- ☐ Shareholder
- ☐ Financier or investor
- ☐ Corporate buyer/purchaser
- ☐ Corporate environmental staff member
- ☐ Environmental NGO member
- ☐ Government official/bureaucrat
- ☐ External research organization member
- ☐ Other ( )

Q7. How did you learn about the existence of this report?

- ☐ Newspaper
- ☐ Magazine
- ☐ Advertisement
- ☐ Public relations office
- ☐ Fujitsu Group employee
- ☐ Fujitsu Group sales representative
- ☐ Plant tour
- ☐ Environmental NGO
- ☐ Friend
- ☐ Homepage
- ☐ Exhibition
- ☐ Other ( )

Thank you for your cooperation. Please also be kind enough to fill in the following:

Name:

Mailing address (for 2003 report)**:**

Occupation (employer)**:** **Department/position:**

Telephone: **E-mail**

Fujitsu and its subsidiaries will be providing information regarding environmental events and introducing environmental products. Please call the number at right for inquiries, or to notify us of changes in the information you have provided above.

Corporate Environmental Affairs Group Telephone: +81-44-754-3413

FUJITSU LIMITED

eco.fujitsu.com/en

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