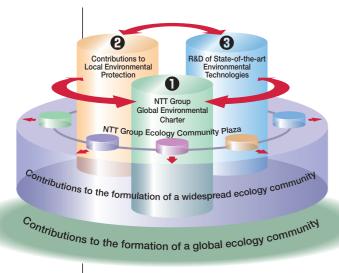
Management

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



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

NTT Group Ecology Program 21

# 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

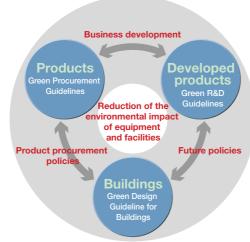
We established this guideline to promote procurement of environmentally friendly products (Green Procurement). We assess suppliers on the basis of their corporate policies as well as their products.

# ●●● 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

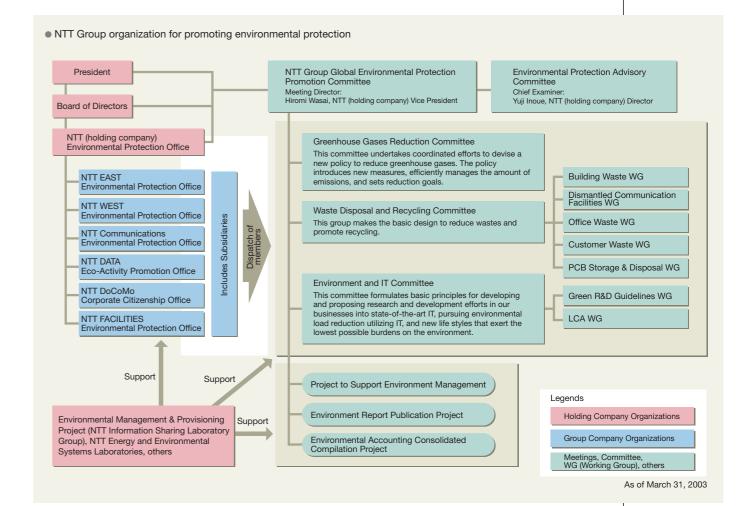
This guideline promotes building designs that support coexistence with the environment, such as seven criteria including extending building life, restricting the use of halon and CFCs, reducing waste, and promoting reuse and recycling.



NTT Group Environmental Guidelines

# 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.



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 Consolidated Compilation Project Office (NTT Information Sharing Laboratory Group)

Management

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



The business scale of the NTT Group is so large we cannot denv 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"

- ••• Paper resource management: Reduce total consumption of virgin pulp to less than 80% of the 1990 levels
- ●●● Prevention of global warming: Reduce CO₂ emissions to less than the 1990 levels
- •••Waste management: Reduce final disposal volume to less than 15% of the 1990 levels

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

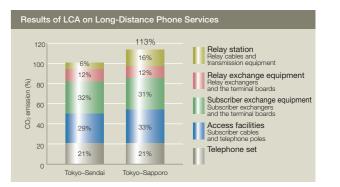
We evaluated the environmental load associated with our longdistance phone services as a second application of LCA following a similar assessment of local calls that we conducted last vear

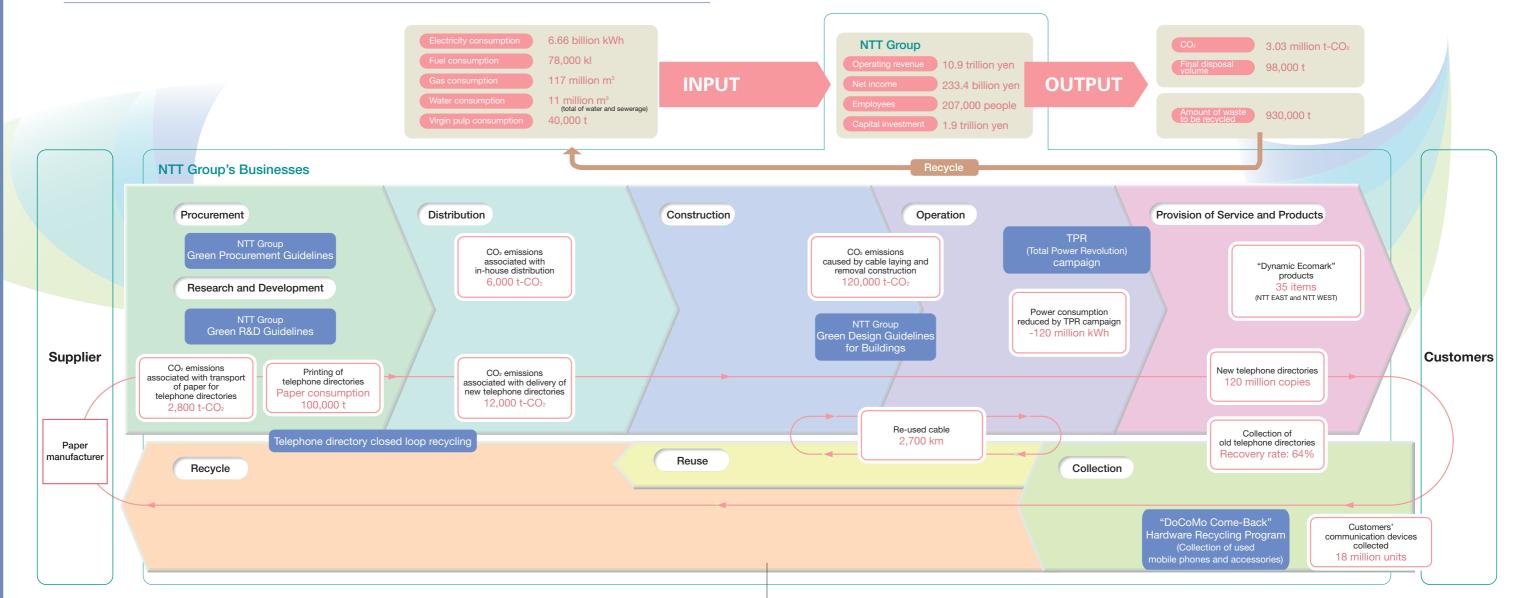
NTT EAST, NTT Communications, and NTT Information Sharing Laboratory Group have assessed the environmental load of fixed telephone services. We compared the environmental load of long-distance phone service between Tokyo and Sapporo, based on defining long-distance phone service between Tokyo and Sendai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





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



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.

Management

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

## Charter

Compliance with laws and regulations and fulfillment of social

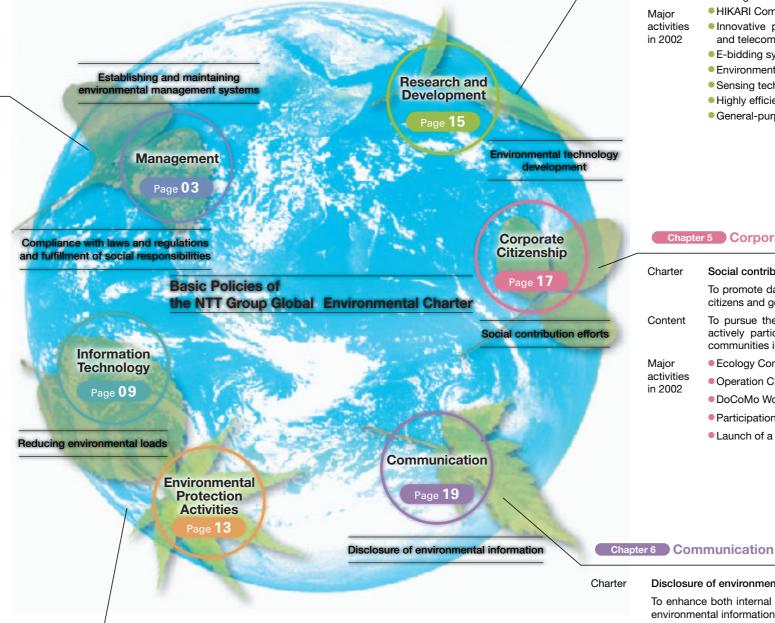
## Content

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

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.

# 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



### 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

- 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.

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

communities in 2002 Ecology Community Plaza

activities in 2002

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

Chapter 2 Information Technology

**Chapter 3 Environmental Protection Activities** 

# 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.

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

### Disclosure of environmental information

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

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

- 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