

# NTT Group Global Environmental Charter

We need to recognize the extent and gravity of current environmental issues, including global warming, ozone layer depletion, destruction of the tropical rain forests, desertification, acid rain, and contamination of the oceans. We must also recognize the degree to which these issues are the direct result of current societal systems, which are intimately linked to corporate activities.

As a business enterprise, we have a responsibility to dedicate ourselves to harmonizing our business activities with global efforts to protect the environment in order to realize sustainable growth and to eliminate problems for future generations. Based on this fundamental recognition, we here establish the NTT Group Global Environmental Charter to clarify our basic policies and actions concerning these issues.

## Basic Principle

To ensure the harmonious co-existence of people with nature and to achieve sustainable growth, we will do our utmost to protect the global environment in all our corporate activities.

## Basic Policies

### 1. Compliance with laws and regulations and fulfillment of social responsibilities

To observe all laws and regulations regarding environmental protection issues and to carry out our responsibilities as global corporate citizens.

### 2. Reducing environmental loads

To establish action plans for energy conservation (reduction of greenhouse gas emissions), resource conservation (conservation of materials such as paper) and waste reduction, and to strive to make continuous improvements.

### 3. Establishing and maintaining environmental management systems

To establish an environmental management system enabling each business unit to pursue voluntary environmental protection activities.

### 4. Developing environmental technologies

To contribute to the reduction of environmental loads through various areas of research and development, including multimedia services.

### 5. Social contribution efforts

To promote daily environmental protection efforts in coordination with citizens and government agencies.

### 6. Disclosure of environmental information

To enhance both internal and external communications through the disclosure of environmental information.

## NTT Group Environmental Protection Activity Report 2003

### Editor's Postscript

This is the fifth annual edition of NTT Group's environmental report. Such corporate environmental reports tend to be difficult to understand and typically inundate the reader with information. Therefore, we try to improve both the content and the format each year.

To prepare for the Environmental Protection Activity Report 2003, we took time to discuss with our staff how we could most effectively present a report that was easy to understand. As a result we adopted a Q&A format, which was introduced in the Website version, for the printed version of the report, in which the NTT Group answers a series of questions from customers. We also attempted to use plain and simple language as much as possible. In the process of carefully reviewing report content, we selected as the major unifying theme the evolution of broadband and IT on reducing the environmental burden affecting all of society.

Nevertheless, we recognize that this report will still fall short in some areas, and will need further improvement. We are genuinely interested in hearing what you think. Please respond to the attached questionnaire, send e-mail with your frank opinions and comments, or use the questionnaire on our Website.



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### For more information

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Today, people are concerned about the global environment and are seeking ways to act on their concern.

Why couldn't broadband networks help unite our common environmental awareness, bridging physical distance and social differences, to create more effective solutions?

Ecommunication, the integration of ecology and communication, represents the NTT Group's approach for concretely making this happen.

With this belief and commitment, during fiscal year 2002 the NTT Group actively engaged customers, local communities, companies, schools, civic groups, and colleagues in discussion and action related to protecting and conserving the environment.

We organized this year's report in the format of a question-and-answer discussion, based on inquiries regarding NTT's environmental protection activities that we received from people representing a variety of ages and backgrounds. We felt this was the best way to convey the essential meaning and intent of ecommunication. Each question is symbolically presented by a member of an "Environment Family," and answered by representatives of the NTT Group companies who are involved in a related project.



Environment Family

Our theme for this year's report, "Vision for a new optical generation—Broadband leading to the world of resonant communication," was chosen by the NTT Group to symbolize both the full-scale, ubiquitous broadband era, shaped by the flow of high-speed, high-capacity optics encircling the globe, and the dynamic nature of the NTT Group itself.

About the Cover Page

## Deploying innovative optical information communication services to reduce environmental loads and contribute to the sustainable development of society

With the advent of a full-scale, ubiquitous broadband era, the NTT Group announced in November 2002 its "Vision for a New Optical Generation," which foresees a world of resonant communication where people, as well as companies and other elements of society, are connected and able to interact anytime, anywhere and with anyone through networks, creating a flow of progress in resonance with the natural world.

The various information communication services that the NTT Group offers based on this vision are intended to address such environmental concerns as reducing the energy consumed for transportation and the associated exhaust gases and CO<sub>2</sub> emissions while at the same time contributing to a safe, flourishing society and strengthening the productivity and competitiveness of corporate activities. Furthermore, in the "NTT Group Three-Year Business Plan (FY2003–FY2005)" that we announced in April 2003, we advocated as one of our primary actions the development of practical, environmentally responsible energy technologies toward realizing a sustainable society.

We intend to help build a prosperous society that can continue to grow through the step-by-step resolution of environmental issues by sharing knowledge and encouraging collaboration among employees, customers, and local communities, creating resonant environmental protection activities, while, of course, reducing the environmental loads generated by the corporate activities of the NTT Group. We appreciate your review of the NTT Group's Environmental Protection Activity Report 2003, which we believe concretely lays out our vision and action plans for accomplishing these objectives.

Moreover, we heartily welcome your candid opinions and advice. Your valuable input will be seriously considered in the development of our future business activities.



A handwritten signature in black ink that reads "Norio Wada".

**Norio Wada**  
President,  
NIPPON TELEGRAPH AND TELEPHONE  
CORPORATION

### Guideline Used to Edit this Report

- The Environmental Protection Activity Report 2003 has been compiled from data collected from April 1, 2002 to March 31, 2003, and also includes activities after April 1, 2003 as well as our future projections.
- The Environmental Protection Activities Report 2003 amalgamates the 2002 data collected mainly from NTT (holding company), NTT EAST, NTT WEST, NTT Communications, NTT DATA, NTT DoCoMo and their group companies. Furthermore, data before 1998 was collected from the NTT Group prior to its restructuring; the details of which are included in the data file section of this report.
- This Report is compiled based on the "NTT Group's Environmental Report Guidelines," which, in turn, were developed by referring to the guidelines of the Ministry of the Environment and GRI (Global Reporting Initiative).
- The NTT Group's environmental activities have largely been disclosed on our Website in the format of easily searchable questions. Please refer to the Website map at the end of the report for further details. This booklet version contains only the most essential information and data. The number of pages was reduced as we did in the 2002 and 2001 versions in consideration of the need to conserve paper resources.
- Although we have not sought third-party certification of NTT Group's environmental report, we regard this report as an honest and unbiased account, and an essential communication tool.
- Names of organizations are as of March 31, 2003.

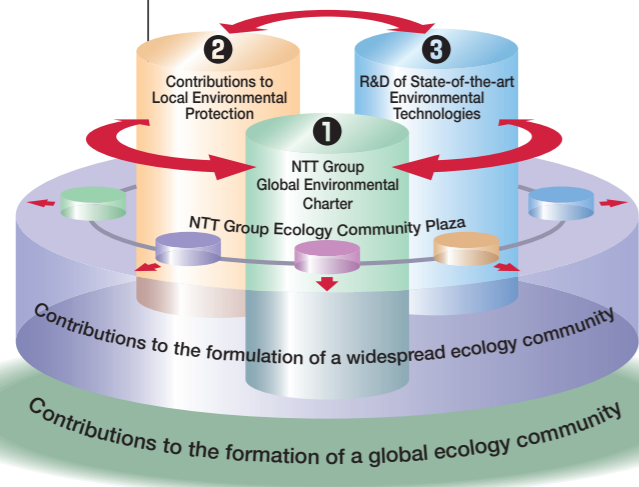
August 2003

# Q1 Could you explain the NTT Group's principles and organization for promoting the resolution of environmental issues?



## A1 Our basic concept and approach to environmental conservation is summarized in "The NTT Group Ecology Program 21," which was developed in consideration of environmental issues based on our sense of social responsibility.

The global environmental issues we now face, such as global warming and industrial wastes, are believed to be the result of our social systems. We recognize that our business activities are closely associated with these problems. By addressing these issues on the basis of our sense of social responsibility, we seek to achieve complete compatibility between our business activities and environmental protection. Our basic approach for protecting the environment is expressed in the "NTT Group Ecology Program 21" and consists of three pillars: the NTT Group Global Environmental Charter, which clarifies our principles, policies, and targets current global environmental issues (see the back cover of this booklet); Contributions to Local Environmental Protection, involving environmental protection activities rooted in local communities; and Research and Development of State-of-the-art Environmental Technologies, in which we apply innovative technologies to resolve environmental issues. Based on this program, we are implementing group-wide environmental protection activities in order to nurture the formation of a global ecology community.



NTT Group Ecology Program 21

## A2 We voluntarily established three corporate guidelines to maintain the trust of society.

The NTT Group has established the following three corporate guidelines to ensure that we fully consider impacts on the global environment in all aspects of our business, including commodity purchase, research and development of products and systems, and operation of company-owned facilities.

### Green Procurement Guidelines

We established this guideline to promote procurement of environmentally friendly products (Green Procurement). We assess suppliers on the basis of their corporate policies as well as their products.

### Green R&D Guidelines

This guideline reconfirms our awareness of the environment impacts associated with research and development activities, methods and results, and when any harmful impacts are identified, we work to address the problem on our own and reduce the environmental load.

### Green Design Guideline for Buildings

This guideline promotes building designs that support coexistence with the environment, such as seven criteria including extending building life, restricting the use of halon and CFCs, reducing waste, and promoting reuse and recycling.

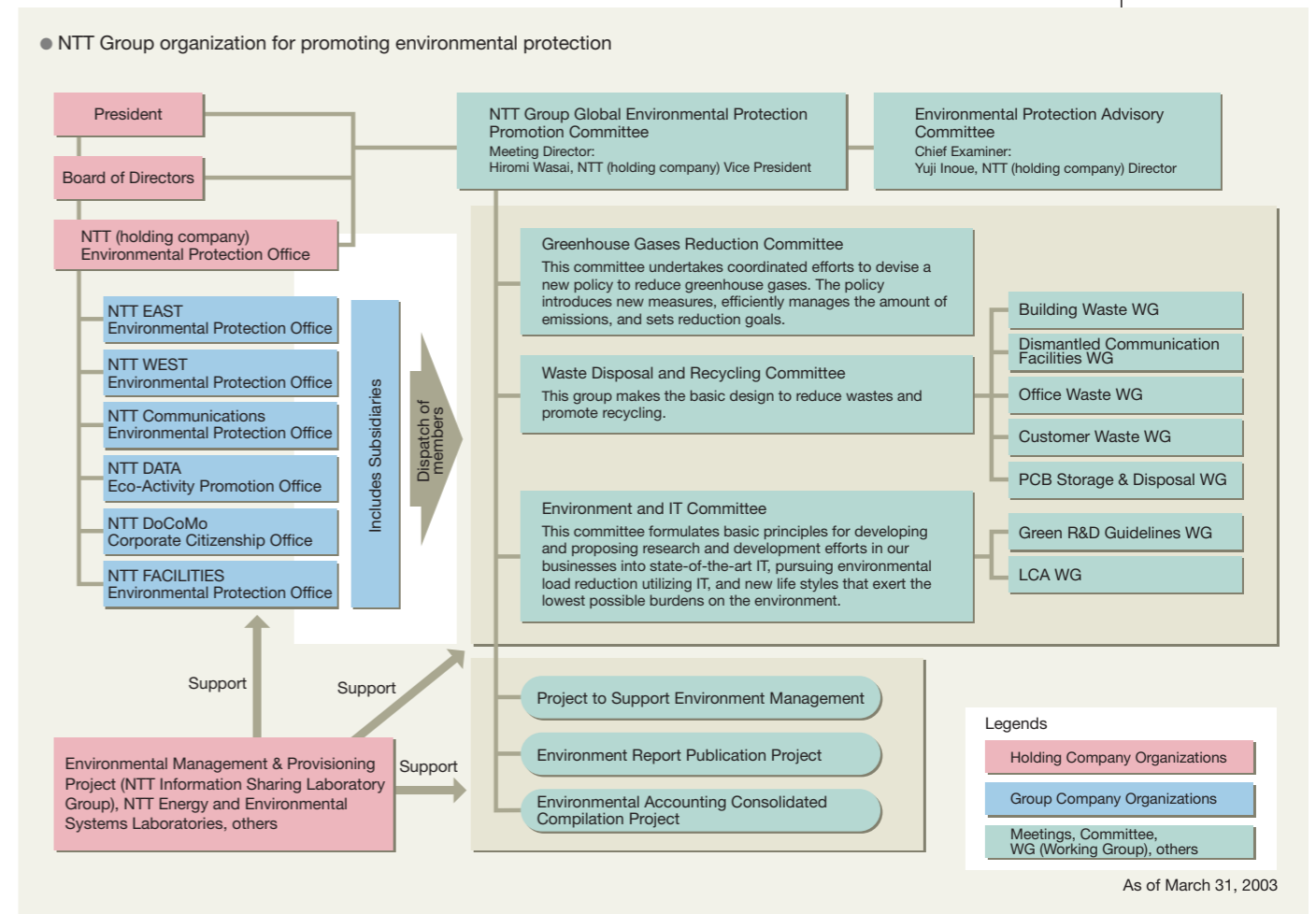


NTT Group Environmental Guidelines

## A3 We established the NTT Group Global Environmental Protection Promotion Committee as a top-level decision-making body.

The number of NTT Group companies increased from 128 to 438, a result of the May 2002 structural reform. In order to ensure that all the group companies were united behind a common concern for global environment issues in accordance with the "NTT Group Global Environmental Charter," we established

the NTT Group Global Environmental Protection Promotion Committee as a top-level decision-making body. In addition, the NTT (holding company) Environmental Protection Office and divisions in charge of the environment-related sections of each participating company work in close cooperation.



As of March 31, 2003

## A4 Here is an explanation of the concept of cost effectiveness, or environmental accounting, and how it will be incorporated into our corporate management.

Starting in fiscal 2000, the NTT Group introduced environmental accounting, which is a system for identifying and analyzing the necessary costs for preserving the environment in the course of our business activities and for quantifying as much as possible and disclosing the effects of these costs, in both physical and financial terms. We annually compile environmental accounting data and incorporate it into our corporate management as important indices for self-evaluation, to ascertain that the desired policies and objectives have been achieved, and as a tool for continuously improving

environmental performance.

Refer to page 21 for the results of our environmental accounting for the NTT Group in fiscal 2002.

In the future, we will further enhance our environmental management by expanding the scope of companies subject to consolidated environmental accounting, analyzing the environmental conservation impact of IT, and exploiting the beneficial aspects of IT to ensure efficient management within the organization.



**Takeshi Origuchi**  
Environmental Accounting Consolidated Compilation Project Office (NTT Information Sharing Laboratory Group)

# Q2 How much impact does the corporate activity of the NTT Group have on the environment?



## A1 The business scale of the NTT Group is so large we cannot deny that it places a heavy burden on the environment. That is why we have established concrete, measurable goals to ensure progress and have been working toward reducing environmental loads.

It is a fact that we place significant environmental loads on society in the process of our business development, simply due to the massive scale of our operations. We consume 0.8% of all electricity purchased nationally, our waste emissions represent 0.2% of national industrial waste, and we use 0.4% of all paper consumed across the nation. This is why we have been working to reduce environmental loads by utilizing technology that supports information sharing services that fall within our business scope in addition to our activities to conserve resources and recycle, based on the three

concrete, measurable targets identified below. For paper resources, we have already achieved our target values for 2010 through the closed loop recycling of telephone directories and the use of recycled paper. For wastes, we are approaching our target values for 2010 through the reuse and recycling of such dismantled communication facilities as cables. For CO<sub>2</sub> emissions, however, we report that our current values fall short of meeting our targets due to the development of information distribution services.

Three targets for reducing environmental loads as established in the "The Principle Activity Targets of the NTT Group" (goals for 2010):

- Paper resource management: Reduce total consumption of virgin pulp to less than 80% of the 1990 levels
- Prevention of global warming: Reduce CO<sub>2</sub> emissions to less than the 1990 levels
- Waste management: Reduce final disposal volume to less than 15% of the 1990 levels

## A2 We are exploring LCA (Life Cycle Assessment), which allows us to assess, for the first time in the world, the environmental impact of information sharing services.

The NTT Group considers LCA to be a useful tool for assessing environmental impact, not only for the manufacturing industry but also for the information sharing service industry as well.

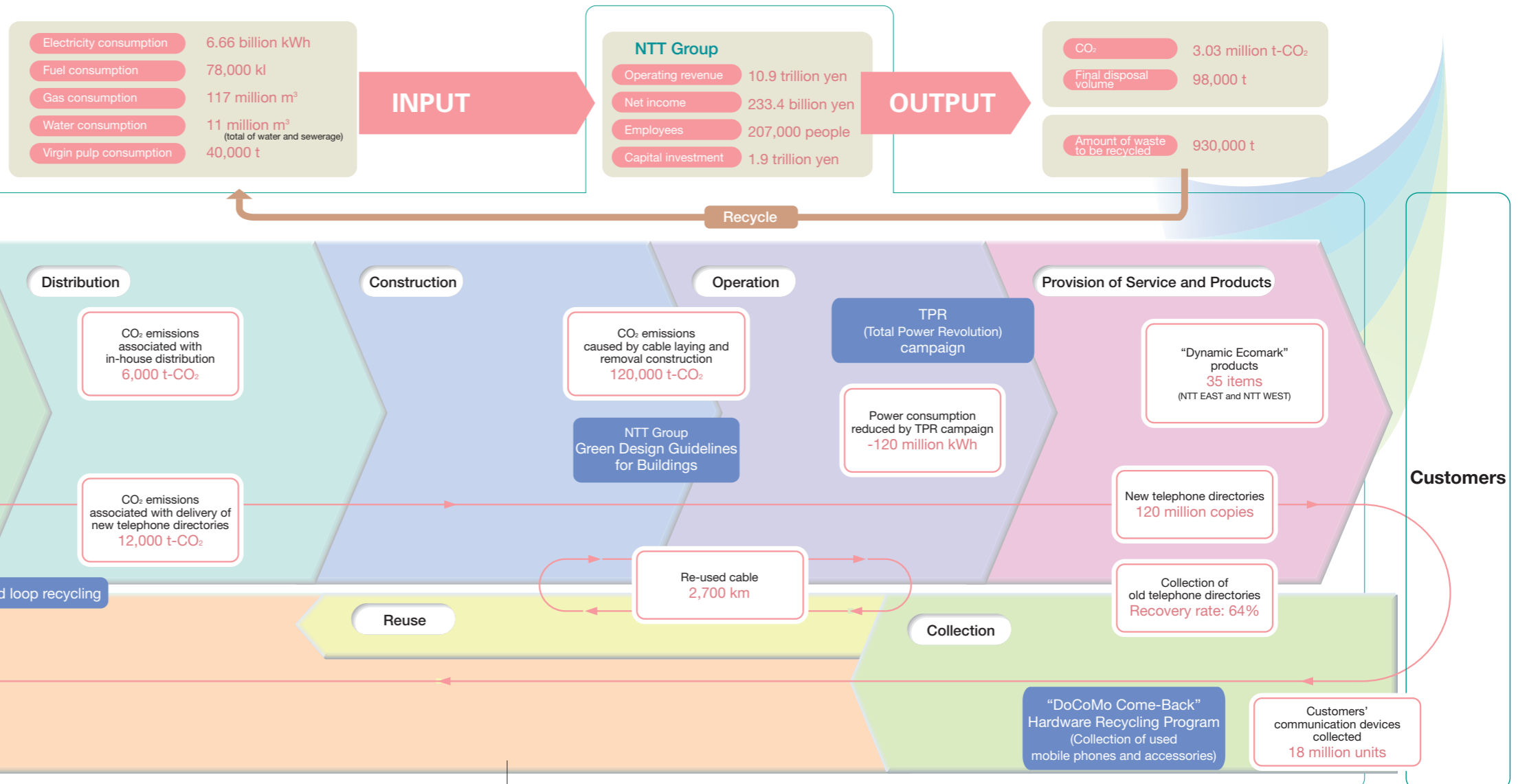
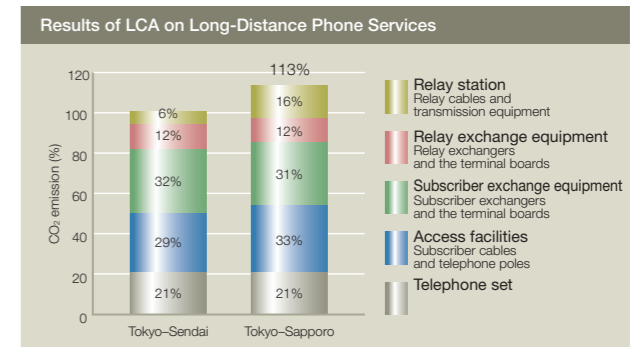
### Environmental impact assessment of fixed telephone services

We evaluated the environmental load associated with our long-distance phone services as a second application of LCA following a similar assessment of local calls that we conducted last year.

NTT EAST, NTT Communications, and NTT Information Sharing Laboratory Group have assessed the environmental load of fixed telephone services. We compared the environmental load of long-distance phone service between Tokyo and Sapporo, based on defining long-distance phone service between Tokyo and Sendai as 100%, and discovered the following results.

- The amount of CO<sub>2</sub> emissions from all equipment in the operation stage accounts for about half of the total.
- Although the amount of CO<sub>2</sub> emissions from relay stations increased in direct relation to the increase in communication distance, CO<sub>2</sub> emissions related to relay exchange equipment remained about the same regardless of distance.

Since long-distance relay stations efficiently transmit voice data by means of high-capacity optical fiber, communication distance does not exert a significant influence on environmental loads. On the other hand, since the average distance between a customer's residence and a NTT facility is larger in local cities compared with such urban areas as Tokyo, the corresponding environmental load of the access equipment is relatively larger. From these results, we could see that the environmental loads from fixed telephone services could be reduced through such actions as improving the efficiency of access equipment, reducing the power consumption of telephone sets, and replacing subscriber cables with optical fiber.



# Q3 What are some of the concrete environmental protection activities that the NTT Group is working on?



**A1** Here are a few of the things we did in 2002, along with our six basic policies on global environmental issues.

**Chapter 1 Management**

**Charter** Establishing and maintaining environmental management systems  
To establish an environmental management system enabling each business unit to pursue voluntary environmental protection activities and promote the prevention of environmental pollution and reduction of environmental risks.

**Content** The NTT Group promotes the establishment of an environmental management system in compliance with ISO 14001. Each business unit sets up and operates an environmental management system suitable for its business. In 2000, environmental accounting was introduced to quantitatively grasp the effects, both material and economic, of the environmental protection activities and apply them to our environmental management.

**Major activities in 2002**

- Acquisition of ISO certification (105 sites)
- Implementation of environmental accounting (130 offices)
- LCA for the information communication services (long-distance phone service)

**Charter** Compliance with laws and regulations and fulfillment of social responsibilities  
To observe all laws and regulations regarding environment protection issues and to carry out responsibilities as global corporate citizens.

**Content** NTT (holding company) obtains and analyzes information on new domestic and international environmental laws and regulations to quickly prepare new measures in collaboration with each environmental committee.

**Major activities in 2002**

- Promotion of NTT Group Ecology Program 21
- Compilation of basic manual for waste treatment procedures
- Study sessions for environmental administrators (11 locations nationwide)

**Chapter 2 Information Technology**

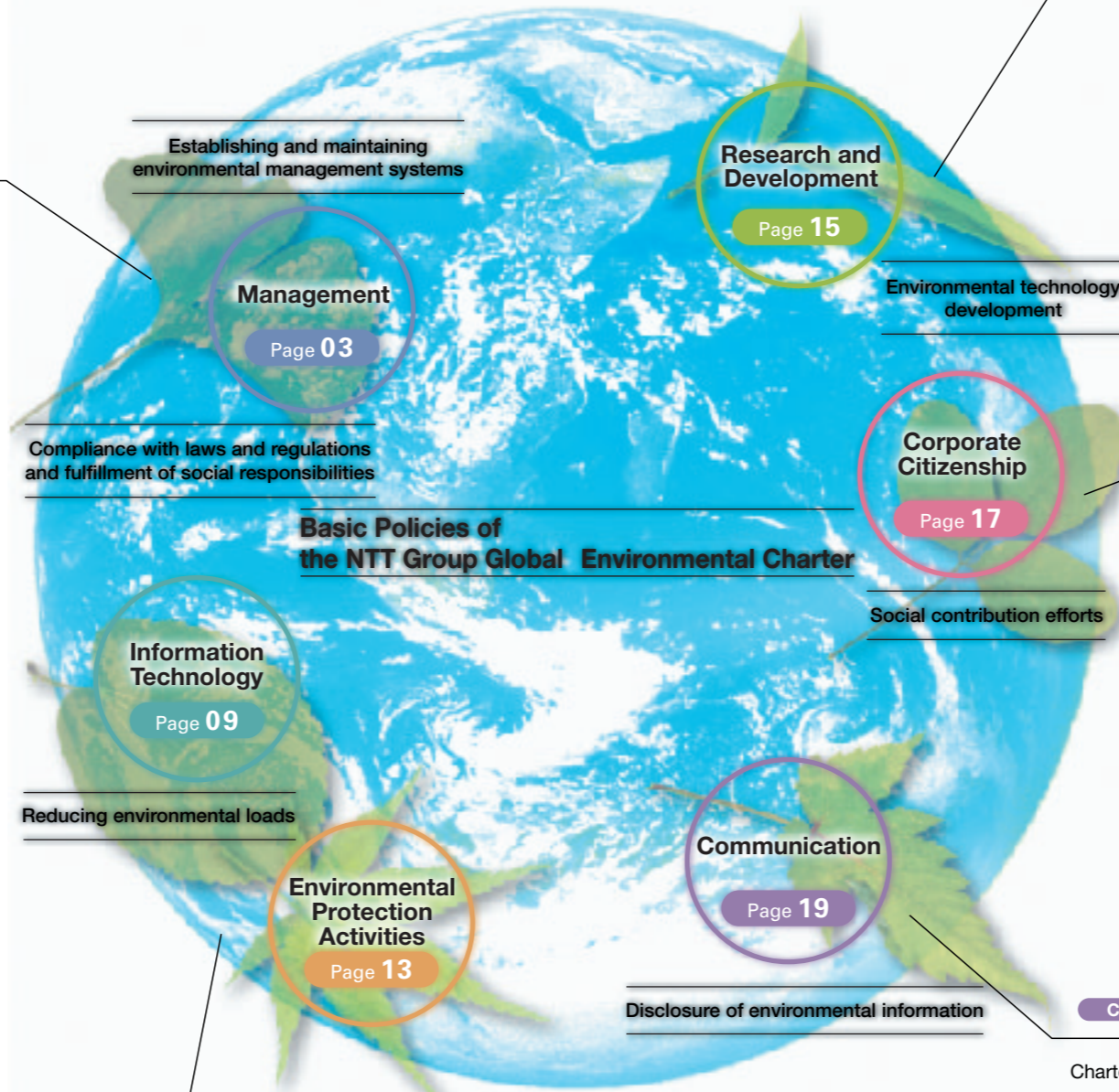
**Chapter 3 Environmental Protection Activities**

**Charter** Reducing environmental loads  
To establish action plans for energy conservation (reduction of greenhouse gas emissions), resource conservation (conservation of materials such as paper) and waste reduction, and to strive to make continuous improvements.

**Content** To contribute to the creation of a sustainable society utilizing IT and continually implement the action plans for conserving energy and reducing greenhouse gas emissions.

**Major activities in 2002**

- Environmental information sharing services to reduce environmental loads:
  - Internet-based billing services
  - New Web-based training systems
  - Video-conferences
  - Information provision services for vehicle operation control
  - Illegal waste dumping monitoring system
- Ongoing promotion of the Total Power Revolution (TPR) campaign
- Collection of used telephone directories and mobile phones



**Chapter 4 Research and Development**

**Charter** Environmental technology development  
Contributing to environmental load reduction by research and development of multimedia services.

**Content** Research and development of information sharing services to help the reduction of environmental loads and technology to prevent global warming.

**Major activities in 2002**

- HIKARI Commerce Services
- Innovative platform supporting remote-control medical treatment and telecommuting
- E-bidding system
- Environment IT Service
- Sensing technology
- Highly efficient fuel cell technology
- General-purpose solar battery charger

**Chapter 5 Corporate Citizenship**

**Charter** Social contribution efforts  
To promote daily environmental protection efforts in coordination with citizens and government agencies.

**Content** To pursue the policy of the "NTT Group Ecology Program 21," we actively participated in environmental protection activities in local communities in 2002.

**Major activities in 2002**

- Ecology Community Plaza
- Operation Clean Environment
- DoCoMo Woods
- Participation in a joint research project
- Launch of a Website calling for action to stop global warming

**Chapter 6 Communication**

**Charter** Disclosure of environmental information  
To enhance both internal and external communications through the disclosure of environmental information.

**Content** The NTT Group discloses environmental information through the Environmental Protection Activity Report (Website and booklet versions).  
In 2002, we conducted an advertising campaign to promote the NTT Group's concept of ecommunication.

**Major activities in 2002**

- Disclosure of environmental information on Websites
- Environmental protection activity report (Website and/or in print) by each business unit
- Release of environmental publications based on materials gathered within the NTT Group
- Questionnaire surveys on the environmental communication activities of the NTT Group

# Q4 It has been said that information sharing services such as broadband, about which we have heard so much recently, will help reduce environmental loads. Is this true?



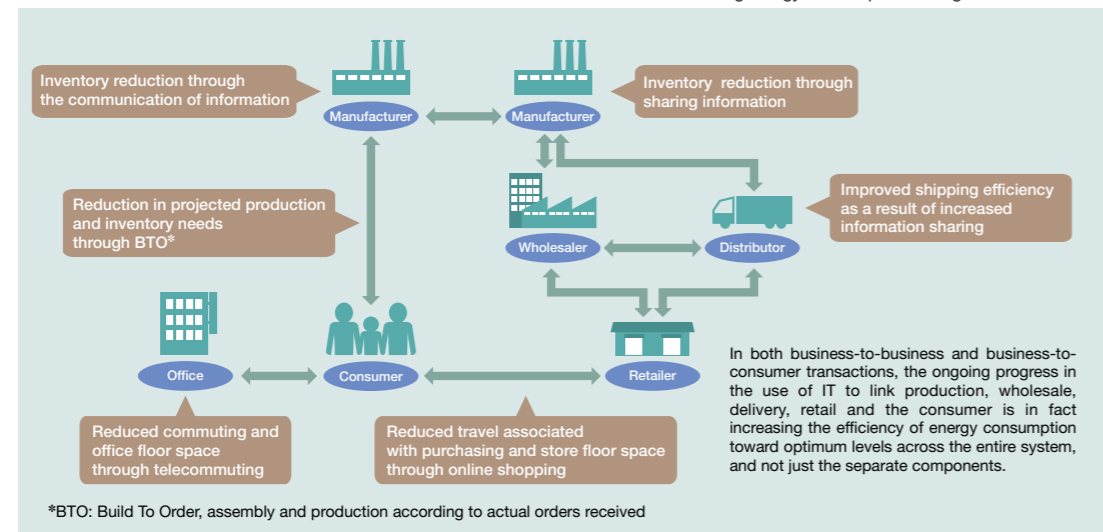
## A1 The effective utilization of IT can help to reduce the wasteful consumption of energy by improving the efficiency of distribution, production planning, and inventory control.

●●●“The Conversion Strategy for Japan’s Next Century,” released by the Ministry of Public Management, Home Affairs, Posts and Telecommunications in January 2003, identifies “Environmental revitalization by IT” as an important future direction, and calls for a 10% reduction in total energy consumption in Japan.

IT certainly represents a promising tool for the resolution of environmental problems, such as the

significant energy required to transport people and materials. The effective use of broadband services can identify and support many ways to reduce the need to move people and materials from one place to another. For example, corporations can use IT to more finely control the inventory of commodities to dramatically prevent over-production and improve the efficiency of distribution.

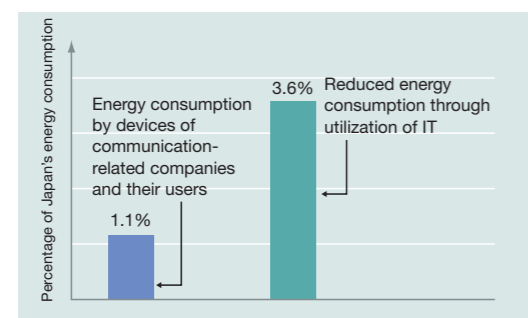
● Reducing energy consumption through the utilization of IT



●●●Data simulations developed by the NTT Group show that in 2010, the power consumption of communication equipment and networks associated with the widespread use of always-on broadband connections will represent 1.1% of Japan’s total energy consumption. At the same time, Electronic Commerce (EC), which can reduce the need for people to travel and simplify physical distribution, turning media resources into electronic information, will reduce Japan’s total energy consumption by 3.6%. We expect to see dramatic improvements from the perspective of the environment. This 3.6% reduction in energy consumption is equivalent to saving approximately 14 million kl or 72 million barrels of crude oil.

●●●For example, one customer of the NTT Group has reduced its annual consumption of light oil by 15.6% by using mobile communications services to control their vending machine inventory and thereby increase the efficiency of their distribution operations.

●●●The Internet is also playing an indirect although important role in encouraging the expansion of community-based environment activities by raising individual awareness of community environmental issues and then linking people with others who have common interests, taking advantage of the Internet’s ability to facilitate two-way communication. As a result, the environmental community is broadened with similar linkages among municipalities and enterprises and the impact of efforts to reduce environmental loads is magnified. In this way, IT contributes to the creation of a sustainable society in which genuine prosperity and courtesy can be realized.



● Projected effects of energy consumption and reduction through IT for 2010

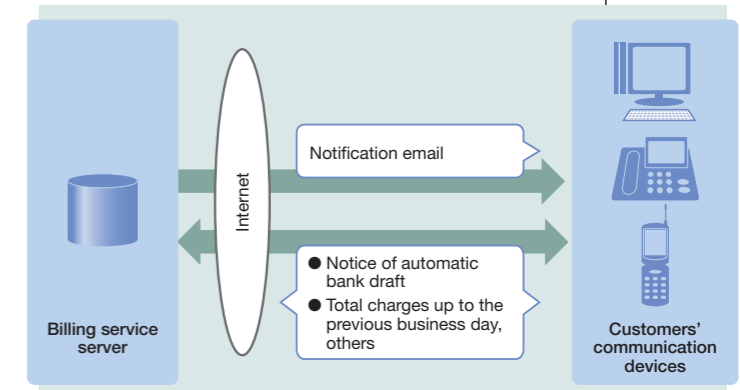
# Q5 Would you give an example of how the NTT Group has utilized IT in its business as well as in its internal operations to reduce environmental loads?



## A1 Using an Internet-based billing service for providing billing information, we were able to reduce the energy required for printing and distributing written notifications.

Billing services provide such information as automatic bank draft payments to phone users via the Web instead of using conventional printed notifications delivered by postal mail. NTT EAST, NTT WEST, NTT Communications, and NTT DoCoMo have already been implementing the system, in which confirmation of the account transfer can be accessed on the Web from the customer’s communication device.

Using this service eliminates the energy costs associated with preparing and delivering written forms, reducing CO<sub>2</sub> emissions by 50% or more, based on simulated projections.



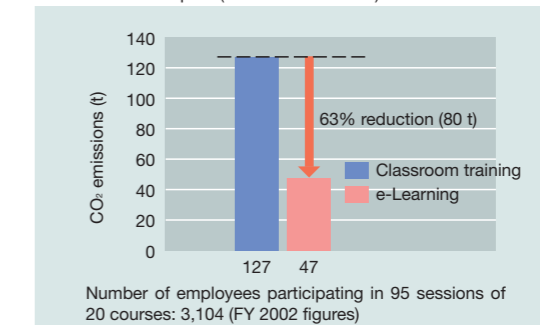
● Internet-based billing service

## A2 We have introduced a new training system that utilizes the Web and satellite communication, thus reducing CO<sub>2</sub> emissions.

The NTT Group has introduced an employee training system, which can be expected to reduce environmental loads by cutting the costs associating with employees traveling to training events. The system, provided by NTT Learning Systems, makes use of the Web and the satellite communication. The biggest difference between this system and conventional e-Learning\* applications is that a live, real-time environment can be provided, in which lecturers and learners can interact almost as if they were actually face-to-face, including question and answer sessions, with full-time instructors based in the training center.

When NTT EAST projected the effect on reducing environmental loads based on actual training data, it found that CO<sub>2</sub> emissions could be reduced by approximately 60% compared with conventional, face-to-face classroom training.

● CO<sub>2</sub> reduction impact (NTT EAST estimate)



\*e-Learning

A form of distance learning in which training material typically shared in a classroom setting is distributed via the Internet. In its conventional application, e-Learning has been an asynchronous (time-independent) format, in which learners download information, such as audio or videotaped lectures which have been stored in advance on a server. While this allows learners to study at their own pace and at times of their convenience, there is no genuine, real-time interaction.



Masayuki Hirakawa  
L&D Division  
NTT Learning Systems Corporation

## A3 Here are a few additional examples of Group activities intended to reduce environmental loads.

In addition to the above example, each Group company works to reduce energy consumption by holding videoconferences in place of traveling to business meetings, and NTT Communications saves

paper resources by utilizing a system in which employees can review their salary statements on an intranet.

# Q6 How is the NTT Group involved in information sharing services that use IT to help reduce environmental loads in society?

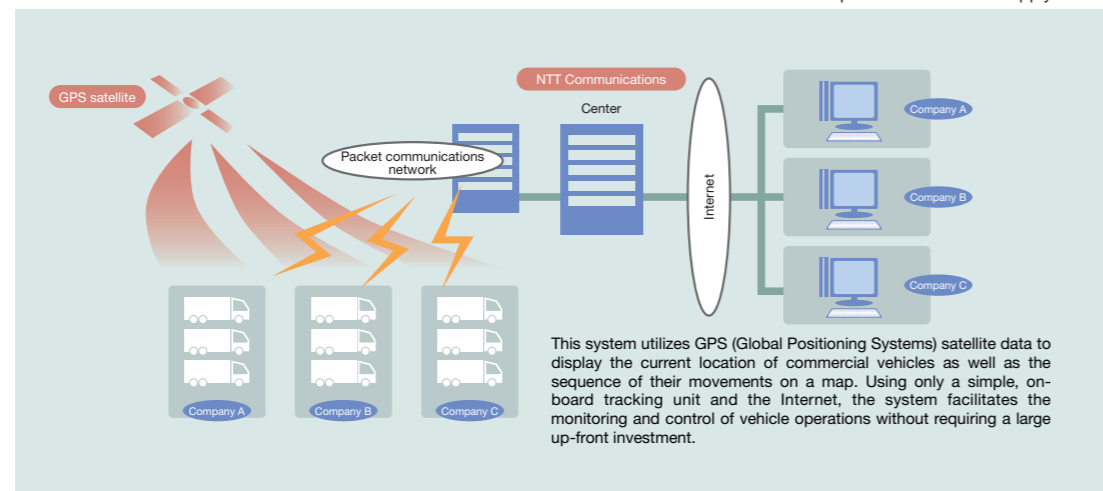


## A1 Here is one example in which we provide information sharing services that help to reduce CO<sub>2</sub> emissions from commercial vehicles.

In May 2002, NTT Communications launched an ASP-based (Application Service Provider) information service that improves the efficiency of vehicle operation control by providing information on vehicle location and travel time via the Internet. We provide a system which controls vehicle operations at reasonable price using only a simple on-board tracking unit for vehicles and the Internet environment without

requiring a large up-front investment by customers in such varied fields as transportation services, towing services, industrial waste collection, and field services. For example, a company with a fleet of 50 vehicles that improves its vehicle operational efficiency by 10% can reduce annual CO<sub>2</sub> emissions by more than 90 tons.

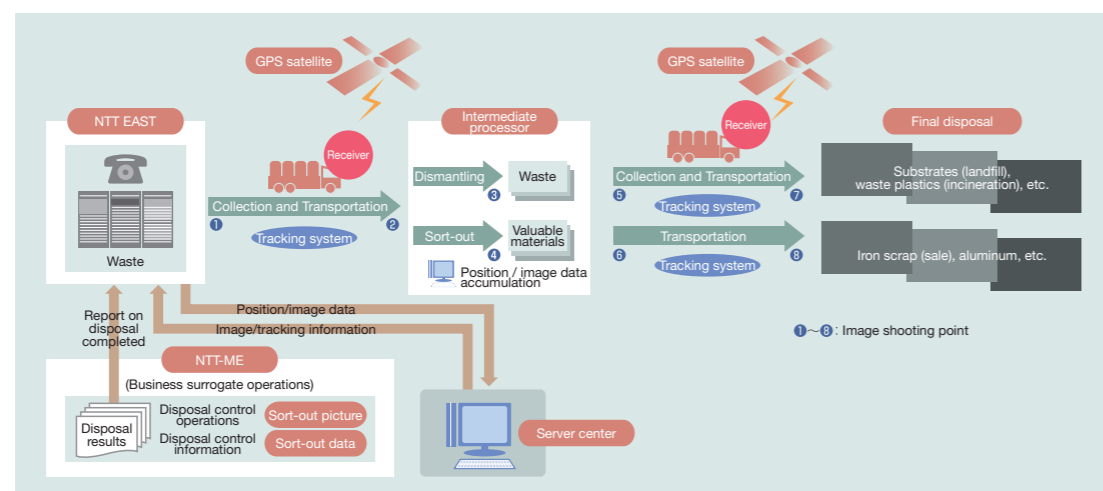
● Vehicle operation information supply service



## A2 We also provide a GPS-supported image tracking service that helps prevent illegal dumping by monitoring waste treatment procedures from the point of collection to the final disposal site.

NTT-ME provides a service for confirming via the Internet that the waste collection truck has arrived at an intermediary treatment facility through the most direct route possible by monitoring and controlling the waste treatment procedures via GPS. The system accurately tracks the status of each step in the process, from collection and transport, to dismantling and sorting, processing at an intermediary treatment site, and final delivery to the disposal landfill, while at

the same time graphically recording and displaying this information. As a result, the system is able to verify compliance with the legal and correct methods of waste disposal and also help prevent illegal dumping. While the service has been effectively deployed within NTT Group since 2001, we have been expanding its use to companies outside of the Group since 2003.



Yasuyuki Uetake  
Material Procurement  
Department  
NTT-ME Corporation

# Q7 How are you involved with goods and services that reduce the consumption of electricity by information communication devices typically used in the workplace and that promote their reuse?



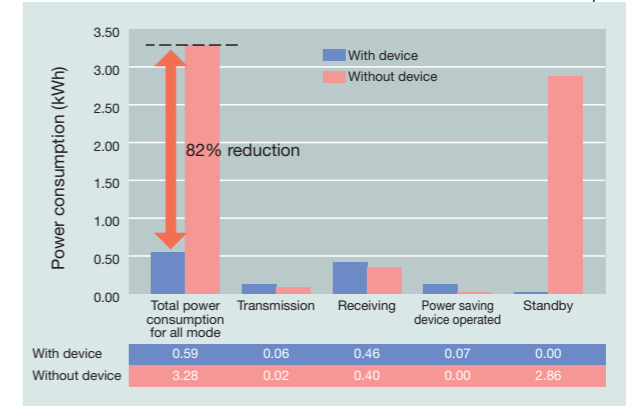
## A1 We have developed and marketed a product that reduces the power requirements of a facsimile in standby mode to zero.

NTT-AT provides an electric-power saving device for facsimiles which is connected to both the power source and the communication line of the facsimile unit. The device reduces its power requirements in standby mode to zero, while supporting the full functionality of the facsimile, thereby reducing the power consumption of every facsimile unit by 80%. This also helps reduce the CO<sub>2</sub> emissions associated with their use of electricity.

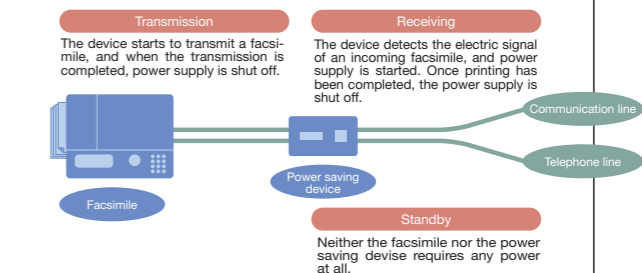


● Power saving device for facsimiles

● Effects of power saving device (results measured for eight days of use)



● The power saving device for facsimiles

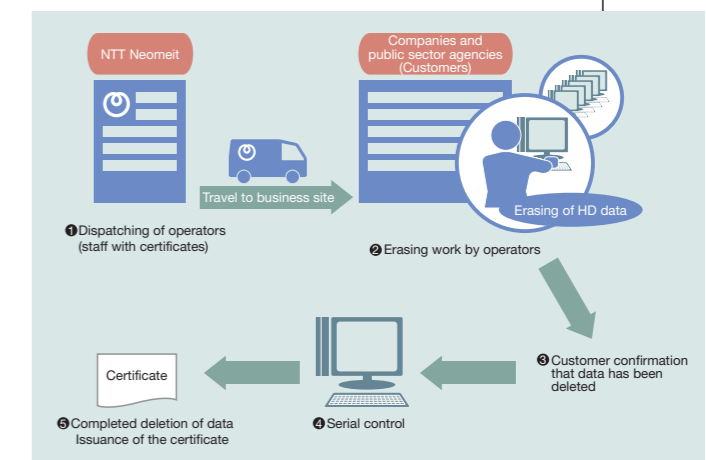


## A2 We provide a secure hard disk erasing service, which encourages the reuse of PCs and servers.

Today, the deletion of data stored on the hard disks of PCs and servers that are no longer used by companies as well as leased PCs which are returned to the rental companies is entrusted to computer users themselves. This means some data, including information that may be potentially sensitive or valuable, may not have been completely erased and still remains on the hard disks of second-hand PCs from which it can be retrieved using data restoring software.

Because of this possibility, companies and local governments that are concerned with information security choose to physically break or damage hard drives to prevent their reuse, raising a significant barrier to efforts for promoting the reuse of computer equipment.

NTT Neomeit addresses this problem, and in September 2002, the company started a service that can completely and securely erase data stored on hard disks.



● The flow of on-site service for erasing hard disk (HD) data at the customer's office

# Q8 What measures are you taking to help prevent global warming?



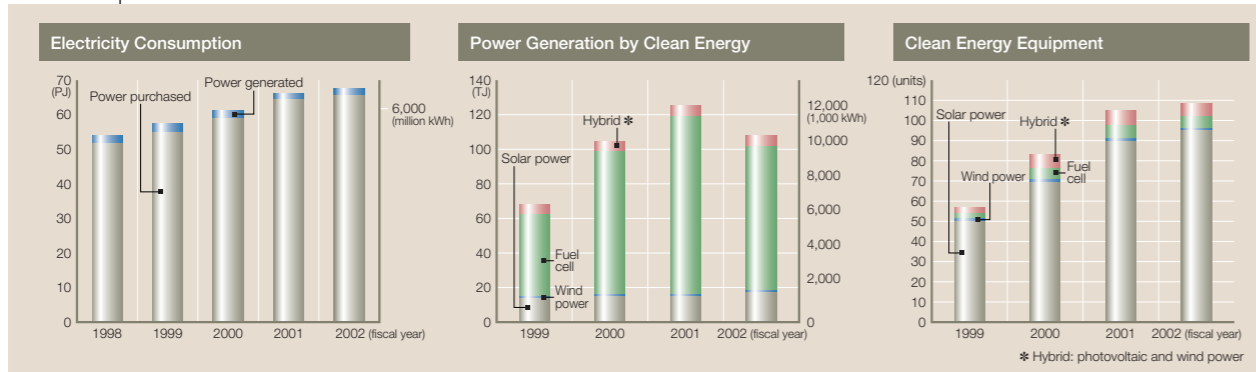
## A1 The NTT Group is making a concerted effort through its TPR (Total Power Revolution) campaign to reduce energy consumption.

The NTT Group is projected to consume more than 10 billion kWh of electric power in 2010 due to the growth in the information sharing society driven by the conversion to IT. "Our Vision for Electric Energy Reduction for 2010" lays out practical actions, and we have been implementing our TPR campaign since 1998.

Our TPR campaign includes energy management in approximately 4,000 buildings nationwide, DC power supply systems for broadband equipment such as servers and routers to reduce electricity consumption, and increasing power self-sufficiency using clean

energy sources such as solar and wind power generation systems. In addition, we are striving to develop and introduce our co-generation system utilizing fuel cells and proactively adapting the power retailing business of the NTT Group to the revised Power Business Law (liberalization of retail to special high-voltage consumers).

Through these efforts, we were able to reduce our electricity consumption by approximately 1.18 billion kWh in five years, and to reduce CO<sub>2</sub> emissions by approximately 0.45 million tons.



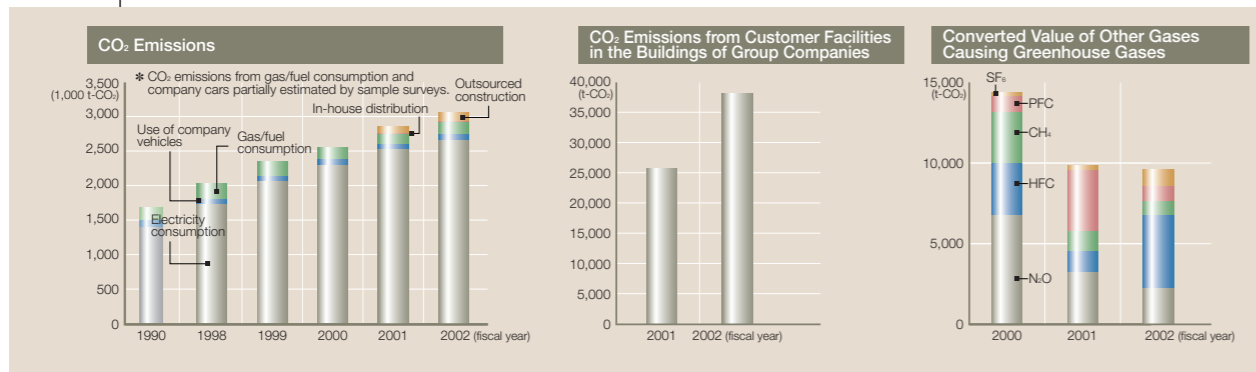
**Kei Niida**  
Greenhouse Gas Reduction Committee  
NTT GP-ECO Communication, Inc.

## A2 We have adopted stricter calculations for greenhouse gas emissions in compliance with global standards.

We upgraded our manual for calculating greenhouse gases to correspond with the revised Global Warming Measures Promotion Law Enforcement Order and the GHG (GreenHouse Gas) Protocol in order to improve the accuracy of our calculations in line with global standards for estimating greenhouse gas emissions. CO<sub>2</sub> emissions data in fiscal 2002 was calculated using

this updated system.

The greenhouse gases other than CO<sub>2</sub> have been reduced by introducing low-pollution vehicles. As described in the management section, however, CO<sub>2</sub> emissions have been increasing because of the progress of broadband services and widespread use of mobile phones.



# Q9 What is done with used telephone directories and used mobile phones?

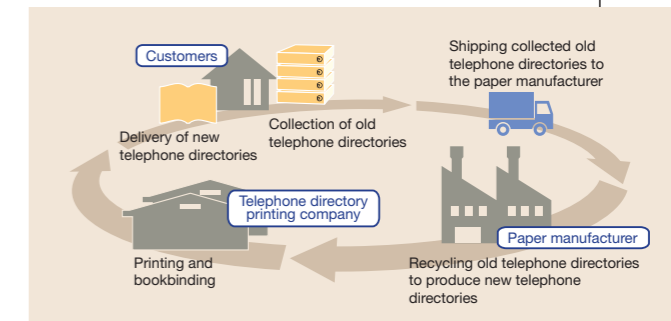


## A1 We are working on Closed Loop Recycling, which recycles old telephone directories into new ones.

A total of 120 million telephone directories are published every year by NTT EAST and NTT WEST, consuming approximately 100,000 tons of paper, which is roughly equivalent to 0.3% of all paper used in the nation (data drawn from fiscal 2002).

Given this vast amount of paper resources used in telephone directories, we created the Closed Loop Recycling System in which new directory pages are made of recycled paper from old telephone directories. The old telephone directories are collected and recycled into paper for the new directories by a paper manufacturer, and the new telephone directories are then printed and bound. We have been delivering telephone directories made in this system since the September 2001 edition. Since the key to the success of this approach is to collect more of the old telephone directories to provide a growing resource pool of

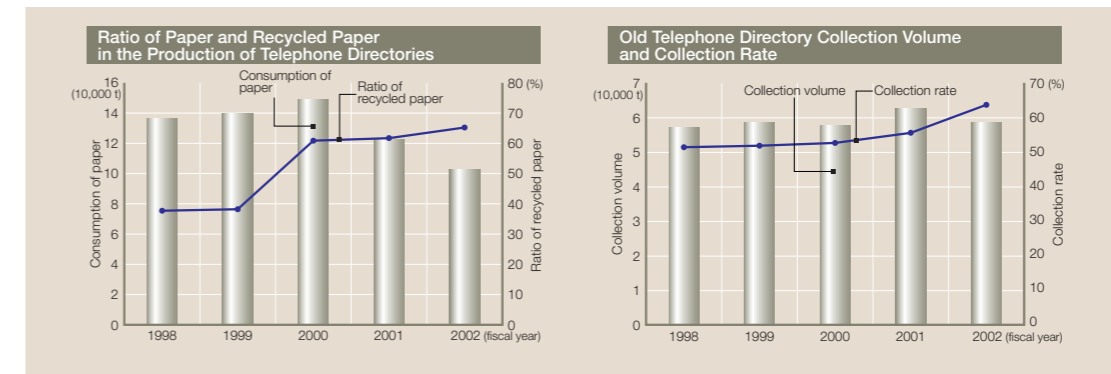
recycled paper, we make a special effort to gather up the outdated directories whenever we deliver the new ones.



● Flow of telephone directory Closed Loop Recycling



**Yoshihiko Yamaguchi**  
Paper Media Division  
NTT Directory Services Co.



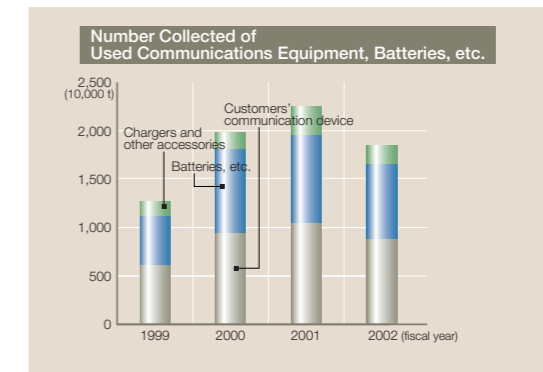
## A2 As part of our corporate responsibility, we proactively collect such equipment as used mobile phones, and will continue to implement 100% recycling.

NTT DoCoMo collects such complete commodity items as used mobile phones, car phones, PHS phone main units, batteries and chargers as one of the most critical issues for environmental conservation. In April 2001, we formed the Mobile Recycle Network in collaboration with mobile phone enterprises, and have been collecting products of not only DoCoMo but of other brands.

In fiscal 2002, the DoCoMo Group collected approximately 9 million products, including about 7.6 million batteries and approximately 2 million accessories such as chargers with the cooperation of our customers. DoCoMo has achieved a 100% recycling rate for the collected products by separating out the various component materials of the collected mobile phones, with nonferrous metal processors removing rare metals such as gold and palladium for reuse as raw materials.

In addition, NTT WEST established in May 2002 a system for recycling the metal cable for

communication circuits, and is now implementing the system nationwide. In fiscal 2002, the annual volume of polyethylene was reduced by 970 tons, equivalent to 16,900 barrels of heavy oil.



**Tadanori Yoshida**  
Distribution Department  
DoCoMo Mobile Co., Ltd.



# Q10 What research and development efforts are you pursuing to resolve global environmental issues?



## A1 Our research and development work targeting the significant reduction of environmental loads includes HIKARI Commerce Services, a new platform for remote-control medical treatment, and telecommuting.

NTT (holding company) is pursuing state-of-the-art technologies and conducting experiments in the field of information communication under its "Vision for a New Optical Generation," anticipating a future in which broadband is widespread and offers potential services that could lead to the reduction of global environmental loads.

### ●●●Electronic catalog system for the era of optical fiber

NTT Service Integration Laboratories has been pursuing research and development into HIKARI Commerce Services beyond current Web-based, e-commerce businesses. One of the keys to these efforts is a system that enhances the ease of selecting goods by arranging product images on a network in a 3D space and rearranging the product information in a variety of ways according to user needs. For example, a travel agency using this system could reduce CO<sub>2</sub> emissions by 267 tons compared to the printing and distribution of 20 travel brochures, 200,000 copies each, over three months.

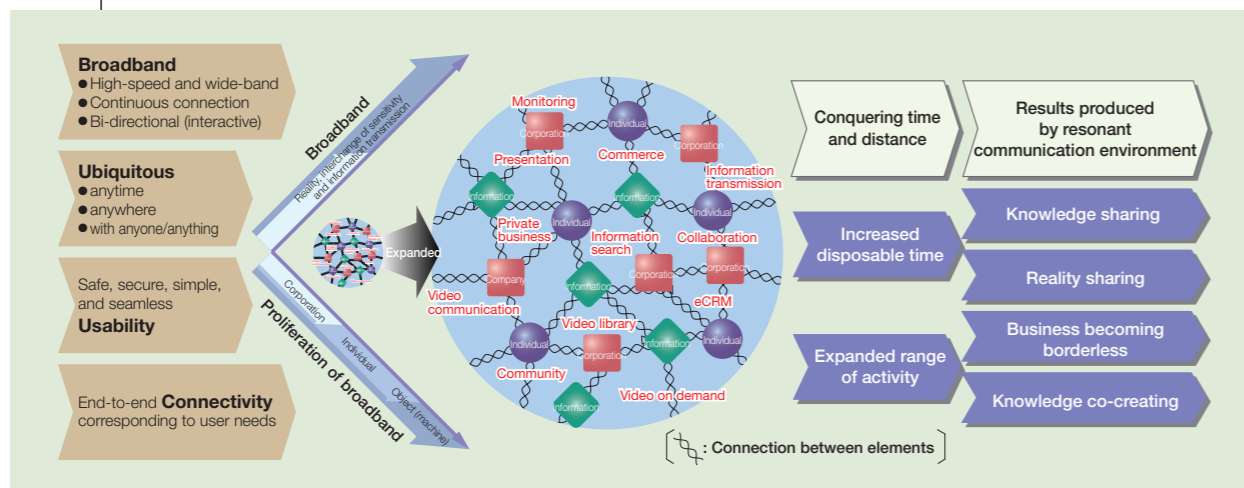
### ●●●An innovative platform supporting remote-control medical treatment and telecommuting

NTT Cyber Space Laboratories has been promoting the research and development of community and collaboration services utilizing fiber optic networks, servers and PCs as a platform to support telecommuting and remote control medical treatment involving multiple locations. Annual CO<sub>2</sub> emission could be reduced by 5.69 million tons if 2.25 million workers utilized this system to telecommute from their homes.

### ●●●e-bidding system

NTT Information Sharing Platform Laboratories has developed a system that facilitates authentication for secure administrative services and e-commerce. Based on this work, NTT Service Integration Laboratories has developed an e-bidding system that is applicable to such varied fields as bidding and procurement for government agencies.

Switching to this e-bidding system from existing conventional bidding processes, which consume large volumes of paper documents as well as the significant costs associating with the flow of people, could reduce annual CO<sub>2</sub> emissions by 2,302 tons, estimated on the basis of 18,000 projects put up for bid with 20 companies competing for each project.



● The fundamental concept of our "Vision for a New Optical Generation" is resonant communication

## A2 We are pursuing research and development into an Environment IT Service that supports co-existence with the natural environment and creates a safe and comfortable community.

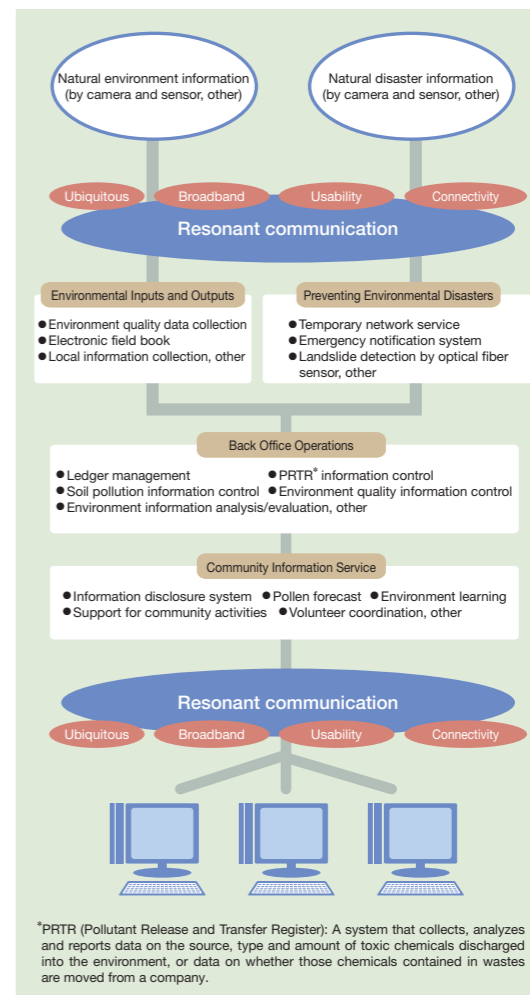
### ●●●Environment IT Service

Environment IT Service is a system that facilitates community consensus-building by providing citizen access to environment information related to their local community and encourages proactive citizen participation in the planning of their own environmental actions.

NTT Energy and Environment Systems Laboratories has been developing technologies to provide this system based on knowledge obtained through an experiment in local governments and field work. The system includes such information as the collection and disclosure of water quality in rivers, airborne particles, and the blooming of cherry trees. It also provides opportunities to learn about the environment and develops environment disaster prevention services to avert potential damage from chemicals.

### ●●●A sensing technology which is a key to realizing the Environment IT Service

NTT Microsystem Integration Laboratories and NTT Energy and Environment Systems Laboratories have been developing and providing systems that enhance the protection of public health and encourage public interest in environmental issues by applying a technology that provides hard data on the state of environmental pollution. In fiscal 2002, we developed a micro-sensing device using micro-machine technology to detect within a few seconds the Volatile Organic Compounds (VOCs) generated by automobiles and environmental hormones. In addition, NTT Energy and Environment Systems Laboratories has developed a system using a fixed point observation sensor to monitor the environmental impact of dairies. These new technologies are also a key technology to realizing the Environment IT Service.



● Environment IT Service

\*PRTR (Pollutant Release and Transfer Register): A system that collects, analyzes and reports data on the source, type and amount of toxic chemicals discharged into the environment, or data on whether those chemicals contained in wastes are moved from a company.



**Yuko Ueno**  
Ubiquitous Interface  
Research Department  
NTT Microsystem  
Integration Laboratories

## A3 We are developing clean energy technologies to reduce CO<sub>2</sub> emissions that could cause global warming.

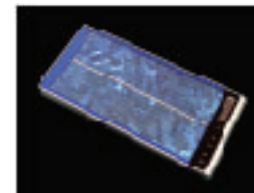
### ●●●Highly efficient fuel cell technology

CO<sub>2</sub> emissions can be further restrained if we apply clean energy to provide most of the increase in power consumption due to the advance of the information communication society.

The NTT Energy and Environment Systems Laboratories focuses on fuel cells, that is, power systems which generate electricity directly from hydrogen and oxygen. It also studies the application of solid oxide fuel cells (SOFC), which hold particular promise for generating the high levels of power required for communications equipment.

### ●●●General-purpose solar battery charger

The NTT Energy and Environment Systems Laboratories has been developing a general-purpose charger using solar batteries that can be widely used for portable electronic devices. We are currently improving the technology toward commercialization in fiscal 2003.



● General-purpose solar battery charger



**Yasuyuki Kanai**  
Energy Systems Project  
NTT Energy and  
Environment Systems  
Laboratories

# Q11 Please describe your social contribution activities from the viewpoint of the environment.



## A1 We support the creation of local environmental communities, including volunteer clean-up campaigns and forest maintenance.

The NTT Group Global Environment Charter affirms the Group's earnest responsibility for and commitment to global environmental issues. A basic policy under this charter is to promote daily environmental protection efforts in cooperation with citizens and government agencies. In fiscal 2002, we also developed active environmental protection and maintenance activities and shared information in every region.

### ●●●Ecology Community Plaza, a base for developing a variety of environment activities in close cooperation with the local community

The NTT EAST Iwate Branch and the NTT WEST Shiga Branch set up an Ecology Community Plaza as a place for providing information and encouraging participation in environment protection activities rooted in the local community. The Ecology Community Plaza supports the networking of environment protection organizations or children in the community, participation in environment protection activities, and environment seminars. In addition, the NTT EAST Aomori Branch has opened up the same plaza concept on the Internet, and has launched a variety of activities in collaboration with local governments. Such efforts have been well received and in fiscal 2002, we experienced a growing number of opportunities to respond to requests for proposals, advocacy, and information needs of environment protection organizations, local governments, and non-profit organizations (NPOs), as well as having staff participate as committee members or even as directors of such organizations. We plan to expand these activities nationwide.

### ●●●Operation Clean Environment, local landscaping, and clean-up activities

Since 1988, we have been conducting community-based activities for cleaning up and landscaping parks, sea coasts, river beds and the areas surrounding our offices with branch employees and their families, as well as retirees, often taking the initiative.

In fiscal 2002, we launched a clean-up campaign for the Nagara river beds with the involvement of employees from the NTT WEST Gifu Branch and other group companies. Moreover, a total of 200 branch employees and their families including people affiliated with other group and cooperating companies also participated in cleaning up the city center of Morioka, under the leadership of younger employees of the NTT EAST Iwate Branch. The total number of participants nationwide in fiscal 2002 exceeded 20,000.



● Employees and their families participated in a post-summer vacation clean-up campaign for the Nagara River, in Gifu City, Gifu Prefecture, September 14, 2002.

### ●●●DoCoMo Woods, tree planting and forest maintenance

DoCoMo Woods is a forest maintenance initiative started by the NTT DoCoMo Group as a part of our natural environment protection activities. We have been implementing the project since 1999, making use of the "Corporate Forests" system of the Forestry Agency and the Green Fund of the National Land Afforestation Promotion Organization.

The objective of this reforestation effort is to deepen information exchanges between DoCoMo employees and their families and the local residents while preserving rich ecosystems and beautiful landscapes through such forestry activities as planting and thinning trees and maintaining hiking trails.

In fiscal 2002, in addition to Aichi and Mie Prefectures, we sponsored project activities with the participation of 700 employees in ten areas including the Tokyo metropolitan area and nine prefectures over the Kanto and Koshinetsu regions to commemorate the 10th anniversary of NTT DoCoMo's establishment.



● Employees participated in tree planting, tree thinning, and the maintenance of hiking trails and bench making in the DoCoMo Tokigawa Sankyo Woods in Tokigawa Village, Saitama Prefecture, September 28, 2002.



● Branch cutting in the DoCoMo Shikanoyama Woods in Atago National Forest in Futtsu City, Chiba Prefecture, September 28, 2002

# Q12 How do you cooperate with local governments, educational organizations, and NPOs in environmental protection activities?



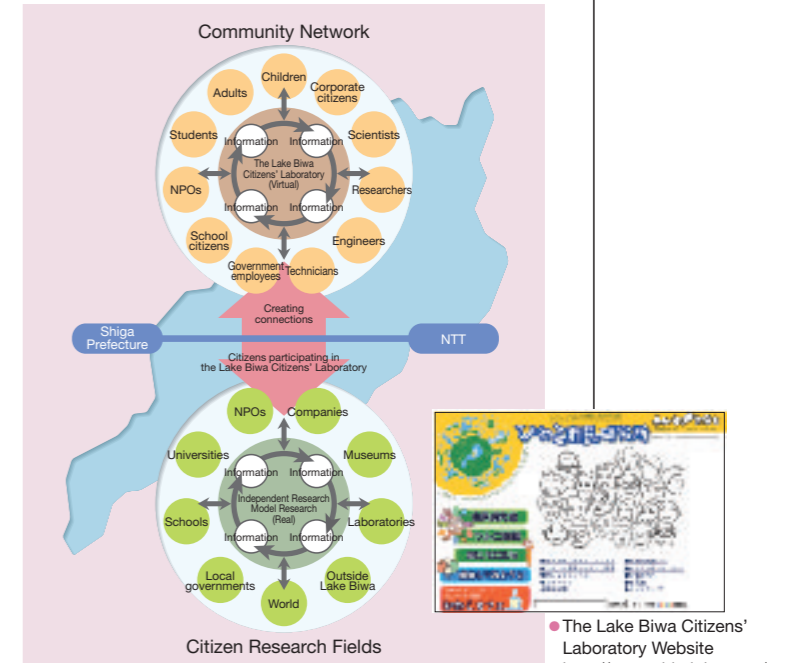
## A1 We carried out a wide range of joint activities in fiscal 2002, including our involvement in the Citizen's Environmental Information Network and an appeal to prevent global warming.

### ●●●Participating in a joint research project to encourage a recycling-based society in Shiga and Iwate Prefectures

NTT EAST, NTT WEST and the NTT Energy and Environment System Laboratories have developed joint research projects in Shiga and Iwate Prefectures with the cooperation of government agencies, elementary and junior high schools, NPOs, universities, and environmental experts to create communities that can co-exist with the environment, and to demonstrate a practical model for a recycling-based society. We established several joint projects, including The Lake Biwa Citizens' Laboratory and Biwako NPO Networks in Shiga Prefecture, as well as the Iwate Environment Networks in Iwate Prefecture.

In the Lake Biwa Citizens' Laboratory, we set up a research facility at the gateway into the Lake Biwa conservation area, and support volunteer citizen studies regarding the regional environment and lifestyles.

In the Biwako NPO Networks, we have been developing systems to support citizen participation making use of IT and facilitating information exchanges among NPOs who are recruiting volunteers and citizens who are looking for ways to be involved.



● Citizen participation joint research project, the Lake Biwa Citizens' Laboratory supported by the NTT Group

● The Lake Biwa Citizens' Laboratory Website <http://www.shiminken.net/>

### ●●●Cooperating in the development of GRI (Global Reporting Initiative) guidelines for telecommunications industry appended documents

In the midst of the rapid changes impacting our entire society, including companies, the guidelines released by the GRI toward establishing practical global standards for Sustainability Reporting (a voluntary sustainability report issued by companies) have been updated every two or three years. Today, the preparation of appended documents showing indices suitable for each industry and field has proceeded under GRI guidelines. The NTT Group joined a working group established by GRI, UNEP (the United Nations Environment Program), and GeSI (Global e-Sustainability Initiative), as the only company in Asia to develop the telecommunications industry appended documents. We also participated in developing the appended documents along with each country's telecommunications companies, communication equipment suppliers, environmental research organizations, human rights groups, and labor unions.

In addition, we carried out collaboration efforts with Japanese and overseas organizations, such as our participation in WBCSD (World Business Council for Sustainable Development), and GEA (Global Environment Action).

### ●●●Opening a Website calling for action to stop global warming on a shared site within the Kankyo goo, an environmental information Website

NTT-X established an interactive Website with a "I will reduce CO<sub>2</sub> Declaration," which promotes the implementation of the Kyoto Protocol in collaboration with the World Wide Fund for Nature Japan (WWF Japan), and has been in full-scale operation since April 2002.

The Website offers a questionnaire survey and calculation of results of daily environmental activities so that we can see at a glance how the amount of CO<sub>2</sub>, a cause of global warming, can be reduced through individual efforts across the nation. As of the end of March 2003, a total of 109,937 people have "signed on" to the declaration on the Website.



● Website with a "I will reduce CO<sub>2</sub> declaration" <http://eco.goo.ne.jp/wwf-go4kyoto/>



Yutaka Fujikawa  
goo Organization Head  
Department  
NTT-X, Inc.

# Q13 Where can we find information on your environmental protection activities and their results?



## A1 We report our activities on our Website, where you will find a wealth of information, our environmental reports, and mass media tools.



**Yasuhiro Iбата**  
Environmental Protection Office  
NIPPON TELEGRAPH AND  
TELEPHONE CORPORATION

The Environmental Protection Activity Report of the NTT Group is made available primarily for our stakeholders on our Website and in this printed edition. At the same time, we try to communicate information on protecting the environment both within and outside of the NTT Group through advertisements in the mass media and environmental events.

### ●●●Disclosure of environmental information on our Website

We continually work to enhance the content of our Website by including such features as "Kids ecommunication" to help children easily understand the relationship between IT and the environment; "NTT Group employees talk about the environment," in which the NTT Group employees discuss their experiences related to environmental activities; and "Cross talking on the Earth," in which prominent men and women engage in dialogues on the environment. In fiscal 2002, we enriched the Website with content on the development of environmental technology.

### ●●●Environmental protection activity reports published by each Group company

NTT Group companies including NTT EAST and NTT WEST, have also been using the Website for their own environmental communications, including reports on their environmental activities.

For additional information on the environmental activities of individual companies, see the URL on page 26.

### ●●●Development of environmental public relations

In November 2002, we released a public relations campaign for newspapers and magazines around the concept "Broadband not only fulfills your dreams but also benefits the global environment," reflecting the environmental aspects of our "Vision for a New Optical Generation." In addition, we shared our thinking and efforts with the public through the proactive participation of each Group company in environment-related events such as lectures at various symposiums and presentations at exhibitions highlighting environmental technology.



● A two-page magazine advertisement

### ●●●Publications

In an "Environment Information Talkfest" sponsored by the NTT Data Institute of Management Consulting, we asked knowledgeable independent experts to discuss their perspectives and recommendations for creating an eco-conscious community. The results of the discussions were compiled and published in *The Grand Design of the Eco-Conscious Community*, by the NTT Publishing in March 2003.

Based on materials gathered within the NTT Group, we released the publication *IT Saves the Global Environment*, edited by NTT-AT which provides good examples of our efforts to resolve environmental problems using IT.



● NTT EAST ● NTT WEST ● NTT Communications



● NTT Data ● NTT DoCoMo ● NTT (holding company)

# Q14 I've completed your survey. How will my responses influence NTT's environmental protection activities?



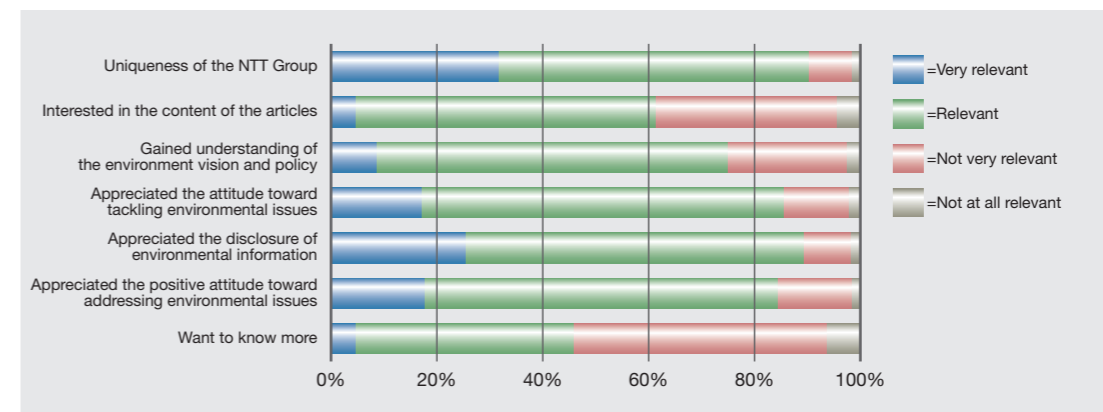
## A1 We are genuinely interested in hearing what you have to say, and we carefully consider this feedback in developing our communications, including this environmental report.

### ●●●Conducting questionnaire surveys

Questionnaire surveys on the Web-based environmental communication activities of the NTT Group were inaugurated by goo-research of NTT-X in March 2003. We received responses from 1,044 individuals.

On the whole, respondents gave high marks to our efforts related to environment issues and the disclosure of environmental information. We also received positive feedback about our Website, as shown in the graph below, indicating that people appreciated NTT's unique approach.

We also noted individual comments and suggestions such as "This seems too much like the questions and answers you would find in a textbook." and "It would be better to use simpler words and expressions so that ordinary people can easily understand." In response to comments like these, we focused more in this year's report on the various nuances in the questions we received from our customers, and we tried to state information as clearly and directly as possible.



● Excerpts from survey results about the Web-based environment protection activities of the NTT Group

### ●●●Evaluations from "Environmental Report Award" reviewers and an environment magazine

The "Environmental Report Awards 2002," noted several positive aspects of the NTT Group Environment Protection Activity Report, including comments that the Q&A format was interesting and that the management system of information was substantial compared to the sites of other companies. At the same time, some expressed concern that questions were too long to understand and that they expected to see more analysis of environmental load results and information on future developments.

In the "Third Annual People's Choice Eco Web Award," we received such comments as "The message is strong and it can be readily evaluated," "I thought that 'Kids ecommunication' offered valuable information, even for adults." On the other hand, some pointed out that the structure of the Website was hard to understand.

The March 2003 issue of *Environment Marketing & Business* commended the presentation concept of our report as exemplified by the concise environmental load map.

Please feel free to share your honest opinions and recommendations for this report for fiscal 2003. We are sincerely interested in what you have to say and will

consider your feedback in our future environment protection and communication activities.



● "Kids ecommunication" Website  
<http://www.ntt.co.jp/kankyo/kids/index.html>

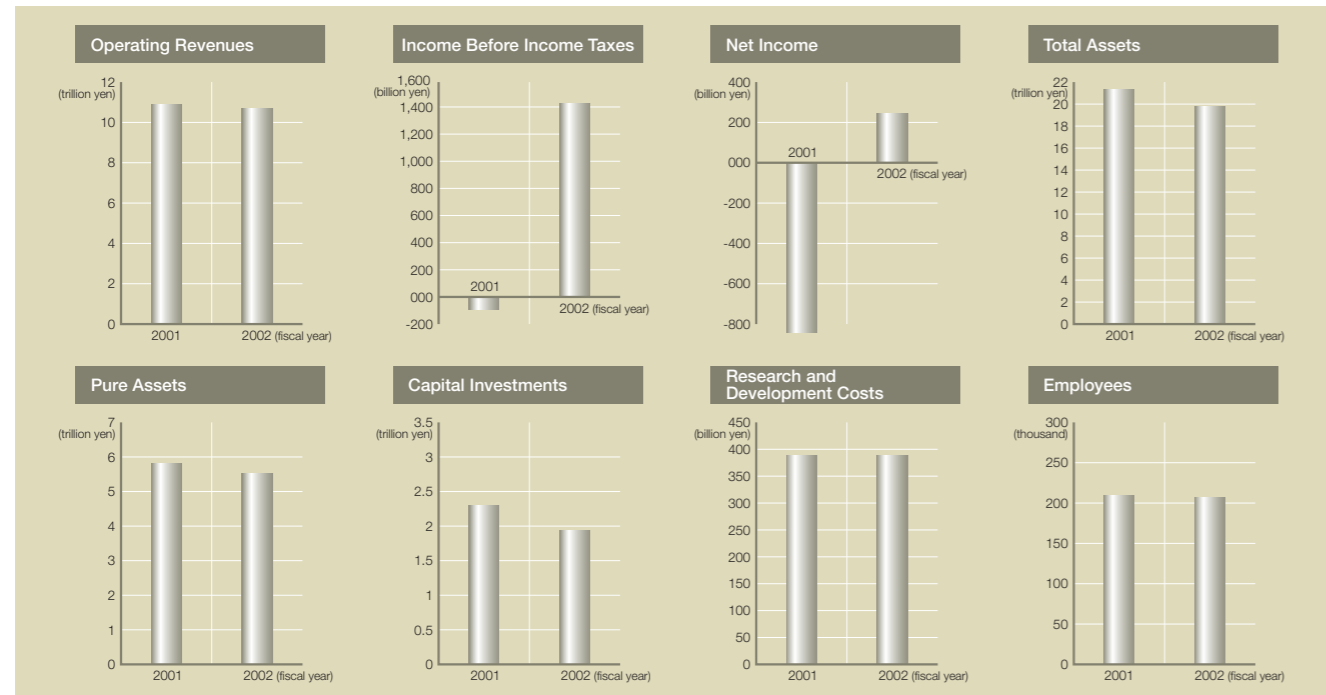
# Environmental Protection Activity Data File

## 2003 Activities, Facts and Figures

●Profile of NIPPON TELEGRAPH AND TELEPHONE CORPORATION (as of March 31, 2003)  
 ●Consolidated profile (as of March 31, 2003)

■ Company name: NIPPON TELEGRAPH AND TELEPHONE CORPORATION (NTT)  
 ■ Address: 3-1 Otemachi 2-Chome, Chiyoda-ku, Tokyo 100-8116 Japan ■ Established: April 1, 1985  
 ■ Capital: 937.95 billion yen ■ Number of employees: 3,178 ■ Website: http://www.ntt.co.jp/index\_e.html  
 ■ Employees: 207,000 ■ Number of companies: 334

### Economic Performance



\*This statement has been prepared in accordance with the accounting principles generally accepted in the United States (U.S. GAAP). Figures from the previous year recorded herein are also calculated using converted figures from the same period of the previous year according to US accounting standards.

### Environmental Accounting in Fiscal 2002

Environmental Conservation Costs (¥100 million)		Environmental Conservation Benefits (¥100 million)	
Listing by the guidelines of the Ministry of the Environment	Investment Cost	Benefits expressed in monetary units	Benefits expressed in physical quantity units (10,000 t)
(1) Business area cost	55.6	Reduced expenses from decreased energy consumption	14.9
• Pollution prevention cost	1.2	Amount gained from recycling	18.2
• Global environmental conservation cost	50.4	Reduction of waste disposal expenses with recycling	0.6
• Resource circulation cost	4.0	The amount of reduced expenses of new purchases through reuse	
(2) Upstream/downstream cost	2.4	• Dismantled telecommunications facilities	223.3
(3) Administration cost	3.3	• Wastes at offices	0.4
(4) R&D cost	40.9	Other economic benefit	19.3
(5) Social activity cost	0.0	Total	276.7
(6) Environmental remediation cost	0.0		
Total	102.2		

Investments and R&D Costs (¥100 million)	
Total investment in current period	19,776.2
Total R&D cost in current period	3,959.7

#### Environmental Accounting of the NTT Group

- Scope of Inclusion  
The companies subject to consolidated environmental accounting are NTT (holding company), NTT EAST, NTT WEST, NTT Communications, NTT DoCoMo, NTT DATA, and their group companies (130 companies in total)
- Period of Report  
From April 1, 2002 to March 31, 2003
- Method of Calculation  
  - Accounting is conducted in accordance with "NTT Group Environmental Accounting Guidelines (2002 version)." This criteria conforms to the "Environmental Accounting Guidelines (2002 version)" issued by the Ministry of the Environment.
  - In the NTT Group's consolidated environmental accounting table, conservation costs and conservation benefits were described. Conservation costs are expressed in currency units, while conservation benefits are classified into those that can be expressed in monetary units and those expressed in units of physical quantity.
  - Conservation costs were tabulated separately as capital investments (environmental investment) and expenses (environmental expense). Personnel costs are included under expenses, although depreciation expenses are not.
  - In order to more efficiently consolidate the NTT Group's environmental accounting, an Internet-based tabulation system was utilized.

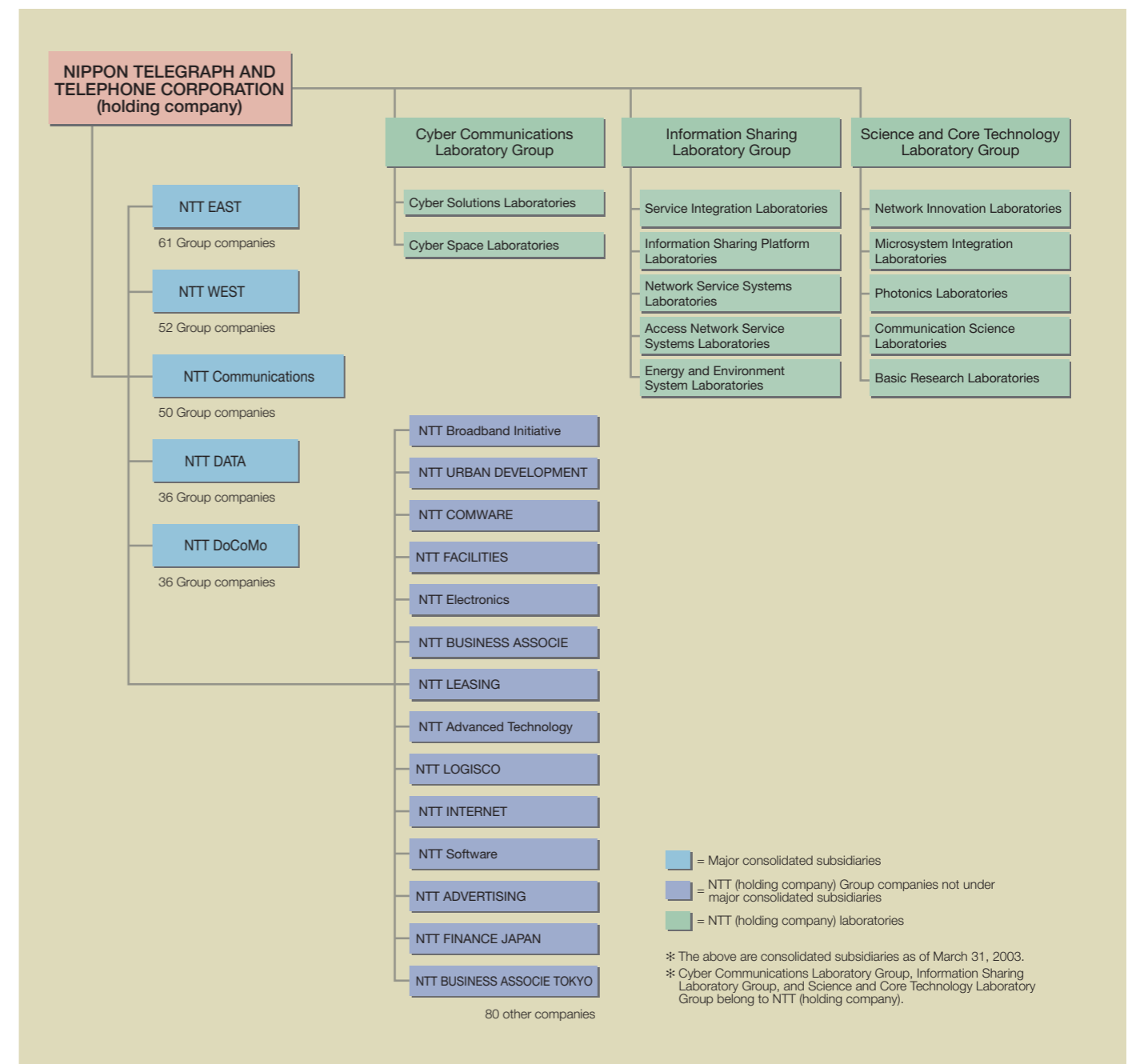
- Tabulated Results  
  - Total environmental conservation cost was 48.33 billion yen (investment: approximately 10.2 billion yen, expense: approximately 38.1 billion yen).
  - For environmental protection impacts, economic impact was 27.67 billion yen. The quantity recycled was 930,000 tons. The major items recycled included communications cables, concrete telephone poles, and telephone directories.
- Others  
  - These are the deemed effects of research and development results. The data were not included in the environmental accounting, but reported on page 15 along with the actual content of research and development.
  - The environmental protection impacts (expressed in units of physical quantity) related to IT services provided to customers were similarly estimated. The data were reported on page 9 along with the content of services.

### Corporate and Group Profiles

The NTT Group, with the holding company NTT at its core, offers a wide range of customer services through its wholly-owned subsidiaries NTT EAST, NTT Communications, NTT DATA, and NTT DoCoMo. Group companies such as NTT COMWARE, NTT-ME, and NTT FACILITIES maintain resources for the entire Group, including software, communications facilities, power facilities, and buildings. Each subsidiary explores new business possibilities and endeavors in order to expand its business domains.

These efforts are supported by two types of R&D (research and development): basic R&D, which is centralized at the holding company level; and specific application R&D, which is engaged in by each subsidiary. Although it is unusual for a holding company to operate its own R&D department, NTT considers R&D a driving force for the management and development of the NTT Group today and in the future.

### NTT Group Consolidated Companies



■ = Major consolidated subsidiaries  
 ■ = NTT (holding company) Group companies not under major consolidated subsidiaries  
 ■ = NTT (holding company) laboratories

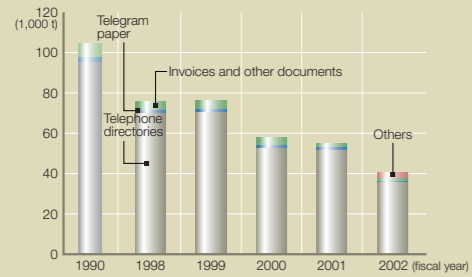
\* The above are consolidated subsidiaries as of March 31, 2003.  
 \* Cyber Communications Laboratory Group, Information Sharing Laboratory Group, and Science and Core Technology Laboratory Group belong to NTT (holding company).

The NTT Group's environmental protection activities are implemented in 438 companies including the consolidated companies above.

1. The unit "t" (tons) represents the amount of materials used.
2. For the amount of energy, the unit "J" (joules) is used, although "kWh" (kilowatt hours) is utilized for some data to facilitate ready comparison in the amounts of electricity. To convert kWh to J, we have used the factor 10,250 kJ/kWh based on the "Law Enforcement Policies for the Rationalization of Energy Use."
3. For the amount of the greenhouse gas, the unit "t-CO<sub>2</sub>" is used. To convert the amount of CO<sub>2</sub> emitted with the use of electricity, calculate by the average electricity discharged coefficient 0.378 kg-CO<sub>2</sub>/kWh.

### Paper Resource Management

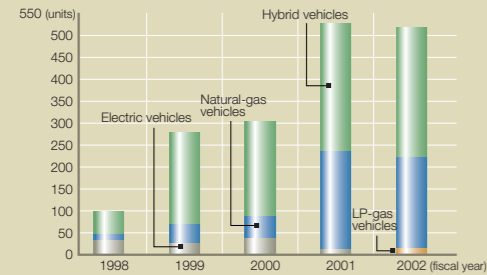
Consumption of Virgin Pulp



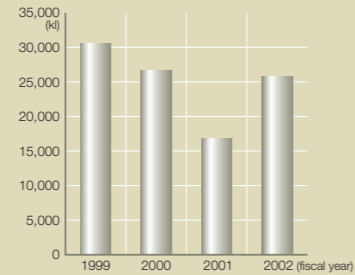
- Ratio of Paper and Recycled Paper in the Production of Telephone Directories – See page 14
- Old Telephone Directory Collection Volume and Collection Rate – See page 14

### Measures against Global Warming

Number of Low Pollution Vehicles



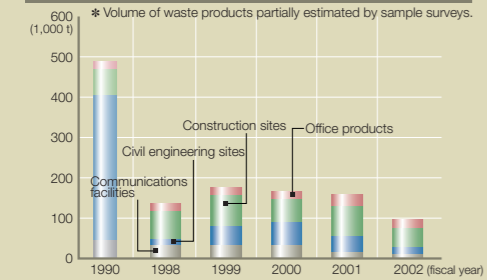
Fuel Consumption by Company Vehicles



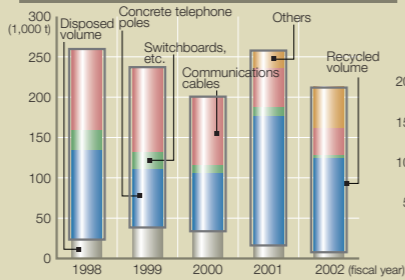
- CO<sub>2</sub> Emissions – See page 13
- CO<sub>2</sub> Emissions from Customer Facilities in the Buildings of Group Companies – See page 13
- Converted Value of Other Gases Causing Greenhouse Gases – See page 13
- Electricity Consumption – See page 13
- Power Generation by Clean Energy – See page 13
- Clean Energy Equipment – See page 13

### Waste Management

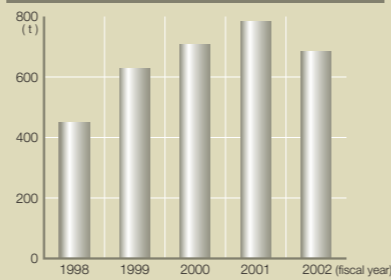
Waste Products



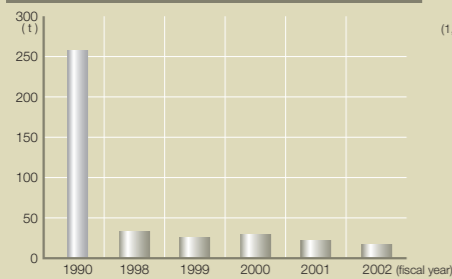
Emissions of Dismantled Communications Equipment



Repellet Production by Plastic Recycling



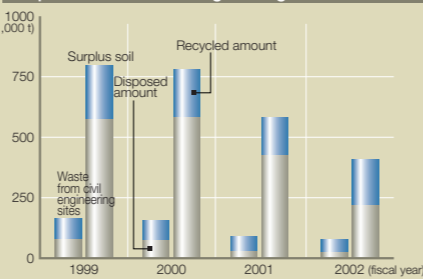
Use of Polystyrene for Packing



Waste and Surplus Soil from Construction Sites

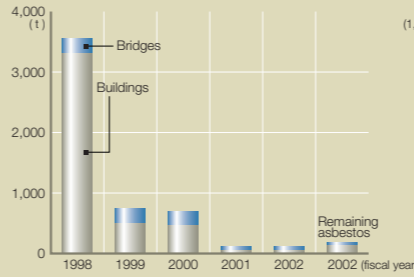


Waste from Civil Engineering Sites/ Surplus Soil from Civil Engineering Sites

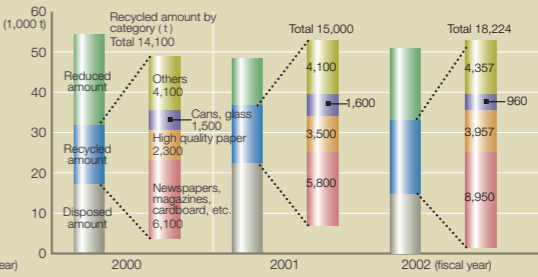


### Waste Management (Continued)

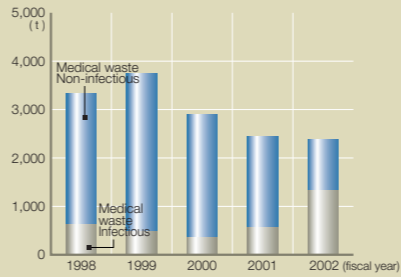
Asbestos Emissions and Remaining Asbestos



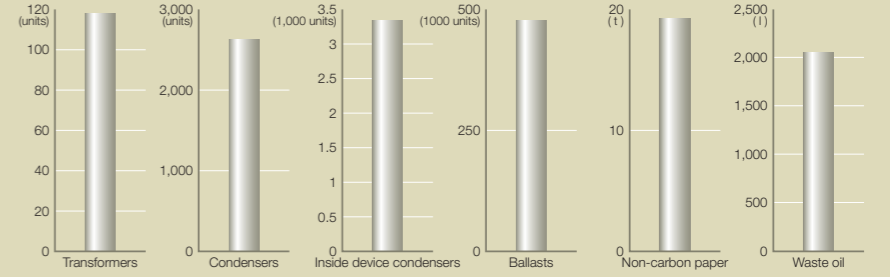
Volume of Office Waste



Volume of Medical Waste



Storage Amount of Used PCB Devices



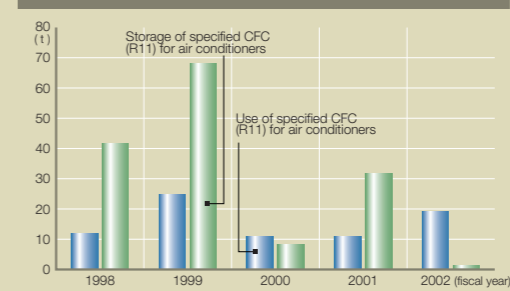
- Number Collected of Used Communications Equipment, Batteries, etc. – See page 14

### Protection of the Ozone Layer, Other Activities

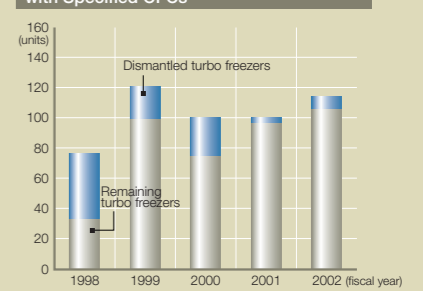
Use of Specified Halon for Fire Extinguishing Equipment



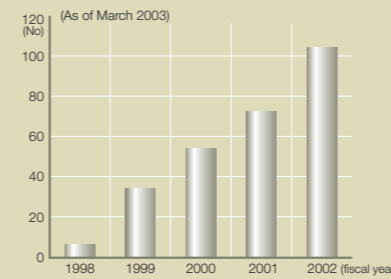
Amount of Specified CFCs for Air Conditioners



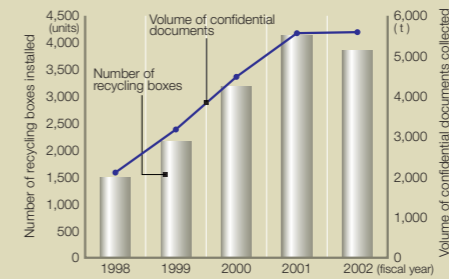
Number of Dismantled Turbo Freezer Units with Specified CFCs



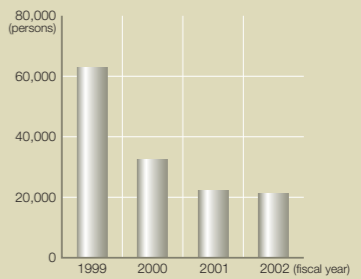
ISO 14001 Certification for NTT Group



Recycling Boxes Installed and Volume of Confidential Documents



Number of Participants in "Operation Clean Environment"



# Website Map Introduction of our Websites

It is our intent to clearly and simply communicate a wide variety of information, not only to those well-versed in environmental issues, but to the general public as well. You can review the entire scope of the environmental protection activities of the NTT Group on our Website, where we introduce our concrete actions as well as ideas and approaches related to the environment.

## Environmental Protection Activity Report 2003 Top Page



The "family members" who appear in this booklet edition of this report also show up in the Web version as a navigation aid to the NTT Group's major environmental protection activities in fiscal 2002. They engage the interest of Website guests by asking questions and receiving detailed explanations from the "father," who is an employee of NTT.

## Environmental Protection Activity Report Index



## Digest



## Q&A Page



When a question requires a response from more than one perspective, the Website visitor is directed first to a summary, from which those who want to know more can follow links to more detailed information. When there is only one answer, the visitor is automatically directed to the detailed page.

## Detailed Answer Page



## Content of the Environmental Protection Activity Report 2003

### Environmental Protection Activity Report

There are three ways for easily locating Q&A topics in which you are most interested.

Your inquiries into the environmental protection activities of the NTT Group were summarized into questions, which were classified and organized into a total of 40 items. We organized the report in a Q&A format with answers provided by NTT Group employees who were most closely related to the specific topic. Those 40 items are classified under three kinds of indices.

- Listing by six areas: Management, IT, environmental protection activities, research and development, corporate citizenship, and communication
- Listing by the NTT Group Global Environmental Charter
- Listing by the Environmental Reporting Guideline of the Ministry of the Environment

### Digest

Review environmental protection activities in an easy-to-understand picture book.

Representative items from the NTT Group's environmental protection activities in fiscal 2002 were compiled in a picture book, which provides a friendly format for elementary school students and those with only a general interest in environmental issues. The stories are told through the format of a family engaged in everyday activities.

### Others, explanation of each content

- Environmental Technology of NTT  
Concretely introduces the environmental technologies of the NTT Group, including research and development to help reduce environmental loads, accompanied by comments of staff in charge.
- Vision and Policies  
Summarizes the vision and basic policies of the NTT Group's environmental protection activities.
- Public Relations on the Environment  
The various activities related to environmental problems, including the research and development of environmental technologies by the NTT Group in fiscal 2002 as presented through magazine and newspaper advertisements.
- Links of Group companies  
Provides information on the environmental protection activities of each NTT Group company and related Website so that you can also review the full picture of the environmental protection activities of the entire NTT Group.

### Booklet PDF Version

NTT Group Environmental Protection Activity Report 2003 is available in PDF format, which can be downloaded and printed.

### Questionnaire Survey

You can submit your opinions and comments on our environmental protection activities using the provided questionnaire survey. Your responses will help to guide us develop next year's report as well as other communications tools and environmental activities.

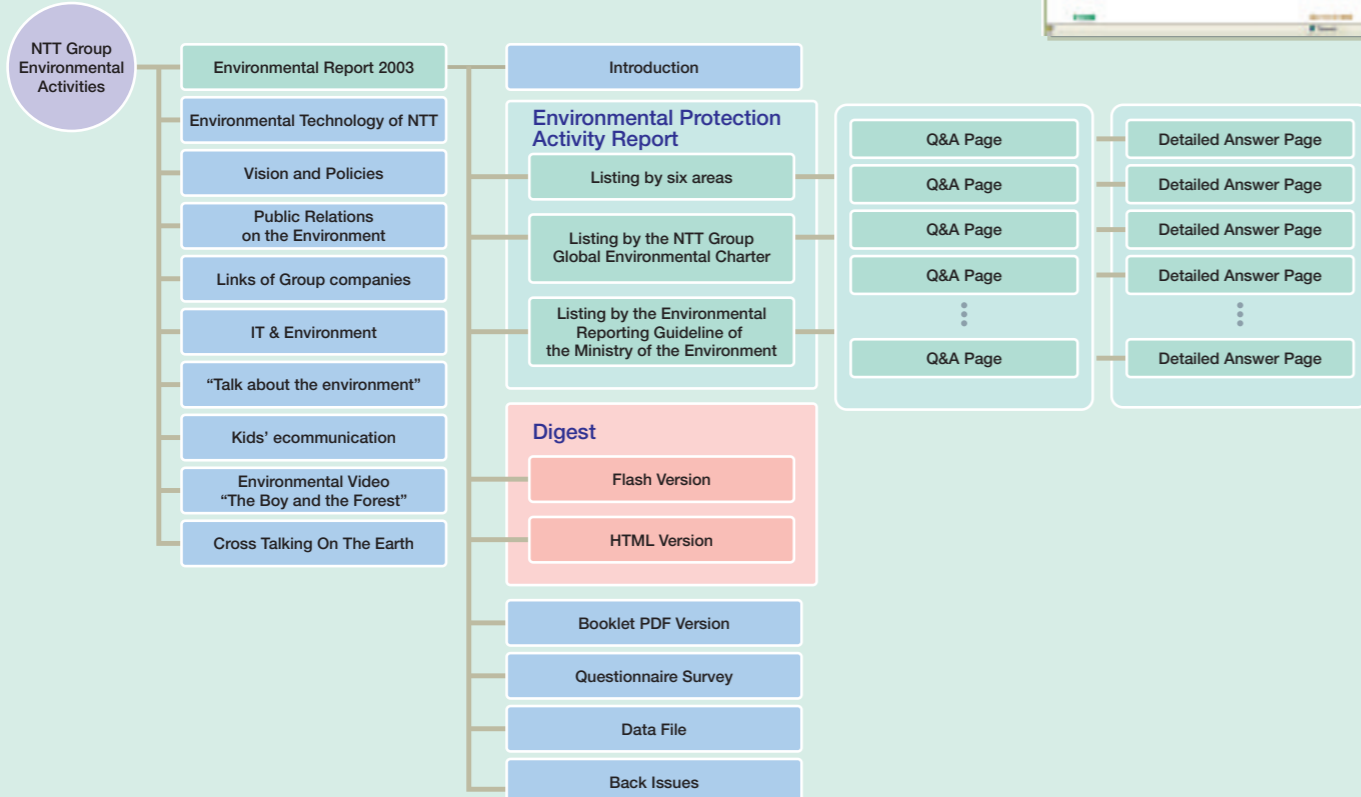
### Data File

- Profile of the Company and Group
- Economic performance
- Environmental protection activity data
- Activities covered in the 2002 report but not included in the 2003 edition

### Back Issues

- Environmental Protection Activity Report 2002
- Environmental Protection Activity Report 2001
- Environmental Protection Activity Report 2000
- Environmental Protection Activity Report 1999
- 1998 environmental report or before

- IT & Environment  
Spotlights the ways in which IT can be effectively used for environmental protection.
- NTT Group employees talk about the environment  
We compiled personal comments of NTT Group employees who are engaged in environment businesses.
- Kids' ecommunication (Japanese only)  
An environmental site for children. We contributed content that helps raise awareness of the environmental protection activities of the NTT Group.
- Cross Talking On The Earth  
Dialogues on the environment involving representatives of every sector of society.



### URL list of NTT Group companies mentioned in this Report

NIPPON TELEGRAPH AND TELEPHONE CORPORATION (holding company)	<a href="http://www.ntt.co.jp/index_e.html">http://www.ntt.co.jp/index_e.html</a>	NTT DIRECTORY SERVICES	<a href="http://bj.nttds.co.jp/english/">http://bj.nttds.co.jp/english/</a>
Cyber Communications Laboratory Group	<a href="http://www.ntt.co.jp/cclab/e/">http://www.ntt.co.jp/cclab/e/</a>	NTT GP-ECO Communication	<a href="http://www.ntt-gp.com/">http://www.ntt-gp.com/</a>
Cyber Space Laboratories	<a href="http://www.ntt.co.jp/cclab/e/ccsouken/">http://www.ntt.co.jp/cclab/e/ccsouken/</a>	NTT WEST	<a href="http://www.ntt-west.co.jp/index_e.html">http://www.ntt-west.co.jp/index_e.html</a>
Information Sharing Laboratory Group	<a href="http://www.islab.ecl.ntt.co.jp/e/">http://www.islab.ecl.ntt.co.jp/e/</a>	NTT-Neomeit	<a href="http://www.ntt-neo.com/english/">http://www.ntt-neo.com/english/</a>
Service Integration Laboratories	<a href="http://www.islab.ecl.ntt.co.jp/e/">http://www.islab.ecl.ntt.co.jp/e/</a>	NTT Communications	<a href="http://www.ntt.com/index-e.html">http://www.ntt.com/index-e.html</a>
Information Sharing Platform Laboratories	<a href="http://www.islab.ecl.ntt.co.jp/e/">http://www.islab.ecl.ntt.co.jp/e/</a>	NTT DATA	<a href="http://www.nttdata.co.jp/en/">http://www.nttdata.co.jp/en/</a>
Energy and Environment Systems Laboratories	<a href="http://kankyo.lelab.ecl.ntt.co.jp/eng/index2.htm">http://kankyo.lelab.ecl.ntt.co.jp/eng/index2.htm</a>	NTT DATA INSTITUTE OF MANAGEMENT CONSULTING	<a href="http://www.keieiiken.co.jp/eng/">http://www.keieiiken.co.jp/eng/</a>
Environmental Management & Provisioning Project	<a href="http://www.enacss.jp/">http://www.enacss.jp/</a>	NTT DoCoMo	<a href="http://www.nttdocomo.co.jp/english/">http://www.nttdocomo.co.jp/english/</a>
Science and Core Technology Laboratory Group	<a href="http://www.ntt.co.jp/sciab/index_e.html">http://www.ntt.co.jp/sciab/index_e.html</a>	DoCoMo Mobile	<a href="http://www.docomobile.co.jp/">http://www.docomobile.co.jp/</a>
Microsystem Integration Laboratories	<a href="http://www.ntt.co.jp/milab/">http://www.ntt.co.jp/milab/</a>	NTT FACILITIES	<a href="http://www.ntt-f.co.jp/profile-e/">http://www.ntt-f.co.jp/profile-e/</a>
NTT EAST	<a href="http://www.ntt-east.co.jp/index_e.html">http://www.ntt-east.co.jp/index_e.html</a>	NTT Advanced Technology	<a href="http://www.ntt-at.com">http://www.ntt-at.com</a>
NTT-ME	<a href="http://www.ntt-me.co.jp/">http://www.ntt-me.co.jp/</a>	NTT LEARNING SYSTEMS	<a href="http://www.nttls.co.jp/">http://www.nttls.co.jp/</a>
NTT-X	<a href="http://www.nttx.co.jp/">http://www.nttx.co.jp/</a>	NTT Publishing	<a href="http://www.nttpub.co.jp/">http://www.nttpub.co.jp/</a>