

NTT Group's Activities to Reduce Environmental Loads

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Abstract

The NTT Group is pursuing its environmental protection activities based on the NTT Group Global Environmental Charter, which prescribes the basic principles and policies for environmental protection activities. This article focuses on one of the Charter's principles: the reduction of environmental loads. It presents up-to-date data concerning NTT Group's activities and introduces some new activities to reduce both the environmental loads generated by its business activities and by society as a whole.

1. Introduction

The NTT Group is striving to achieve a sustainable society while seeking compatibility between environmental protection and business activities based on its 1999 plan "NTT Group Ecology Program 21" [1]. Based on the plan's concepts, the NTT Group has established the NTT Group Global Environmental Charter, which prescribes the basic principles and policies for global environmental protection (**Fig. 1**). The Kyoto Protocol, an international treaty on preventing global warming, came into effect in February 2005 and global awareness of the need for environmental protection is rising. This article provides up-to-date data about some activities introduced in last April's Special Feature and introduces some recent initiatives taken by the Group to reduce environmental loads generated by its business activities and by society as a whole.

2. Update on activities to reduce environmental loads

2.1 Prevention of global warming

The number of clean energy facilities constructed by the Group is increasing as shown in **Fig. 2**. Fiscal year 2003 saw 106 photovoltaic generation systems installed, up by 11 systems from fiscal 2002. Howev-

er, in spite of efforts to reduce power consumption, an increase in the number of IT (information technology) and telecommunication facilities brought about by the expansion of broadband services and the increase in the number of access points for the 3G mobile telephone service resulted in increased carbon dioxide emissions by the NTT Group. The emissions in fiscal 2003 amounted to 2,920,000 tons against the Group's target of 1,690,000 tons for fiscal 2010. Although the rate of increase is gradually leveling off, the increasing trend is expected to continue, necessi-

Basic policies

- 1) Comply with laws and regulations and fulfill social responsibilities
Observe all laws and regulations regarding environmental protection issues and carry out our responsibilities as global corporate citizens.
- 2) Reduce environmental loads
Establish action plans for energy conservation (reduction of greenhouse gas emissions), resource conservation (conservation of materials such as paper) and waste reduction and strive to make continuous improvements.
- 3) Establish and maintain environmental management systems
Establish an environmental management system enabling each business unit to pursue voluntary environmental protection activities.
- 4) Develop environmental technologies
Contribute to the reduction of environmental loads through various areas of R&D including multimedia services.
- 5) Make social contribution efforts
Promote daily environmental protection efforts in coordination with citizens and government agencies.
- 6) Disclose environmental information
Enhance both internal and external communications through the disclosure of environmental information.

Fig. 1. NTT Group Global Environmental Charter.

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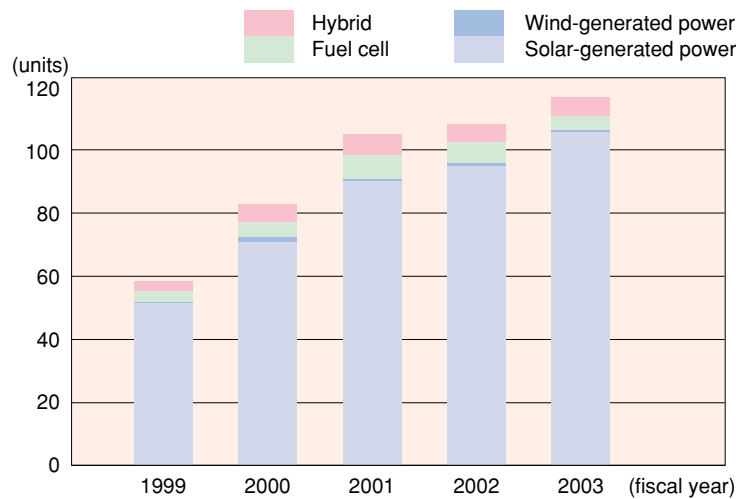


Fig. 2. Number of clean energy power generators installed in NTT Group.

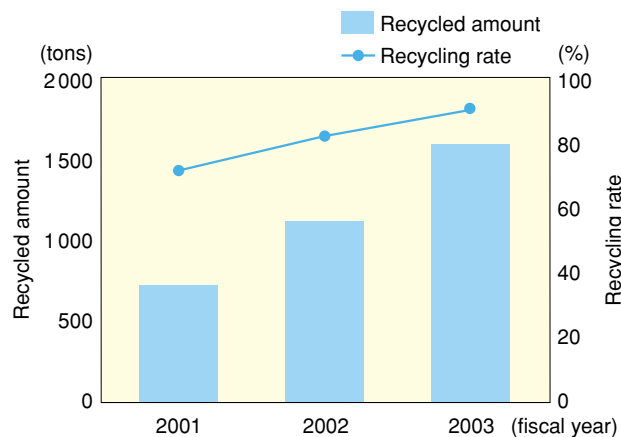


Fig. 3. Recycled amount and recycling rate for dismantled optical fiber cables.

tating renewed determination by the NTT Group to reduce power consumption. To promote the use of clean energy, the NTT Group will aim to increase the capacity of solar cell generation systems so that they can also be applied to outdoor equipment, such as remote monitoring systems. And to extend clean energy to society as a whole, NTT released a commercial version of its Solar Card Power [2],[3], a compact and high-power mobile power supply unit, which went on sale in July 2004.

2.2 Handling of waste

The target set by the group is to reduce, by 2010, the amount of waste for final disposal to 72,000 tons, which is 15% less than the 1990 level. When decommissioned telecommunication facilities, such as

switching systems and telecommunication cables, are found to be still usable, they are reused at other sites in the same company or other companies within the NTT Group. Those that cannot be reused are segregated according to materials and components and recycled. The recycling rate for the waste cable recycling system developed in 2001 [1] has reached 92.5% (Fig. 3).

NTT Facilities, NTT-ME, and NTT Neomeit, which are all engaged in business associated with buildings and telecommunication cables, have been increasing the recycling of construction and civil engineering waste generated when buildings are constructed or demolished or when cables are installed by managing the recycling rate using manifest slips and by choosing waste processing companies that

have demonstrated a high recycling rate.

Many NTT Group companies have obtained ISO14001 certification, which requires segregating and increasing the recycling of waste from ordinary office buildings. Thanks to these efforts, the amount of waste for final disposal in fiscal 2003 was reduced to 77,000 tons, so it is steadily approaching the fiscal 2010 target of 72,000 tons. The NTT Group will continue to promote reuse and recycling to achieve its targets.

2.3 Reduction of use in paper resources

The collection rate for old telephone directories reached 65.2% in fiscal 2003 (**Fig. 4**). Recent new efforts include reevaluating how Hello Pages directories*¹ are published and confirming whether a new or relocated customer actually needs a new telephone directory. Other measures taken by the NTT Group include reducing the amount of paper used in offices and introducing electronic systems for paperless reporting of internal transactions, such as salary details, to individual employees. As a result of these measures, the amount of virgin pulp used by the NTT Group in fiscal 2003 was reduced to 37,000 tons compared with 40,000 tons for fiscal 2002 [1], which is well below the fiscal 2010 target of 84,000 tons. The fiscal 2010 target will be lowered to encourage fur-

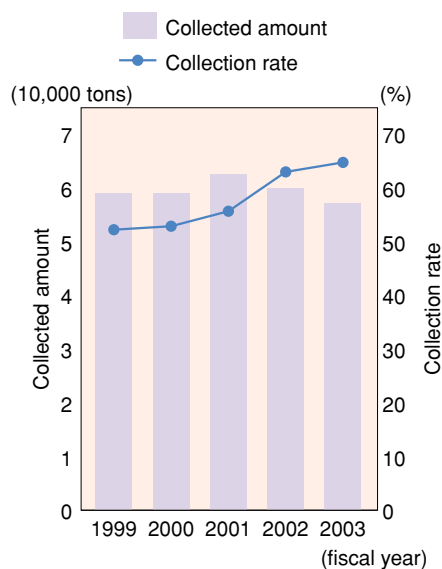


Fig. 4. Weight of old telephone directories collected and collection rate.

*1 Hello Page is a directory of business and residential listings (in Japanese only).

ther reductions in the use of virgin pulp.

3. New activities

3.1 Water purification using microporous material (MPM)

When waste paper from telephone directories and other documents is processed for recycling at a paper mill, paper sludge is discharged and usually ends up at a landfill. To prevent this organic sludge from decomposing and to reduce its volume, it must be incinerated, which raises the problem of securing landfill sites to bury the resulting ash. The main components of the ash from incinerated sludge are clay and calcium carbonate, which are added to the paper fibers to create a smooth surface finish and prevent ink from running. NTT Access Network Service Systems Laboratories has been successful in developing a process for converting this ash into a new microporous material (MPM) [4], which can be used to improve water quality and absorb harmful gases. Due to the numerous micropores, MPM has a large surface area, which gives it high cation exchange and absorption properties.

In a water purification experiment conducted in the Yoda River in Kakogawa (Hyogo prefecture) last year, it was found that effective placement of MPM formed into spheres (called eco-balls) or plates reduced the biochemical oxygen demand (an indicator of water contamination) and the concentration of dissolved chemicals (such as nitrogen and phosphorus) and also removed small floating debris. The components of MPM absorb only nitrogen and phosphorus. After it has been used to purify water, the MPM can then be used as a nutrient soil dressing. This innovation thus closes the loop in the flow of paper resources (**Fig. 5**).

We are also researching other applications of MPM, such as its use as an additive to strengthen concrete against acid rain, an absorbent for harmful gases (such as carbon dioxide), and a material for improving polluted soil around factories.

3.2 Visual Showcase

As electronic commerce, such as online shopping on the Internet and online ordering, becomes widely accepted, the physical distribution of goods will become more efficient, and overproduction will become better controlled, resulting in an overall reduction in the amount of energy consumed by society as a whole. The NTT Group is undertaking R&D on “optical commerce services” that can be provided

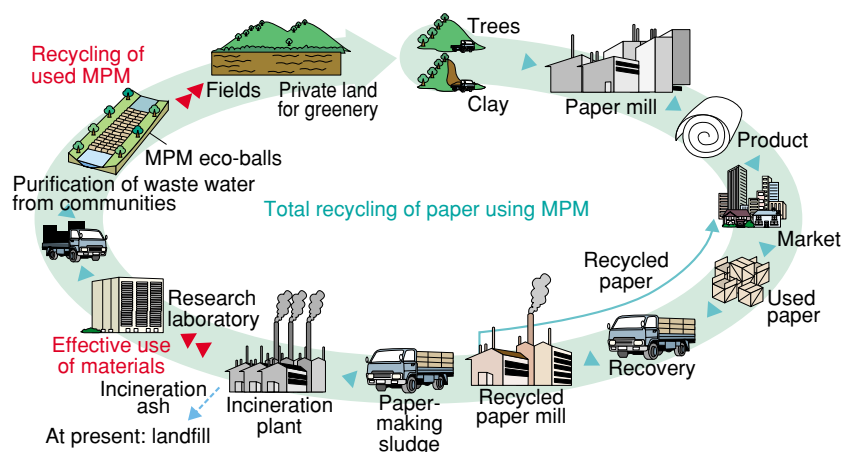


Fig. 5. Total paper recycling system using MPM.

over a high-speed, large-capacity optical network and are superior to the current form of web-based electronic commerce. One of these optical commerce services, Visual Showcase, allows products selected by the user to be displayed in a three-dimensional space, thus letting the user compare different products. The system allows the consumer to shop and search for or select products, which in turn will encourage the use of online commerce.

If a travel agent uses Visual Showcase to replace 200,000 prints for each of 20 different travel brochures distributed over a period of three months, carbon dioxide emissions will be reduced by 267 tons [5].

Progress in information communication technologies (ICT) services, such as online commerce promoted by Visual Showcase and teleworking, is expected to reduce total energy consumption in Japan by 3.9% [3]. The NTT Group is striving to promote ICT services that will effectively reduce energy consumption.

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