NTT Group Activities Toward a Sustainable Society

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Abstract

The NTT Group is conducting unified environmental protection activities based on the principle and policies of the NTT Group Global Environment Charter with the aim of achieving a sustainable society. This article presents examples of NTT Group activities for reducing the environmental impacts associated with NTT business operations and for reducing the environmental impact of society as a whole by providing information and communications technology (ICT) services. It provides an update to the previous article in March 2005.

1. Toward a sustainable society

People around the world are becoming increasingly aware of environmental problems since the Kyoto Protocol took effect on February 2005. Japan has been active in environmental initiatives, as demonstrated by the national campaign "Team Minus 6%" for meeting the Kyoto Protocol objectives. And in Japan's corporate world, the promotion of environmental management has become an important management issue from the viewpoint of social responsibility.

The NTT Group was working to achieve a sustainable society even before the recent attention to environmental problems. Based on "NTT Group Ecology Program 21" established in 1999 as a basic concept for environmental protection activities, NTT Group companies are united in their effort to make environmental protection and business operations compatible with each other on the initiative of the NTT Environmental Protection Office. This article presents some examples of NTT Group activities that aim to reduce not only environmental impacts due to business operations but also the environmental impact of society as a whole through the optimal application of information and communications technologies (ICT).

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2. NTT's perspective on the environment

2.1 NTT Group CSR Charter

The NTT Group established an "NTT Group CSR Charter" in June 2006 [1]. As shown in **Fig. 1**, this charter states our commitment and four goals for corporate social responsibility (CSR) linked by the common theme of communication. It lays out the basic policy for carrying out CSR activities as a unified group to meet the social responsibilities of a major corporation.

2.2 NTT Group Global Environment Charter

One of the CSR goals—Communication between people and the global environment—talks about reducing our own environmental impacts and reducing the environmental impact of society as a whole through the provision of ICT services. The environmental goal in the NTT Group CSR Charter can be met by following the basic principle and policies of global environment protection described in the NTT Group Global Environment Charter. This declares the following six basic policies [2] that provide the foundation for each NTT Group company's environmental charter: (1) comply with laws and regulations and fulfill social responsibilities, (2) reduce environmental loads, (3) establish and maintain environmental management systems, (4) develop environmental technologies, (5) make social contribution efforts, and (6) disclose environmental information. Furthermore, as our approach to reducing the environmental

Our Commitment
As a leader of the information and telecommunications industry, the NTT Group is committed to providing reliable, high-quality services that contribute to the creation of a safe, secure, and prosperous society through communications that serve people, communities, and the global environment.

Our CSR Goals
Communication between people and their communities
1. We shall strive to create a richer and more convenient communications environment and utilize our technology to contribute to the resolution of the various issues faced by societies with aging and declining populations.

Communication between people and the global environment
2. We shall strive both to reduce our own environmental impacts and build environment-friendly forms of communications and to provide information and communications services that help to reduce the impact of society as a whole on the global environment.

Safe and secure communication
3. While striving earnestly to ensure information security and resolve telecommunications-related social issues, we shall do our utmost to provide a safe and secure user environment and contribute to the creation and future development of communication culture.
4. Fully recognizing the role that telecommunications plays as a critical infrastructure supporting society and protecting our livelihoods, we shall strive to offer secure and reliable telecommunications services fortified to withstand disasters and capable of connecting people irrespective of time, location, and other circumstances.

Team NTT communication
5. All of us on Team NTT pledge to perform our duties with pride and a keen sense of responsibility in compliance with the highest ethical standards, striving to fulfill our mission to society by working both for our own development as professionals and for the further development of a flourishing and vibrant community.

-Team NTT comprises all NTT Group employees, including temporary employees, contract employees, employees of our corporate partners, and also former employees who endorse the NTT Group's CSR activities.

Fig. 1. NTT Group CSR Charter.

Table 1. NTT Group principal action plan targets.

Prevention of global warming	Reduce CO_2 emissions per subscriber by at least 35% for all telecommunications carriers. (Telecommunications carriers: NTT East, NTT West, NTT Communications, NTT DoCoMo)
	Reduce CO_2 emissions per unit of sales by at least 25% for all other group companies (Other group companies: NTT DATA, NTT COMWARE, NTT FACLITIES, etc.)
Waste reduction	Reduce amount of final-disposal waste to no more than 15% of 1990 levels.
Reduction of paper use	Reduce consumption of virgin pulp to 80% or less of 1990 levels (this target was achieved as of fiscal 2004).

impact of society as a whole through the provision of ICT services, we drew up the NTT Group Vision for Environmental Contribution in 2006.

3. Activities to reduce environmental impacts due to business activities

3.1 NTT Group principal action plan targets

The NTT Group provides services throughout Japan, so its large-scale business operations have a large impact on the global environment. For example, the amount of electric power that the group consumes is about 0.9% of the total amount of power purchased in Japan. With this in mind, the NTT Group has identified three items as major environmental impacts associated with its business activities: (1) the emission of greenhouse-effect gases mainly due to the use of electric power in ICT facilities, (2) waste from used communications equipment, facility construction, and office buildings, and (3) the use of paper resources as in telephone directories. The NTT Group has established principal action plan targets for these three items to be reached by 2010 and is now working to achieve ongoing reductions in environmental impacts to meet those targets (**Table 1**).

3.2 Preventing global warming

More than 90% of CO_2 emissions associated with business activities in the NTT Group, such as the provision of ICT services, is due to the use of electric power. NTT Group companies have taken a united stance in reducing power consumption by launching a succession of power-saving campaigns: the "Save Power Campaign" in 1987, the "Super Save Power

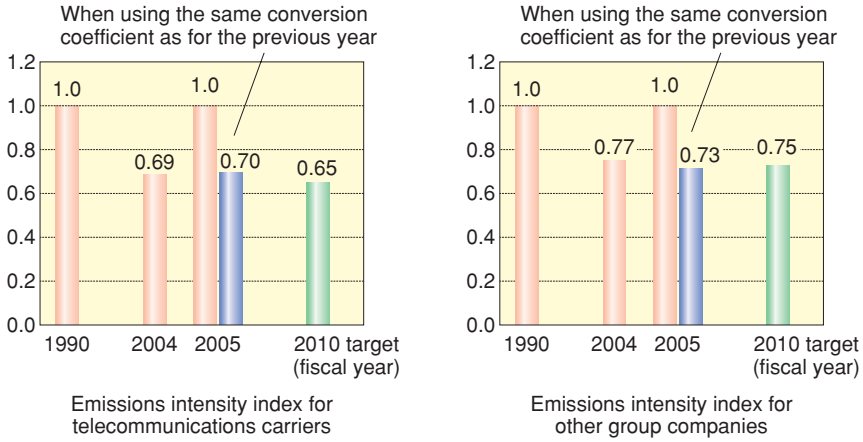

Fig. 2. NTT Group CO_2 emissions intensity index.

Campaign" in 1995, and the "Total Power Revolution (TPR) Campaign" in 1997. The TPR campaign, which is still in effect, promotes: (1) energy management in about 4000 NTT buildings, (2) the introduction of or replacement of old equipment with energy-efficient power supply equipment and air conditioning equipment, (3) the introduction of low-power-consumption techniques like the use of DC power supplies in servers routers and other IP-related equipment (IP: Internet protocol), and (4) self-sufficiency in electricity through the use of green energy such as that obtained from solar and wind power generation systems.

In FY2005, the TPR campaign was instrumental in achieving a power reduction of about 170 million kWh across the entire NTT Group.

The FY2005 results for the CO_2 emissions intensity index[*1], a target of the NTT Group, while incorporating a change in the coefficient used to convert amount of power used into amount of CO_2 emissions[*2], reveal an increase for both telecommunications carriers and other group companies over the previous fiscal year (**Fig. 2**). However, if these results were calculated using the same coefficient as for the previous fiscal year, non-carrier group companies would show an improvement of about 5% due mostly to reduced power usage in office buildings, while telecommunications carriers would show an increase of about 1.6% due to the expansion of broadband services and mobile-communications facilities. In the years ahead, the NTT Group will support the efficient expansion of communication facilities with the aim of reaching the target for the prevention of global warming.

3.3 Reducing waste

The NTT Group actively promotes initiatives to reduce, reuse, and recycle waste (3R activities) to help form a resource-recycling society. It is working, in particular, to reduce the amount of waste for final disposal (landfill waste) across the entire group with a focus on waste from the dismantling of communications equipment, waste from construction and civil works, and waste from office activities.

Communication facilities such as switches and communication cables that can be reused after dismantling will be actively reused within the NTT Group. Other facilities will be recycled as much as possible. For example, the outer sheath of communication cables can be peeled off and made into pellets that can be recycled as the sheaths of new cables. This is a form of recycling at the material level [3]. Activities such as these resulted in a recycling rate of 99.5% for used communications equipment in FY2005, maintaining zero emissions in this area as in FY2004 (**Fig. 3**).

Waste from construction and civil works such as concrete blocks and woodchips generated when constructing or demolishing buildings, laying communication cables, etc. is a matter of concern for NTT

*1 Relative CO_2 emissions intensity per fiscal year normalized by the value for FY1990.

*2 The coefficient for converting from the amount of power used into the amount of CO_2 emissions was changed from 0.378 kg/kWh in FY2004 to 0.555 kg/kWh in FY2005 in accordance with 2006 revisions in the Law Concerning the Promotion of Measures to Cope with Global Warming. This coefficient is supposed to be revised every year.

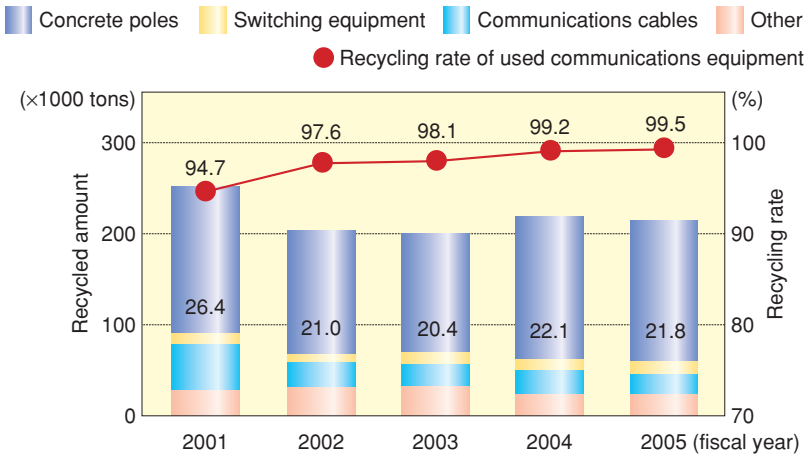

Fig. 3. Recycled amount and recycling rate of used communications equipment.

Group companies. These companies are working to minimize waste discharge through measures aimed at prolonging the life of telecommunication buildings and other structures and to improve the recycling rate by selecting intermediate-processing companies with a high recycling rate. These measures are mainly promoted by NTT FACILITIES, which undertakes the disposal of waste from construction.

In a similar vein, NTT Group business offices are working to reduce waste in the form of discharged paper and plastics. They are proactively constructing environmental management systems (EMSs) conforming to ISO 14001 and other standards and are striving to improve the recycling rate by sorting garbage before it is collected.

As a result of these activities, the amount of landfill waste for the NTT Group for FY2005 came to 40,000 tons. This is a major reduction from 77,000 tons for FY2003 reported two years ago [2]. It means that the 2010 target of 72,000 tons has been reached well ahead of time. The NTT Group plans to continue its promotion of 3R activities for reducing waste.

3.4 Reducing the use of paper resources

The NTT Group uses a lot of paper. For example, the amount of paper used for the nearly 129.5 million telephone directories issued annually has reached about 80,000 tons or about 0.3% of all paper used in Japan. To deal with this situation, the NTT Group has been operating a closed-loop recycling system since April 2001 that collects old directories and uses them in making new ones. In this system, old telephone directories are collected when delivering new ones. In FY2005, about 47,000 tons of old directories were collected in this way.

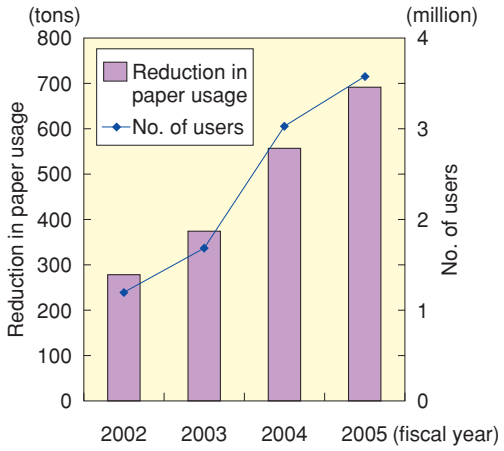

Fig. 4. Number of billing-service users and reduction in paper usage.

The NTT Group is also working to expand the use of non-paper-based billing services as another measure for reducing the use of paper in customer services. These billing services allow customers that pay their phone bills by bank transfer to check billing details on the Internet, by e-mail, or from a cellular phone. The number of customers using these billing methods for NTT Group services reached about 3,582,000 in FY2005 (**Fig. 4**). The reduction in paper usage for that year was about 698.6 tons (equivalent to 175 million sheets of A4-sized paper) compared with the old paper-based billing method.

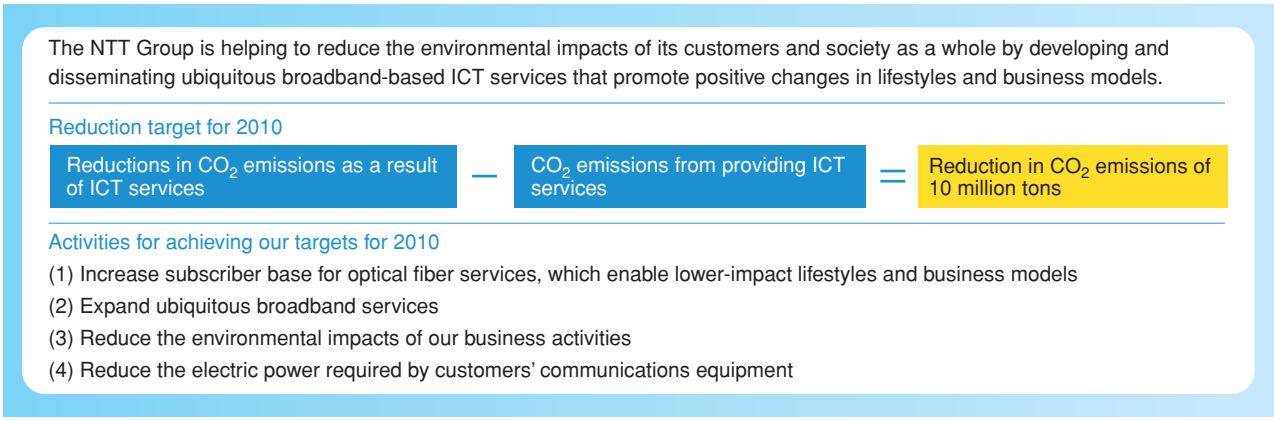

Fig. 5. NTT Group Vision for Environmental Contribution.

Other ongoing measures for reducing the use of paper include double-sided printing of office documents and paperless operations through electronic payment. These measures helped to lower the amount of virgin pulp used in FY2005 to 26,000 tons, down from 40,000 tons for FY2003 [2]. This continues the trend for the NTT Group to beat the 2010 target of virgin-pulp use of 84,000 tons. However, as the ratio of used-paper content in new telephone directories and telegram forms is reaching its technological limit, and as paper-reduction measures for office environments have come to be implemented throughout the NTT Group, it was decided to declare the target met at the end of FY2004. To maintain the present level of virgin pulp used, the NTT Group plans to continue its usage-reduction activities while making every effort to achieve even further reductions.

4. Activities for reducing environmental impact of society as a whole through ICT

4.1 NTT Group Vision for Environmental Contribution

Our basic approach to reducing the environmental impact of society as a whole through the provision of ICT services is stated in the NTT Group Vision for Environmental Contribution (**Fig. 5**), which was announced in May 2006. This clearly states that the NTT Group shall contribute to the protection of the global environment through the provision and expansion of ICT services, its main line of business. It defines the target value for CO_2 reduction for customers and society as a whole to be achieved through the provision of ICT services and the specific activities for achieving this reduction.

4.2 Approach to fulfilling the vision

To promote efforts at fulfilling the NTT Group Vision for Environmental Contribution, the NTT Information Sharing Laboratory Group developed a system for calculating the environmental-impact reduction effect of ICT services [4]. This system enables just about anyone to easily assess reductions in environmental impact that in the past could be assessed only by environmental experts. It enables the deployment and expansion of ICT services to be undertaken in terms of its environmental aspects. For example, the Hiroshima branch of NTT West calculates the environmental-impact reduction effect of a system when making a solutions proposal and presents it to the customer as an effect of system implementation in conjunction with EMS activities already set up in business offices. And NTT DATA is using the system to ensure that the environmental effects of the systems that it develops in house are being properly assessed. To make further reductions in the environmental impacts of customers and society as a whole, the NTT Group will continue its efforts in developing and deploying environmentally friendly ICT services while aiming to meet the 2010 CO_2 reduction target of 10 million tons declared by the NTT Group Environmental Contribution Vision.

5. Future plans

Looking to the future, the NTT Group will continue its activities toward reducing environmental impacts associated with business operations based on the principles and polices of the NTT Group CSR Charter and NTT Group Global Environment Charter. It will also undertake the development and large-

scale deployment of environmentally friendly ICT services to contribute to the reduction of the environmental impact of society as a whole.

References

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