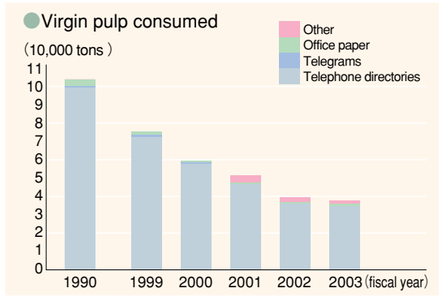
Efforts to reduce use of paper resources by recovering and recycling.

Efforts to Reduce Use of Virgin Pulp

Web search 17-1

To conserve world forests that help reduce atmospheric pollution as well as global warming, the NTT Group is taking steps to curtail its use of paper, especially the use of virgin pulp. We drastically reduced our consumption of virgin pulp from 105,000 tons in 1990 to 37,000 tons in 2003 by recycling telephone directories, using recycled paper in offices, and adopting online bill-paying and other paperless systems. This reduction to 37,000 tons greatly exceeds the target we initially set in "Principal Activity Targets for the NTT Group" of 84,000 tons, so we are now considering what our new goal should be.

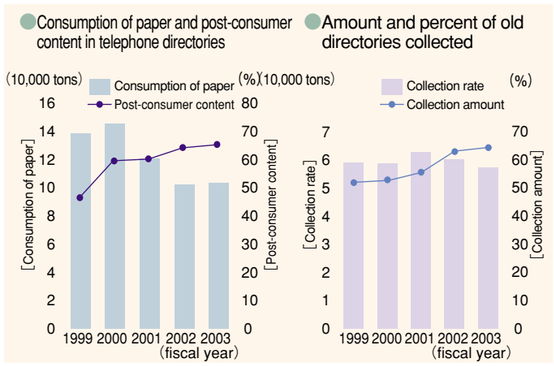


Recycling Telephone Directories and Increasing the Proportion of Post-Consumer Content

Web search 17-2

To lessen the impact of producing telephone directories, the NTT Directory Services developed a closed-loop directory recycling system that collects outdated telephone directories and recycles them to make new directories. We have been producing directories made by this process since edition released in September 2001. Thanks to an aggressive old directory collection effort, our recovery rate in 2003 was up to 65%, which is equivalent to 57,000 tons of material. We also pushed up the proportion of old directory material, and we are now producing directory grade paper with about 66% post-consumer content.

We have also looked for ways to cut down on the volume of paper needed to produce directories by reevaluating the way we publish Hello Page directories and by checking with people to make sure that they really need a directory when they install a phone or move into a house.



Reduction of Paper Use with Digital Maps

Web search 17-3

One effective way to reduce the amount of paper we use is to change information into electronic data. From October 2000, NTT-ME Group, consisting of NTT-ME Corporation, NTT-Neomeit Corporation, and a number of other companies, began offering large-scale digital maps produced by NTT-ME Group. Covering all of Japan, the maps include geographical features that are constantly modified by NTT-ME Group. The maps have been used not only by the NTT Group but by government offices and public-service corporations as well. To satisfy the demand for increasingly diverse and higher level geographic information systems, NTT-ME group's mapping technology was upgraded in September 2003 to accommodate longitude and latitude projections, Geodetic Coordinates 2000, and several other file formats such as ESRI Shape.

Sample image of the detailed country-wide digital map.
Color of features and size of character fonts can be easily varied by setting appropriate parameters in the application.

Efforts to catch environmental pollution problems before they occur.

Promotion of Group-Wide Initiatives to Address Potential Environmental Risks

Web search 18-1

Beginning with the company's discovery of soil contamination through voluntary soil surveys, NTT Group has developed various guidelines and checklists to catch potential problems early on or even before they occur, including procedures to ensure sewage treatment parameters do not exceed acceptable standard levels, to monitor storage of PCBs, and to deal with electromagnetic emissions. No incidents involving soil pollution or water pollution occurred in 2003.

Progress in the Removal and Proper Storage of Articles Containing PCB

Web search 18-2

The NTT Group is making good headway in the removal and proper storage of articles containing PCB in compliance with the PCB Special Measures Law, and also provides the government with detailed reports regarding the PCB Special Measures Law and the Telecommunication Business Law. The PCB removal process continued through 2003, and an inventory revealed that 2 transformers, 95 condensers, and 9,518 stabilizers containing PCB still remain in the field. The table at the right shows the number of PCB-containing items now in storage, and we will continue our removal and storage efforts in the coming years.

Quantities of articles containing PCB in storage

	2003 (fiscal year)
Transformers (units)	161
Phase advance condensers (units)	2,683
Embedded condensers (units)	3.5
Stabilizers (10,000 units)	51
Non-carbon paper (tons)	15.6
Waste oil (liters)	2,179

Every Single Person at the Center Actively Committed to Environmental Conservation and Improvement

Web search 18-3

As a priority policy for environmental conservation, NTT Science and Core Technology Laboratory Group (Atsugi R&D Center) is taking active measures to address the proper management of chemical substances.

In developing cutting-edge nanotechnology-based devices, the Center employs a wide variety of chemical substances. Therefore, three fundamental principles have been established for the handling of these substances: "Use chemicals that have the least adverse impact on the environment;" "Use only those substances that are absolutely necessary;" and "Never use more of a particular substance than is required." Every effort is made to minimize the environmental burden.

The use of chemical substances may generate waste matter (solids and liquids) that may include environmental pollutants. Waste solids are collected and their disposal is commissioned to reliable specialist companies. Waste liquid is processed in a dedicated facility within the Center, and released to public sewers only after water quality tests verify that pollutant values do not exceed official drainage standards. Furthermore, the Center conducts regular inspections of the atmosphere, sewage, groundwater, soil, etc., to watch for any environmental contamination.

Systematic upgrading and improvement are required to assure the efficient performance of environmental equipment. In fiscal 2003, we upgraded and improved some of our equipment, including scrubbers (exhaust processing facilities), and the facility that furnishes chemicals for waste liquid processing.

While it is true that measures involving facilities and equipment such as those described above are necessary for the proper management of chemical substances, the most important requirement is that the people who handle chemical substances strive to reduce of the impact of such substances on the environment. The Center acquired ISO 14001 certification in December 1999, and every single person working at the Center is actively involved in tackling issues relating to conservation and improvement of the environment.