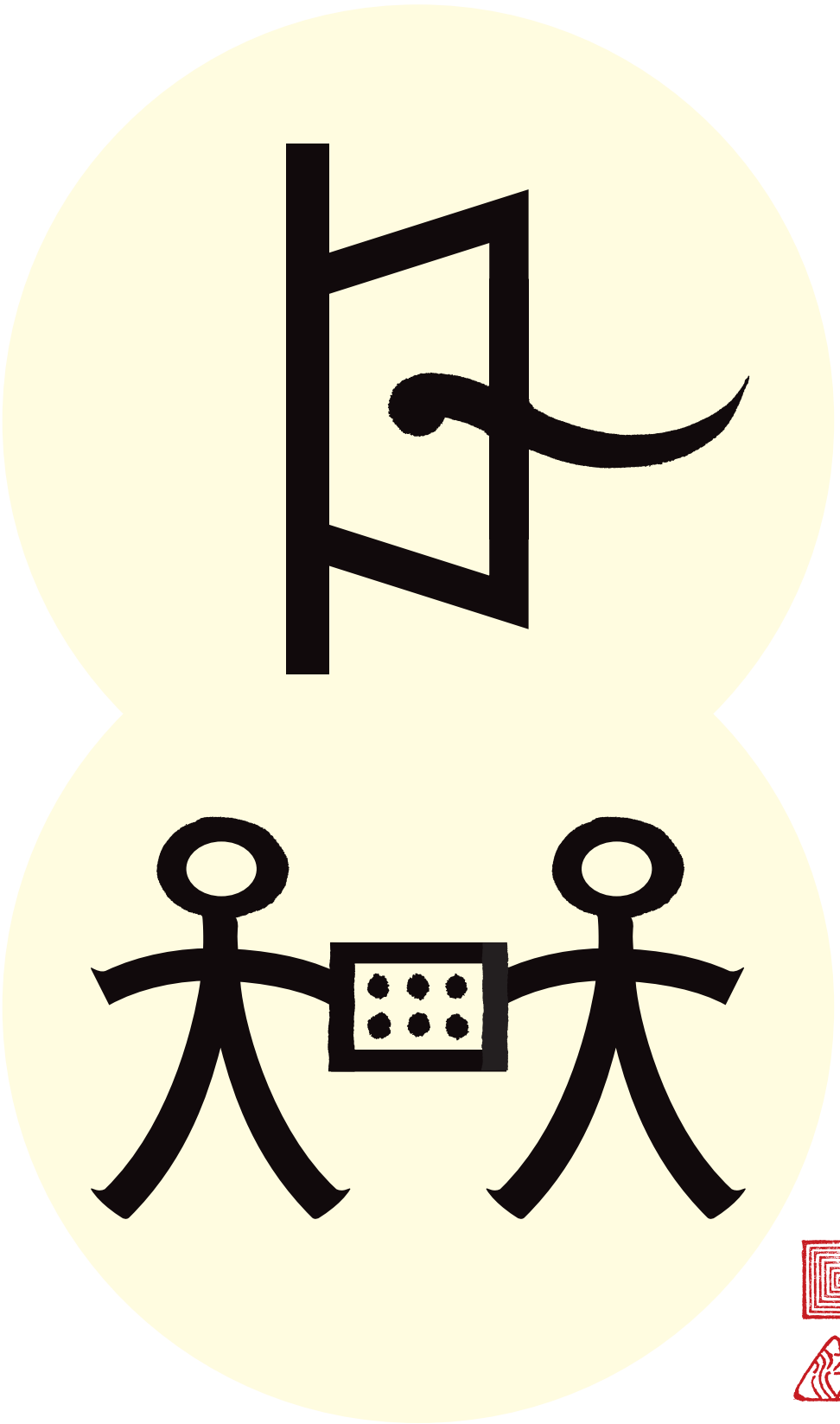
DNP

DNP Group Environmental Annual Report 2003
April 2002 – March 2003



Striving for Open and Fair Communication

P&I Solutions DNP TECHNOLOGY

Basic Policy of the 2003 Environmental Report

Reporting Policy

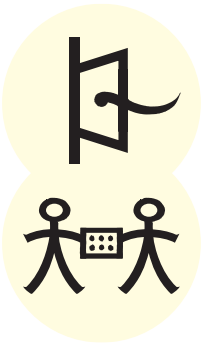
- This year, we added the sections New Topics for FY 2002 and Special Feature.
- We have arranged the presentation to make easy to grasp the environmental impact (material flow) of the entire DNP group and allow easy comparison with last year's figures.
- We have added commentaries by persons concerned here and there.
- We have added a section on overseas sites following the Data by Sites section.
- We continued to use the "Kensyou-Meidai method" by Shin Nihon & Co for the independent review of the report.

Scope, period and field

- The report covers 56 sites (Please see pages 4, 5)
- The report covers the activities and data concerning conservation of the global environment from April 1, 2002 to March 31, 2003.

Tompa Characters

Characters form the fundamental building blocks of communication. This year, we continue to use Tompa characters on the cover of our report, given the importance of printed characters as the fundamental building blocks for communication and their role in the history of the DNP group. The characters we have chosen this year stand for "Open and Fair Communication."



Tompa Character Design: Katsumi Asaba

Tompa hieroglyphic characters are still used daily by the Naxi, a minority race living in the Lijiang region of the Yunnan province in the People's Republic of China.

Contents

Aiming toward Sustainable Growth

Yoshitoshi Kitajima
Chairman of the Board
President & Chief Executive Officer

It is taken for granted today that costs arise in the treatment and recycling of wastes and widely accepted that costs in connection with the disposal of waste should be borne by the party producing the waste. Furthermore, in this age of increasing concern about natural disasters brought about by global warming, companies are being asked to bear the cost not only for the disposal of waste but for CO_2 emissions as well.

As we strive to develop a sustainable economy, companies are being called on to make even greater efforts toward environmental conservation. These very same companies, however, consume energy and resources to provide products and services, which in turn further impact the environment. Accordingly, as a duty to society, we believe that every company should play a leading role in conservation and make an active effort to realize a sustainable recycling-oriented society.

Conservation Efforts

DNP and the DNP Group companies produce publications, packaging materials, building materials and electronics materials, which are used by a broad range of consumers. At the same time, however, the production of such products has considerable environmental impact, consuming substantial amounts of resources such as paper and plastic while releasing CO_2 into the atmosphere.

In order to address this situation, we made an early start in environmental activities, establishing an environmental department within the company as early as 1972, one of the first in the industry to do so. In 1993 we established our own environmental management system, the “Eco-Report System”, to further enhance our active and ongoing efforts to reduce industrial waste, conserve energy, as well as monitor and reduce hazardous waste. In March 2000 we established the “DNP Group Environmental Committee” through which we implement efforts to improve the overall environmental performance of the DNP Group while strengthening our system for planning and developing environmentally-friendly products. Furthermore, we have made an active effort to disclose information regarding environmental matters, releasing an environmental report each year since 1999, and incorporating the opinions of our stakeholders within our environmental measures.

Contributing to Society with Emergent Evolution

In our Vision for the 21st Century, we set forth our corporate philosophy, “the DNP Group will contribute to the creation of an intellectually active, rich, and 21st century society with emergent evolution.” A “society with emergent evolution” is a society in which the actions of its many individuals, creates a stream of stimuli that dissipates through all of society, affecting each individual and leading to the creation of new values.

Companies bring convenience to consumers through their activities and the lifecycles of their products. At the same time they have the potential to have an adverse affect on society and the environment. Accordingly, companies bear important responsibilities whenever they interface with society, holding responsibilities not only for products and services, but for the safety of consumers, maintenance of data security, conservation of the global environment, as well as the safety and preservation of the regions in which they operate. Companies operating within an emergent society must act in accordance with applicable laws and corporate ethics, release information to and establish a rapport with customers, consumers, employees, regional authorities and local residents, combine their knowledge with that of such parties and promote business activities that will be appreciated and accepted by society.

In order to help realize the development of a sustainable recycling-oriented society, the DNP Group will continue its environmental management focusing on environmental efficiency and will carry out its responsibilities as an emergent company in the 21st century.

DNP Corporate Profile (as of 31 March 2003)

Concepts for the 21st Century

P&I Solutions DNP

In 2001, DNP embarked on a program of new efforts in commemoration of 125 years of operation. The new efforts are based on the concept of "P&I Solutions DNP", the aim of which is to fuse our **"Printing Technology"** with **"Information Technology"** to provide solutions that will bring about new values within the emergent society of the 21st century. The business domain of DNP encompasses a broad range of fields, including publishing and commercial printing, packaging and building materials, electronics, and network systems. Recently we have begun operation of an Internet data center, the first in the industry to do so, and have been developing a wide range of solutions that promise to lead the ubiquitous society such as IC cards and IC tags.

As one of the largest players in the industry, we at DNP will continue to provide P&I solutions with one eye on the next generation-solutions that will enhance the lives and businesses of our customers.

Company Name
Dai Nippon Printing Co., Ltd.

Head Office
1-1, Ichigaya Kagacho 1-chome
Shinjuku-ku, Tokyo 162-8001, Japan
Tel: +81-3-3266-2111
URL: http://www.dnp.co.jp/
E-mail: info@mail.dnp.co.jp

Originally Founded
October 1876

Established
January 19, 1894

Capital
¥114.464 billion

Employees
9,737 (DNP parent company)
35,182 (consolidated companies for the printing business)

Sales Offices
52 locations in Japan
16 locations overseas (including local affiliates)

Main Plants (including affiliates)
33 domestic plants
8 overseas plants

R&D Facilities
11 locations in Japan

Main Businesses

■ Information Communication

Books and Magazines	Books, dictionaries, commemorative books, text books, magazines
Commercial Printing	Catalogs, fliers, pamphlets, calendars, posters, POP displays
Business Forms	IC and other cards, securities certificates, share certificates, bankbooks, advertising circulars, electronic forms
Other	Internet-related businesses, database marketing businesses, BS/CS digital broadcasting businesses, campaigns and events

■ Lifestyle and Industrial Supplies

Packaging	Packaging for foodstuffs, beverages, confectionary, daily goods, medical supplies, etc.
Decorative Materials	Interior & exterior materials for housing and furniture, 3-D printed products, decorative metal paneling
Industrial Supplies	Printer ribbons, facsimile ribbons, anti-reflective film for displays, electrode materials for lithium-ion rechargeable batteries, carrier tape for transportation of electronic materials, copier toner cartridges

■ Electronics

Displays	Color filters for LCD displays, shadow masks for TV tubes, rear panels for plasma TVs, screens for rear projection TVs
Electronic Components	Semiconductor photomasks, lead frames

■ Beverages

Manufacture and sale of juices and cola, in association with Hokkaido Coca-Cola Bottling Co., Ltd.

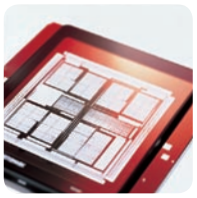
* Note: We changed our classification of business types as of FY 2002.

Internet Data Center
The foundation of DNP's IT solutions. Provides a network infrastructure to customers.

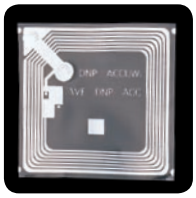
Yubi-net Pass
Micro reader-writer for IC cards

Electrode materials for lithium-ion rechargeable batteries
Electrode materials for lithium-ion rechargeable batteries used in personal computers and cell phones.

Fusion transfer recording material
Used in "wrapped buses" and exterior advertisements, these materials allow for accurate color rendition and are highly durable.



Photomask
Used in IC or LSI production, a photo-mask is a substrate used to create minute circuit patterns on a silicon wafer.

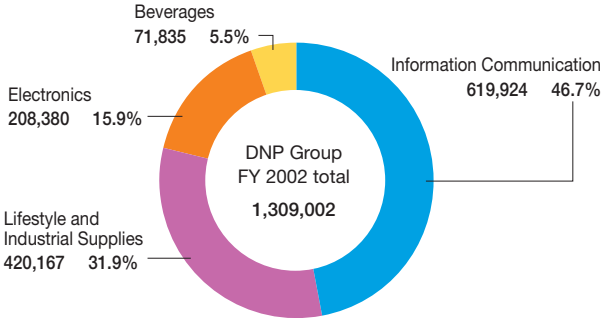


IC Tag "Accuwave"
An original DNP IC tag made of semiconductor-related material and created through application of metal etching technology.

Employees

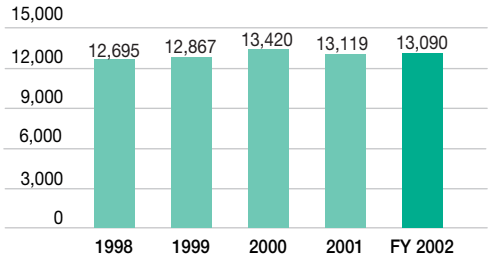
	March 31 2001	March 31 2002	March 31 2003
DNP	10,698	10,352	9,737
Consolidation	34,094	34,868	35,182

Consolidated Division Sales (Unit: million yen)

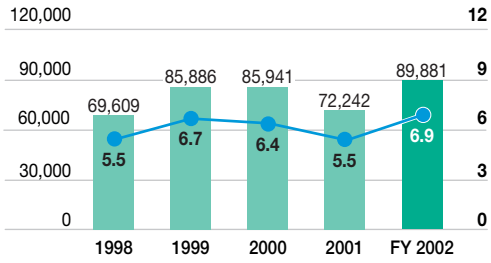


*Note: Sales includes –11,304 million yen in inter-divisional sales or transfers.

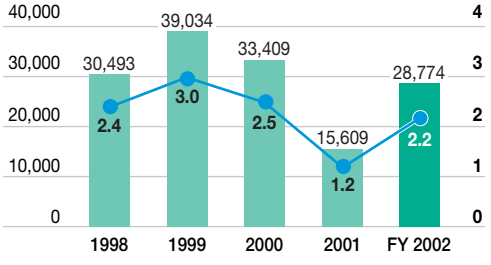
Consolidated Net Sales (Unit: 100 million yen)



Consolidated Operating Income (Unit: million yen)
Consolidated Operating Income Rate (Unit: %)



Consolidated Net Income (Unit: million yen)
Consolidated Return on Sales (Unit: %)



Organization of DNP Group

56 sites covered under this report

Hokkaido Sapporo
1 **Hokkaido Dai Nippon Printing Co., Ltd.** — **Plate-making / printing / bookbinding manufacturing of packaging (BC* Division)**
2 **Head Plant, Hokkaido Coca-Cola Bottling Co., Ltd.** — Beverage manufacturing (BC Division)

Miyagi Sendai
3 **Tohoku Dai Nippon Printing Co., Ltd.** — Plate-making / printing / bookbinding / manufacturing of packaging (BC Division)

Fukushima Izumizaki, Nishi Shirakawa-gun
4 **Izumizaki Plant, Dai Nippon Printing Technopack Co., Ltd.** — Plate-making / printing plate / printing (Lifestyle and Industrial Supplies Division)

Tochigi Utsunomiya
5 **DNP Graphica Co., Ltd.** — Printing /bookbinding (Information Communication Division)

Ibaraki Ushiku
6 **Ushiku Plant, DNP Data Techno Co., Ltd.** — Manufacturing of various types of plastic cards (Information Communication Division)

Saitama Otone, Kita Saitama-gun
7 **F.D.P. Dai Nippon Co., Ltd.** — Manufacturing of electronic parts for displays (Electronics Division)

Shiraoka, Minami Saitama-gun
8 **Shiraoka Plant, Dai Nippon Offset Co., Ltd.** — Offset printing (Information Communication Division)

Kawaguchi
9 **Kawaguchi Plant, Dai Nippon Offset Co., Ltd.** — Offset printing (Information Communication Division)

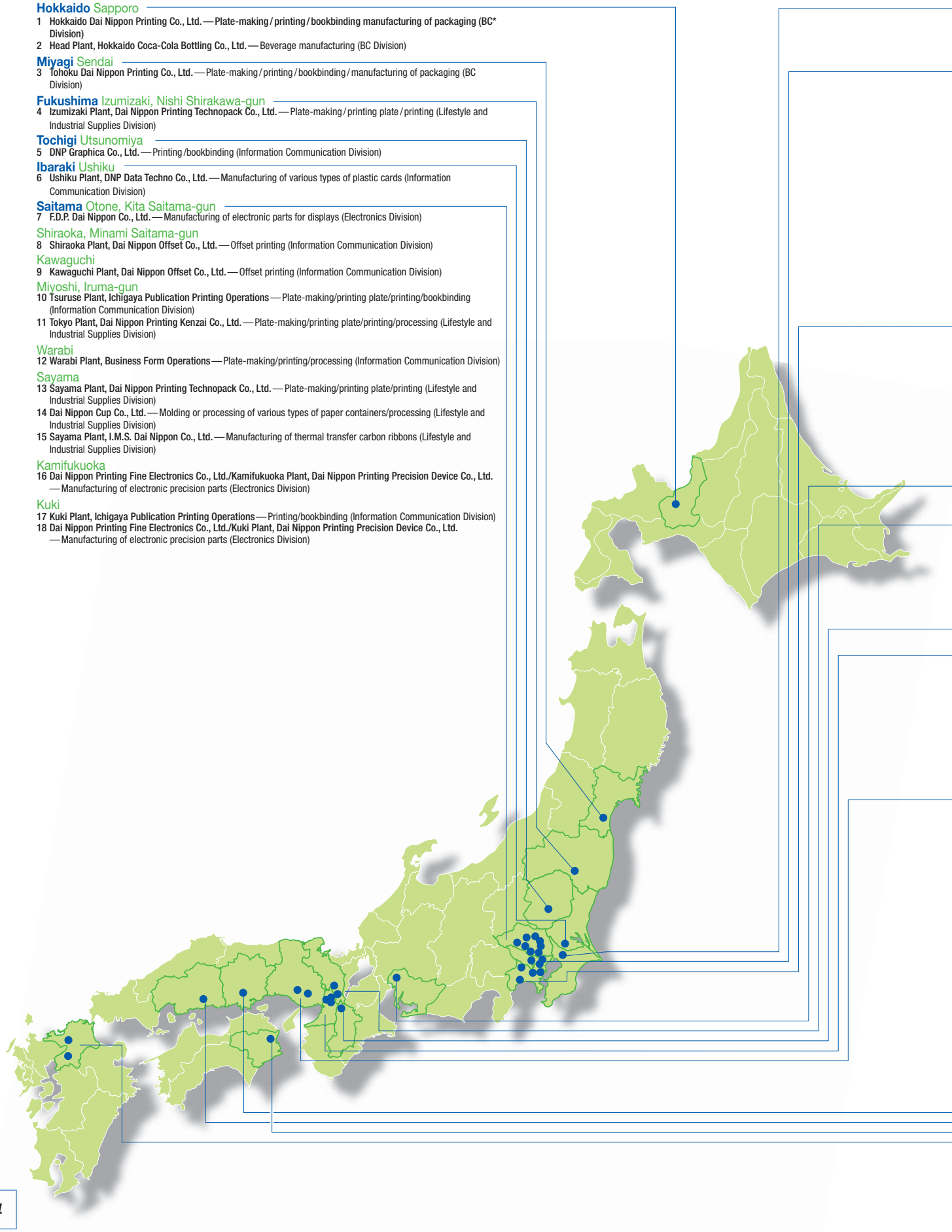
Miyoshi, Iruma-gun
10 **Tsuruse Plant, Ichigaya Publication Printing Operations** — Plate-making/printing plate/printing/bookbinding (Information Communication Division)
11 **Tokyo Plant, Dai Nippon Printing Kenzai Co., Ltd.** — Plate-making/printing plate/printing/processing (Lifestyle and Industrial Supplies Division)

Warabi
12 **Warabi Plant, Business Form Operations** — Plate-making/printing/processing (Information Communication Division)

Sayama
13 **Sayama Plant, Dai Nippon Printing Technopack Co., Ltd.** — Plate-making/printing plate/printing (Lifestyle and Industrial Supplies Division)
14 **Dai Nippon Cup Co., Ltd.** — Molding or processing of various types of paper containers/processing (Lifestyle and Industrial Supplies Division)
15 **Sayama Plant, I.M.S. Dai Nippon Co., Ltd.** — Manufacturing of thermal transfer carbon ribbons (Lifestyle and Industrial Supplies Division)

Kamifukuoka
16 **Dai Nippon Printing Fine Electronics Co., Ltd./Kamifukuoka Plant, Dai Nippon Printing Precision Device Co., Ltd.** — Manufacturing of electronic precision parts (Electronics Division)

Kuki
17 **Kuki Plant, Ichigaya Publication Printing Operations** — Printing/bookbinding (Information Communication Division)
18 **Dai Nippon Printing Fine Electronics Co., Ltd./Kuki Plant, Dai Nippon Printing Precision Device Co., Ltd.** — Manufacturing of electronic precision parts (Electronics Division)



Chiba Kashiwa
19 **Kashiwa Plant, Dai Nippon Polymer Co., Ltd.** — Molding, processing and printing of plastic containers (Lifestyle and Industrial Supplies Division)
20 **Dainippon Jushi Co., Ltd.** — Manufacturing and processing of synthetic resin films (Lifestyle and Industrial Supplies Division)

Tokyo Shinjuku-ku
21 **Ichigaya Plant, Ichigaya Publication Printing Operations** — Plate-making/printing plate/printing/bookbinding (Information Communiction Division)
22 **DNP Facility Service Co., Ltd.** — Meal services, etc.
23 **Enokicho Plant, Commercial Printing Operations** — Plate-making/printing/bookbinding (Information Communication Division)

Shinagawa-ku
24 **Gotanda Plant, Ichigaya Publication Printing Operations** — Plate-making/printing/bookbinding (Information Communication Division)
25 **SP Dai Nippon Co., Ltd.** — Manufacturing of various advertising and promotional materials (BC Division)

Kita-ku
26 **Akabane Plant, Ichigaya Publication Printing Operations** — Printing (Information Communication Division)
27 **Akabane Plant, Commercial Printing Operations** — Plate-making/printing/bookbinding (Information Communication Division)
28 **Dai Nippon Seihon Co., Ltd.** — Bookbinding (BC Division)
29 **DNP Logistics Co., Ltd.** — Packaging/shipping (BC Division)
30 **Dai Nippon Hoso Co., Ltd.** — Processing of filling and packaging (BC Division)
31 **D.N.K Co., Ltd.** — Printing and manufacturing of machine tools (BC Division)

Fuchu
32 **D.T. Circuit Technology Co., Ltd.** — Manufacturing of printed circuit boards (BC Division)

Kanagawa Tsuzuki-ku, Yokohama
33 **Dai Nippon Printing Technopack Yokohama Co., Ltd.** — Plate-making/printing plate/printing (Lifestyle and Industrial Supplies Division)

Midori-ku, Yokohama
34 **Tokyo Plant, The Inctec Inc.** — Manufacturing of ink, varnish, pigments and dyes (BC Division)

Odawara
35 **Sagami Yoki Co., Ltd.** — Manufacturing of laminated tubes (Lifestyle and Industrial Supplies Division)

Aikawa, Aiko-gun
36 **Tokyo Plant, Dai Nippon Ellio Co., Ltd.** — Printing and processing of metal sheets (Lifestyle and Industrial Supplies Division)

Saiwai-ku, Kawasaki
37 **DT Fine Electronics Co., Ltd.** — Manufacturing of semiconductor photomasks (BC Division)

Aichi Moriyama-ku, Nagoya
38 **Tokai Dai Nippon Printing Co., Ltd.** — Printing/bookbinding/manufacturing of packaging (BC Division)

Kyoto Minami-ku, Kyoto
39 **Kyoto Plant, Dai Nippon Printing Fine Electronics Co., Ltd.** — Manufacturing of electronic precision parts (Electronics Division)

Ukyo-ku, Kyoto
40 **Kyoto Plant, Dai Nippon Printing Technopack Kansai Co., Ltd.** — Plate-making/printing plate/printing (Lifestyle and Industrial Supplies Division)

Kyotanabe
41 **Tanabe Plant, Dai Nippon Printing Technopack Kansai Co., Ltd.** — Plate-making/printing plate/printing (Lifestyle and Industrial Supplies Division)

Nara Kawanishi, Shiki-gun
42 Nara Plant, Business Form Operations — Plate-making/printing/processing (Information Communication Division)

Osaka Hirakata
43 **Kansai Plant, The Inctec Inc.** — Manufacturing of ink, varnish, pigments and dyes (BC Division)

Neyagawa
44 **Neyagawa Plant, DNP Media Create Kansai Co., Ltd.** — Printing (Information Communication Division)
45 **Kansai Plant, Dai Nippon Polymer Co., Ltd.** — Molding, processing and printing of plastic containers (Lifestyle and Industrial Supplies Division)
46 **Osaka Plant, Dai Nippon Ellio Co., Ltd.** — Printing and processing of metal sheets (Lifestyle and Industrial Supplies Division)

Higashinari-ku, Osaka
47 **Osaka Plant, DNP Media Create Kansai Co., Ltd.** — Plate-making/printing plate/bookbinding (Information Communication Division)

Hyogo Kita-ku, Kobe
48 **Kobe Plant, Dai Nippon Printing Kenzai Co., Ltd.** — Plate-making/printing plate/printing/ processing (Lifestyle and Industrial Supplies Division)

Ono
49 **Ono Plant, DNP Media Create Kansai Co., Ltd.** — Plate-making/printing/bookbinding (Information Communication Division)

Okayama Mitsu, Mitsu-gun
50 **Okayama Plant, I.M.S. Dai Nippon Co., Ltd.** — Manufacturing of sublimation transfer materials (Lifestyle and Industrial Supplies Division)
51 **Okayama Plant, Dai Nippon Printing Kenzai Co., Ltd.** — Plate-making/printing plate/printing/processing (Lifestyle and Industrial Supplies Division)
52 **DNP Industrial Materials Co., Ltd. Okayama Plant** — manufacture of electronic parts, etc. (Lifestyle and Industrial Supplies Division)

Hiroshima Mihara
53 **Mihara Plant, Dai Nippon Printing Precision Device Co., Ltd.** — Manufacturing of electronic precision parts (Electronics Division)

Tokushima Tokushima
54 **Shikoku Dai Nippon Printing Co., Ltd.** — Plate-making/printing/manufacturing of packaging (BC Division)

Fukuoka Minami-ku, Fukuoka
55 **Fukuoka Plant, Kyushu Dai Nippon Printing Co., Ltd.** — Plate-making/printing/bookbinding/manufacturing of packaging (BC Division)

Chikugo
56 **Chikugo Plant, Kyushu Dai Nippon Printing Co., Ltd.** — Plate-making/printing/bookbinding/manufacturing of packaging (BC Division)

* BC (Brother Company): Affiliate companies that manufacture products not related to the group's Information Communication, Lifestyle and Industrial supplies, and Electronics divisions or related to several divisions.

Other Domestic Consolidated Affiliates

- Dai Nippon Art Co., Ltd., Dai Nippon Total Process Ichigaya Co., Ltd., Dai Nippon Uni Process Co., Ltd., Wakosya Co., Ltd. and Dai Nippon Techtas Ichigaya Co., Ltd. are covered under a portion of the Ichigaya Plant, Ichigaya Publication Printing Operations
- Dai Nippon Logistics System Ichigaya Co., Ltd. is covered as a division of the plants under the Ichigaya Publication Printing Operations (Ichigaya Plant, Gotanda Plant, Tsuruse Plant, Kuki Plant anf the Akabane Plant)
- DNP Media Create Co., Ltd. and Dai Nippon Logistics System for business printing are covered as a division of the Enokicho Plant, the Business Printing Operations
- Dai Nippon Total Process BF is covered as a division of the Warabi and Nara Plants, the Business Form (BF) Operations
- DNP Techtas BF (plate-making & printing) is covered as a division of the Warabi Plant, the BF Operations
- Dai Nippon Micro Technica is covered as a division of the Kamifukuoka Plant, Dai Nippon Printing Fine Electronics Co., Ltd.
- Of the companies treated as consolidated companies under financial accounting practice, we excluded 10 companies without manufacturing divisions, such as DNP Shoji. Furthermore, we excluded DAP Technology Co., Ltd. from our accounting for FY 2003 as it only began operating on April 1, 2003 and excluded the two companies acquired in FY 2002 as the data is still being prepared and they are deemed to be insignificant at this stage

Environmental Management as a Good Corporate Citizen

Hironori Kato
Chairman of DNP Group Environmental Committee
Director

At DNP and the companies of the DNP Group, we have made it our objective to implement environmental management that allows us as a good corporate citizen to contribute to the development of a sustainable recycling oriented society. This Environmental Report was produced to inform our stakeholders of the environmental efforts and achievements of the DNP Group and is intended as a communication tool.

In the 2003 edition, our reporting policy called for a report that allowed our readers to quantitatively evaluate our improvements in environmental efficiency as well as introduce the various efforts we have made towards executing our corporate social responsibilities. Furthermore, in order to enhance the credibility of its content, we also had the report reviewed by a third party under the "Verification Proposition System."

Major Efforts in FY 2002

On March 29, 2002 the DNP Group held a DNP Group Environmental Committee Meeting, in which the committee set targets for FY 2002 and confirmed that the group would continue its FY 2002 policy for environmental management, which was to: 1. develop and sell environmentally friendly products, 2. reduce the environmental impact of our business activities, and 3. maintain a good rapport with society through the disclosure of environmental information. For details regarding environmental targets and performance for FY 2002, please refer to page 23.

As part of our effort to improve resource efficiency within business areas, we established two cogeneration systems and one water recycling system, implemented "Production 21", which reduced waste during the production stage, and improved the resource consumption efficiency of energy and water as well as our key raw materials.

As an effort to reduce environmental impact, over the past few years, we have focused on VOC*1 measures. In 1999 the group released into the atmosphere a total of 10,000 tons of the toluene, designated as a Class I Chemical Substance under the PRTR Law*2. Since then, however, we have implemented solvent recovery and removal equipment as part of our effort to reduce this by half. As a result of these measures, in FY 2001 we achieved our goal of reducing emissions of such substances by half. Given the early achievement of our original goal, in March 2002 we set a new target to reduce toluene emissions to 500 tons/year. As a result of these efforts, our toluene emissions in FY 2002 fell to 30% of the amount in 1999.

Future Issues

While reducing atmospheric emissions of toluene continues to be a matter of top priority, we have also positioned the reduction of greenhouse gases (GHG) as an issue of major importance, strengthening our efforts in this area. In order to reduce the nation's greenhouse gases, we expect that the government will implement economic measures. Accordingly, as of FY 2002, we began to calculate our greenhouse gas emissions using the "GHG Protocol" the international guideline for calculating and reporting greenhouse gas emissions, as prescribed in the Kyoto Protocol.

Furthermore, in FY 2003 we participated in the Environment Ministry's "Greenhouse Gas Emissions Trading Trial Operations" and the "Credit Transaction Transfer Trial Operations" as conducted by the Ministry of the Economy, Trade & Industry.

In the future, we intend to focus on the environmental aspects of each product and site*3 of the DNP Group while continuing with environmental management that can contribute to the development of a sustainable recycling-oriented society.

*1. VOC: Abbreviation for Volatile Organic Compounds, a generic term for organic solvents that evaporate quickly.

*2. PRTR: Abbreviation for Pollutant Release and Transfer Register, a system under which companies that handle hazardous chemicals must record and publicly release the amount of chemical substances they release into the environment or transfer as waste.

*3. Site: The smallest management unit within our environmental management system.

New Topics and Special Feature

Contents

Close up Report Efforts in Environmental Labeling

The DNP group has established the Type II environmental label

The DNP Eco-label

New Topics in FY 2002: Environmental Labels, Environmental Report Prize

Efforts to Establishment of Environmental Labels within the DNP Group

The DNP group is striving to establish environmental labels that meet ISO standards so that we may provide environmental impact information in an appropriate manner. Under the ISO standards, there are three types of environmental label. The following describes our efforts towards establishment and use of these labels.

[Type I (3rd-party certified label)]

A typical Type I label would be the "Eco-mark" as used by the Japan Environment Association. Products labeled with the Eco-mark include advertising circulars printed on recycled paper ("S-mail").

Another label drawing attention in recent years is certification by the Forest Stewardship Council (FSC). FSC certification is an international certification system operated by the FSC, a non-profit organization. The system comprises two types of certification, "Forest Certification" and "Chain-of Custody" certification. Forest Certification is given to forests that are managed under international standards that take into account the environmental, social and economic factors. CoC Certification is awarded in cases where timber, timber products and paper products derived from forests receiving Forest Certification are properly managed in the processing and distribution process and are free of contamination with uncertified products.

In order to indicate that a printed product is made of wood products that have received Forest Certification and has been managed in an appropriate manner in the processing and distribution process, it is necessary for both the papermaking company and the printing company to acquire CoC Certification.

In October 2002, Tokai Dai Nippon Printing Co., Ltd. acquired CoC Certification from the FSC. Interest in the FSC's Forest Certification and CoC Certification has been increasing, as has the number of products bearing the CoC Certification mark.

In FY 2003, the Commercial Printing Operation of Dai Nippon Printing Co., Ltd., and DNP Media Create Kansai Co., Ltd. acquired certification.

[Type II (Self Certification Labels)]

In order to raise the appeal of our environmentally-friendlly products, the DNP group has established the "DNP Eco-label" based on the ISO 14021 standards. The first product to bear the label was used on "Safmalle", a decorative building panel developed by the Decorative Materials Operation.

Used as interior wall panels for homes, the "Safmalle" sheets were designed to be used in buildings with a high emphasis on health, environment and safety. The sheets use a base material free of polyvinyl chloride (an olefin-based plastic film), and are unique in that they do not use any substances believed to cause the sick house syndrome such as formaldehyde, toluene and xylene.

Three environmental labels based on ISO standards

Type I (ISO 14024)
Labels attached to products deemed to have reached standards established by third party organizations

Type II (ISO 14021)
Labels attached to products deemed to have reached standards set by the business operator

Type III (ISO TR14025)
Labels that indicate the environmental impact of a product in accordance with an LCA evaluation

FSC-CoC certificates

Products with the FSC-CoC certification mark

The DNP eco-label


Pamphlet on "Safmalle" decorative sheets

Standards for manufacture of construction paneling

1. Reduction of substances that may cause damage to one's health
   - Panels should not contain substances prescribed under the "Guideline Values for Indoor Concentrations of Hazardous Substances" within the "Guideline on Indoor Air Pollutants" (Ministry of Health, Labor and Welfare)
2. Reduction of environmentally hazardous substances
   - The product should be made of materials that do not contain chlorine-based substances that can produce dioxins when incinerated as a specified in the RoHS Directive (2002/95/EC) and the product should be made of materials that are free of lead, cadmium, mercury or hexavalent chromium as specified in the End of Life Vehicle (ELV) Directive (2000/53/EC).

[Type III (Labels that provide information)]

Sublimation transfer ribbon is used as an output medium for digital cameras. In FY 2002, this material acquired certified registration for Type III Environmental Labeling, “Environmental Product Declarations” (EPD) from the Sweden Environmental Management Council. This was the first time that a product made by a printing company received EPD certification. Under the Environmental Label Type III system, companies release data on the lifecycle assessments of products. A third-party examination organization then examines and makes a certified registration of this data, issuing an environmental label for the product concerned. The EPD that we acquired on this occasion is a ground-breaking certification program developed by the Sweden Environmental Management Council and is internationally acknowledged. Furthermore, given that EDP requires performance of an LCA, in compliance with the requirements of the ISO 14040 series, the label provides objective certification that the LCA data provided is of a high quality and in accordance with international standards.

Sublimation transfer ribbon

Cards printed using sublimation transfer ribbon

The Okayama Plant, where sublimation transfer ribbon is manufactured.

Designated product type: Sublimation transfer ribbon
Designated products: Standard ink ribbons (2 types) for use with sublime card printers:
ID-3BP (250 screen /PS core)
ID-3BP (250 screen/ABS core)
Examination body: Japan Gas Appliances Inspection Association (JIA)
Registration body: Sweden Environmental Management Council

Results of LCA on an ID-3BP ink ribbon (250 screen/PS Core)

	Unit	Manufacturing	Use	Disposal	Total
Emission substance					
Greenhouse gas	Kg CO_2-eq	2.66E+00*	1.42E–02	6.27E–08	2.67E+00
Acidic gas	Kmol H^+-eq	9.57E–05	1.31E–06	5.36E–12	9.70E–05
Ozone depleting gas	Kg CFC-11-eq	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formation of photo-chemical oxidants	Kg ethene-eq	3.82E–03	1.70E–03	8.79E–06	5.54E–03
Eutrophic substances	Kg O_2-eq	1.19E–02	1.84E-04	8.27E–10	1.20E–02
Waste					
Industrial waste for which special management is required	Kg	4.17E–02	–	–	4.17E–02
Industrial waste	Kg	6.10E–02	–	–	6.10E–02
General waste	Kg	–	–	–	–

* Note: In the table, 2.66E+00, for example, would express $2.66 \times 100 = 2.66$; 9.57E–05 would express 9.57×10^{-5}.

Environmental Report Awards

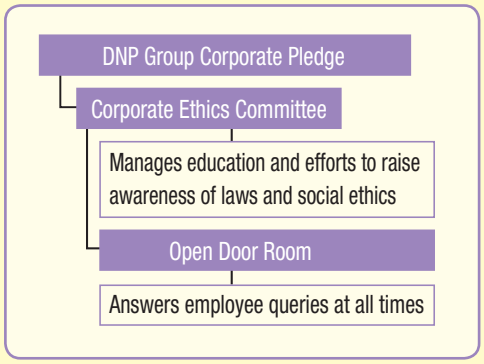
The DNP Group Environmental Report 2002, released in FY 2002 received the Prize for Excellence (the Global Environmental Forum Chairman’s Prize) in the 6th Environmental Report Awards, sponsored by the Global Environmental Forum and the National Association for Promotion of Environmental Conservation.

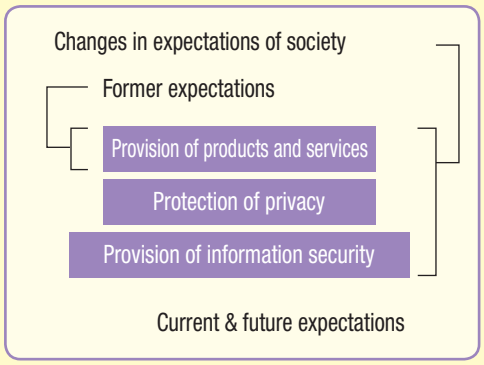
Special Feature

Performing our social responsibilities while aiming for sustainable development

At the DNP Group, in addition to operating in compliance with applicable laws and social ethics, we have given top priority to realization of our corporate philosophy while making efforts for the benefit of society in the capacity of a good corporate citizen.

Under this policy, in an effort to develop a company that earns the respect and trust of society, we established at an early stage a number of committees, including our Corporate Ethics Committee, Environmental Committee, Product Safety Committee, and Committee for Promotion of Data Security & Personal Data Protection, each which have made ongoing efforts to tackle the issues at hand. In this section, we introduce a few of the key efforts we have made to carry out our duty to society, that is, efforts towards the development of a recycling-oriented society.





Corporate Ethics

In 1992 the DNP Group established the DNP Group Corporate Pledge, which set forth clear instructions to act in accordance with laws and corporate ethics. Through this and other means, we promote efforts to carry out our responsibilities to society. In October 2002, aiming to further enhance our compliance systems, we established our “Open Door Room”, a consultation office where employees can discuss matters concerning compliance.

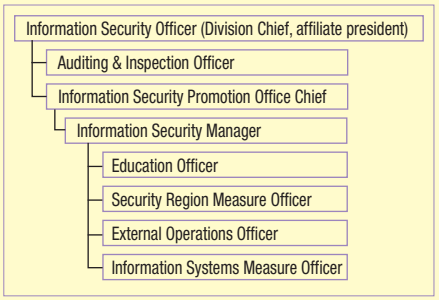
Information Security

Since its establishment, the DNP Group has processed data concerning our customers and consumers for further application in the business world. In the course of these activities, we have maintained a high level of information security, and aim to improve this still further in the future. In addition to the provision of high quality products and services, we will continue to provide P&I Solutions*1 based on a foundation of stringent personal data protection and information security systems.

[Management structure]

In April 2002, we established the DNP Group Committee for Promotion of Information Security & Personal Data Protection, and have been developing our management structure, including those of our subsidiaries, towards the establishment of an information security management system.

[Organization within business divisions]



[Results of efforts]

Following our establishment of organizational structures to promote the protection of personal data in April 1999, we have made ongoing efforts to improve our level of security, establishing internal rules and guidelines, enhancing our staff training programs and acquiring certifications such as the Privacy Mark*2, ISMS*3, and the BS7799*4.

Company training programs-performance

Staff training through network learning
- May 2000: Personal Data Protection Training (Part 1) begins, attended by some 8,000 employees participate
- Feb. 2002: Personal Data Protection Training (Part 2) begins, attended by some 8,000 employees participate
- Sept. 2002: Information Security Training begins, attended by some 16,000 employees

Internet Business Emergency Response Training (Lectures and practical classes)
- Begin in March 2003, attended by some 2,000 employees from the Business Planning Division

Efforts to protect personal data
- April 1999: System for Promotion of Information Security & Personal Data Protection established
- Dec. 1999: Company Rules based on the JIS Q 15001 Personal Data Protection Rules & Guideline established
- Jan. 2000: CP established in sections handling personal data-begin to acquire Privacy Mark.

Certifications acquired

■Divisions acquiring Privacy Mark
- Dai Nippon Printing Co., Ltd., Business Form Operations
- Dai Nippon Printing Co., Ltd., IPS Operations
- Dai Nippon Printing Co., Ltd., C&I Operations
- DNP Digitalcom Co., Ltd.
- DNP Logistics Co., Ltd.
- Dai Nippon Uniprocess Co., Ltd.
- DNP Media Create Kansai Co., Ltd.

■Divisions acquiring BS7799 and ISMS certification
- DNP Facility Service Co., Ltd.

*1 Fusion of DNPs printing technology with information technology to provide solutions that will bring about new values. Please refer to page 2.

*2 Domestic system under which a third-party organization certifies that the company is handling personal information in a proper manner. The reviewing organization examines to see whether a personal information management system has been established and is in operation.Companies deemed to have met the required standards are granted permission to use the privacy mark.

*3 A information security management system for protecting the data assets of an organization; generally used in reference to the ISMS compliance evaluation system, a domestic third party evaluation system.

*4 Data security management system standards as issued by the BSI (The British Standards Institute). Defining security as the maintenance of air-tightness, perfection and availability, the standards require the management of data values, threats and vulnerability.

Efforts to Universal Design (UD)

The DNP Group provides a wide range of products for use by general consumers. Given that packages are products that consumers actually grasp when using, the DNP Packaging Division has established five rules for universal design ("UD") under which it develops and proposes new products.

The DNP concept of UD: Packages designed to be a pleasure to use by all who handle them

Five DNP rules for UD

- Rule 1. Clear, easy-to-understand expression of required information
- Rule 2. Simple, intuitive utility
- Rule 3. Flexibility and safety during use
- Rule 4. Appropriate weight and size
- Rule 5. Able to be opened with minimum force or movement

+

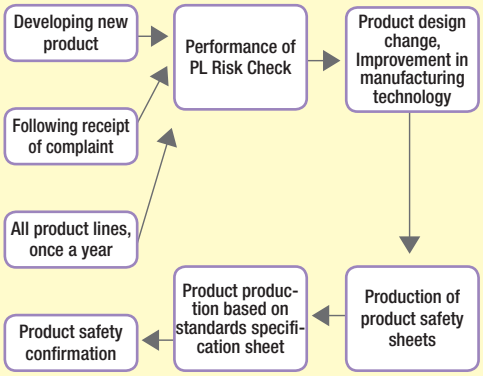
1. Be of a shape that enhances the attractiveness of the product
2. Be easy to separate and dispose of

Cap marked in braille lettering.

Product Safety

In 1994 we established the Product Safety Committee. We have also established a common product liability (PL) management system throughout the entire DNP group and continue to promote product safety on a group-wide basis. The fundamental framework of the PL management system comprises PL risk checks performed when developing new products or when we receive a complaint, as well as an overall safety review of our entire product lineup once a year. Under the system, whenever products or manufacturing methods deemed liable to contain faults are detected, we modify design and improve technology to eliminate risk, using our findings as a reference to establish product safety standards, and perform produce safety reviews each year. To date, we have established standards for 408 different items, which are used as safety standards for product manufacturing. Furthermore, we have been performing PL training programs since 1994 and have performed computer network-based training through since 2000, through which a total of 4,468 employees completed training.

PL Management System



Responding to Natural Disasters

The DNP group has implemented various emergency response measures incorporating both organizational systems and facilities in order to minimize damage to people, property and business activities in the event of an earthquake. Our disaster prevention organization is structured such that a regional management system is placed between the central management system and the management systems of the individual sites to make it easier for sites located in a common region to coordinate their activities in the event of a disaster. Furthermore, each office has its own fire brigade, which carry out training drills on a bi-annual basis. We have performed the following efforts to improve our disaster relief facilities:

(1) We performed earthquake-resistance tests on over 800 buildings nationwide to a level of magnitude 6 (400 gal*1), making earthquake strengthening modifications where necessary.

(2) Emergency power shut-down system installed
   1. Power automatically shut off and machinery stopped in event of earthquake exceeding 150 gal.
   2. Ink supply system and elevators automatically stopped in event of earthquake exceeding 80 gal.150

(3) Installed emergency announcement system that operates automatically in the event of an earthquake.

(4) Installed emergency communications systems within major sites within the DNP group comprising a multi-channel two-way radio and a satellite telephone to back up our emergency telephone network.

(5) Installed a "DNP Voice Mail" system that allows employees and their family members to contact each other in event of a disaster.

(6) Installed emergency provisions such as food, water and torches (We distributed these to local citizens after the Hanshin earthquake).

Disaster prevention system

The action subgroups and teams are selected in accordance with factors such as ability, buildings, property protection, business activities, public relations and region.

*1 A unit of acceleration used to express the acceleration of seismic waves. 1 gal expresses an acceleration of 1cm/s^2.

Evaluating & Fostering Personnel

Within the DNP group, we strive to foster independent professional personnel through our various personnel and training systems. The development of sound, professional employees helps to stimulate and strengthen our organization, leading to the realization of our Vision for the 21st Century.

Personnel systems

[Target management system (Managerial positions), Target challenge system (General positions)]

Under this system, every six months, employees set their own work targets, plans, methods and schedule in accordance with the aims of their division. The system has been devised to encourage staff to take on new challenges, rewarding each employee with bonuses or promotions in accordance with their achievements.

[Self-evaluation performance development system]

Under this system, employees review their achievements each year and consider their own career plans and future studies. In their review, employees may enter their desire for transfer or family circumstances for later discussion with their superiors. Once completed, employees then fill in a "Performance Development Card", entering specific details regarding their superior's perspective of their personal development targets and career plans. In the event that the employee has a strong desire for transfer and it is deemed necessary for the employee's career development, employee superiors work to realize this.

[In-house venture system]

Under this system, employees make proposals for new businesses to the company. Then, if adopted a new company is formed though joint-investment, and the person making the proposal can sometimes become the operator. For the employees wishing to utilize this system, we provide a seminar on financing and marketing, the "New Business Development Support Seminar." In April 2002, a new company was developed under this system, CP Design Consulting, which performs consulting and educational activities concerning personal data protection and crisis management.

Yasushi Suzuki,
President of CP Design Consulting Co., Ltd.

[In-house recruiting system]

Under this system, vacant positions requiring specialist knowledge or experience, or positions created to strengthen a division or particular line of work are advertised within the DNP group. Employees may apply for such positions at their own free will. Recruiting drives are held twice a year, during which 30–50 proposals are made. Following each recruiting drive, around 20–30 people transfer their position.

[In-house apprenticeship system]

Under this system, employees who wish to learn the latest technology or acquire further knowledge about their current position, or wish to broaden their scope of work, may work as an apprentice in the section of their choice for a limited term.

[Meister system]

Under this system, employees who are skilled professionals are given the title "Meister." Candidates are selected on the merits of specialist knowledge and skills, creativity, name recognition, credibility and leadership skills, while those awarded the title of Meister are expected to pass on their skills with those in their own division and to others within the DNP group.

The DNP Training Center in Hakone

Training systems

[Graded training]

The DNP group offers a variety of training programs for executive staff, general staff and new employees, each graded to suit the rank and duties of each staff member. Between April 2002 and March 2003, we trained a total of 5, 270 employees under this system.

Executive staff: Leadership studies, executive training, training common to all job types, specialist training for each job type (network learning)

General employees: training common to all job types, specialist training for each job type (network learning, technical seminars)

New employees: New employee training

[Network learning]

Network learning is a training system that allows employees to study through the company intranet. The system is used when providing essential training to group-wide employees or the employees of a specific division, or when providing information on environmental changes for which a quick response is required. Currently, courses in 22 subjects are offered through network learning, covering environmental problems, the PL law, information security, accounting and financial knowledge. Between April 2002 and March 2003, a total of 37,270 employees received training under the system.

[CAPA]

DNP promotes a total of 192 study courses through correspondence such as business skill improve-

A pamphlet on CAPA

ment courses and courses leading to the acquisition of qualifications such as an analyst for small- and medium-sized businesses. Employees who acquire the qualifications within the allocated timeframe receive from the company financial support equivalent to half the tuition fees. Between April 2002 and March 2003, a total of 2, 186 employees studied under such courses.

Internship Efforts

In response to corporate needs and to promote understanding of a wide variety of businesses, the DNP group has established an internship system, into which it actively receives university students.

Domestic internship system "In Touch with DNP"

Our internship system has been operating since 1998. Furthermore, since 2001 we have applied the system within the DNP group, and hope to increase the number of companies making use of the system.

The purpose of the DNP internships is to "support students by providing the work experience so that they may contribute to society as soon as they enter it." The DNP intern system is not related to the company recruiting system. The internship system is designed:

- To help students chose their own position and industry when applying for a job;
- To make use of their knowledge acquired during their internship to enhance their continuation of studies at university.

In FY 2002, the DNP group held internships on 42 different themes, each lasting two weeks, in which a total of 75 students participated. Furthermore, we held "mini internships*1" lasting one day on four occasions in Tokyo, and once in Osaka, in which a total of 3000 students participated.

"In Touch with DNP 2002"

Participation requirements	Student at university, graduate school, or technical institute (faculty, department of no significance)
Period	Two weeks over August–September, 2002
Work content	Participants are allocated to positions based on the curriculum of each work theme, and are required to submit a report at the completion of the internship.
Number of students recruited	1 to 3 for each work theme
Method of application	Applicants are required to fill in the Entry Form within our home page*2.
Method of selection	Review of Entry Form and an interview.

Work themes and locations

No	Theme	Division	Location
1	WWW server system performance evaluation test	DNP Digitalcom Co., Ltd.	Tokyo
2	IT Logistics planning development	DNP Information Systems Co., Ltd.	Tokyo
3	Digitization of visual contents production	DNP AV Center Co., Ltd.	Tokyo
4	Digital archive management of artworks such as the RMN Image Archives*3	DNP Archives .Com Co., Ltd.	Tokyo
5	Efforts to make effective use of corporate historical documents	DNP Corporate History Center Co., Ltd.	Tokyo
Plus 42 other work themes			

*1 We performed this for students that could not make the 2-week commitment or who were unable to enter the internship program. The program included guided tours of various facilities as well as business training sessions involving group work.

*2 Website: http://www.dnp.co.jp/intern/

*3 Business involving the rental of positive film or digital data for the 500,000 artworks of the RMN, (the French National Art Gallery Federation), and the image licensing for reproductions thereof.

Comments by participants

■ Ms. Nami Tateyama: Majoring in International Business, Department of Law

Work theme: Internet-based marketing and site planning

I found it fun to create presentation materials while holding discussions and cooperating with the other participants-it gave me the sort of satisfaction that you just don't find at university. Looking back on it now, I have to say that it was one of the most significant experiences that I have had during my university years. The internship gave me the opportunity to realize the importance of working and human relationships, and the pleasure of making your own way through life, besides giving me the opportunity to find out who I really am.

■ Mr. Shigeharu Yoshida: Majoring in Applied Biology, Graduate School of Industrial Art & Science

Work theme: Development of functional wrapping materials

Before participating I had the impression that research work was a bit of a closed shop. However, after watching everyone rushing to and from business appointments and answering one call after another, the word "action" suddenly appeared in my head. Furthermore, the way people responded was speedy, precise and direct. I also realized that the ability to respond under pressure and use one's imagination was also essential factors that helped one to perform tests and produce results in a limited amount of time. Participating in the internship program provided me with a good opportunity to view myself objectively.

Overseas internship system

DNP receives interns from overseas, mainly through the Co-op Japan Program*1. In 2003 we intend to accept one student through the Co-op Japan program and one through the EU-Japan Center for Industrial Cooperation*2. In January 1989, DNP established DNP Denmark A/S in Karlslunde, Denmark. Serving as the base for manufacture and sale of large projection TV screens (60 to 200 inch), the company has expanded to become the largest Japanese corporation in Denmark. As part of our effort to contribute to Danish society, as of 2001, we have been receiving interns from Copenhagen Business School (CBS). The aim of the intern program is to have the intern increase their knowledge and appreciation of DNP and Japan, in the hope that they will pass this on to other students following their return.

*1 This program was established by the "Japan Science & Technology Fund" that was set up under the Pacific 2000 plan, established by the Canadian federal government in an effort to promote exchange with countries in the Pacific region. The program is aimed at 4th year students in Canadian university science and engineering departments, who would like to experience working in Japan. DNP has participated in the program since 1995.

*2 This center is associated with the Institute for International Studies and Training and was established in May 1987 as a backbone organization for coordinating industrial cooperation between Europe and Japan.

■ Mr. Hans Ruben Vinding: Majoring in economics and managerial studies, Copenhagen Business School

Period of intern program: October 2002 to July 2003

Received by: Display Components Operations, Electronic Device Operations

I have always had an interest in Japan, and studied Japanese at the CBS. As I studied the language, I became interested in the culture, and ended up wanting to stay long term so I could get to know Japan better.

During my internship I studied marketing analysis based on various data, and analyses of the strategies of Japanese corporations that have been successful in overseas markets. I also went on a study tour of the manufacturing line of the Kamifukuoka plant, where I saw how they made photo-masks and lead frames semiconductors. In the future I hope to make use of the things I have learned at DNP in Denmark, and eventually work for a Danish company with strong links with Japan or a Japanese company with strong links with Denmark.

Health & Welfare

The DNP group is striving to enhance our welfare systems, measures and facilities, in an effort to promote health among employees and their families and to provide a pleasant comfortable workplace.

DNP Group Total Welfare System

In order to ensure that our employees understand and make the most of the various welfare systems offered by the DNP Group, we send explanatory materials to the homes of our employees.

Consultation office

Since 1985 we have operated a consultation office were employees can discuss legal matters, tax matters and housing matters with specialist consultation staff in cooperation with lawyers and tax consultants.

Health consultations

[DNP health network]

■ **Telephone health consultation system**
Under this system, employees can discuss health and medical concerns with consultants from a specialist medical organization.

■ **Mental health counseling system**
Under this system, employees can receive mental health counseling from a medical school specialist or clinical psychologist. Employees can visit clinics throughout the nation, from Hokkaido to Okinawa.

[Mental health consultation clinic] Employees may receive examinations by specialists or counseling by specialist counselors twice a week at Ichigaya Medical Center.*3

[Nutrition & exercise consultation clinic] DNP Facility Service Co., Ltd. has established a nutrition & exercise consultation clinic, staffed by nutritionists and health care trainers in an effort to promote health and prevent lifestyle diseases.

[Nursing care consultation service] Under this service, DNP group executives, employees and their families or retirees may discuss their nursing care needs with a specialist care manager.

*3 The mental health consultation office also holds the intranet-based mental health seminar aimed at managerial staff, developed by DNP. The seminar was prepared by a medical specialist in charge of mental health consultations, diagnosis and treatment. The seminar provides information of direct importance to managers such as types of stress, methods of prevention and early warning signs etc.

Life plan consultation office

The main services of the life plan consultation office are consultations concerning post-retirement economic problems such as employment insurance, etc., and the provision of information on lifetime learning opportunities, etc.

Efforts to Reduce Greenhouse Gas*1 (GHG) Emissions

The DNP group has positioned the problem of global warming as a global issue of extreme importance, recognizing the reduction of GHGs as a corporate social responsibility and taking appropriate steps against this. Furthermore, in order to ensure corporate sustainability, we are taking measures to accommodate future environmental restrictions. In FY 2002 we prepared a calculation & reporting manual and a GHG emissions inventory, needed in order to determine accurately the overall amount of GHGs arising from business activities.

Efforts to reduce GHGs are being carried out on an international scale based on the Framework Convention on Climatic Change. The Kyoto Protocol sets forth the targets for reduction of such gases in Japan for the first commitment period — 2008 to 2012. Under these circumstances, society is counting on companies to make efforts to reduce GHGs. At the same time, however, experts predict that costs in the form of environmental taxes and emissions trading*2 will arise in connection with GHG emissions and that GHG emissions will be subject to economic transactions.

Calculation of GHG emissions

In addition to our ongoing efforts based on the Energy Conservation Law and the Law for Measures against Global Warming, as listed in pages 38 and 39, the DNP group has established as an environmental target and has achieved results regarding voluntary efforts to reduce CO_2 emissions per unit of value added production, which is an index of economic efficiency, and to restrict our overall emissions of GHGs.

In FY 2002 we calculated the overall GHG emissions for the entire DNP group based on the GHG Protocol*3 which is recognized as the international standard, so that we may perform accurately calculations for GHG emissions that may be required in the future. By making an accurate calculation of the GHG emissions of our overall business operations, we will be able to take appropriate action against fluctuations in emissions arising from changes in production activities, and provide useful data to use as a reference when making decisions regarding the establishment of facilities to reduce GHGs. Through these efforts, we will not only be able to achieve the environmental targets of the DNP group, we will also be able to take appropriate measures in response to new environmental restrictions anticipated in the future.

Furthermore, the Ministry of the Environment and the Ministry of the Economy, Trade & Industry, have been preparing legislation regarding the calculation of greenhouse gas emissions. In FY 2003, The Ministry of the Environment released "Trial Businesses for Greenhouse Gas Emissions Trading" while METI released "Credit Trading Transfer Trial Businesses" as a step towards developing regulations concerning calculation of greenhouse gases. The DNP group intends to participate in discussions concerning the development of such regulations and increase our knowledge in this area.

Results of calculations of GHG emissions by the DNP group by year (Unit: t-CO_2)

		FY 2001				FY 2002				FY 2003			
Emission type	Source/gas	CO_2	CH_4	N_2O	Total	CO_2	CH_4	N_2O	Total	CO_2	CH_4	N_2O	Total
Direct	1. Fuel consumption	383,253	975	80	384,308	385,048	1,400	157	386,605	415,996	1,576	236	417,808
Direct	2. Incineration of waste on site	44,499	–3	936	45,432	43,353	–3	869	44,219	30,626	–2	652	31,276
Direct	3. Transport of products	6,077	3	80	6,160	5,277	3	70	5,350	4,663	3	64	4,730
Indirect	Purchase of electricity	438,172			438,172	418,931			418,931	393,766			393,766
	Total				874,072				855,105				847,580

Note: Please refer to related data on pages 38 and 51.

[Scope and method of calculation]

This report covers the GHG emissions of all of the sites subject to disclosure (See pages 4-5) except DNP Industrial Supplies Co., Ltd., which was separated during the term, and DNP Facility Service Co., Ltd., which does not have a production division, with FY 2000 as the base year.

(1) Scope of calculation

• Under the GHG protocol, greenhouse gases are calculated as follows:

	Direct/Indirect	Emissions source	Content
Scope 1	Direct emission amount	Emissions direct from site	Production of electricity, heat and steam. Mechanical & chemical production process. Transport of raw materials, products, waste. Leakage from production facilities.
Scope 2	Indirect emission amount	Emissions due to purchase & sale of electricity & heat.	In order to ensure transparency, purchase amount and sale amount (not net consumption amount) indicated.
Scope 3	Indirect emission amount	Indirect emissions arising from transport of products, employee transport commuting, and main production processes of outsourced products.	Employee business trips and commuting. Emissions arising from disposal of company waste. Emissions arising during use of products produced & sold. Direct emissions from companies to which work is outsourced.

The DNP group has calculated the direct emissions (Scope 1) from our production activities and the characteristics of products we make, determining these to be attributable to the consumption of fuel, incineration of waste and transport of products. We have not determined emissions arising in connection with transport of raw materials and waste, as these are not subject to management. Under the GHG protocol, disposal of our waste falls under Scope 3. Incineration of waste, however, is calculated as direct emissions of Scope 1. In Scope 2, we have calculated purchase of electricity as indirect emissions. We have not determined the GHG amount for items under Scope 3.

(2) Method of calculation

The heat generation amount and the GHG emission coefficients for each emissions source were calculated using the methods appearing in the report on the results of the review of methods of calculation of emissions of greenhouse gases as proposed by the Environmental Ministry's "Greenhouse Gas Emissions Calculation Method Deliberation Committee," in August 2002 and the Enforcement Regulations of the revised Energy Conservation Law executed in April 2003.

*1 Greenhouse gases (GHG):
Gases that have an effect on global warming, prescribed as being CO_2, CH_4, N_2O, HFC, PFC, SF_6-6 gas. The Kyoto Protocol built in three flexible measures for the reduction of greenhouse gases, namely, Joint Initiatives, Clean Development Mechanisms, and Emissions Trading.

*2 Emissions trading
System that allows countries and companies to trade amounts of GHG emissions with each other so that they may achieve reduction targets.

*3 GHG Protocol
International guideline developed in 1998 by the World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI) for calculating and reporting six types of greenhouse gas prescribed in the Kyoto Protocol.

Project to Reduce GHG

Based on an accurate understanding of the GHG emissions reduction amount, we positioned as a domestic CDM/JI*1 the cogeneration system project implemented within the Mihara plant of Dai Nippon Printing Precision Device Co., Ltd. Furthermore, using the CDM/JI procedure as a reference, we produced a program design document (PDD), calculated the emissions amount and the reduction amount and evaluated the effectiveness of the project.

*1 CDM: A system for reducing GHGs through joint cooperation between advanced and developing countries. Under this system, advanced countries that invest in GHG reduction facilities in developing countries can acquire credits for the emissions they reduce in such countries.

JI: A system for reducing GHGs through joint cooperation between advanced countries. Under this system, advanced countries that invest in GHG reduction facilities in developing countries can acquire credits for the emissions they reduce in such countries.

Domestic CDM/JI: Domestic GHG reduction operations.

GHG emissions reduction project calculation results

Item evaluated/ calculated / Breakdown of energy type		(1) Base year (FY 2000)	(2) Cogeneration plan	(3) FY 2000 Cogeneration operation performance (Performance for August to March converted to annual performance amount)	(4) FY 2002 Case in which cogeneration not implemented (Performance for August to March converted to annual performance amount)	(5) Case in which cogeneration performed at same energy demand as when planned
Energy type	Breakdown	CO_2 Emissions (tons)	CO_2 Emissions (tons)	CO_2 Emissions (tons)	CO_2 Emissions (tons)	CO_2 Emissions (tons)
Electricity	Purchased electricity	61,855	10,597	33,912	81,078	10,823
	Electricity generated through cogeneration	0	0	0	0	0
	Electricity generated through STC	0	0	0	0	0
Municipal gas	Boiler	36,453	3,661	13,380	46,948	5,086
	Cogeneration	0	55,222	51,422	0	51,422
	Oxygen rich boiler	0	2,097	2,168	0	2,168
Nitrogen gas	Cogeneration system	0	0	0	0	0
	External purchase	297	0	0	997	0
	Transport (Diesel)kl	16	0	0	54	0
Total CO_2 emissions		98,621	71,576	100,882	129,078	69,499

Shaded portion is column CO_2 emission amount by cogeneration operation.

The factory steam demand amount for (1), (2) and (5) of the Item Evaluated Column is 231,000 tons; that for (3) and (4) is 298,000 tons. CO_2 emissions were calculated from the amount of municipal gas consumed in each type of steam emission facility. Regarding external purchases of nitrogen gas, we calculated the CO_2 emission amount arising during manufacture of nitrogen gas by the external operator and the CO_2 emitted in the course of transporting the gas to the factory. The CO_2 emissions coefficients for electricity were calculated using the coefficients used by Chugoku Electric power company.

■ Results of calculations for GHG emissions reduction project

The GHG emissions reduction project calculation results table expresses the results of estimations arising in connection with changes in the base year, project planning, performance and energy demand.

(1) The base year was set as 2000, the year in which cogeneration systems (two 5000kW gas turbines) were scheduled to be installed. Our energy consumption amount in FY 2000 included 96,649,000 kWh purchased from an electric company, 15,717,000m³ of purchased municipal gas, resulting in GHG emissions of 98,621 tons.

(2) Under the plan under which the cogeneration system was implemented, we calculated the planned GHG emissions amount with the energy consumption amount at the same level as the base year. As a result, the GHG emissions amount stood at 71,576 tons, while the planned GHG reduction amount stood at 27,045 tons, which is expected to bring about reductions equivalent to 27% of the entire emissions of the Mihara plant.

(3) The reduction in GHGs through cogeneration operations were calculated from the month in which the operations began until March 2003, given that cogeneration operations began in August 2002. We then converted this to an annual amount. The results showed GHG emissions to be 100,882 tons.

(4) Cases in which cogeneration was not implemented at FY 2002 energy demand:
In FY 2002, production was expanded at plants, increasing electricity consumption by 140% and steam consumption by 128% against a base year of FY 2000. This made it difficult to calculate the reduction amount. In view of this, we calculated emissions in the case where a cogeneration system had not been implemented at FY 2002 energy demand, comparing the results. The results indicated that the GHGs stood at 129,078 tons, and that operation of cogeneration systems had reduced emissions by 22%.

(5) Furthermore, in order to compare the effects arising from cogeneration system operation with the planned effects, we calculated energy consumption for FY 2002 in the case where it was the same as the planned amount. The results indicated GHG emissions to be 69,499 tons, less than the planned amount of 71,576 tons, indicating the achievement of reduction effects in excess of the planned amount.

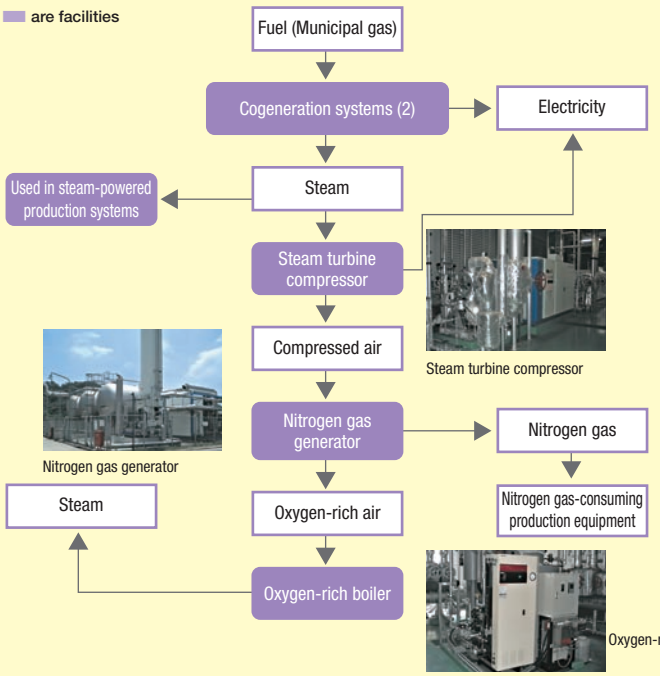
■ Overview of the cogeneration system

The cogeneration system at the Mihara plant is an energy multi-stage utilization system that was developed independently by DNP in accordance with the characteristics of the plant. The following describes the key elements of the system and their functions:

* Gas turbine: Produces electricity and fuel though combustion of municipal gas
* Steam turbine compressor: Produces electricity and compressed air through steam
* Nitrogen gas production system: Produces nitrogen gas and oxygen-rich air from compressed air. The nitrogen gas is used in the production process.
* Oxygen-rich boiler: Boiler exhaust gas used to supply aid to boiler. The oxygen-rich gas produced through the nitrogen gas production system is injected in with the boiler exhaust gas, so that it may be used as air supply gas. This marks the first time that such a system has been used in Japan, and may be recognized as a new means for achieving CDM/JI.

The cogeneration system at the Mihara plant

Used in steam-powered production systems



Environmental Management System

Contents

Close-up Report Environmental awareness among employees

In an effort to improve our environmental performance, the DNP group performs ongoing improvement of our management systems. Furthermore, each employee makes an effort to reduce environmental impact, being fully aware of the environmental impact of their allocated products and the production processes thereof.

The DNP Group Environmental Philosophy and Vision for the 21st Century

Practice of environmental management

Summary **Since the establishment of the Environment Department of DNP in 1972, the DNP group has promoted environmental conservation activities. In 1992 we established our Environmental Commitment. In 1993, we began full-fledged environmental management activities, following the establishment of our Eco-Reporting System, the group's original environmental management system. Furthermore, in March 2000 we strengthened our conservation activity promotion system with the establishment the DNP Group Environmental Committee. In May 2001, we made a fresh start, establishing the DNP Group's Vision for the 21st Century, and adopting a corporate philosophy of "the DNP Group will contribute to the creation of an intellectually active, rich, and 21st century society with emergent evolution."**

At DNP group, we aim to develop a better relationship with society, functioning as a good corporate citizen, aiming to realize a recycling oriented society while becoming a better partner with extensive community involvement.

The DNP Group's Environmental Philosophy

In 1992 the DNP group adopted a commitment to the environment, declaring its intention to strive to protect the global environment and use resources effectively within the DNP group Code of Conduct, which is used as a guideline by all employees.

[Environmental Declaration]

"We will make every effort to protect the prosperity and future of the human race by protecting the environment and using resources effectively."

Today we face the serious issue of how to protect the global environment. Due to the dramatic economic growth of recent years, our ecosystem is being destroyed through the depletion of the ozone layer, global warming, increasing volumes of industrial waste, and the careless consumption of natural resources. As a result, our earth's circulatory system is beginning to be affected. These problems, together with the rapid depletion of natural resources, should be a source of concern, since they threaten our daily life and may even stifle economic growth. We will act aggressively in addressing environmental issues, using our comprehensive technological resources to safeguard the prosperity and future of the human race. (Excerpt from the DNP Group's Codes of Conduct)

The DNP Group's Environmental Policies

The DNP Group's efforts are directed towards the continuous prosperity of a world economy with limited resources and for the development of a society that recirculates resources. The DNP Group is making every effort to minimize the impact our business operations have on the environment, and this includes compliance with environmental laws and regulations as well as recognizing the relationship that each of our business activities has to the environment.

1 Each member of the DNP Group establishes and periodically reviews its own environmental policies and environmental targets, and puts into effect continuous improvement of its activities and the prevention of environmental pollution.

2 For all construction projects, and before designing and commissioning new facilities, we carry out a full and detailed environmental survey to assess the impact that the project will have on the environment, to make proper efforts to protect the environment.

3 When carrying out research, development and design for a new product, we consider the impact of the product on the environment throughout its life cycle, including the ordering of raw materials, production, distribution, use, and disposal. We give special consideration to energy conservation, resource conservation, and reducing the use of harmful chemicals.

4 When purchasing raw materials, stationery, and equipment, we choose items that are ecologically-friendly and easy to recycle.

5 In manufacturing a product, we aim to comply with environmental laws and regulations, and moreover we set up more stringent standards to reduce the emissions of pollutants into the air, watershed, and soil, and to prevent unpleasant odors, noise, vibration, and land subsidence. We are constantly improving facilities, techniques and manufacturing processes to promote the targets of energy conservation, resource conservation and the reduction of industrial waste.

6 When generating waste from business operations, we strive to achieve zero emissions by separating and recycling waste as much as possible.

Implementation of Environmental Management

In 1972, the DNP Group established the Environment Department at Dai Nippon Printing Co., Ltd. to initiate fullscale environmental activities, reduce the emissions of industrial waste, and conserve energy. In addition, this enabled the company to begin developing products with environmental conservation in mind. In 1993, the Group formed the Eco-Report System as its management system. This signaled the start of the company's full-scale environmental management activities. Furthermore, in March 2000, the DNP Group's Environmental Committee was launched. Prior to the set up of this committee, the environmental management system dealt mainly with manufacturing sites. However, the committee enhanced this system to encompass sales, planning and R&D and helped to further the group's environmental conservation activities.

DNP Group's Vision for the 21st Century

The DNP Group will contribute to the creation of an intellectually active, rich, and 21st century society with emergent evolution.

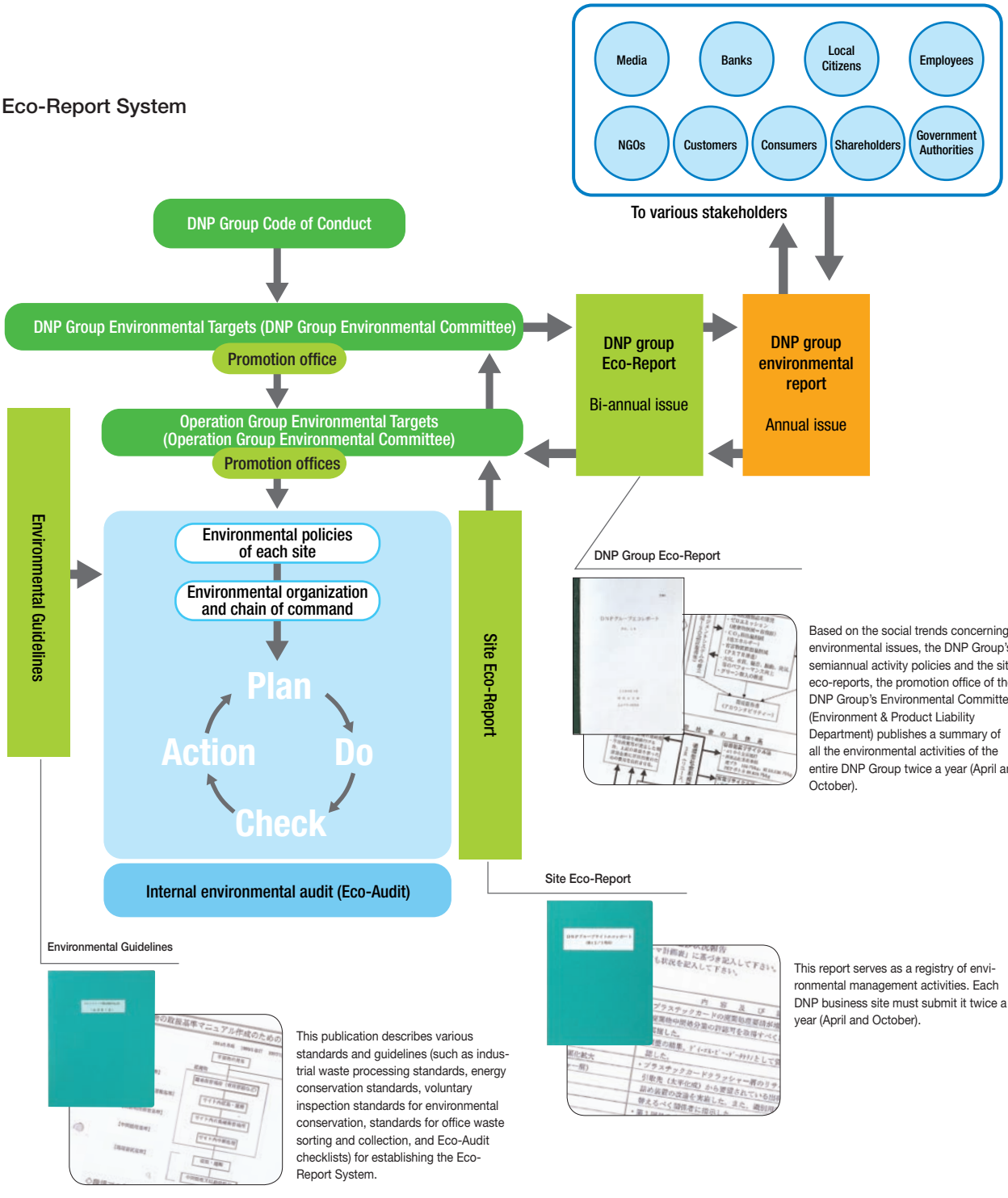
As part of our vision for the 21st century, the DNP group embraces the above environmental philosophy. Furthermore, in response to increasingly complex environmental issues, utilizing the fruits of printing technology developed over the years and technical expertise of the DNP group, we will strive to provide environmentally sound products and reduce environmental impact of the production process.

At DNP, we aim to develop a better relationship with society, acting as a good corporate citizen, working to realize a recycling oriented society while becoming a better partner with extensive community involvement.

DNP Environmental Management System, “Eco-Report System”

Summary Developed by the DNP group as a means of achieving the group’s environmental targets, the Eco-Report System is an original environmental management system that forms the basis of the group’s environmental management activities. The DNP group practices ongoing group-wide environmental activities, incorporating ISO 14001-certified systems that take into account the characteristics of each business domain, based on our Eco-Report environmental management system.

Eco-Report System



Based on the social trends concerning environmental issues, the DNP Group’s semiannual activity policies and the site eco-reports, the promotion office of the DNP Group’s Environmental Committee (Environment & Product Liability Department) publishes a summary of all the environmental activities of the entire DNP Group twice a year (April and October).

This publication describes various standards and guidelines (such as industrial waste processing standards, energy conservation standards, voluntary inspection standards for environmental conservation, standards for office waste sorting and collection, and Eco-Audit checklists) for establishing the Eco-Report System.

This report serves as a registry of environmental management activities. Each DNP business site must submit it twice a year (April and October).

DNP Group's Environmental Management System (EMS)

[Environmental Policies and Targets]

The DNP Group's environmental policies and targets are decided by the DNP Group's Environmental Committee at its head office and reviewed on a regular basis in light of global and customer trends, and the status of companywide activities.

The policies and targets specified herein are widely communicated throughout the company from the head office's promotion office to the environmental committee and promotion office in each operations. The environmental committee of each operations then establishes its own policies and targets based on those passed down from the head office and in consideration of business trends. It then carries out specific activities based on each division's policies and targets.

Environmental Committee

March 29, 2002	Decided on the policy for efforts in FY 2002
August 29, 2002	Released activity report for first half of FY 2001
March 31, 2003	Decided on the policy for efforts in FY 2003

[Implementing Activities at the Site]

When implementing specific activities, each site conducts environmental management activities as stipulated in the DNP Group's environmental guidelines. Activities are recorded monthly in a Site Eco-Report. On a six month basis, results are assessed and targets are set for the next six month period. In addition, site activities are audited once a year to ascertain if they comply with legal regulations and to see the achievement of targets for the overall Group. This is done to ensure the improvement of environmental management activities.

Produced Site Eco-Report for term ending Sept. 2002
(Record of site activities from April to Sept. 2002)
Produced Site Eco-Report for term ending March 2003
(Record of site activities from October to March 2002)
Environmental audit "Eco-Audit" implemented

[Flow for the Disclosure of Environmental Information]

The head office's promotion office publishes DNP Group Eco-Report covering companywide activities twice a year, based on changes in social environmental trends and the Site Eco-Reports from each operations. This is the Group's white paper on environmental activities. Following publication of the report, management goes out to each site to resolve problems at a particular site or the positioning of each problem within the Group for the purpose of mutually understanding environmental information and pinpointing important issues that exist among operations. The paper also supports the sharing of information and ascertaining future key topics. Furthermore, once a year, this DNP Group Environmental Report is published to inform of our environmental management activities over the past year.

Released DNP Eco-Report No. 19
(Record of site activities from April to September 2002)
Released DNP Eco-Report No. 20
(Record of site activities from October to March 2002)

DNP Group Eco-Report

[Achievement of Autonomous, Environmentally Conscious Plants]

The DNP Group uses three tools, its environmental guidelines, Site Eco-Reports and the DNP Group Eco-Report. Once every six months PDCA (Plan→Do→Check→Act) practices are carried out. This helps each site become more independent in conducting management and controlling environmentally conscious procedures and aiming toward the achievement of autonomous, environmentally conscious plants.

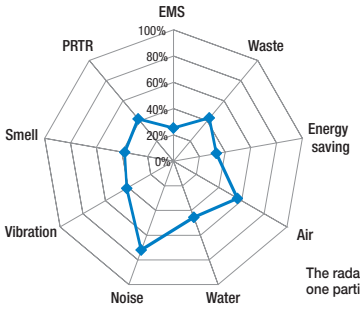
[Practice of Environmental Management]

In 1972 the Environmental Department was established to start fullfledged environmental management activities. In 1993, we set up a proprietary environmental management system known as the Eco-Report System. In the beginning, the system covers 23 major sites nationwide. Today the system has been expanded and encompassed 55 sites including sales and planning divisions, not just manufacturing plants. Over the course of the years since its initial implementation, we have worked continually to improve management methods. We will continue to carry out this system. Furthermore, we plan to expand the system to meet the needs of the changing times. We aim to keep enhancing the level of our environmental management system.

We intend to expand the themes we deal with. Our issues have mainly focused on our plants but we plan to take on issues such as the development and sale of environmentally conscious products and green purchasing. Our goal is to be evaluated as a company which practices environmental management and contributes to developing a recycling oriented society.

Evaluation of site activity performance by radar chart

In order to clarify the relative positioning of and problems associated with environmental management, waste reduction, global warming prevention, environmental conservation and PRTR of each site within the DNP Group, we made an item-by-item index of the activity performance of each site and expressed them in a radar chart.



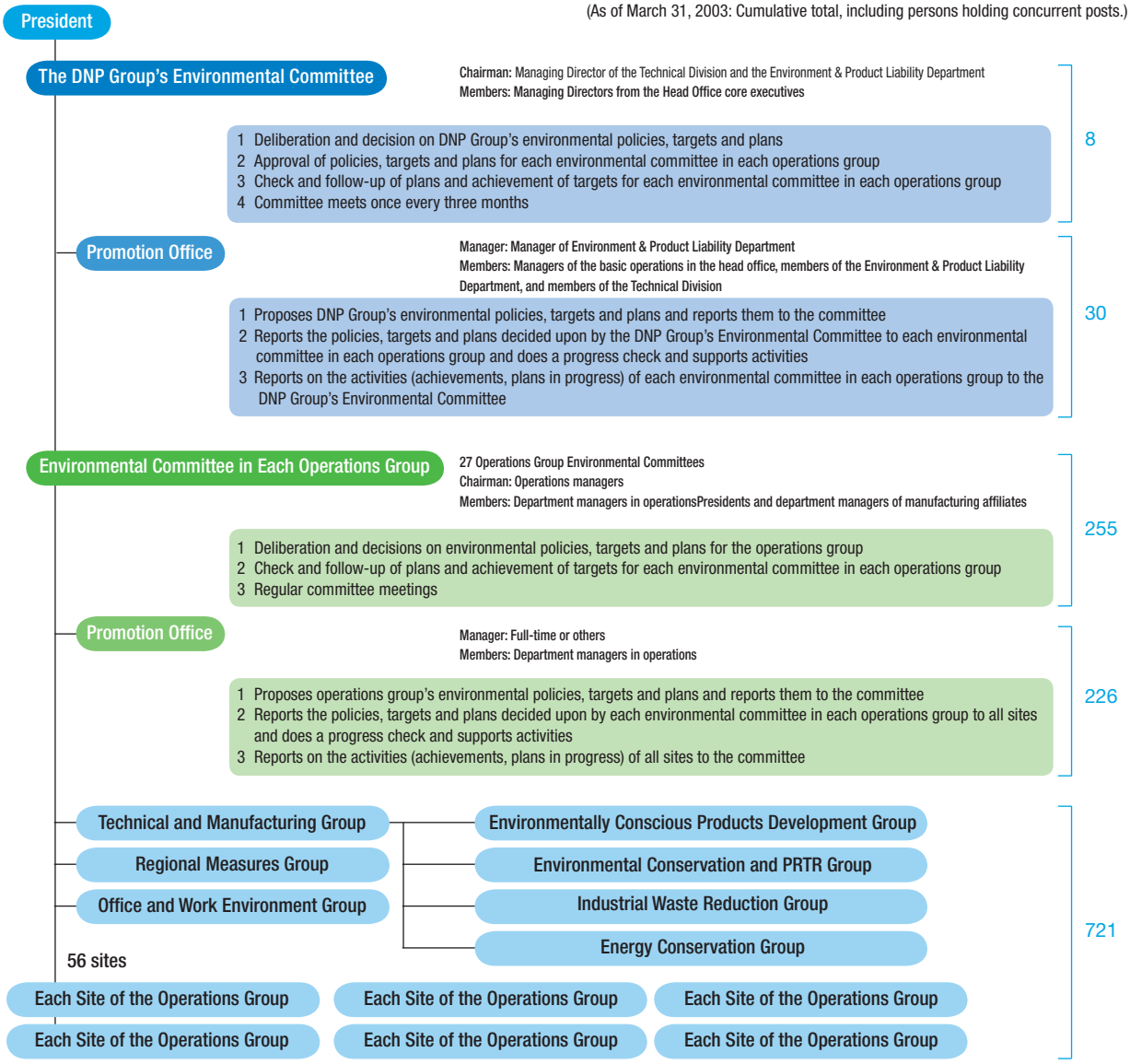
The radar chart of one particular site

Management Activities—
Groupwide Environmental Management System

The DNP group environmental management organization comprises the DNP Group Environmental Management Committee, which oversees the activities of the entire group, the environmental committees of each operation group, and promotions offices which are placed under each committee. The DNP Group Environmental Committee comprises Managing Directors from the Head Office core executives. The committee determines the environmental policy and targets for the entire DNP group while taking into account social trends and activities of each business area, discusses and resolves proposal plans, and checks the state of progress of plans and targets.
The items determined by the Environmental Committee are relayed through the promotions offices (Head Office), to the environmental committees of each business group, where they are implemented taking into account the characteristics of each business area, the results of which are compiled into Site Eco-Reports.

DNP Group Environmental Management Structure

(As of March 31, 2003: Cumulative total, including persons holding concurrent posts.)



State of ISO 14001 Implementation

The DNP group is carrying out group-wide environmental management through its Eco-Report System, an independent, practical environmental management system. In addition, we are also striving to acquire ISO 14001 certification, giving priority to sites that need certification and tak ing into account the demands of our clients.

Target To acquire ISO 14001 certification at 30 sites by FY 2005

Summary Performance: In FY 2002 five sites received certification, namely, Tien Wah Press (Pte.) Ltd., of Singapore, Chikugo plant, Kyushu Dai Nippon Printing Co., Ltd., Kyoto plant, Semiconductor Components Operations, Sayama plant, Information Media Supplies Operations, and Kansai Ono plant, DNP Media Create Kansai Co., Ltd.
Starting with Okayama plant, Information Media Supplies Opearations, the first factory in the printing industry to be awarded certification (in November 1997), by the end of FY 2002, we achieved ISO 14001 certification of a total of 14 systems at 16 sites.

In FY 2003, as a further step towards achievement of our targets, Tokyo plant, Decorative Materials Operations and, Kamifukuoka plant, Electronic Device Operations began implementation of an environmental management system, in an effort to achieve certification within the fiscal year. Aiming to acquire certification in FY 2005, we are promoting system development at a further 14 sites. The Semiconductor Components Operations was renamed the Electronic Device Operations on April 1, 2003.

State of acquisition of ISO 14001 certification (for 14 systems at 16 sites as of March 31, 2003)

Site name	Date acquired	Organization at which registered
Okayama plant, Information Media Supplies Operations	1997.11	JIA–QA*2
Mihara plant, Display Components Operations	1998. 7	DNV *3
DNP Facility Service Co., Ltd.*1	2000. 4	JIC–QA*4
Okayama plant, Decorative Materials Operations	2000. 7	JIA–QA
Tokai Dai Nippon Printing Co., Ltd.	2001. 5	JIA–QA
Sayama plant, Dai Nippon Printing Technopack Co., Ltd.	2001.12	DNV
Kobe plant, Decorative Materials Operations	2002. 1	JIA–QA
Tokyo plant, The Inctec Inc.	2002. 1	JCQA*5
Kansai plant, The Inctec Inc.	2002. 1	JCQA
Utsunomiya plant, The Inctec Inc.	2002. 1	JCQA
Ushiku plant, Business Form Operations	2002. 3	DNV
Tien Wah Press (Pte.) Ltd.	2002. 5	PSB*6
Chikugo plant, Kyushu Dai Nippon Printing Co., Ltd.	2002. 6	DNV
Kyoto plant, Semiconductor Components Operations	2002. 7	DNV
Sayama Plant, Information Media Supplies Operations	2002. 1	JIA–QA
DNP Media Create Kansai Co., Ltd.	2003. 3	JIA–QA

*1. In addition to ISO 14001, management system for coordinating product quality, environment, work safety, and foodstuff hygiene also acquired.
*2. JIA–QA: Japan Gas Appliances Association, QA Center
*3. DNV: Det Norske Veritas (Norway)
*4. JIC–QA: JIC Quality Assurance Ltd.
*5. JCQA: Japan Chemical Quality Assurance Ltd.
*6. PSB Certification Pte, Ltd. (Singapore)

Chikugo plant, Kyushu Dai Nippon Printing Co., Ltd.


Kyoto plant, Semiconductor Components Operations


Sayama plant, Information Media Supplies Operations


Ono plant, DNP Media Create Kansai Co., Ltd.

Achievements and Assessment of Conservation Activities

The DNP group is making steady achievements in environmental conservation, and sets environmental targets appropriate to each business activity, taking into account its environmental policy. The following table indicates the performance and evaluation of targets for FY 2002, which were set in March 2002.

◎ : Exceeded target by wide margin ○ : Target achieved or progressing on target × : Target unachieved

Theme	Target	Performance in FY 2002	Evaluation	Page no
Development & sale of environmentally conscious products • Increase in sales of environmentally conscious products	Increase year-on-year sales by 10%	Year-on-year sales up by 35% Sales in FY 2002 stood at ¥101.9 billion; those for FY 2001 stood at ¥75.7 billion	◎	44
PRTR • Reduce the air emissions of toluene	To reduce air emissions of toluene of the entire group to 500t/year by FY 2004	Air emissions amount in FY 2002 stood at 3,151 tons Release amount reduced by 62% against a base year of FY 2000 (8,376 tons)	◎	33
• Reduce the release and transfer amount of chemical substances designated as Type I substances under the PRTR Law	To reduce the release and transfer amount of chemical substances (except toluene) designated as Type I substances under the PRTR Law by 50% against a base year of FY 2000	Reduced by 29% against base year of 2000 Release and transfer amount in FY 2002 stood at 870 tons Release and transfer amount in FY 2000 stood at 1,220 tons	○	33
Global warming prevention • Reduce greenhouse gas emissions.	To reduce greenhouse gas emissions amount to the level in FY 2000 by FY 2010	Reduced emissions by 2.9% against base year of FY 2000 Emissions amount in FY 2000 stood at 843,000 tons. That for FY 2000 stood at 868,000 tons	○	38, 39
• Reduce overall energy consumption	To reduce overall energy consumption to FY 2000 level by FY 2010	Reduced by 2.5% against a base year of FY 2000 Overall consumption in FY 2002 stood at 18,069TJ; that in FY 2000 stood at 18,525T	○	38, 39
• Reduce energy consumption per unit of value added production (energy consumption amount/production amount)	To reduce energy consumption per unit of value-added production by 15% by FY 2010 against a base year of 1990	Reduced by 3.9% against a base year of FY1990 Reduced by 3.4% against a base year of FY 2001 FY 2002 energy consumption per unit of value added production stood at 3.94TJ/¥100 million. That for FY 2001 stood at 4.08TJ/¥100 million. That for FY1990 stood at 4.10 TJ/¥100 million	○	38, 39
• Reduce of CO_2 emissions per unit of value added production (CO_2 emissions amount/production)	To reduce CO_2 emissions per unit of value added production by 20% by FY 2010 against a base year of FY1990	Reduced by 11.4% against base year of FY1990 Reduced by 2.5% against base year of FY 2001 FY 2002 CO_2 emissions per unit of value added production: 176t-CO_2/¥100 million That for FY 2001:181t-CO_2/¥100 million. That for FY1990: 199t-CO_2/¥100 million	○	38, 39
Reduction of industrial waste • Reduce waste per unit of value-added production (waste emissions amount/production)	To reduce waste by 20% by FY 2005 against a base year of FY 2000	Reduced by 32.4.% against a base year of FY 2000 That for FY2000 stood at 0.312 tons/¥million	◎	34
• Reduce overall amount of unused materials	To reduce unusable materials by 10% by FY 2005 against a base year of FY 2000	Reduced by 21.7% against a base year of FY 2000 FY 2002 unused materials: 506,000 tons That for FY 2000 stood at 646,000 tons	◎	35
• Achieve zero emissions	To achieve zero emissions at 20 sites by FY 2005	Achieved at six sites. Landfill use ratio at less than 1% at 24 sites.	○	35
• Reduce unusable materials generation ratio (Unused materials generation amount/materials input amount)	To reduce unusable materials generation ratio by 20% by FY 2005 against a base year of FY 2000	Reduced by 14.7% against a base year of FY 2000 Unused materials generation ratio in FY 2002: 15.1 That in FY 2000: 17.7%	○	34
• Improve recycling ratio (Recycling amount/total unusable materials amount)	To achieve a recycling ratio of 80% by 2005	Improved recycling ratio by 3.4 points since FY 2001 FY 2002 recycling ratio stood at 77.6%. That for FY 2001 stood at 74.2%	◎	34
Environmental Conservation • Reduce air pollutants	To keep maximum density of substances subject to air emissions regulations at less than 70% of regulated amount	Voluntary standard attainment ratio: 93% (That in FY2001: 92%)	◎	41
• Reduce water pollutants	To keep maximum density of substances subject to wastewater regulations at less than 70% of regulated amount	Voluntary standard attainment ratio: 89% (That in FY 2001: 83%)	○	41
• Control odors	To keep maximum odor level at site perimeter at less than 70% of regulated amount	Voluntary standard attainment ratio: 89% (That in FY 2001: 91%)	○	41
• Control noise	To keep maximum noise level at site perimeter at less that 95% of regulated amount.	Voluntary standard attainment ratio: 47% (That in FY 2001: 45%)	×	41
• Control vibration	To reduce maximum vibration level at site perimeter at less than 95% of regulated amount.	Voluntary standard attainment ratio: 100% (That in FY 2001: 100%)	◎	41
Office Environment • Improve the recovery ratio of separated paper	To improve recovery ratio of separated paper by 65% in comparison to general waste.	Recovery ratio in FY 2002: 62.3% That in FY 2001: 60.7%	×	36
Green Purchasing • Improve ratio of environmentally-conscious products in purchased raw materials	To improve the year-on-year purchase ratio of products deemed to be environmentally conscious by 2.5%.	Improved by 2.7% against base year of FY 2001 Green products purchasing ratio in FY 2002: 18.6% That in FY 2001: 15.9%	○	43
• Improve ratio of purchased general products (office supplies, fixtures, etc.) bearing certified environmental labels such as eco-mark,, etc.	To improve purchase ratio of certified products bearing environmental label within general supplies purchase amount by 3.0%	Improved by 3.4% against a base year of 2001 Purchase ratio in FY 2002 stood at 12.5% That in FY 2001 stood at 9.1%	○	43
Reduction in Environmental Impact of Transport • Reduce CO_2 emissions per unit of carriage (CO_2 emissions/transport tons-kilometers)	To reduce CO_2 emissions per unit of carriage by 5% by FY2010 against a base year of 2000	Reduced by 26% against a base year of 2000 CO_2 emissions per unit of carriage: 85t-CO_2/million tons-km That in FY 2000: 116t-CO_2/million tons-km	◎	51
• Reduce of transport-use fuel consumption per unit of sales (Fuel consumption amount/sales)	To reduce transport-use fuel consumption/sales by 20% b FY 2010 against a base year of 2000	Reduced by 6% against a base year of 2000 FY 2002 transport-use fuel consumption per unit of sales: 78kl/¥100 million That for FY 2000: 83kl/¥100 million	○	51
Environmental Management System • Promotion of ISO 14001 certification acquisition	To achieve ISO 14001 certification at 30 sites by FY 2005	Acquired at five more sites, brining the total number of certified sites to 16	×	22
• Improvement of Eco-Report System	To perform eco-audits at all sites	54 sites participated in Eco-Report System	○	56, 57

* We used the value-added total amount as the production amount (business activity amount) in per-unit calculations

Environmental Education

The DNP group performs environmental education, with separate courses for different employee ranks, job categories and function. The courses cover internal and domestic trends concerning environmental problems, knowledge and laws, as well as DNP's conservation efforts. We provide this education to improve our employees' awareness of environmental matters and to provide the opportunity to gain the knowledge and management know-how required to achieve environmental targets.

Environmental Education in FY 2002

During the year, we performed educational seminars for new recruits on two occasions, attended by a cumulative total of 429 employees, and our Technical Seminar A, aimed at technical staff, on three occasions, attended by a cumulative total of 243 persons.

Our Eco-Report training programs, which focus on important elements of the PRTR Law and how to deal with factory inspections under the Energy Conservation Law, were consecutively held in May and November, and were attended by 914 employees. Also in FY 2002, as a step towards the trouble-fee execution of PRTR risk communications, we held Environmental Communications classes targeting the Environmental Committee Officers of each site on 3 occasions, which were attended by a cumulative total of 263 persons.

The correspondence courses that we held in FY 2001 we continued to operate in FY 2002. The three courses, namely, "Easy on the Earth Environmental Seminar", "ISO 14001 for Beginners" and "LCA and Environmental Labels" were attended by 37 people.

In FY 2002, we did not offer our network learning course Environmental Problems & Business, as all of those who took the course last year had already completed the course. In FY 2003, we intend to reopen the course, with slightly modified content, targeting a new group of employees.

Education for employees entering the company

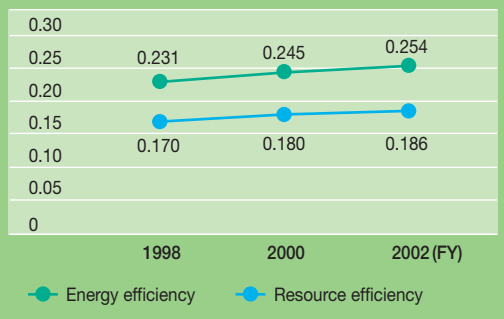
Education for emvironmental communications

Training	Course	Course Content	Year Began	Eligibility	When Course Is Taken	No. of People Attended
Education for employees entering the company	Environmental activity overall (required)	Basic environmental knowledge and conservation efforts of the DNP group	1994	Each year for those hired in April and during other times of the year	Upon entering the company	2517
Technical Seminar A	How DNP deals with the environment (required)	Basic knowledge of the environment, its impact and means for reducing such	1997	2nd year technicians	Year the employee becomesqualified to take the course	1882
Technical Seminar B	Environment (optional)	Environmental laws and regulations	1999	Technicians	Irregular	104
Network Learning	Environmental issues and business	Environmental information to be used when presenting customers with proposals concerning environment-oriented businesses	2000	Employees with more than 2 years experience in the sales and planning divisions (required)	Employees determines when they take the course	4317
Correspondence Course	(optional)	Primer on ISO 14001 and LCA	Select a course each year	DNP Group all employees	Semiannually	–
Eco-Report Training	Environmental targets for current term	Domestic & international trends in environmental issues, revisions in environmental laws, degree of achievement of environmental targets, new targets, issues concerning specific sites	1993	Site members of the operations group environmental committee	Semiannually	–
Environmental Communications	Risk Communications	Evaluating health risks of chemical substances, methods of reducing emissions, disclosure of data concerning such substances	2002	Site members of the operations group environmental committee	3 times a year	263

Environmental Performance

Contents

Environmental Efficiency



Energy efficiency = Production (¥100 million) / Energy consumption (TJ)
Resource efficiency = Production (¥100 million) / Materials input (tons)

The DNP group uses unit ratios (environmental impact per unit of production) as an index to express environmental impact. In the chart, we used as an index production per unit of energy or raw materials consumed in order to confirm improvements made to the environmental efficiency of resources.

Close-up Report "Production 21"

The realization of a sustainable society requires improvement of "environmental efficiency" through efforts to maximize the efficiency of resource and energy as well as reduction of the environmental impact per unit of economic activity.

The DNP group performs "Production 21," which eliminate any form of waste from the entire production process. Through these activities, we improve yield* and reduce lead times, which has led to significant achievements in reduction of waste product emissions per unit of production, reduction in unusable materials ratios, reduction in energy consumption per unit of production, as well as CO_2 emissions per unit of production.

*Yield: Ratio of products without defects out of total amount of products produced.

Environmental Impact of the Entire DNP Group

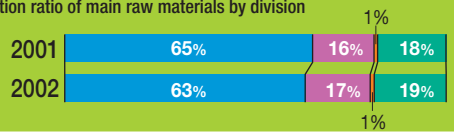
The DNP group produces a wide range of consumer items by using raw materials, including paper, film, plastic, metals (steel and aluminum) and ink.

Each division in the DNP group has its own particular characteristics. For example, the Information Communications Division uses a lot of paper and produces a large amount of unusable materials. The Lifestyle and Industrial Supplies Division uses a lot of auxiliary materials (solvents) and releases large amounts of greenhouse gases. The Electronics Division consumes large amounts of water, accounting for some 60% of the total consumed by the DNP group. Furthermore, when measured in terms of environmental impact per unit of production, consumption of main raw materials per unit of production in the Information Communications Division is large, while consumption of water and emissions of wastewater per unit of production in the Electronics Division is large. In addition, when measuring unusable materials per unit of production, there is little difference between divisions, while the in the Lifestyle and Industrial Supplies Division, emissions of greenhouse gas per unit of production is relatively large.

Key raw materials

	FY 2001	FY 2002	
Paper	2,096,100 t	2,056,400 t	(1.9% down)
Film	104,600 t	110,400 t	(5.5% up)
Resin	54,100 t	62,200 t	(15.7% up)
Metals	50,700 t	67,600 t	(33.3% up)
Ink	65,900 t	62,500 t	(5.0% down)
Other	93,900 t	113,500 t	(20.9% up)

Composition ratio of main raw materials by division

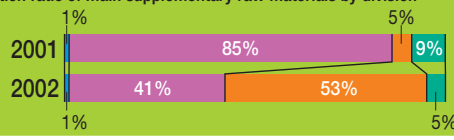


Key supplementary materials

	FY 2001	FY 2002	
Solvents	32,700 t	28,400 t	(13.1% down)
Acid/alkaline	1,200 t	32,800 t*1	–

*1 Different accounting method used in FY 2001

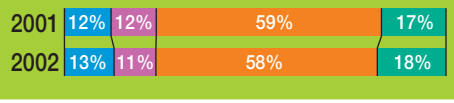
Composition ratio of main supplementary raw materials by division

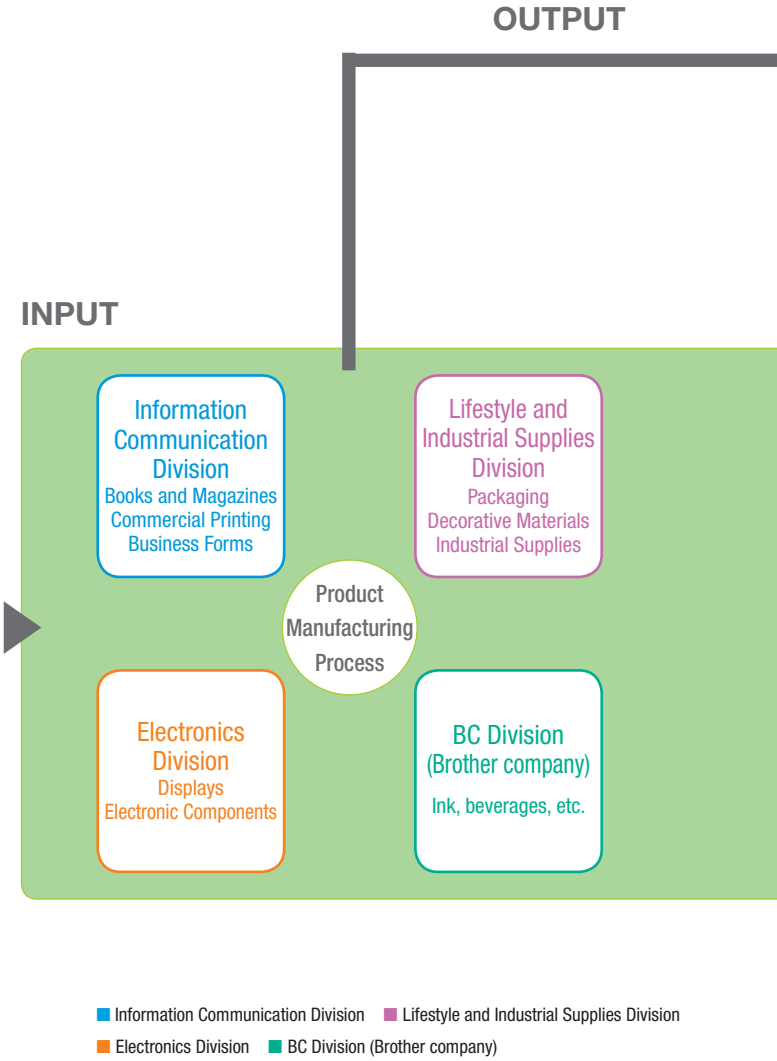


Utilities

	FY 2001	FY 2002	
Electricity	1.108 billion kWh	1.042 billion kWh	(6.0% down)
LNG	130.4 million m³	140.7 million m³	(7.9% up)
LPG	18.9 million kg	23.3 million kg	(23.3% up)
Fuel Oil	8,900 kl	6,700 kl	(25% down)
Water	14.3428 million m³	13.4857 million m³	(6.0% down)

Composition ratio of water consumption by division





Information Communication Division Lifestyle and Industrial Supplies Division
Electronics Division BC Division (Brother company)

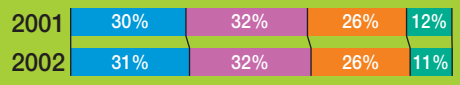
In FY 2002, we changed the method for tallying consumption of main raw materials, acid and alkaline substances, as well as the water recycling ratio. In FY 2001, we excluded magnetic tape for use in plastic cards included in main raw materials, as the film part of the tape does not constitute part of the structure of the cards. We included iron chloride, which is used in the production process, in the category for acid and alkaline substances. In the category for recycled water amount, we also entered the amount of recycled water that is used for heating, cooling and used repeatedly in building air-conditioning systems. In comparison with performance in FY 2001, there is little change in the composition ratio of each division except for the change in scope of items subject to accounting. In main raw materials and auxiliary materials, metals and plastics have increased while inks and solvents have decreased. In utilities, LPG and LNG have increased while consumption of electricity, heating oil and water, as well as wastewater has decreased.

Regarding the recycling of materials within the DNP group, we implemented odor-removing equipment, which removes odor through incineration, and solvent recovery equipment. This brought about a slight increase in the recycling ratio. As an effort to produce steam through use of waste heat, we used the waste heat from incinerators and odor-removing equipment to create steam, which is used as a heat source for drying. However, the steam production fell slightly on account of a temporary shutdown of the incinerator in the Izumisaki plant.

Emissions to Air

	FY 2001	FY 2002	
GHG emissions	855,100 t-CO_2	847,600 t-CO_2	(0.9% down)
NOx emissions	620 t	627 t	(1.1% up)
SOx emissions	74.5 t	56.5 t	(24.2% down)
VOC emissions	5,100 t	3,500 t	(31% down)

GHG emissions composition ratio by division



Note: Please see pages 38 and 51 for related data concerning greenhouse gas emissions.

OUTPUT

Recycling within the DNP Group

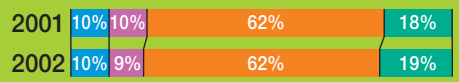
	FY 2001	FY 2002
Amount of solvents recycled	5,500 t (Recycling ratio*1 1.17)	5,000 t (Recycling ratio*1 1.18)
Amount of acids and alkalis recycled	58,500 t (Recycling ratio*1 44.8)	38,300t (Recycling ratio*1 21.7)
Amount of water recycled	473,489,300 m³ (Recycling ratio*1 34.0)	479,604,800 m³ (Recycling ratio*1 36.6)
Amount of steam generated though use of waste heat	151,000 t	98,000 t

Environmental impact per unit of production by division (t/¥ million)

Impact/Division	Information Communications	Lifestyle & Industrial Supplies	Electronics	BC
Key raw materials	15.5	6.4	0.4	4.7
Unusable materials	1.9	1.5	2.1	0.7
Water consumption	16.7	23.7	119.0	24.5
Wastewater	11.7	16.2	108.1	22.5
GHG emissions	2.6	4.2	3.2	1.0

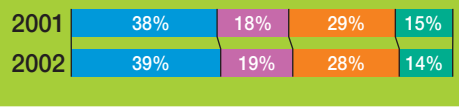
	FY 2001	FY 2002	
Wastewater	13,250,000 m³	11,574,600 m³	(12.7% down)
COD emissions*2	32.3 t	41.1 t	(27.2% up)
Nitrogen emissions*2	19.2 t	21.3 t	(11% up)
Phosphorous emissions*2	0.9 t	1.6 t	(78% up)

Wastewater emissions composition ratio by division



	FY 2001	FY 2002	
Unusable materials	519,400 t	506,100 t	(2.6% down)
Waste materials	105,000 t	96,800 t	(7.8% down)
Landfill disposal	25,300 t	21,300 t	(15.8% down)

Wastewater emissions composition ratio by division



*1 Recycling ratio is calculated as (input amount + amount reused) / input amount. Steam generation amount and solvents contained within ink have been excluded)

*2 Amounts given for COD, nitrogen and phosphorous are based on emissions into wastewater channels to which the Water Pollution Control Law applies.

Environmental Impact by Division

The following describes the characteristics of the material flows concerning the key divisions of DNP, namely the Information Communication Division (Books and Magazines, Commercial Printing and Business Forms, etc.) the Lifestyle and Industrial Supplies Division (Packaging, Decorative Materials and Industrial Supplies), the Electronics Division (Displays, Electronic Components). As of FY 2002, we included in the Lifestyle and Industrial Supplies Division the Information Media Supplies Division, which had been included in the Electronic Components & Information Media Supplies Division in FY 2001.

Information Communication Division

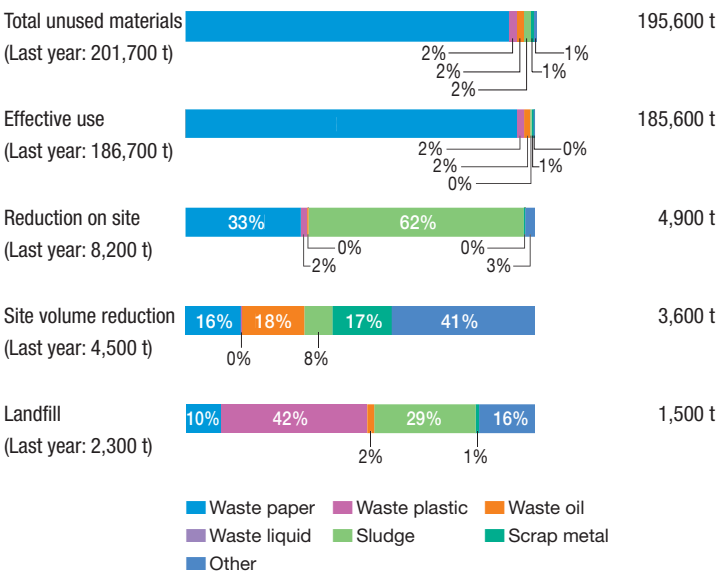
This division is characterized by a substantial use of recycled solvents and high consumption of paper, its key raw material. For paper, we have achieved a recycling ratio of 99%. Using special recovery equipment, the division recycles some 2,200 tons of toluene solvent, which is used as the sole solvent in gravure printing. The large-scale recycling of toluene brings about considerable economic benefits.

Within the division, Warabi plant, the Business Form Operations uses waste heat from the plant incinerator. Although our wastewater amount is decreasing, the environmental impact of this has increased due to the expansion of production at the Ushiku plant. At other sites we treat our own wastewater before releasing it into public sewage systems, where it undergoes secondary treatment.

In comparison with FY 2001, items causing environmental impact have been on a downward trend. At the same time, however, consumption of LNG and LPG as well as emissions of GHG of Kuki plant, Ichigaya Publication Printing Operations (Information Communication Division) has been increasing as the waste heat from the cogeneration system installed therein is used by the Kuki plant of the Electronics Division which is located within the same site.

During the plate-making process, the Information Communications Division uses special facilities designated under the Water Pollution Control Law and the Sewage System Law, including an automatic film developing and washing system (system for developing and fixing plate-use photographic film, used as the basis for printing plates), an automatic photosensitive coating printing plate developing and rinsing system (system for developing plates used in offset printing), a surface treatment system by acid/alkalis (system for coating surface of plates used in gravure printing), and an electroplating system (system for electroplating plates used in gravure printing with copper or chrome). The printing presses themselves are designated under the Noise Control Law and Vibration Regulation Law. The operation of the printing system is not subject to any regulations under environmental laws. The other machinery used by the facility includes compressors, ventilation equipment and boilers.

[Treatment of unused materials]



Key Raw Materials

Printing paper: 1,550,000 t (Last year: 1,582,000 t)
Plastic film: 2,600 t (Last year: 2,400 t)
Printing ink: 23,600 t (Last year: 25,500 t)

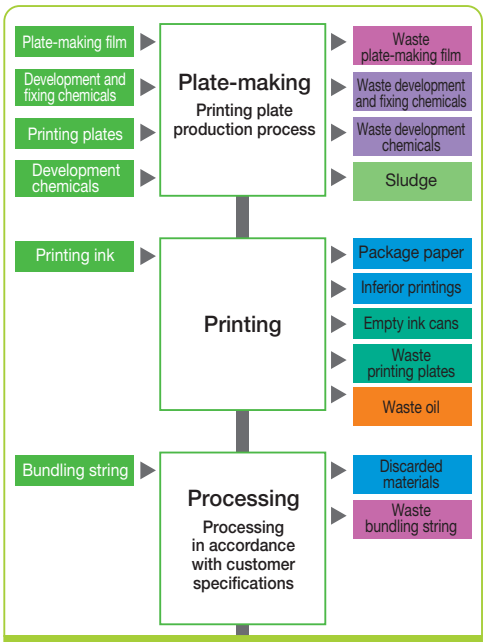
Key Supplementary Materials

Solvents: 300 t (Last year: 300 t)
Acids and alkalis: 100 t (Last year: 100 t)

Energy

Electricity: 296.9 million kwh (Last year: 316.3 million kwh)
LNG: 56.6 million m³ (Last year: 53.4 million m³)
LPG: 4.7 million kg (Last year: 4.3 kg)
Fuel oil: 100 kl (Last year: 200 kl)

Water: 1,691,600 m³ (Last year: 1,752,800 m³)



Emissions to Air

GHG: 259,600 t (Last year: 257,900 t)
NOx: 200 t (Last year: 200 t)
SOx: 1.0 t (Last year: 1.3 t)
VOC: 1,000 t (Last year: 870 t)

Emissions to Water

Wastewater: 1,183,700 m³ (Last year: 1,333,900 m³)
COD: 0.2 t (Last year: 0 t)
Nitrogen: 0.2 t (Last year: 0 t)
Phosphorus: 0 t (Last year: 0 t)

Products

Recycled Volume

Solvents: 2,200t (Last year: 3,300 t)
Steam generated from waste heat: 7,500 t (Last year: 6,600 t)
Water: 148,660,500 m³ (Last year: 150,354,900 m³)

Lifestyle and Industrial Supplies Division

This division is characterized by consumption of a large amount of solvents in processes such as gravure printing, coating and laminating. These processes consume a wide variety of inks, each containing a large proportion of solvents, which, when heated and dried, form the printed coating on the printing surface. As a result of these circumstances, measures against VOCs*1 is a significant issue for the division. During the drying process, we use a deodorizing system (incinerator) to remove odors that arise as the solvents evaporate. The deodorizing system also produces steam using the waste heat arising from the burned solvents. Accordingly, the division is also characterized by recovery of large amounts of heat, as well as substantial emissions of GHG. Furthermore, as a measure against VOCs, as of FY 2002, we switched to use of water-based ink and promoted installation of solvent recovery equipment at a number of sites, for use with reusable VOCs. Through this measure, we have reduced the amount of solvent consumed by the division, while increasing the amount of recycled solvent.

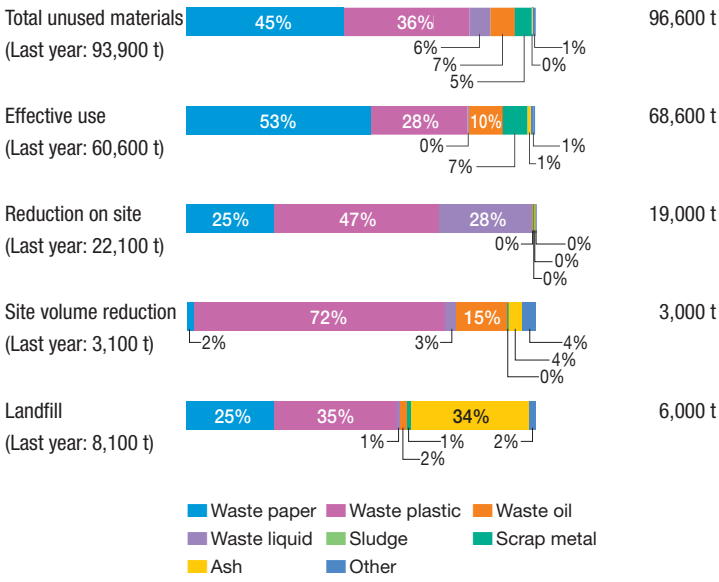
The division uses a wide range of raw materials, including paper, plastic films, plastic and metal (aluminum). By making various combinations of coatings and laminates, we are able to deliver the level of performance required in our products. On account of these circumstances, the waste materials emitted from this division are composite materials, which are difficult to recycle. As a means of making effective use of such waste materials, we perform onsite thermal recycling*2 or have the materials converted to forms of solid fuel by external contractors.

The division is also characterized by production of substantial amounts of landfill waste, however, due to the high proportion of materials containing chlorine compounds, which are unsuited to thermal recycling. The environmental facilities used in the Lifestyle and Industrial Supplies division are the same as those used in the Information Communication division.

*1 VOC: Abbreviation for Volatile Organic Compounds, a generic term for organic compounds that evaporate easily.

*2 Thermal Recycling: To make use of the potential energy contained wastepaper and waste plastic, etc. by burning it and using the heat as an energy source for generating steam, etc.

[Treatment of unused materials]



Key Raw Materials

Printing paper: 183,000 t (Last year: 184,300 t)
Plastic film: 83,700 t (Last year: 79,100 t)
Resin: 58,100 t (Last year: 50,100 t)
Metals: 38,700 t (Last year: 38,900 t)
Printing ink: 33,700 t (Last year: 35,000 t)

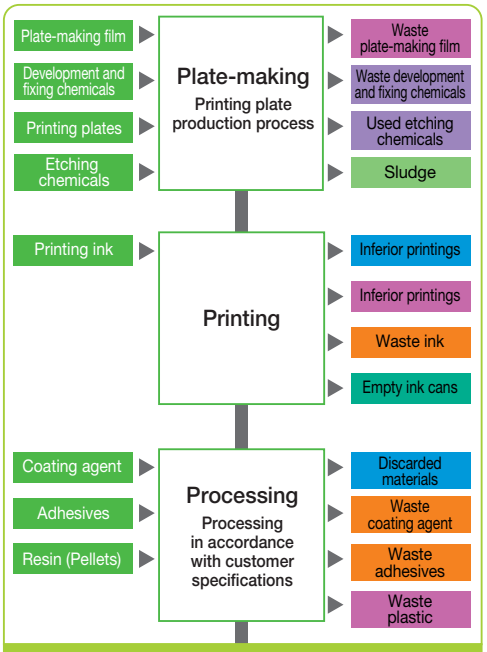
Key Supplementary Materials

Solvents: 25,300 t (Last year: 28,800 t)
Acids and alkalis: 100 t (Last year: 100 t)

Energy

Electricity: 344,400 million kWh (Last year: 337,300 million kWh)
LNG: 22,200 million m³ (Last year: 22,600 million m³)
LPG: 18,600 million kg (Last year: 14,600 million kg)
Fuel oil: 4,500 kl (Last year: 4,000 kl)

Water: 1,538,800 m³ (Last year: 1,371,500 m³)



Emissions to Air

GHG: 273,000 t (Last year: 269,600 t)
NOx: 201 t (Last year: 187 t)
SOx: 38.0 t (Last year: 33.7 t)
VOC: 2,100 t (Last year: 3,500 t)

Emissions to Water

Wastewater: 1,050,000 m³ (Last year: 1,064,000 m³)
COD: 0.2 t (Last year: 0.2 t)
Nitrogen: 0 t (Last year: 0.1 t)
Phosphorus: 0 t (Last year: 0 t)

Products

Recycled Volume

Solvents: 1,400 t (Last year: 1,300 t)
Steam generated from waste heat: 73,600 t (Last year: 125,700 t)
Water: 157,549,400 m³ (Last year: 157,465,500 m³)

Electronics Division

The Electronics Division uses applied photographic plate-making technology. The division is characterized by consumption of large amounts of water and acid, which is used in etching when producing shadow masks*1 and lead frames*2. The division makes effective use of waste acid, recycling it for reuse both within the plant and through private operators.

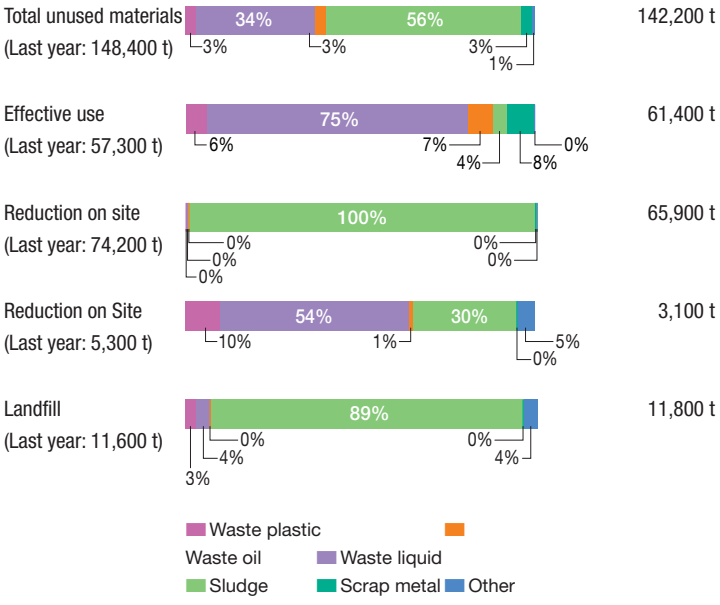
In FY 2002, the consumption of key raw materials within the division increased following consolidation of production systems with the Mihara plant, while other sources of environmental impact fell, especially greenhouse gases thanks to installation of a cogeneration system in the Mihara plant.

The recycling ratio of the Electronics Division stood at 43.2% in FY 2002, surpassing the FY 2001 ratio of 38.6% by 4.6%. In contrast with this, however, the division's landfill waste ratio increased by 0.5% to reach 8.3%, a relatively high rate in comparison with the group average of 4.2%. The challenge for the division now is to reduce this amount.

*1 Shadow mask: An electronic device used in plate making with fixed pore size and pitch so that the electron beams that correspond to the three primary colors (red, green, blue) released from an electron gun contained within the color picture receiving duct each hit the fluorescent body only.

*2 Lead frame: The connecting terminals of a semiconductor chip, which perform a number of functions, including connection of the chip with an external devices, release of heat, maintenance and protection of the chip.

[Treatment of unused materials]



Key Raw Materials

Plate-making film: 6,600 t (Last year: 5,800 t)
Materials: 14,200 t (Last year: 11,400 t)
Glass: 2,200 t (Last year: 2,200 t)

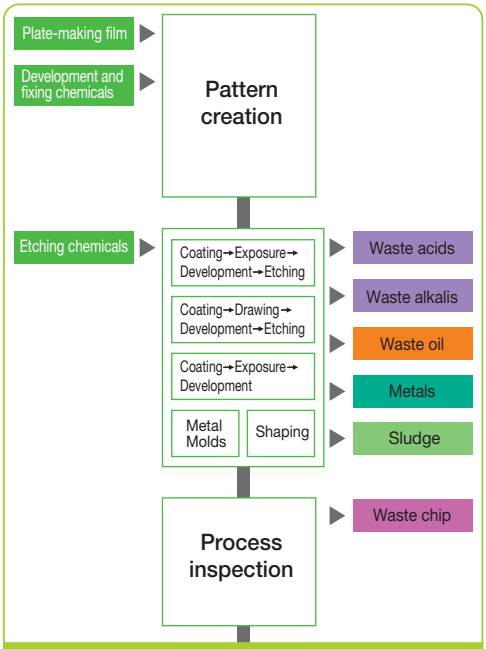
Key Supplementary Materials

Acids and alkalis: 32,700 t (Last year: 1,000 t)

Energy

Electricity: 247,300 million kWh (Last year: 305,500 million kWh)
LNG: 52,400 million m³ (Last year: 46,700 million m³)
LPG: 0 million kg (Last year: 0 million kg)
Fuel oil: 0 kl (Last year: 0 kl)

Water: 7,878,400 m³ (Last year: 8,753,200 m³)



Emissions to Air

GHG: 215,000 t (Last year: 223,700 t)
NOx: 126 t (Last year: 169 t)
SOx: 0 t (Last year: 0 t)
VOC: 0 t (Last year: 0 t)

Emissions to Water

Total wastewater: 7,154,900 m³ (Last year: 8,455,300 m³)
COD: 30.0 t (Last year: 30.1 t)
Nitrogen: 18.5 t (Last year: 15.4 t)
Phosphorus: 1.2 t (Last year: 0.4 t)

Products

Shadowmask | Photomask
Lead frame | Color filter
Projection TV screens

Recycled Volume

Acids and Alkalis: 38,300 t (Last year: 58,500 t)
Water: 150,181,900 m³ (Last year: 142,989,300 m³)

Reducing Environmental Pollutants

Summary The DNP group is striving to monitor and reduce our emissions of environmental pollutants in an effort to preserve the global and regional environments. Our efforts to preserve the atmosphere include reduction of hazardous air pollutants, ozone-depleting substances, SOx (sulfur oxides), VOCs (volatile organic compounds). To help preserve water resources, we are striving to reduce CODs (chemical oxygen demand) and reduction of nitrogen and phosphorous.
In FY 2002, we decommissioned a particular piece of plant machinery that consumed some 50 tons of dichloromethane a year. In addition, emissions of dioxins, SOx, and VOCs fell while those for ozone-depleting substances and NOxs increased. Regarding emissions of water pollutants, our emissions of COD and nitrogen increased, while that for phosphorous increased.

Impact on the Air

[Hazardous Air Pollutants]

Of the substances prioritized for production under the Air Pollution Control Law, we have already phased out trichloroethylene and tetrachloroethylene*.

*1 We discontinued use of trichloroethylene in 1996 and tetrachloroethylene in 1997.

Although we still use diachloromethane to wash printing plates, we have reduced use of this substance through implementation of a cooling-condensing equipment, and water-based washing systems, as well as conversion to substitute substances. In FY 2002, we decommissioned a particular piece of plant machinery that consumed some 50 tons of dichloromethane a year, an action which is expected lead to an emission amount of 6 tons in FY 2003.

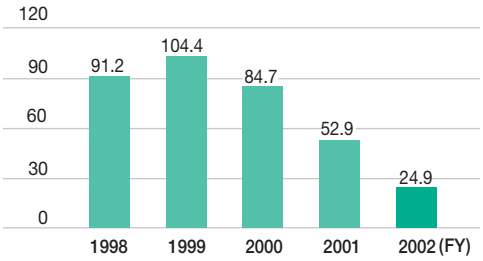
The DNP group uses both large and small incinerators to incinerate its waste, the smaller ones of which we have been phasing out due to the difficulty of managing such facilities. In FY 2002 we decommissioned the last 10 of our small incinerators, an action which led to a halving in year-on-year emissions of dioxins into the air. The DNP group now operates only six large-scale incinerators, each of which satisfy regulations for 2002 and have built-in heat recovery systems.

[Ozone Depleting Substances]

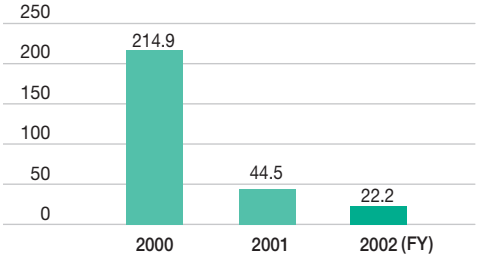
The DNP group currently uses the ozone depleting substances CFC-11*1 and CFC-12 as a coolant in 17 of our air conditioning systems. These systems, however, are gradually being replaced with gas-absorption systems. At the same time, we are continuing efforts to reduce use of hazardous chlorine-based organic compounds, and substances with high ozone-depleting coefficients during production processes. This, however, has led to an increase in the use of the substitute HCFC-141b*2, and a subsequent increase of emissions of this substance in FY 2002. Although the ozone depleting coefficient of this substance is relatively small, in view of its effect on global warming, emissions should be subject to restrictions. In the future, we will strive to reduce emissions of this substance under the PRTR system.

* In 1994 We discontinued use of 1,1,1-trichloroethane, a substance of which production has been prohibited under the Montreal Protocol. (*1 Chlorofluorocarbon. *2 Hydrochlorofluorocarbon)

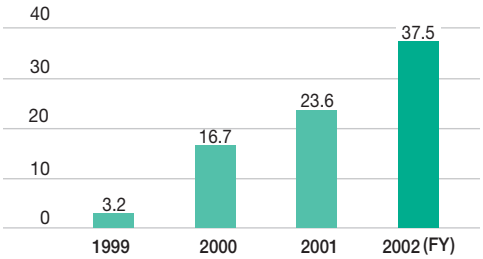
Dichloromethane Emissions (Unit: tons)



Dioxin Emissions (Unit: mg-TEQ)



Emissions of Substitutes to CFC (Unit: tons)



[Sulfur Oxides (SOx) and Nitrogen Oxides (NOx)]

COD is an index of the amount of organic compounds contained in wastewater, and indicates the amount of oxygen consumed in order to break down organic matter contained within water using an oxidant.

The wastewater generated by the DNP group in the production process and that from company cafeterias, etc., contains organic matter, which can be a source of water pollution. As a measure against water pollution, we use on-site wastewater treatment systems to remove hazardous substances and reduce sludge and hazardous substances from factory wastewater. In FY 2002, however, our year-on-year COD emissions actually increased by 8.8 tons following the transfer of facilities and personnel to regions in which COD regulations apply.

[Volatile Organic Compounds (VOCs)]

The solvents, adhesives and washing agents we use during the printing process contain toluene and xylene. These solvents are volatile, and have an adverse effect on the atmosphere.

As part of our effort to reduce air emissions of substances designated under the PRTR law, and in the interests of odor reduction, we have been breaking down VOCs through incineration, and have implemented measures to recover and recycle such compounds through absorption systems. In addition, we are promoting conversion to water based substances and low-impact substitute solvents, etc. In FY 2002 we reduced our air emissions of VOCs by 1,594 tons, thanks to efforts to break down toluene and xylene and conversion to substitute substances.

Impact on Water

[Chemical Oxygen Demand (COD)]

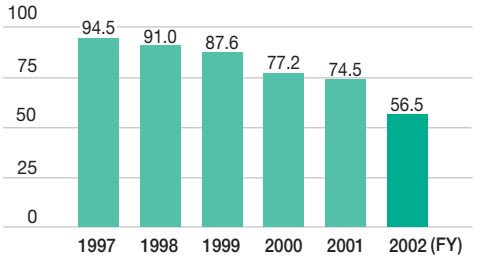
COD is an index of the amount of organic compounds contained in wastewater, and indicates the amount of oxygen consumed in order to break down organic matter contained within water using an oxidant.

The wastewater generated by the DNP group in the production process and that from company cafeterias, etc., contains organic matter, which can be a source of water pollution. As a measure against water pollution, we use on-site wastewater treatment systems to remove hazardous substances and reduce sludge and hazardous substances from factory wastewater. In FY 2002, however, our year-on-year COD emissions actually increased by 8.8 tons following the transfer of facilities and personnel to regions in which COD regulations apply.

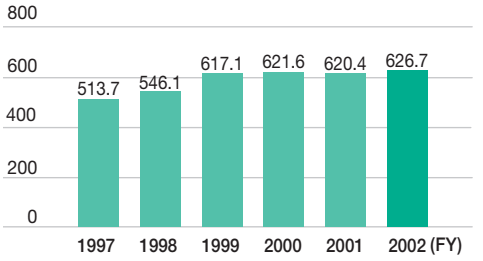
[Nitrogen & Phosphorous]

Another factor that can impact water quality is the problem of eutrophication. This phenomenon occurs when plankton in stagnant water regions such as a closed-off sea or lake reproduces at an abnormally high rate due to an overabundance of nitrogen and phosphorous arising from domestic wastewater and factory emissions. As a measure against eutrophication, the DNP group treats wastewater emitted from our factories and offices through on-site septic tanks and wastewater treatment systems. Looking at nitrogen and oxygen emission levels as of 2000, we see that emissions of nitrogen have remained steady while those for phosphorous have increased. In order to address this situation, we have begun efforts to change the type of chemical additives we use in the manufacturing process and the wastewater treatment process in our plants that produce a high volume of wastewater.

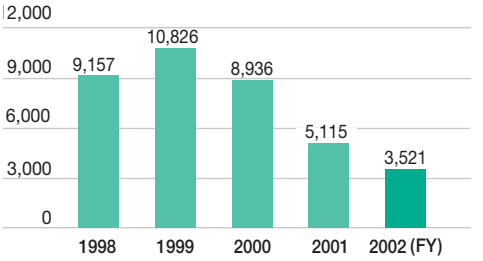
SOx Emissions (Unit: tons)



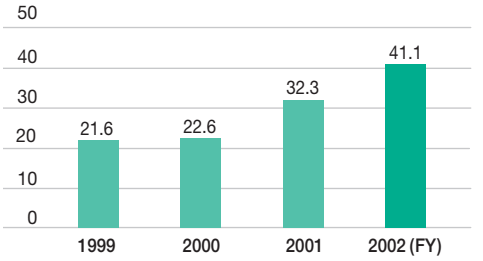
NOx Emissions (Unit: tons)



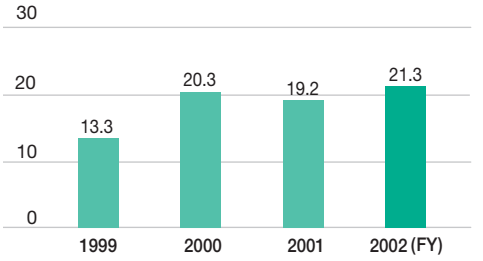
VOC Emissions (Unit: tons)



COD Emissions (Unit: tons)



Nitrogen Emissions (Unit: tons)



Phosphorus Emissions (Unit: tons)

Effect of Chemical Substances on the Environment

The DNP group is striving to reduce releases and transfers of PRTR* substances, establishing our own PRTR system (DN-PRTR) system in 1998 ahead of the Law to Promote the Tracking and Management of Environmental Releases of Designated Chemical Substances (The PRTR law).

*PRTR: Pollutant Release and Transfer Register

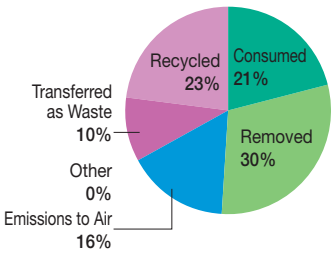
Targets To reduce air emissions of toluene by the DNP group to 500 tons/year
To reduce emissions and transfers of items designated as Class I Chemical Substances (except toluene) under the PRTR law to 50% of the FY 2000 level by FY 2004

Performance Total air emissions of toluene by the DNP group in FY 2002 stood at 3,151 tons, a reduction of 62% against the level in FY 2000.
Total emissions and transfers of Class I Chemical Substances excluding toluene in FY 2002 stood at 870 tons, a reduction of 29% against the level in FY 2000.

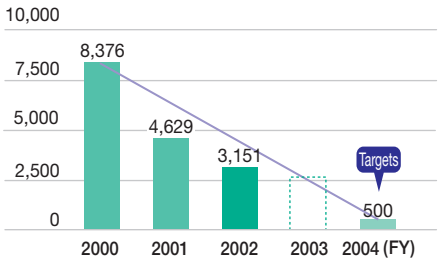
In FY 2002, the DNP group handled a total of 21,713 tons of chemical substances (25 substances at 32 plants), of which 3,512 tons (the equivalent of 16%), was released into the air. There were no releases of these substances into public waterways or the ground. The chemical substances with the largest volume of air emissions are xylene and in particular toluene, of which we released 3,151 tons into the air, accounting for 90% of our air emissions. The two substances are used as an ink solvent in the printing process.

The DNP group is currently promoting a plan to reduce toluene, the aim of which is to reduce air emissions of toluene for the entire DNP group to less than 500 tons/year by FY 2004. The plan includes implementation of equipment to recover or remove toluene from exhaust gases. In FY 2002, we managed to reduce our year-on-year emissions of toluene by 1,478 tons, following implementation of removal systems. In addition, when converted to an annual amount, our emissions for the year ending March 2003 amounted to 2,675 tons. Furthermore, we have reduced emissions and transfers of Class I chemical substances excluding toluene by 29% from the level in FY 2000, thanks to efforts to discontinued use of the substance through conversion to substitutes.

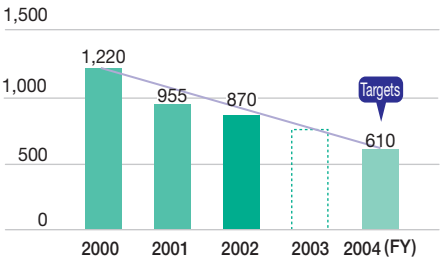
Composition ratio of chemical substances emitted or transferred



Toluene Emissions Ratio (Unit: tons)



Release & Transfer Amounts (Unit: tons)



Chemical Substances subject to PRTR Law

Unit: t (dioxins: mg-TEQ)

Substances	Handled	Emissions to air	Transferred to sewer system	Transferred as Waste	Recycled	Consumed	Removed
Monoethanolamine (2-Aminoethanol)	18.3	0	4.9	13.4	0	0	0
Isophorone Diisocyanate	23.0	0	0	0	0	23	0
Ethylbenzene	212.4	10.6	0	7.2	13.5	85	96.1
Ethylene Glycol	11.4	0	0	0	0	11.4	0
Ethylene Glycol Monoethyl Ether	25.9	4.7	0	1.6	0	5.5	14.0
Ethylene Glycol Monomethyl Ether	571.3	260.6	0	56.1	0	198.5	56.2
ε-Caprolactam	15.1	0	0	1.5	0	13.6	0
Xylene	512.0	22.1	0	10.7	212.6	97.2	169.3
Silver And Its Compound (Water-Soluble)	10.0	0	0.2	0	2.2	0	7.7
Chromium And Chromium (III) Compounds	95.3	0	0	55.9	19.8	19.7	0
Hexavalent Chromium	56.6	0	0	0.5	0.1	26.7	29.3
Cobalt And Its Compounds	220.4	0	0	3.1	53.7	163.6	0
2-Ethoxyethyl Acetate	20.0	9.4	0	0.2	0	10.5	0
1, 1-Dichloro-1-Fluoroethane	37.5	37.5	0	0	0	0	0
Dichloromethane	28.5	24.9	0	3.5	0	0	0
Dioxins	–	22	0	694.0	0	0	0
Copper Salts (Water-Soluble)	362.4	0	0.1	158.0	106.9	71.3	26.1
Toluene	15,652.1	3,150.9	0	1,791.1	2,338.8	2,592.2	5,779.1
Nickel	2,877.8	0	0	0	1,613.7	1,161.6	102.0
Nickel Compounds	880.8	0	0	167.0	713.0	0.8	0
Hydroquinone	10.9	0	10.9	0	0	0	0
Bis (2-Ethylhexyl) Phthalate	52.7	0.4	0	1.7	0	39.4	11.2
Trimellitic Anhydride	6.0	0	0	0.1	0	5.9	0
Poly (Oxyethylene) Nonylphenyl Ether	5.4	0	0	0.1	0	5.2	0
Manganese And Its Compounds	7.4	0	0	2.6	1.8	3	0
Total	21,713.1	3,521.2	16.2	2,274.2	5,075.9	4,534.2	6,291.6

Efforts to Recycling of Resources — Reduction of Waste

The DNP Group is promoting measures to reduce and make effective use of unusable materials generated during the production process as part of our effort to contribute to the development of a sustainable recycling-oriented society. In FY 2002, we achieved significant reductions in waste emissions per unit of production as well as in the overall amount of unusable materials generated by the group.

Targets

Reduction of Industrial Waste

To achieve the following targets by FY 2005:

- Reduce waste emissions per unit of production (Waste emissions/production) by 20% from the FY 2000 level
- Reduce the amount of unusable materials generated by 10% from the FY 2000 level
- Achieve zero emissions at 20 sites
- Reduce the unused product generation ratio (unused product generation amount/total material inputs) by 20% from the FY 2000 level.
- Achieve a recycling ratio (Recycle amount/unused product generation amount)

Explanation of indexes:

Indexes were calculated as follows using the letters in the right-hand flow diagram, which indicates the routes of waste treatment

Waste emissions per unit of production = Waste emissions amount [E+F]/Production

For production, which indicates the business activity amount, we use the total value added amount for the consolidated companies subject to disclosure in this report.

Zero emissions: Total elimination of landfill-destined emissions [I+J] when treating unused materials generated in the course of production.

Unused product generation ratio (%): Unused product generation amount [A]/total material inputs×100

For accounting purposes total material input amount is deemed to be the key raw materials input during the manufacturing process, and includes paper and in the case of the Information Communications Division, paper, film, plastics, metals and ink in the case of the Lifestyle and Industrial Supplies Division, and metal and glass in the Electronics Division. In the Electronics Division, when calculating the unused product generation amount, we only enter unused materials attributable to key input materials, as substances such as waste acid and waste alkali, which have nothing to do with the input key raw materials, arise as unued materials.

Recycle ratio (%) = Recycle amount [C+G+K] / unused product generation amount (A) ×100

It should be noted, however, that in the case of heat-recovering furnaces, we add D–F to the recycle amount.

Performance

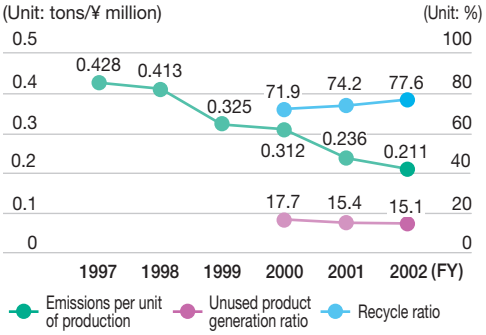
Achievements in FY 2002

- Waste per unit of production stood at 0.211, a decrease of 32.4% from the FY 2000 level, clearing the target level by a wide margin.
- The total unused product generation amount stood at 506,100 tons, a decrease of 21.7% from the FY 2000 level, also clearing the target by a wide margin.
- Hokkaido Coca-Cola Bottling achieved zero emissions, bringing the total number of zero emission sites to six. (Sites achieving zero emissions as of FY 2001: Gotanda plant and Akabane plant, Ichigaya Publications Printing Operations, Sayama plant, Dai Nippon Cup, Kansai plant, Dai Nippon Polymer, Hokkaido Dai Nippon Printing.)
- The unused product generation ratio stood at 15.1%, a reduction of 14.7% from the FY 2000 level, but only slightly down from the 15.4% posted in FY 2001.
- The recycle ratio stood at 77.6%, 3.4 points above the 74.2% set in FY 2001.

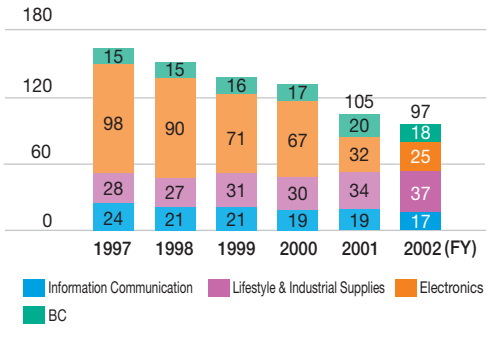
As part of our “cost structure reforms” outlined in our Vision for the 21st Century, the DNP group has initiated “Production 21” in an effort to reduce unused materials. Under this effort, we aim to eliminate all waste in the manufacturing process in addition to improving yields and reducing lead times. At the same time, in strategic fields, we are focusing our managerial resources though selection and concentration key personnel. In accordance with these efforts, we continued to consolidate production of shadow masks, which had been performed by the Electronics Division, to the Mihara plant and improved productivity of building materials. Thanks to these and other measures, our FY 2002 unused product generation amount stood at 506,100 tons, a reduction of 2.6% from last year's amount, and a reduction of 21.7% from the level in FY 2000. In addition, year-on-year emissions per unit of production fell by 2.6%, or 32.4% from the FY 2000 level to reach 0.211. In each of the indexes measured, we attained the targets set for the DNP group.

In efforts to find effective uses for unused materials, we promoted the reuse of waste plastic, sludge and incineration ash as a raw material in cement making. Also in FY 2002, as a measure to reduce emissions of dioxins, we succeeded in using waste plastic as solid fuel by discontinuing use of incinerators without heat recovery systems. Thanks to these efforts,

Waste per Unit of Production (Unit: tons/¥ million)
Unused Product Generation Ratio, Recycling Ratio (Unit: %)



Waste Emissions (Unit: tons)

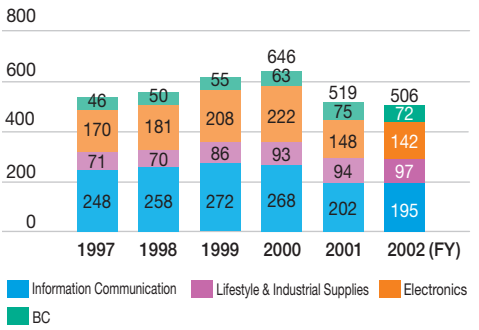


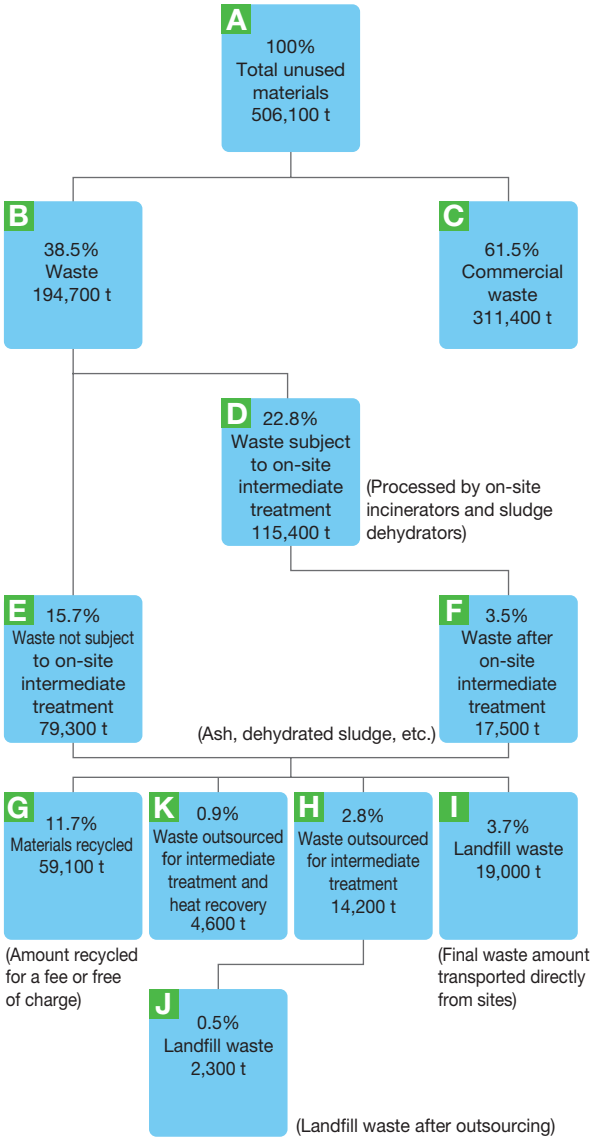
we achieved a recycling ratio of 77.6%, up 3.4 points from the recycling ratio of 74.2% set in FY 2001. One remaining challenge, however, is the reduction of sludge waste, which accounts for 51% of our landfill-destined waste.

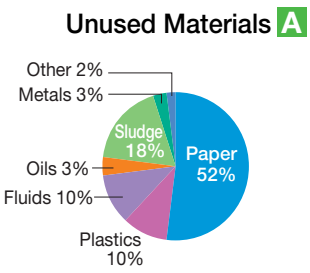
The state of zero emissions is achieved when a plant is able to eliminate landfill waste by recycling all unusable materials that arise during production. To date, we have achieved zero emissions at six sites, namely, Akabane plant, Ichigaya Publication Printing Operations, Gotanda plant, Ichigaya Publication Printing Operations, Sayama plant, Dai Nippon Cup Co., Ltd., Kansai plant, Dai Nippon Polymer Co., Ltd., Hokkaido Dai Nippon Printing Co., Ltd., Hokkaido Coca-Cola Bottling Co., Ltd. Furthermore, the number of sites that have reduced their landfill use ratio 1% or less reached 24, seven more than in FY 2001.

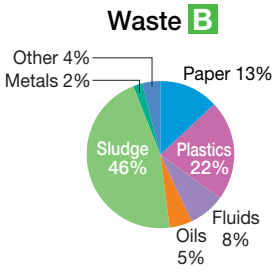
In view of the achievements made in FY 2002 for waste emissions per unit of production unused materials generation amount, both of which cleared the DNP group targets, we have decided to increase the reduction targets of these two items by 40% and 25% respectively. In the future we will further promote reduction and effective use of unused materials based on our "Production 21" activities, while striving to attain targets in other areas.

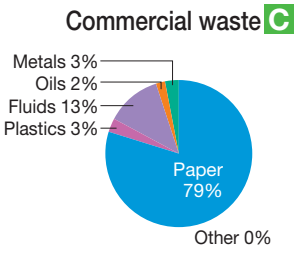
Total Unused Material Generation Amount (Unit:1,000 tons)

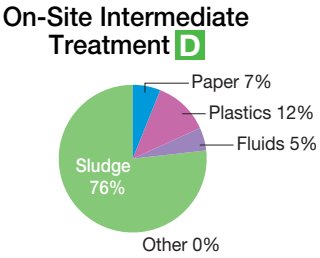


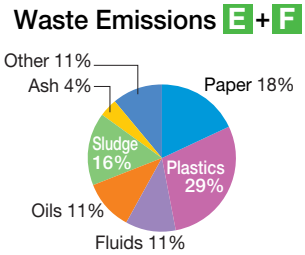


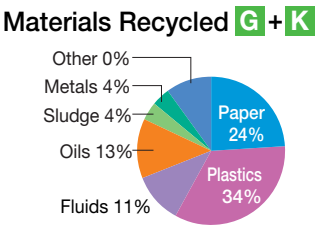


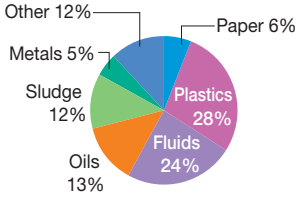


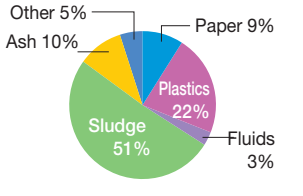












Efforts to Recycling of Resources—Activities in Offices

The DNP group strives to promote recycling within our offices. Since 1993 we have established targets for use paper recovery ratios and collecting used paper after separating into four different categories-high quality paper, newspapers, magazine paper and cardboard.

Targets **To increase our used paper separation and recovery ratio to at least 65% of that for municipal waste**

Used paper recovery amount / {(used paper recovery amount + municipal waste amount (excluding cans, bottles & waste)} × 100

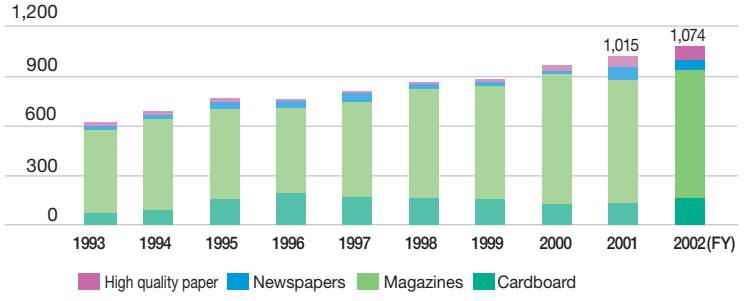
Performance In FY 2002 we performed separation and recovery of used paper at 27 sites, two more than in FY 2001. The recovered paper amounted to 1,074 tons, a recycling ratio of 62.3%. At offices within the group, we performed inspection tours and paper separation training sessions, and reviewed our paper recovery subcontractors. As a result, we managed to stop the downward trend in recovery ratios that had been continuing since FY 2000. In future, we will strive to further improve our recovery ratio.

(Units: tons)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002 (FY)
Used paper recovery	613	678	756	751	801	855	870	959	1,015	1,074
High quality paper	30	22	25	16	13	14	17	39	72	86
Newspapers	25	24	39	39	48	30	24	22	78	65
Magazines	500	552	545	513	581	655	682	781	740	770
Cardboard	58	80	148	184	158	155	147	118	125	154
Municipal waste	430	386	431	420	388	382	334	510	657	651
Used paper recovery + general waste	1,044	1,064	1,186	1,171	1,189	1,236	1,204	1,470	1,672	1,725
Used paper recovery ratio	58.80%	63.70%	63.70%	64.20%	67.30%	69.10%	72.30%	65.30%	60.70%	62.30%

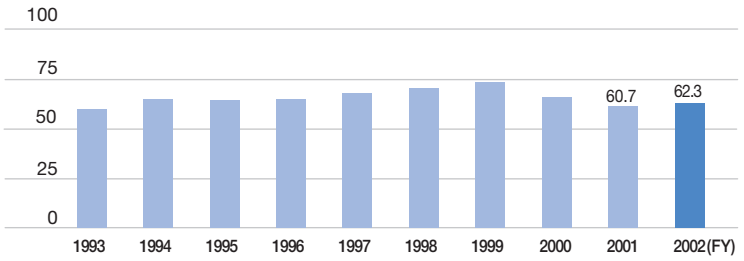
Used paper recovery

(Unit: tons)



Used paper recovery ratio

(Unit: tons)



Nara plant office waste separation boxes
Top: Office Bottom: Cafeteria

Efforts to Recycling of Resources—Water Recycling

Performance **Recognizing water as a limited resource, the DNP group strives to reduce water consumption (input amount) and recycle water. In FY 2002, our total group consumption amount stood at 13,468 m³, a year-on-year reduction of 6.0% (857,000 m³). Our water emission amount for the same year stood at 11,572,000 m³, a year-on-year reduction of 12.7% (1,678 m³)**

Water Recycling

The DNP group uses water in many production processes, including heating, cooling, air conditioning, adding moisture during offset printing, and washing of precision parts. Given that many of these processes consume large amounts of water, a large proportion of plants have installed closed water recycling systems. In FY 2002, Hokkaido Coca-Cola bottling Co., Ltd. implemented a water recycling system.

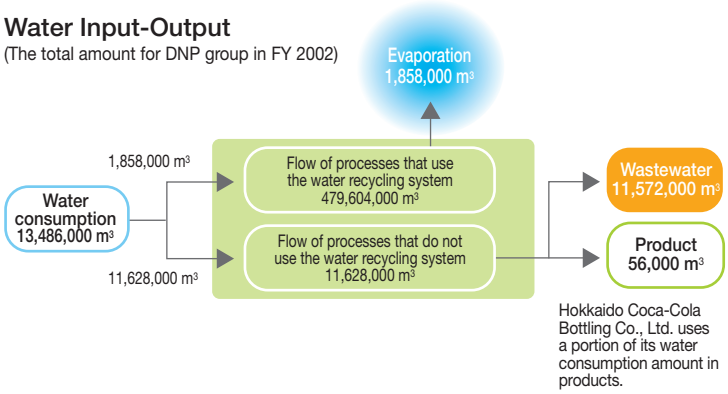
The table headed “Water Recycling Amount” on the right indicates the flow amount (i.e. consumption amount) of water passing through heat exchangers and washing facilities each fiscal year. In FY 2002, consumption stood at 479,604 m³, a year-on-year increase of 1.3% (6,115 m³).

The diagram headed “Water Input-Output Amount” indicates the total amount of water flowing into and out of the DNP group in FY 2002. Of the 13,486,000 m³ of water consumed by the entire DNP group, the manufacturing processes that use recycled water consume 1,858 m³ through evaporation, while those that do not use the recycled water consume 11,628,000 m³ tons.

The water consumption ratio is defined as being the water consumption amount divided by the water use amount. In FY 2002, the water consumption ratio stood at 36.6 times of the water use amount and a year-on-year reduction of 7.6%. Furthermore, we calculated the flow amount of water within the closed recycling system by multiplying the pump capacity by operating time.

Water Input-Output

(The total amount for DNP group in FY 2002)



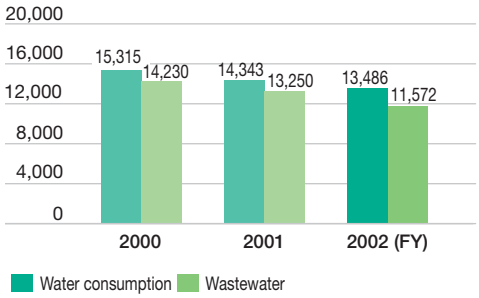
Hokkaido Coca-Cola Bottling Co., Ltd. uses a portion of its water consumption amount in products.

Use of Rainwater

The DNP group promotes effective use of rainwater collected from office building roofs. In FY 2002, total of 4,818 m³ of rainwater was used by the C&I building and DNP Logistics Co., Ltd. building, located in Tokyo, which use rainwater as flush water in 37.6% of company toilets.

Rainwater tank (C&I building)

Water Consumption & Wastewater (Unit: 1,000 m³)



Water Recycling (Unit: 1,000 m³)

	2000	2001	2002 (FY)
Heat & cooling Air conditioning	477,992	472,208	478,272
Washing	1,314	1,281	1,332
Total	479,306	473,489	479,604

Water Input-Output (Unit: 1,000 m³)

	2000	2001	2002 (FY)
Water consumption	15,315	14,343	13,486
(Steam)	1,004	1,000	1,858
(Wastewater)	14,230	13,250	11,572
(Products)	81	93	56
Water consumption	494,984	487,274	493,090
(Recycled water)	479,305	473,489	479,604
(Non-recycled water)	14,675	12,785	11,628
(Evaporation in recycling)	1,004	1,000	1,858
Water use ratio	32.3	34	36.6

C&I Building and DNP Logistics Co., Ltd. Building Total Rainwater Consumption and Utilization Ratio

	2000	2001	2002 (FY)
Used in toilets (m³)	14,383	16,074	12,828
Rainwater consumption (m³)	6,211	4,848	4,818
Rainwater utilization ratio (%)	43.2	30.2	37.6

Rainwater utilization ratio (%) = (Rainwater utilization amount / water flush amount) ×100

Measures against Global Warming

In an effort to reduce global warming, the DNP group is striving to curtail emissions of greenhouse gases and conserve energy.

Targets To achieve the following by FY 2010

1. To maintain greenhouse gas emissions at the FY 2000 level
2. To maintain energy consumption at the FY 2000 level
3. To reduce energy consumption per unit of production by and CO_2 emissions per unit of production by 15% and 20% respectively, against a base year of FY 1990.

Performance In FY 2002

1. Greenhouse gas emissions stood at 843 tons, a reduction of 2.9% (25,000 tons) from the FY 2000 level and a reduction of 0.8% (7,000 tons) from the FY 2001 level.
2. Energy consumption stood at 18,069 TJ (Terra joule) down 2.5% from the FY 2000 level (457 TJ) and down 0.3% (50 TJ) from the FY 2001 level.
3. Energy consumption per unit of production stood at 3.9 TJ/¥100 million while CO_2 emissions per unit of production stood at 176.37 ton ¥100 million, down 3.9% and 11.4% respectively against a base year of FY 1990 and down 3.4% and 2.5% respectively against a base year of FY 2001.

* Emissions of greenhouse gases have each been converted to their equivalent tonnages of CO_2

* Heat emissions have been expressed in Terra joules (1012 joule).

In this report we calculated greenhouse gas emissions, energy consumption, energy consumption per unit of production and CO_2 emissions per unit of production as follows:

Method of calculating greenhouse gases

Greenhouse gases were calculated in accordance with the method listed in the report on the results of the review concerning calculation of greenhouse gases by the Environmental Ministry's Greenhouse Gas Emissions Calculation Method Review Body, in August 2002.

Furthermore, although we used the greenhouse gas coefficients specified for each year, as coefficients had not been determined for FY 2001 and FY 2002, for years following FY 2000, we used the coefficient for FY 2000.

For greenhouse gas global warming coefficients, we used the coefficients set forth in the Enforcement Order for the Law for Promotion of Measures against Global Warming.

Method of calculating energy consumption

We calculated consumption of electricity and fuel by converting it to heat in accordance with the Enforcement Regulations to the Revised Energy Conservation Law, executed on April 1, 2003.

Method of calculating energy consumption per unit of production and CO_2 emissions per unit of production

Energy consumed per unit of production = Energy consumption amount (TJ) / production (¥100 million)

CO_2 emissions per unit of production = CO_2 (1,000 tons) emitted through consumption of energy (fuel, electricity) / production (¥100 million)

Production indicates the amount of business activity. For this factor, we use the total value added amount of affiliates subject to disclosure in this report.

Regarding calculation of greenhouse gas and energy consumption, we switched to the above calculation method in this report and recalculated past data.

Furthermore, the DNP group calculated the six gases specified as greenhouse gases in the Kyoto Protocol agreement. We determined CO_2, CH_4 and N_2O from energy consumption amounts and waste incineration amounts. We also determined HFC, PFC and SF_6 from the coolant in air conditioning facilities, etc., and insulators in power transformers. In FY 2002 the group produced no emissions of HFC, PFC and SF_6.

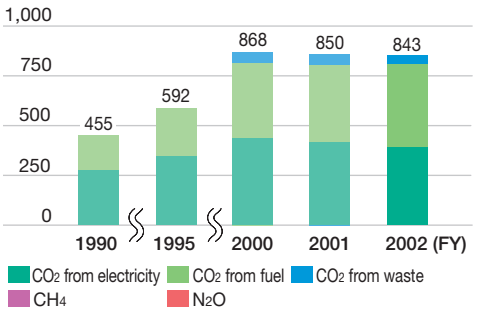
Efforts in FY 2002

In FY 2002 we continued our efforts to reduce emissions of greenhouse gases, promoting "Production 21", an effort involving the entire DNP group manufacturing division, installing cogeneration systems, converting from heating oil to municipal gas, preparing for and operating at energy management standards focusing on plants designated as Class I Energy Management facilities under the Energy Conservation Law, and discontinuing use of incinerator furnaces.

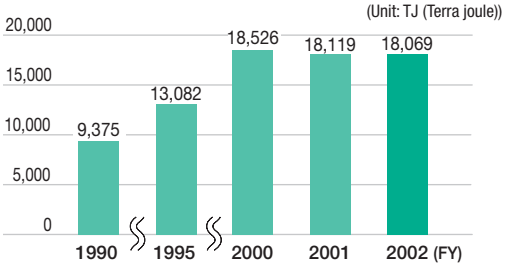
Transitions in Emissions of Greenhouse Gases (Unit: 1,000 tons)

	1990	1995	2000	2001	2002 (FY)
N_2O	–	–	1	1	1
CH_4	–	–	1	1	2
CO_2 from waste incineration	–	–	45	44	31
CO_2 from fuel	181	247	383	385	416
CO_2 from electricity	274	345	438	419	393
Total	455	592	868	850	843

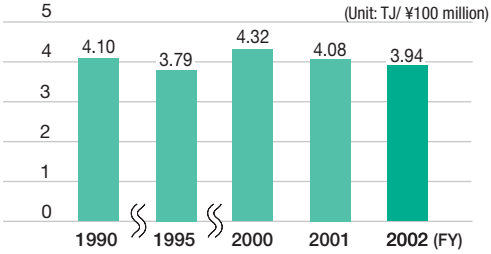
Greenhouse Gas Emissions (Unit: 1,000 tons)



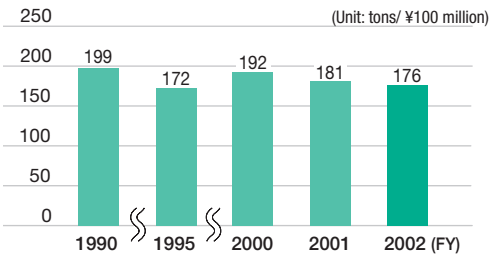
Energy Consumption (Converted to heat) (Unit: TJ (Terra joule))



Energy Consumption per Unit of Production (Unit: TJ/ ¥100 million)



CO_2 Emissions per Unit of Production (Unit: tons/ ¥100 million)



Implementation of Cogeneration System

In FY 2002, The Mihara Plant of Dai Nippon Printing Precision Device Co., Ltd. implemented a cogeneration system, bringing to 9 the total number of such systems operating within the DNP group. The following table indicates the CO_2 reduction benefits brought about though establishment of such systems. In FY 2002, the DNP group reduced CO_2 emissions by 16,523 tons through such systems, equivalent to around 2% of the CO_2 emitted by the entire DNP group.

The 9 cogeneration systems currently in operation are located at the following six sites. Years in brackets indicate year of installation. Kamifukuoka Plant, Dai Nippon Printing Fine Electronics Co., Ltd. (1990), Kyoto Plant, Dai Nippon Printing Technopack Kansai Co., Ltd. (2) (1992 and 1996), Akabane Plant, Commercial Printing Operations (2) (1995), Tsuruse Plant, Ichigaya Publication Printing Operations (1999), Kuki Plant, Ichigaya Publication Printing Operations (2001), Mihara Plant, Dai Nippon Printing Precision Device Co., Ltd. (2) (2002)

Cogeneration system at Kuki Plant, Ichigaya Publication Printing Operations

	Electricity, steam and CO_2 generated by cogeneration systems			CO_2 emissions if the electricity was purchased	CO_2 emissions if the steam was generated through a boiler	CO_2 emissions reduced through cogeneration
	Electricity (1,000 kWh)	Steam (tons)	CO_2 emissions (tons)	CO_2 emissions (tons)	CO_2 emissions (tons)	CO_2 emissions (Tons)
2000	88,812	228,462	65,474	33,571	37,436	5,533
2001	138,378	253,726	92,059	52,307	41,576	1,824
2002 (FY)	204,771	461,196	136,453	77,404	75,572	16,523

Conversion to Substitute Fuels

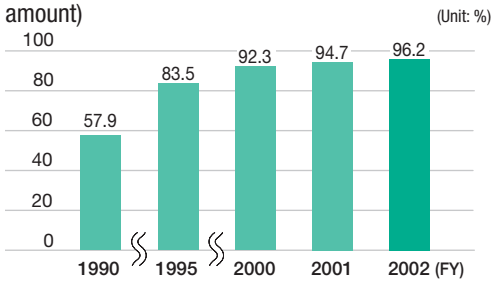
In an effort to reduce air pollution and prevent global warming, the DNP group is promoting conversion to municipal gas, which contains no sulfur and which has low greenhouse gas coefficients.

In FY 2002, Dai Nippon Cup Co., Ltd. changed its boiler fuel from heating oil to municipal gas.

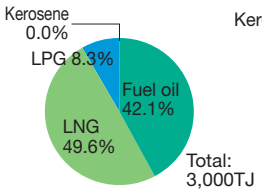
By promoting conversion of fuels to municipal gas, we have improved our gas usage ratio, which stood at 57.9% in FY 1990, to 96.2% in FY 2002.

* Gas usage ratio = Gas consumption (converted to heat amount) / total fuel consumption amount (converted to heat amount) × 100

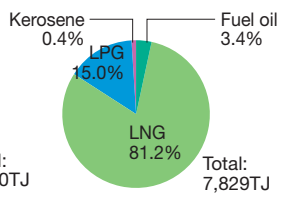
Gas usage ratio (Converted from heat generation amount)



Composition ratio of types of heat energy consumed in FY 1990



Composition ratio of types of heat energy consumed in FY 2002



Establishment and Practice of Energy Management Standards

The DNP group promotes the reduction of CO_2 emissions though establishment and practice of energy management standards based on the Energy Conservation Law.

In FY 2002, the printing industry was designated as an industry subject to on-site energy management examinations by the Ministry of the Economy, Trade and Industry, and underwent examinations at 19 sites.

Of these 19, one site was issued with a report requiring rectifications, while the remaining 18 were evaluated as performing proper energy management, and earning high praise in a number of areas.

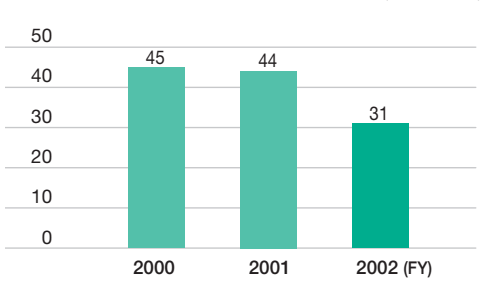
Discontinuation of Small Incinerators

In FY 2002 we discontinued use of small incinerators without heat recovery systems. As a result, our emissions of greenhouse gases that arise though incineration of waste fell by 14,000 tons against a base year of FY 2000 and 13,000 tons against a base year of FY 2001.

Note 1: Sites at which small incinerators were discontinued in FY 2002:
Shiraoka & Kawaguchi Plants, Dai Nippon Offset Co., Ltd., Kashiwa Plant, Dai Nippon polymer, Dai Nippon Plastic Co., Ltd, Sagami Container Co., Ltd., Tohoku Dai Nippon Printing Co., Ltd. Shikoku Dai Nippon Printing Co., Ltd.

Note 2: CO_2 arising from the combustion of paper is not contained in the GHG amount in accordance with the Kyoto Protocol.

Greenhouse gas emissions through incineration of waste



No. of incinerators subject to calculation: 17 in FY 2000, 17 in FY 2001, 16 in FY 2002

Furthermore, in FY 2001 one incinerator stopped operation during the term, while another 10 in seven sites stopped operation in FY 2002. Six incinerators are currently in operation, each of which contain boilers and have thermal recycling capability.

Environmental Risk Management

Summary In addition to keeping track of trends in environmental regulations that apply to group operations, and maintaining compliance, in an effort to maintain even stricter environmental controls, the DNP group has established its own voluntary standards (water, air, odors, noise and vibration), as well as its own voluntary guidelines (chemical substance management, measures against ground contamination, etc.), which are strictly observed. Furthermore, the group promotes risk management, making efforts to prevent foreseeable accidents and emergencies, establishing emergency response systems and performing drills in preparation for emergency situations.

In FY 2002, we performed voluntary standard compliance examinations at a number of our sites. The examinations detected traces of airborne NOx emissions and waterborne pH, n-hexane, as well as a number of deficiencies regarding the density of odors around emission ducts and noise levels in metropolitan areas. Improvement of these matters presents a challenge for the future. Following the examinations, we performed a significant number of improvement measures, including conversion to gas fuels, maintenance of exhaust gas treatment equipment, discontinuation of incineration, improvement of wastewater treatment equipment performance, as well as measures to prevent leakages of chemical substances. To address the problem of noise and vibration, we performed monitoring operations through voluntary measuring, made improvements to the source of noise and vibration, and established soundproof walls. Furthermore, as a measure against the problem of odors, we improved the performance of our odor-removing equipment and performed improvements at the odor source.

In FY 2002, we experienced one accident concerning wastewater, prompting a serious review of our methods and procedures. Furthermore, we performed emergency response drills under the assumption of gas leaks and accidental release/leakage of wastewater. Regarding discontinued machinery containing PCBs, we stored these in an appropriate manner in a specified place, with adequate measures to ensure prevention of loss.

Compliance with Applicable Laws and Regulations

The DNP group makes a continual effort to detect abnormalities at an early stage and prevent incidents of pollution in order to minimize environmental damage and the economic impact sustained as a result, as well as the risk of a loss of social trust arising from such incidents.

The DNP group constantly monitors trends in environmental laws and regulations, noting their applicability to our business operations and products. We have implemented notification and educational measures to ensure that our employees are well versed in the following laws and regulations, positioning them as items that apply directly to managerial procedures. In addition, when deemed necessary, we establish our own voluntary standards, which are even more stringent than national laws, and ensure compliance though daily monitoring and measuring activities. Furthermore, the DNP group performs on a regular basis its own environmental audits, which confirm the state of our risk management and compliance.

Major Laws and Regulations

Law	Voluntary Standards
Basic Environment Law	
Basic Law for Establishing a Recycling-Based Society	
Law Regarding the Promotion of the Utilization of Recycled Resources	
Law for Promotion of Sorted Collection and Recycling of Containers and Packaging	
Waste Management and Public Cleansing Law	*
Law Concerning the Promotion of the Measures to Cope with Global Warming	
Law Concerning Rational Use of Energy	*
Air Pollution Control Law	*
Water Pollution Control Law	*
Law for Special Measures for the Conservation of the Environment of the Seto Inland Sea	*
Sewerage Law	*
Noise Regulation Law	*
Vibration Regulation Law	*
Offensive Odor Control Law	*
Soil Pollution Control Law	*
Law Concerning the Protection of the Ozone Layer through the Regulation of Specified Substances and Other Measures	*
Law Concerning the Recovery and Destruction of Fluorocarbons	
Law Concerning Special Measures against Dioxins	*
Law Concerning the Improvement of Pollution Prevention Systems in Specific Factories	*
Law Concerning Special Measures against PCB Waste	
Law Concerning the Reporting of the Release into the Environment of Specific Chemical Substances and Promoting Improvements in Their Management	*
Law Concerning Regulation of Pumping-Up of Ground Water for Use in Building	
Factory Location Law	
Local Regulations	*

Major Improvement Measures in FY 2002

Key Measures against Air Pollution

Fuel conversion (heating oil→gas)
Upgrading of burners
Replacement of exhaust gas catalyst converters
Prohibition of dichloromethane
Discontinuation of incinerators
Renewal of hydrocarbon treatment systems

Key Measures against Water Pollution

Prevention of leakages in exhaust gas cleaning unit
Installation of wastewater outlet shutter
Replacement of filtration film
Installation/upgrading of purification tanks
Measures against spillages of incinerator wastewater
Underground tank leakage inspections
Replacement of ion-exchange resin
Installation of compressor drain liquid recovery system
Adjustment of sulfuric acid replenishment amount
Modification of alkali neutralization tank
Conversion to non-hydrazine based boiler compounds
Replacement of active charcoal in filtering systems

Key Measures against Noise

Measurement of noise
Maintenance of cooling towers
Modification of air conditioning systems
Sound insulation of building windows
Maintenance of compressors
Conversion to low-noise blowers
Installation of sound-absorbing material in exhaust ducts
Installation of sound-deadening walls
Measures to reduce noise of sheet-feed system

Key Measures against vibration

Measurement of vibration
Maintenance of compressors
Regulation of printed paper stacking
Regulation of vibration-causing machines

Key measures against odors

Measurement of odors
Maintenance of deodorizing systems
Examination of deodorizing system performance
Cleaning of deodorizing system catalysts
Replacement of deodorizing system catalysts
Installation of additional deodorizing systems
Enhancement of exhaust gas recovery and deodorizing systems
Renewal of reactionary elements in treatment systems

Monitoring and Measuring Environmental Impact

The DNP group has established voluntary environmental standards for air, water, noise, vibration and odors, which are even more stringent than those required by law. Occasionally, however, we receive complaints from nearby residents concerning noise and odors. Following receipt of such a complaint, we make an utmost effort to determine the cause, rectify the problem and perform measures to prevent reoccurrence of the problem in the future.

Targets **We aim to achieve the following targets by FY 2005:**

- To keep maximum densities of air emissions subject to emissions regulations at 70% of the required standard or less.
- To keep maximum densities of wastewater discharges subject to wastewater regulations at 70% of the required standard or less.
- To keep the maximum density of odors at our site perimeters at 70% of the required standard or less.
- To keep the maximum level of noise and vibration at our site perimeters at 95% of the required standard or less.

Performance **As indicated in the following table, we have already achieved our targets for vibration and will have achieved our targets regarding air, water and odors in the near future. The target achievement ratio in noise, however, remains low, even though this has been improving in comparison with the levels in FY 2001.**

(Measurements of noise in municipal sites are sometimes affected by background noise.)

The table below exhibits the achievements we made in FY 2002.

Item	The voluntary standard achievement ratio in FY 2001	The voluntary standard achievement ratio in FY 2002	Improvement	Voluntary Standards
Air	92%	93%	↗	Under 70% of legal standards
Water	83%	89%	↗	Under 70% of legal standards
Odor	91%	89%	↘	Under 70% of legal standards
Noise	45%	47%	↗	Under 95% of legal standards
Vibration	100%	100%	→	Under 95% of legal standards

Note 1: The voluntary standard achievement ratio is determined by multiplying the indexes measured for air, water, odors, noise and vibrations in plants subject to regulations (total measured indexes) by the target attainment indexes for each item.

- Air: Ratio of voluntary standard achievement index number against total measured index number for SOx, particulate, NOx and dioxin.
- Water: Ratio of voluntary standard achievement index number against total measured index number for pH, COD, SS etc. (excluding water temperature)
- Odors: Ratio of voluntary standard achievement index number against total measured index number for emissions duct odor density, perimeter fence odor density and number of substances for which density measurements were taken.
  *State of compliance with emissions duct regulations also included in odor measurement data.
- Noise: Ratio of time zones in which voluntary standards were achieved out of the total number of times zones in which measurements were taken (daytime, morning, evening & night)
- Vibration: Ratio of time zones in which voluntary standards were achieved out of the total number of times zones in which measurements were taken (daytime, night)

Note 2: For items in which measurements were not taken in the previous year, and in which targets were not achieved according to the most recent data, we have deemed these as not achieving targets in the fiscal year concerned.

Note 3: In last year's environmental report, we evaluated the above voluntary standard achievement ratios using the ratio of plants that achieved all measurement indexes on a site-by-site basis, and have used a different method this year.

Accidents and Incidents of Non-Compliance

The DNP group, while striving to operate in compliance with environmental laws and regulations, has experienced one abnormality in connection with wastewater discharges over the last five years, and one incident of accidental release of waste liquid into a river. We are currently making an utmost effort to ensure that such incidents are not repeated.

Date of accident: May 24, 2000

Site: Sayama Plant, Dai Nippon Printing Technopack Co., Ltd.

The quality of wastewater released to the sewer system exceeded standards. The problem was caused by insufficient treatment of compressor drain water due to insufficient performance of the plant's wastewater treatment system, resulting in an extract of n-hexane exceeding the regulatory standard. We resolved the problem by improving the performance of the plant oil-water separation system.

Date of accident: April 11, 2002

Site: Fukuoka Plant, Kyushu Dai Nippon Printing Co., Ltd.

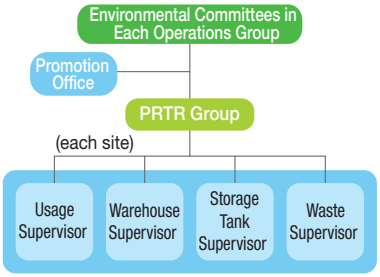
In this accident, industrial process wastewater was accidentally released into a river due to a fault by the private wastewater treatment operator. The particular wastewater concerned is normally transferred to a tanker truck and taken away. The accident was occurred when the transfer hose became disconnected. The wastewater concerned was a mixture of water that had been used to wash printing plates, as well as moisturizing water and a small amount of lubricating oil used in the printing process. Following the accident, under government supervision, we laid sandbags, erected an oil fence and cleaned up items floating on the surface of the river. We also performed an examination into the cause of the accident, reviewing the work procedures of the private operator within the site, reviewing our emergency contact procedures and installing new emergency materials in order to minimize the effects of any future accident.

Fukuoka Plant, Kyushu Dai Nippon Printing Co., Ltd. emergency cleanup materials

Anticipated Emergencies and Emergency Response

The DNP group uses solvents and chemicals during the manufacturing process. Whenever these products are delivered or treated as waste after use, there remains the danger of spillages. In order to address this situation, we have established a "Chemical Substances Management Guide" outlining the proper treatment of chemical substances, and are striving to reduce accidents, installing retaining walls and emergency shutoff systems at chemical receiving areas, and installing double-walled storage tanks, etc. Furthermore, to minimize the pollution in the event of an accident, we have installed emergency materials and perform emergency training.

Management of Chemical Substances



Chemical Substances Management Guide (Contents)

I. Establishing a Chemical Substance Management System
II. Monitoring Amount of Chemical Substances Handled
III. Implementing Chemical Substance Management
  1. Examining Facilities
  2. Managing Waste that Contains Chemical Substances
  3. Restricting Emissions through Facilities Improvement
  4. Management by Production Process
  5. Proper Usage
IV. Preparing for Accidents and Emergencies
V. Education and Training

Soil and Groundwater Contamination and Reduction Measures

Conventionally, the DNP group performed ground surveys following the acquisition of new sites or as part of the ISO 14001 certification application process. Prompted by the Law concerning Measures Against Ground Contamination, however, the group established a "Guideline to Measures Against Ground Contamination," which sets forth ground contamination examination standards. The guideline prescribes that ground surveys must be performed whenever a site that has used a hazardous substance or decides to abolish certain facilities as specified in the Water Contamination Prevention Law. Furthermore, the guide states that in the event that ground contamination is discovered, the site must notify the governor of the prefecture concerned and perform appropriate measures such as removal of the contaminated ground under the supervision. In FY 2002 we performed ground and groundwater examinations of the sites on the right, all of which were confirmed to be free of contamination.

Sites Performing Ground and Ground water Surveys in FY 2002

Groundwater surveys	Tokyo Plant, Dai Nippon Printing Kenzai Co., Ltd.
	Kuki Plant (Electronics Division)
	Mihara Plant, Dai Nippon Printing Precision Device Co., Ltd.,
Ground surveys	Osaka Plant, Dai Nippon Erio Co., Ltd.

Environment-related Lawsuits

The DNP group has not been subject to any environment-related lawsuits during the period under review.

Amount of Stored Hazardous Substances

The DNP group currently has in storage 267 cases of PCBs on 27 sites. The PCBs are contained in oil that was extracted from transformer equipment that is no longer in use. The PCBs are stored in special containers in special storage rooms, and are managed under the strictest of conditions in accordance with applicable regulations to ensure prevention of leakage or loss. Each site makes sure the PCBs are stored in the appropriate manner, performing daily inspections and making regular reports to the authorities, and confirming storage conditions in annual internal audits.

PCB storage area at Akabane Plant, Ichigaya Publication Printing Operations

Accident prevention measures

Wastewater conduit shutter
Kyoto Plant, Dai Nippon Printing Technopack Kansai Co., Ltd.

Leakage retaining walls
Ushiku Plant, DNP Data Techno Co., Ltd.

Emergency Training (Performed in FY 2002)

Prevention of air pollution

Ushiku Plant, DNP Data Techno Co., Ltd.
Training under the assumption of a leakage of municipal gas

Kobe Plant, Dai Nippon Printing Kenzai Co., Ltd.
Emergency response training involving odor removal equipment

Mihara Plant, Dai Nippon Printing Precision Device Co., Ltd.
Trainings under the assumption of black smoke arising from incinerator and leakage of municipal gas

Prevention of water pollution

Mihara Plant, Dai Nippon Printing Precision Device Co., Ltd.
Trainings under assumption of a crack in water-supply yard and leakage of processing water
Training under assumption of leakage of absorption liquid in exhaust gas washing equipment

Sayama Plant, IMS Dai Nippon Co., Ltd.
Training under assumption of oil leakage

Ushiku Plant, DNP Data Techno Co., Ltd.
Emergency wastewater treatment and wastewater recovery

Prevention of Ground Contamination

DT Circuit Technology Co., Ltd.
Training for responding to emergency in chemical treatment facility

Emergency response training
Sayama Plant, IMS Dai Nippon Co., Ltd.

Emergency response training
Ushiku Plant, DNP Data Techno

Upstream Activities—Green Purchasing

In an effort to reduce the environmental impact of upstream activities, the DNP group promotes green purchasing-although on some occasions we are required to purchase materials in accordance with specifications demanded by our clients.

Targets

Green Purchasing Target

- To improve the ratio of purchased products that reach the DNP Purchasing Headquarters standards for green purchasing by 2.5% each year.
- To improve the ratio of purchased products bearing environmental labels such as the Eco-Mark by 3.0% each year.

Note: The DNP Purchasing Department's standards for green purchasing are as follows:

Paper: Paper containing recycled paper, non-wood based paper, TCF pulp paper (Paper made using without the use of chlorine)

Ink: Soybean oil ink, water-based ink, and toluene-free ink, toluene-free solvents, recycled solvents

Materials: Products certified as worthy of environmental marks, recycled materials, etc.

Sites covered: 32 sites under the DNP Purchasing Division

Performance In FY 2002, our year-on-year purchase ratio for environmentally sound materials improved by 2.7% while that for general materials improved by 3.4%.

State of Purchasing of Raw Materials (paper, ink and materials)

In FY 2002, purchases of environmentally sound raw materials accounted for 18.6% of all raw material purchases, a year-on-year improvement of 2.7%.

In order to promote purchases of environmentally-sound products, the DNP Purchasing Division placed a list of recommended environmentally sound products on its intranet website and provided information to the sales divisions. As a result, the selection ratio of environmentally sound A3-size coated paper and mat-coated paper improved, with the year-on year purchase ratio of environmentally-sound products improving by 2.0%.

In ink purchases, we increased use of soybean oil ink, water-based ink and toluene-free ink. As for solvents, we promoted conversion to recycled products and substitute products. As a result, the ratio of environmentally sound ink purchases improved by 9.6% from the previous year.

In production materials, we improved our year-on-year purchase ratio of environmentally sound products by 1.4%, through increased use of recycled PS plates*1 and paper tubes, use of environmentally-sound blanket cleaning agent and adhesives, and conversion to recyclable film and eco-bands*2.

*1: PS-plates: Abbreviation for pre-sensitized plates, which are used in offset printing. These are aluminum plates with a hydrophilic layer that have been coated with a photosensitive liquid. By coating with a plate film and exposing it to light, a chemical reaction occurs in the photosensitive resin, resulting in the creation of an offset printing plate.

*2: Eco-band: Plastic bands made of recyclable plastic

Environmentally sound products list
DNP Purchasing Division website

Soybean oil ink

State of General Materials (Stationery, office supplies and fixtures, etc.)

In purchases of general materials, environmentally sound products accounted for 12.5% in FY 2002, a year-on-year improvement of 3.4%. In addition to the increased use of business card and company envelopes made of recycled paper, we increased registrations of eco-products in all types of stationery and office supplies. Product unit prices also fell during the year, resulting in increased adoption of environmentally sound products.

Uniform

Downstream Activities—
Development & Sale of Environmentally Conscious Products

In an effort to reduce environmental impact through the stages of product design, development and sale, the DNP group has established a "Development Guideline for Environmentally Conscious Products" and promotes the development and sale of environmentally conscious products, based on the "Consideration of Lifecycle Factors in Products and Services" section of the "Fundamental Principals of Green Purchasing" (Revised June 12, 2001) produced by the Green Purchasing Network.

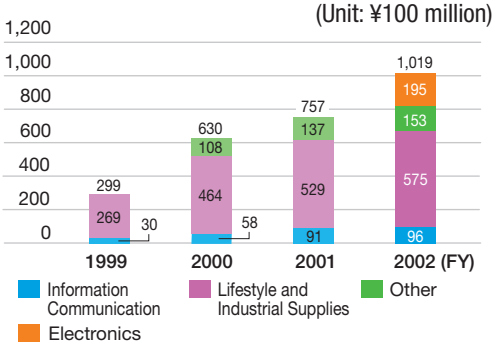
Targets DNP Group Environmental Target
- To increase sales of environmentally sound products by 10% each year

Performance Sales of environmentally conscious products stood at ¥101.9 billion, up 35% from the previous year (¥75.7 billion) and reaching the group target.

Sales for environmentally-conscious products in FY 1999, when we began taking records, stood at ¥29.9 billion, but increased steadily thereafter, reaching ¥101.9 billion by FY 2002. Of particular note was the achievement of the Electronics Division, whose switch to heavy-metal free products and products that do not use organic solvents during manufacture, contributed significantly to the increase in sales.

In the Information Communication Division, substantial increases were achieved for sales of products using recycled paper and soybean ink, metal-less calendars and cards that do not use polyvinyl chloride. The Lifestyle and Industrial Supplies Division has seen steady increases in sales of paper products that were formerly made of non polyvinyl chloride and plastic, and products that use water-based ink. In "Other," sales of sales-promotion materials made of non-polyvinyl chloride materials fell, while those using soybean oil ink increased substantially.

Sales of Environmentally Conscious Products
(Unit: ¥100 million)



Environmental Conscious Products Development Guideline

1. Reduction of Environmental Pollutants

Elimination of ozone-depleting substances, heavy metals and organic chloride compounds
Curbing of air emissions of greenhouse gases, nitrogen oxides, etc. during life cycle
Examples:
- Products that do not contain organic solvents
- Adoption of raw materials that do not contain chlorine
- Printed matter using soy oil ink
- Adoption of raw materials that do not use heavy metals such as chrome and lead

2. Conserving resources and energy

Restrictions on use of metal resources and fossil fuels
Examples:
- Lightweight products,
- Products and systems that conserve energy during life cycle

3. Adoption of sustainable resources

Use of sustainable resources
Examples:
- Products that use non-wood based paper
- Paper products that were formerly made of plastic

4. Able to be used long term

Consideration of ease of repair and parts replacement, length of maintenance and repair services, expansion of functions, etc.
Example: Card that can display updated information

5. Reusability

Products designed to be taken apart for cleaning, refilling, etc; development of recovery and reuse systems that are easy for the purchaser to use.
Example: Refillable containers

6. Recyclability

Consideration of whether product uses easy-to-recycle material, whether it has been designed to break down and/or separate easily according to material, whether there exists a recovery/recycle system that can be used easily by the purchaser
Example: Products made using one type of material

7. Use of recycled materials

Frequent use of recovered/recycled parts
Examples:
- Printed matter using 100% recycled paper
- Products that use paper as shock absorber
- Products that use recycled plastic

8. Easy to treat and dispose of

Consideration such that product causes minimum impact when incinerated or landfilled
Examples:
- Products that break down easily into base materials
- Products that use plastic that breaks down naturally

Conservation Technologies, Product Research and Development

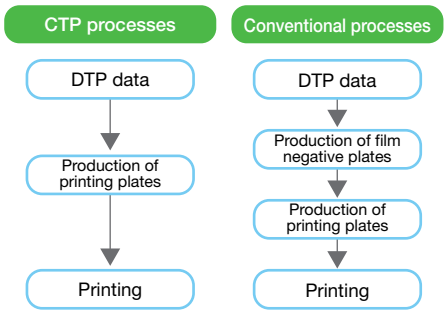
Summary Based on the R&D organizational structure indicated on the right, the DNP Group is striving to develop technologies that reduce environmental impact incurred during production and the environmental impact of products.

R&D to Reduce Environmental Impact Incurred during Production

In order to reduce the environmental impact incurred during production, the DNP group performs research and development in a number of key areas, including methods for the elimination of solvents and use of water-based inks in gravure printing and the laminating process (reduction of VOCs), development of various examination equipment (reduction of waste), improvement of efficiency of printing presses (energy conservation) and printing systems (reduction of waste and conservation of energy).

An example of improving the efficiency of a printing system is conversion to CTP in offset printing, and our "High-efficiency Gravure Printing Press," which we developed in FY 2002. Consisting of various independent printing units, each of which can be operated independently, the new printer has greatly improved efficiency by reducing the time needed when changing printing plates and adjusting color.

Conceptual drawing of CTP



CTP: Computer To Plate
System wherein printing plate (plate that is attached to printing press) is produced directly from negative data contained within a computer.
The system eliminates the need for film negatives, reduces waste and produces no waste developer or fixer, needs no exposure device for printing film negatives and saves energy.

DTP: Desk Top Publishing
Publishing system wherein operations such as production of illustrations, input and editing of pictures, text layout and printing are performed though a work station or personal computer.

DNP Group R&D Organization

(Head Office Staff Divisions)
- R&D, Commercialization Office
- Intellectual Property Office

(Head Office R&D Divisions)
- R&D Center
- Physical Property Analysis Center
- Materials Development Research Center
- Production Research Center
- C&I IT Research Center

(Group-wide Planning Divisions)
- Packaging Development Center
- CBS Development Office

(R&D Divisions by Operations)
- Business Forum Research Center
- Packaging Research Center
- Decorative Materials Research Center
- Data Recording Materials Research Center
- Electronic Device Research Center
- Display Product Research Center

Efforts to Reduce Environmental Impact of Products

The DNP group is striving to develop technologies to reduce the environmental impact of products through reduction of environmentally hazardous substances (elimination of halogen-based substances, volatile organic solvents), improvement of recyclability (use of single materials, material labeling, etc.) and reduction of waste.

[Reduction of environmental pollutants]

In decorative, we are promoting development of non-chlorine based barrier film. The film has barrier properties that prevent entry of oxygen and moisture. We improved the barrier properties of the film though improvement of the steam adhesive process, and are promoting conversion away from materials containing chlorine such as vinylidene chloride.

In industrial materials, in FY 2001 we began sales of "Flexible Flat Cable Cover" that contains no organic chlorine-based substances.

In decorative materials, we applied our electric wire surface treatment technology to develop products that contain no VOCs, which can have strong odors and case allergies. This technology is used when irradiating electronic wires and for hardening resin used to coat substrate surfaces, and offers good protection against soiling and scratching. Furthermore, we developed technologies for measuring the VOCs arising from building materials, built the "Home Construction Materials Analysis & Evaluation Center" and received ISO/IEC 17025 third-party certification for our technology and processes for measuring VOCs released from building materials.

High-efficiency gravure printing press

Flexible flat cable cover

[Recycling Efforts]

In an effort to promote separation of container packaging, we took measures to display packaging separation and material labels on our products in cooperation with our clients, as prescribed in the “Law to Promote Effective Use of Resources,” executed in April 2001.

[Reduction]

We have been promoting reduction of superfluous materials in our containers at the design stage, part of our policy to emphasize “Reduce”, one of the 3Rs touted under the Law towards Promotion of Development of a Recycling-Oriented Society.

Life Cycle Assessments (LCA)

[About LCA]

In order to reduce the environmental impact of downstream areas, the DNP group has actively embraced LCA, into its packaging operations, where there is great concern regarding the problem of waste in packaging.

Since November 1997, we have applied lifecycle inventory analysis (“setting of purpose and scope” and “inventory analysis” as prescribed within the framework of ISO 14040) in the course of developing environmentally-conscious products. Evaluation of packaging products using LCI is not only beneficial to the packaging material user, it also satisfies a requirement of business operators as prescribed in the “Container and Package Recycling Law”* (enacted in 1996). As a business operator playing a role in the development of a recycling-oriented society, we will in the future continue to develop products using LCA.

Making use of our knowledge of LCI, the Data Recording Materials Division achieved certification for its information-providing environmental labels (EPD) used on sublime heat transfer materials.

* Under the fundamental policy of the Container and Package Recycling Law, it is the duty of the nation to establish LCA methods and to provide information, and that it is the duty of the business operator to perform LCA-based development and provide information for consumers.

[Case Study of LCA]

We performed an LCA assessment of our PET bottles, which are manufactured using a sterilized filling system (APP) developed by DNP. The results of the assessment are shown in the graph on the right. Although there are claims that the recycling of PET bottles only leads to further environmental impact, in FY 2001, a year in which recycling progressed further than was required in FY 2000 under the Container and Package Recycling Law, it was determined that energy consumption and atmospheric emissions have been falling. In the future, we hope to use LCI to develop easy-to-recycle containers.

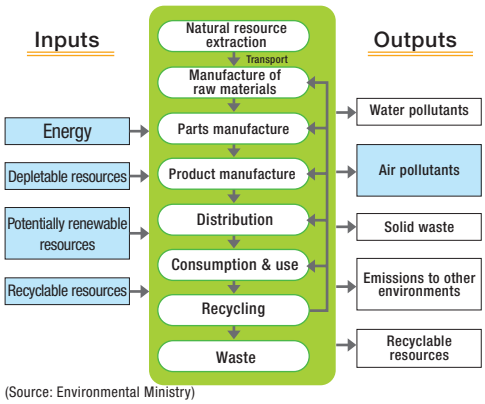
PET bottles produced by APP system

[Participating in LCA Research]

DNP extends cooperation to government-sponsored LCA research projects, participating as an industrial representative in the “Project for Development of Designs and Manufacturing Technology for Low-waste Recyclable Plastic (sponsored by the Ministry of Economy, Trade and Industry)” as performed by the Japan Chemical Innovation Institute, and “Examinations concerning Lifecycle Assessments of Containers & Packaging (sponsored by the Ministry of the Environment), as performed by the Institute for Policy Sciences.

Material identification labeling (Close-up)

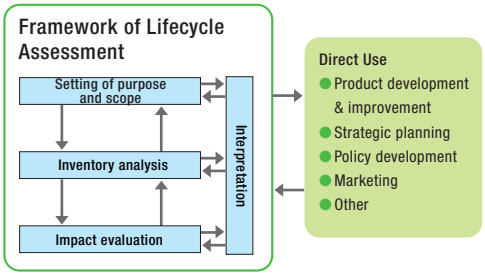
Product Life Cycles and Environmental Impact



(Source: Environmental Ministry)

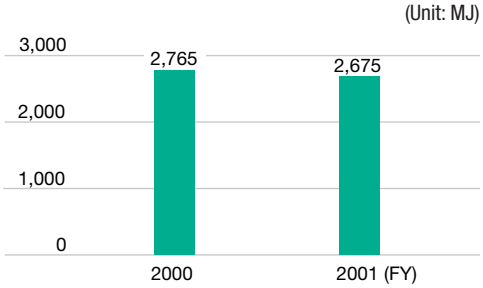
DNP mainly uses blue-colored parts in the development of environmentally-conscious products.

Stages of LCA (ISO 14040)



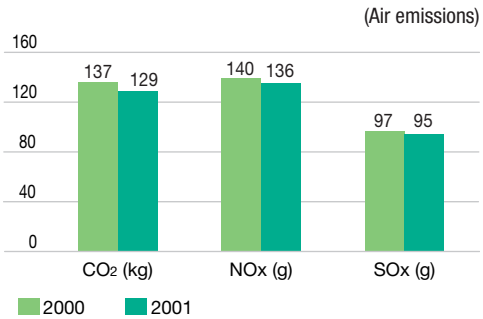
Transition in consumption of energy due to improvement in PET bottle recycling efficiency

(Per 1,000 bottles from raw materials extraction to recycling)



Changes in air emissions due to improvements in recycling efficiency

(Per 1,000 bottles from raw materials extraction to recycling)



Environmentally Conscious Products—
Efforts to Reduce Environmental Impact in Downstream Areas

Summary Regarding environmental impact in downstream areas, the DNP group has determined the impact of containers and packaging materials. According to our calculations, a total of 384,000 tons of CO_2 has been emitted in connection with containers and packaging shipped by the DNP group.

Under the Container and Packaging Recycle Law, the DNP group has a duty to recycle used containers and packaging as a "container manufacturer." The group carries out this duty through The Japan Containers & Packaging Recycling Association, which recycles packages and containers on behalf of the group. In FY 2002, the group carried out its duty, paying ¥190.5 million in recycling fees to the association.

Products that have acquired the DNP group Eco-Mark are "S-mail recycled paper type (70%)" and "S-mail recycled paper type (100%)." "S-mail" is a letter-sized writing paper that folds into an envelope, which can then be sent as a postcard. "Super S-mail Clear Recycled Paper Type", registered in FY 2001, is no longer qualified to bear the Eco-Mark as the specifications of the paper have changed.

Examples of Environmentally Conscious Products

Reduction of Environmental Pollutants

Environmentally-conscious interior paneling [VOC-free, PVC-free]

The DNP group manufactures interior panels that are used in housing and as a building material. We have modified the ingredients of these panels, changing the base film to a non-PVC type and eliminating use of printing inks or coatings that use VOCs, determined to be a cause of the sick-house syndrome by the Ministry of Health and Welfare. We have also developed "electron beam" coated paneling, which are durable and have good dirt resisting properties.

WS Safmare　　EB-coat HT flooring

"Inorganic Barrier (IB) Film" [free of organic chlorine compounds]

The DNP group manufactures packaging-use clear vapor-deposit barrier film that is free of chlorine compounds, a source of dioxin. The film has been used as packaging for foods, toiletries and other daily goods that require packing with barrier qualities.

PET-G Cards [free of chlorine based organic compounds]

PET-G cards are made of amorphous copolyester (PET-G), which breaks down into water and CO_2 without letting off chlorine-based gases when incinerated. PET-G is also suitable for IC cards.

Environmentally-conscious Ink [VOC-free]

The DNP group develops and manufactures environmentally-conscious ink. During FY 2002, shipments showed an increasing tendency towards use of soybean oil ink in offset and newspaper printing, and a trend towards water based inks in gravure printing, both of which are helping to prevent air pollution and improve working environments around printing presses.

Soybean oil ink

Water-based gravure ink

Conservation of Resources and Energy

"Spouch" [reduction of manufacturing energy]

Spouch is a portable beverage container with a built-in drinking nozzle that shrinks as the beverage is consumed. After performing an LCA analysis, we determined that, in comparison with plastic bottles, the containers require less energy in manufacture and release fewer emissions to air. The containers can also be used as packaging for products that require retort sterilizing.

Thin Lamination [lightweight packaging material]

PE·EC (polyethylene extrusion) is a lamination technology pioneered by the DNP group. By improving materials and film manufacturing methods, we have developed a method that allows lamination to be performed using a film as thin as 5 microns*, as opposed to the conventional thickness of 13 microns. This has resulted in a wrapping material of up to 30% less weight.

* A micron is one thousandth of a millimeter.

"Ittai-kun" One Piece Tube [reduction of packaging materials]

Our one-piece tubes have eliminated all superfluous parts and use some 30% less plastic than conventional tubes. The tubes have improved hygienic properties-there are no seams between the cap and the tube, preventing a build up of dust when displayed in shops and adhesion of water and mould when left wet areas.

"Elbow Pouches" [contributing to recycling systems]

Elbow pouches are liquid refill packs that are easy to open and pour. The pouches help to conserve resources by enabling reuse of the original container, and shrink to a compact size after use.

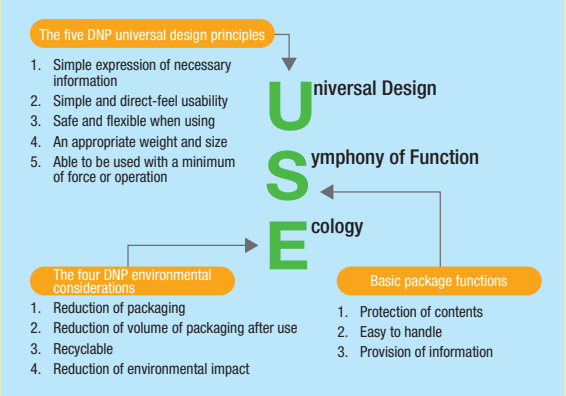
Efforts in Packaging

Yoshio Nishida, Director, Packaging Development Center

The Packaging Development Center provides packing for everyday consumer items such as foods, beverages and daily goods. Within the DNP group, the center channels a considerable amount of resources into development of environmentally conscious products, establishing the LCA evaluation method in 1997, and applying it to product production, one of the first in the industry to do so. In addition to environmental considerations such as reduction of packaging materials and improvement of recyclability, as of 2000, we have been incorporating "universal design," a form of design that allows anyone to use products easily. Furthermore, we have been striving to develop and produce "packages that are easy on users, products and the environment" based on the concept of "USE · FULL® Package", which uses as its foundation the basic functions of packaging, that is, to protect and allow easy use of the package contents. The number of cases of new products being adopted by companies has been increasing steadily, namely the PET bottle sterilized filling (APP) system (page 46) and our insulated paper cup "Hi-Cup" (page 49). In the future we hope to continue our efforts to contribute to the development of a recycling-oriented society through package design that responds to the needs of society.

USE·FULL® Package

This made-up word was chosen to express DNP's policy towards packaging design, namely designs that are useful and which incorporate the three consumer conveniences of "Universal design", "Symphony of function" and "Ecology."



Extraction of Sustainable Resources

"HI-CUP" Insulated Paper Cups [converted from plastic to paper]

HI-CUP is a double-walled heat insulated cup made of recycled paper. After use, the cup can be easily crushed into a small size.

Paper Trays [converted from plastic to paper]

Our paper trays can be used for food dishes and frozen foods, etc, and are microwave safe. The outer cover of the trays can be printed on, and give a better finish than printed plastic trays. After use, the trays can be easily crushed into a small size.

Box trays

Pressed paper tray

Long-Life Product

Redecoration Panels

Our self-adhering WS Compo interior-use panels make redecoration simple. Designed for long-term use, the panels can be installed without the need to perform alteration work, which can lead to noise, odors, dust and generation of waste materials.

Thin paneling "WS Compo"

Reusability

Peel-apart delivery slips [contributing to reuse systems]

Applying our coating technology, we developed special peel-apart slips that peel apart easily and without tearing. Consisting of a single sheet of paper, the slips help to conserve paper. Furthermore, as the adhesive coating does not remain on the bill and receipt sections after separating, they can be recycled as cardboard, etc.

Efforts in Decorative Materials

Toshiko Fujita, Leader Decorative Materials Operations
Decorative Material Reserach Center

The Decorative Materials Division has supplied construction materials for all sorts of applications within housing construction, including interior products for use in floors, walls and ceilings, surface materials for use in front doors, interior doors, closet doors and furniture, and products used in wet areas such as bathroom wall panels, and kitchen cupboard doors, etc. Recent years have seen increased interest in the health and safety aspects of housing materials, and a strong demand for environmentally-conscious construction materials. We began efforts to accommodate such needs at an early stage, and have strived to provide environmentally-conscious products. In addition, we have established a "Home Construction Materials Analysis & Evaluation Center," a facility for testing and evaluating the environmental soundness of products used in housing, including measurement of VOCs (Volatile Organic Compounds) emitted from building materials. The Center has also helped to create business in new areas, as it is also used to test materials at the request of other companies.
In the future, we hope to further enhance our range of products and services, and contribute to pleasant living environments.

Home Construction Materials Analysis & Evaluation Center

Located within the Decorative Materials Research Center (Gotsu-cho, Gotsu-gun, Okayama Pref.)

The DNP group has received ISO 17025 certification for its technology and processes for measuring VOCs (Volatile Organic Compounds) released from building materials as regulated under JIS A 1901. (Date of Certification: April 25, 2003; Certifying body: The Japan Accreditation Board for Conformity Assessment (JAB); Certification number: RTL 01330)

ISO 17025 is a certification wherein the measuring system of a testing center and the results thereof are certified by a third party. During the certification process, the measurement items and methods are subject to examination. The certification states that the Home Construction Materials Analysis & Evaluation Center, as operated by Group 3 of the DNP Decorative Materials Research Center operates a quality control system, has acquired and applies the appropriate level of technology and has the capacity to produce technically sound results.

Use of Recycled Materials

Magazines, Pamphlets made of 100% Recycled Paper

Magazines, Pamphlets made of 100% Recycled Paper
In a joint venture with Oji Paper we developed a recycled paper that uses 100% recycled paper, and promote usage among the DNP group.

Recycled Paper “S-Mail”

As a new addition to our lineup of “S-Mail” products, special postcards that can be used for invoices and invoice breakdowns, etc., we have developed recycled paper S-Mail products. The new products are available in 70% and 100% recycled paper versions, each of which has acquired the Eco-Mark.

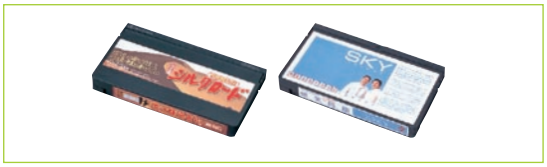
Recyclabilities

“Super Hard Art-Tech” [easy-to-recycle materials]

These are interior panels for use in passenger trains, made from aluminum to improve recyclability. One of the key features of the panels is that they are hard yet can be shaped and curved easily.

“e-Video” [eliminating need to separate]

These are easy-to-recycle video cassettes made of polystyrene. We have also developed a special “e-Video Eco” version that is completely free of metal parts.

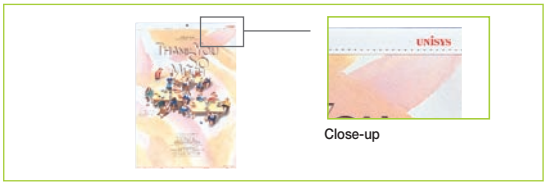


“Eco Cut-outs” [eliminating need to separate]

These are point-of-purchase displays that use part of the original packaging box as a base. Because they contain no veneer or metal parts, the displays can be easily disposed of and recycled, with no need to separate into different materials.

Environmentally-Conscious Calendars [eliminating need to separate]

Our environmentally-conscious calendars use recycled paper and low-impact ink, and contain no metal or plastic parts.



Easy Disposal

“Back-in Box” [easy to separate]

Back-in boxes are containers are cardboard boxes that containing an inner plastic bag. The box and bag sections can be separated and folded both before and after use, greatly helping to reduce storage space and improving recyclability.

Stretch Labels [easy to separate]

Stretch Labels are easy-to-remove labels that are attached to containers without use of an adhesive. When used with PET bottles, the labels can be separated using specific-gravity separation methods. Being very thin, the labels also help to conserve energy and costs. Furthermore, the high clarity and high gloss of the labels enhances the attractiveness of the label design.

Measures to Reduce Environmental Impact of Transport

DNP Logistics Co., Ltd., which performs logistics operations for the DNP group, is a general logistics company with a fleet of around 200 trucks that operate between Tohoku and Kyushu using cities as hub areas.

Targets To make the following reductions by 2010 against a base year of 2000
1. To reduce CO_2 emissions per tons-kilos transported*1 by 5%
2. To reduce transport-use fuel per unit of sales by 20%

*1 Transport ton-kilos = Σ(cargo weight × transport distance)

Performance Thanks to improvements in transport operations, in FY 2002 we reduced our CO_2 emissions by 23% from the level in FY 2000. Furthermore, our CO_2 emissions per ton-kilometers fell by 26%, exceeding the target for 2010. Fuel consumption per unit of sales, however, remained at the same level as last year, due to the fall in sales following the drop in road shipping costs.

FY		2000	2001	2002	(comparison with FY 2000)
Tons-kilometers transported	(Million ton · km)	53.18	55.65	55.47	
Fuel consumption	(kl)	2,299	1,997	1,764	
Sales	(¥100 million)	27.6	25.74	22.65	
CO2 emissions*2	(tons)	6,160	5,350	4,730	(-23%)
CO2 emissions per ton-kilos transported		116	96	85	(-26%)
Fuel consumed per unit of sales		83	78	78	(-6%)

*2 As of FY 2002, we calculated this in accordance with the method determined by the "FY 2002 Greenhouse Gas Emissions Calculation Method Commission (August, 2002)." The figures differ from those listed in the report for FY 2001 as at that stage, we calculated emissions in accordance with the "Sept. 2000 Environmental Ministry Greenhouse Gas Emissions Calculation Method Commission."

Reduction of CO_2 gas and Nitrogen Oxides (NOx)

DNP Logistics strives to reduce fuel consumption, streamlining truck allocation and delivery routes and promoting idle-stop campaigns.

In an effort to improve driving performance, since FY 2001 we have monitored driving operations by adding digital tachometers to trucks operating in the Sayama and Yokohama regions. In FY 2002, our fuel consumption stood at 59kl, while CO_2 emissions amounted to 157 tons, an average reduction of 15.5%, from FY 2000, and exceeding the reductions made in FY 2001. In the Sayama region, a fleet of 4-ton and other trucks transport products and semi-finished products from plants to customers and between plants. In this region, we improved transportation efficiency by streamlining truck allocation and delivery routes, resulting in a fuel consumption reduction ratio of 22.8%. In the Yokohama region, we transport printing ink from our plants to special customers in tanker trucks weighing over 10 tons. As the delivery routes are fixed and constant, we are unable to make significant reductions through streamlining as was performed in the Sayama region, and use only idle-stop as a measure for improving fuel efficiency.

With the reduction in fuel consumption amounts, emissions of NOx have also fallen. Furthermore, we are promoting conversion from diesel to CNG fuel, which produces few NOx emissions during combustion.

Reduction in Fuel Consumption in the Sayama and Yokohama regions through Improved Driving Efficiency

	2000		2001	2002	(FY)	
Distance traveled (1,000km)						
Sayama	1,050.90		979.8	880.3	1	
Yokohama	955.3		917.1	846.9	2	
Fuel consumed (kl) (light oil)						
Sayama	225.3		190.2	145.8	3	
Yokohama	219.8		195.6	178.2	4	
Fuel economy (km/l)						
Sayama	4.66	5	5.15	6.04		
Yokohama	4.35	6	4.69	4.75		
Fuel consumption (kl) when converted to FY 2000 fuel efficiency						
Sayama			210	188.9	7	1÷5
Yokoyama			211	194.7	8	2÷6
Fuel consumption reduced						
Sayama			19.8	43.1	9	7-3
Yokohama			15.4	16.5	10	8-4
Total			35.2	59.6	11	
Fuel consumption reduction ratio (%)						
Sayama			9.5	22.8		9÷7×100
Yokohama			7.3	8.5		10÷8×100
Average			8.4	15.5		11÷(7+8)×100
CO_2 reduction amount (tons)			93.2	157.2		*2

Reducing Suspended Particulate Matter (SPM)

The DNP group is promoting measures in response to the new diesel vehicle regulations that will be executed in eight municipal regions, including Tokyo, as of October 2003. We began taking steps to accommodate the new regulations in the summer of 2001. In June 2002, we prepared a plan of action for modifying each of the vehicles in our fleet. In August 2002, we began to replace some of our fleet with new regulation-compliant vehicles and added particulate matter filters to others. By the end of FY 2002, some 66% of fleet vehicles were compliant with the new regulations (79% at the end of June 2003). We expect to complete compliancy modifications by September 30.

Close-up

Regulation-compliant vehicle with particulate filter installed

Environmental Communications

Contents

*For details/queries regarding key environmental data of sites, please refer to our Website
URL: http://www.dnp.co.jp/jis/eco/

Close-up Report "Review of Sweden and Denmark-Countries with Advanced Environmental Systems"

(Please refer to page 54)

In November 2002, we visited Sweden and Denmark, two countries to learn the measures and policies performed by the companies and governments towards stakeholders and the kind of environmental information released. We were particularly impressed by the high level of communication skills shown by corporate public relations officers and government agency spokespersons, and felt that we still have a lot to learn. The following is a brief introduction of the type of policies for a sustainable economy being promoted by the national and local governments.

Copenhagen "City Bike Project"

The City Bike project is a free-of-charge bicycle rental system started as a measure to address the never-ending problem of bicycle theft. A "City Bike Foundation" was soon established, the aim of which was to develop a handy, environmentally friendly means for visiting the various sightseeing spots around the city. The three main objectives of the Foundation were:

- To alleviate traffic jams and the problem of abandoned bicycles
- To encourage the environmental consideration
- To provide a means of transport for sightseeing

The bicycles are available from April to December for effective use as a means of transport for sightseeing. The rental service is operated by 20 employees hired under a job-placement program for unemployed. The bicycles are fitted with solid tires that never go flat, no handbrakes and parts that are incompatible with those of other bicycles, making them unlikely targets for theft. The bicycles can be rented for 20 Coronas per use (around ¥330), which is returned to the user upon return of the bicycle.

City-bike bearing a company advertisement

Marine Wind Farm in Middlegron

Since the second half of the 1970s, Denmark has implemented wind power as a source of sustainable energy. As of 2002, the country has 6,000 windmills in operation, saving 4.7 million tons in CO_2 emissions, and powering around 16% of the country's power needs.

Middlegron Wind Farm, as shown in the following picture, consists of 20 2-megawatt windmills built on man-made islands stretching 3km into Copenhagen bay, generating a total of 40 megawatts. With a propeller length of 38m and sitting on a pole 64m in height, the windmills have a built-in safety feature that stops the windmill from turning when the wind becomes too strong.


An upward view of the huge windmills


20 windmills on the sea

Disclosure of Environmental Information

Summary From 1998 through 2002, the DNP Group has released environmental information through "Environmental Reports," which have undergone revisions on four occasions. Our 2002 report received a Prize for Excellence in the Environmental Report Awards. During this time, we continued to receive opinions from our stakeholders through surveys and seminars. However, we believe there is still room for improvement regarding our receiving activity.
In 2000 we began to offer support services to help our clients produce their own environmental reports and websites. Given that such environmental communications tasks involve input from throughout the entire DNP group, we conduct planning and production of reports and website contents in cooperation with DNP Media Create*1 and DNP Digitalcom*2.
*1: DNP Group planning & production company
*2: DNP Group digital media (mainly Internet) planning & production company

Release of Environmental Information

[Characteristics of the DNP Group Environmental Report]

We produced 10,000 copies of the 2002 Environmental Report, our fourth such report.

1. Awarded Prize for Excellence in Environmental Report Awards

   Our 2002 Environmental Report was selected from among 11 others as worthy of the Prize for Excellence in the Sixth Environmental Report Awards, sponsored by the Global Environmental Forum. In the review, we received a comment of, "The section on environmental performance was somewhat difficult to understand, and it was unfortunate that emissions of industrial waste were expressed in terms of waste per sale." In this year's 2003 report, we have improve these matters.

2. Characteristics of 2002 Version (Special Feature section, etc.)

   We added the special feature, "Accelerating Greenification" at the beginning of the report and added lots of pictures with the aim of producing a comprehensive, straightforward presentation. The cover was again adorned with a "Tompa" character, created by our Art Director, Katsumi Asaba, and was intended to express "accelerating greenification."

3. Implementation of Kenshyou Meidai Method

   We had the report verified by a third party using the "Kenshyou Meidai Method" a new method for verifying the credibility of environmental reports developed by Shin Nihon & Co.

[Results of the 2002 Survey]

We performed two different surveys, one targeting external parties and the other targeting new employees, and analyzed the results.

■ External survey

We received enquiries and/or survey replies from 26 persons with the following scores regarding the quality of the report: ■ Coverage: 4.1; ■ Clarity: 4.0; ■ Understandability: 4.0; ■ Cover Design: 4.1, an average score of 4.1 of a perfect score of 5. Here are a few of the more noteworthy points brought to our attention:

"Regarding anti-global warming measures, the report tended to focus on efforts to improve the efficiency of the energy supply. However, I would like more on efforts to develop energy-saving production methods." (Male; 52)
"The text would have been easier to understand if you included more sections on the opinions of users and investors on the environmental efforts of DNP." (Male; 30)
"There was too much to read. I would be better if you had taken a more simple approach to the presentation." (Male)
"There was too much company terminology, which made it difficult to understand." (Male; 63)
"I found the part on company efforts to promote greening interesting." (Female; 21)
"I would like more on the company's progress of mid- and long-term environmental efforts." (Male; 32)

■ Employee Survey

As part of our environmental education program for new employees, we performed a seminar using our Environmental Report in which we also took a survey. We received a total of 185 replies with the following noteworthy points:

"The environmental impact by the DNP group is large-mass production, mass consumption and mass waste, so the company to should make an utmost effort for environmental measures, even if it requires considerable facilities investment. Although reducing CO_2 emissions is one of the hardest things to achieve, I would like the company to seek out measures to do so." (Female; 22)

"This opened my eyes to the importance of separating waste. While I am interested in environmental issues, I didn't realize the sorting it, it would cause a vicious circle." (Female; 22)
"I realized that achievement of environmental targets is only possible if everyone joins forces to address the problem. As a member of this company, I will have to keep that in mind." (Female; 24)
"Environmental Issues had always seemed difficult to me, but I realized that it is actually quite easy." (Female; 22)
"The environmental report had good coverage of activities and numerical data. But it could have been improved further if the report provided separate explanations for the sections containing difficult technical terms." (Male; 23)

[Results of the Sixth Environmental Management Survey]

In the Sixth Environmental Management Survey of the Nippon Keizai Shimbun Co., Ltd, held in autumn of 2002, the ranking of the DNP group fell from 15 to 22. In the survey on overseas companies, the company was ranked 25th. In recycling efforts and efforts against global warming, we received a low score, a matter that has prompted us to make further efforts in these areas in the future.

[Communications with Shareholders]

The DNP Report, our shareholder journal, carries articles on our overall environmental efforts. The articles covered ISO 14001 certification within the group and Chain of Custody certification from the Forestry Stewardship Council.

Releasing Information In-house

[Group Newspaper "DNP Family"]

We often hear of cases of employees not being aware of the environmental activities of their company. In order to alleviate this situation, we ran a five page special feature on our environmental efforts in our group newspaper "DNP Family".

Environmental Communication Development Operations

[Study Tour of Advanced Environmental Nations in Europe]

(Please refer to Page 52)

From November 3 through 10, 2002, we made a study tour of companies, government facilities and households in Sweden and Denmark, examining environmental management, education and communications. The key companies visited were Sweden McDonalds, Electrolux and Carlsberg.

[Sustainability Report Seminar]

On November 15, 2002, we held a seminar by cooperation with the environmental NPOs Shin Nihon & Co. and Natural Step Japan entitled "Environmental Management Strategies Aiming for Sustainable Management," which was attended by 63 people.

[Supporting Production of Environmental Reports and Websites]

In 2000 we began services to help produce our clients' environmental communications materials. Services include contents planning, design, translation and media development. As shown in the picture on the right, we offer clients the most efficient means of communication, whether it be a booklet or website.

[Environmental Report Production Seminar]

Each year since 2000, we have held a seminar on practical know-how for the production of environmental reports, focusing on trends, designs and analyses of recently published reports. During our seminar held in January 2003, we received 100 participants from 90 companies.

[Joint Development of Environmental Accounting Software "Enasus"]

We developed environmental accounting software in cooperation with Shin Nihon & Co., based on standards set forth in the Environmental Ministry's Environmental Accounting Guidelines, 2002. The software systemizes calculating and tallying functions, allowing the development of precise environmental accounting systems.

For further details, please contact Shin Nihon & Co., Advisory Service Division, Environmental Auditing Dept. TEL. 03-3503-6448

Relationship with Local Communities

The DNP group strives to establish and maintain a rapport with local communities, performing a large number of activities, including beautification activities along rivers and the areas around our factories, performance of emergency response training, participation in and sponsorship of local festivals, and conducting factory inspection tours.

Major Environmental Management Activities

Hokkaido Dai Nippon Printing	Cleanup & weeding around factory	Monthly
Tohoku Dai Nippon Printing	Cleanup around factory	Monthly
Izumizaki Plant, Dai Nippon Printing Technopack	Cleanup around factory	5 times
Warabi Plant, Business Form Operation	Cleanup around factory and neighboring residential areas	7 times
Sayama Plant, Dai Nippon Printing Technopack	Cleanup and beautification of national roads	(Once-twice a month)
Dai Nippon Printing Fine Electronics & Kamifukuoka Plant, Dai Nippon Printing Precision Device	Cleanup around factory Kamifukuoka station cleanup	Daily April
Kuki Plant, Ichigaya Publication Printing Operations	Young Drivers' Club cleanup activities	Four times in May, etc.
Dai Nippon Printing Technopack Yokohama	Cleanup around factory	4 times
Tokai Dai Nippon Printing	Cleanup of Shonai River	3 times
Kyoto Plant, Dai Nippon Printing Techopack Kansai	Cleanup around factory and beautification of Omuro and Tenjinin Rivers	Daily
Kobe Plant, Dai Nippon Printing Kenzai	Cutting of grass on Arima River	Three times
Shikoku Dai Nippon Printing	Cleanup around factory	Daily
Fukuoka Plant, Kyushu Dai Nippon Printing	Cleanup of footpaths around factory	Daily

Employees of Tokai Dai Nippon Printing clean up Shonai River bank

Communication Activities with Local Communities

Hokkaido Coca-Cola Bottling	Supported local Yosakoisooran dance team Supported	June
	Kiyoda-ku Snow Festival Snow Fight	February
Tokyo Plant, Dai Nippon Printing Kenzai	Received junior high school student field study tour	July
Warabi Plant, Business Forum Operations	Company fire brigade participated in Warabi Comprehensive Emergency Response Training	August
Ichigaya Plant, Ichigaya Publication Printing Operations	Received junior high school student field study tour	Throughout year
Dai Nippon Seihon	Guidance of pedestrians at intersections during Traffic Safety Week in Spring and Autumn	
DNP Logistics	Guidance of pedestrians at intersections Won Indoor Fire Hydrant Operation Skills Section at Akabane Fire Prevention Training	April, June September
Dai Nippon Printing Technopack Yokohama	Won Chairman's Prize in Kanagawa Association of Employment of Handicapped Persons Covered group examining Yokohama Tsuzuki-ku "Charm of Tsuzuk"	November
Tokai Dai Nippon Printing	Guidance of pedestrians at intersections during Traffic Safety Week in Spring and Autumn Had booth in EPOC Campus Festival	November
Dai Nippon Printing Technopack Kansai	Participated in Kyotanabe-shi Yawata-shi Fire Department joint fire drills	November
Okayama Plant, IMS Dai Nippon	Installed audio equipment in Mitsucho Local History Resource Center	October
Okayama Plant, Dai Nippon Printing Kenzai	Improvement of audio equipment at Otsu-cho local history museum	February
Shikoku Dai Nippon Printing	Family Factory Study Tours Received junior high school student field study tour	August September
Fukuoka Plant, Kyushu Dai Nippon Printing	Participated in Minami-ku Fire Brigade Operations Competition	June

Dai Nippon Printing Technopack Kansai performs firefighting training

Internal Environmental Audits

Each site participating in the Eco-Report System and operating a manufacturing division performs "Eco-Audit" in accordance with designated procedures to confirm that the plant-do-check-action (PDCA) practices of environmental management activities is being carried out properly.

Targets To perform Eco-Audits at each site

Performance In FY 2002, we conducted eco-audits at all 54 sites.

Results of Eco-Audit

In FY 2002 we performed Eco-Audits at 54 different sites.

Of the sites designated for disclosure in this report (Please see pages 4, 5) we did not perform Eco-Audits on Okayama Plant, DNP Industrial Supplies Co., Ltd., as it was separated during the term, and DNP Facility Service Co., Ltd., as it does not have a manufacturing division.

Following the audit, the number of notifications issued for "Improvement Required," reached 45, a substantial drop form the 93 issued in the previous fiscal year. Notifications for "Improvement Consideration & Examination" stood at 241, down from the previous year's 246. Among the notifications for "Improvement Required," a number touched on legal compliance matters such as failure to build a fence around waste storage or failure to notify the authorities of specified facilities. Furthermore, we have confirmed that all sites have made the appropriate modifications in response to improvement by asking them to fill in and return a "Correction Measures Performed" sheet.

Type of notifications and requests for improvement issued in Eco-Audit

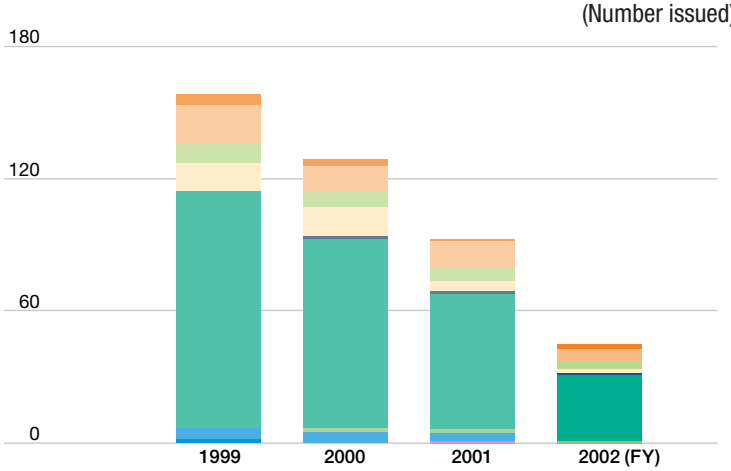
Type of notification	Content of demand for corrections
Improvement required	Submission of written description of correction measures performed or improvement plan
Improvement consideration & examination	Submission of written description of results of consideration/examination or improvement plan as necessary

2002 Eco-Audit Performance

Number of sites being audited	54
Number of attendees at sites subject to examination	345
Cumulative auditor number	137
Cumulative auditing hours	270
Number of qualified Eco-Auditors	92

Transition in Notifications for "Improvement Required" in Eco-Audits

(Number issued)



	1999	2000	2001	2002 (FY)
Air	6	3	1	2
Water quality	17	11	12	6
Noise	9	8	6	3
Vibration	9	13	5	2
Odors	0	1	1	1
Waste	108	86	62	30
Energy	6	2	1	0
Pollution prevention organization	1	5	4	1
Dioxin	0	0	1	0
Total	156	129	93	45

Examining DNP Logistics' paperwork

Examining paperwork of Kyoto Site (Electronics Division)

Inspection of Kuki Plant (Electronics Division) site

Site inspection of Dai Nippon Jushi Co., Ltd.

Content of Eco-Audits

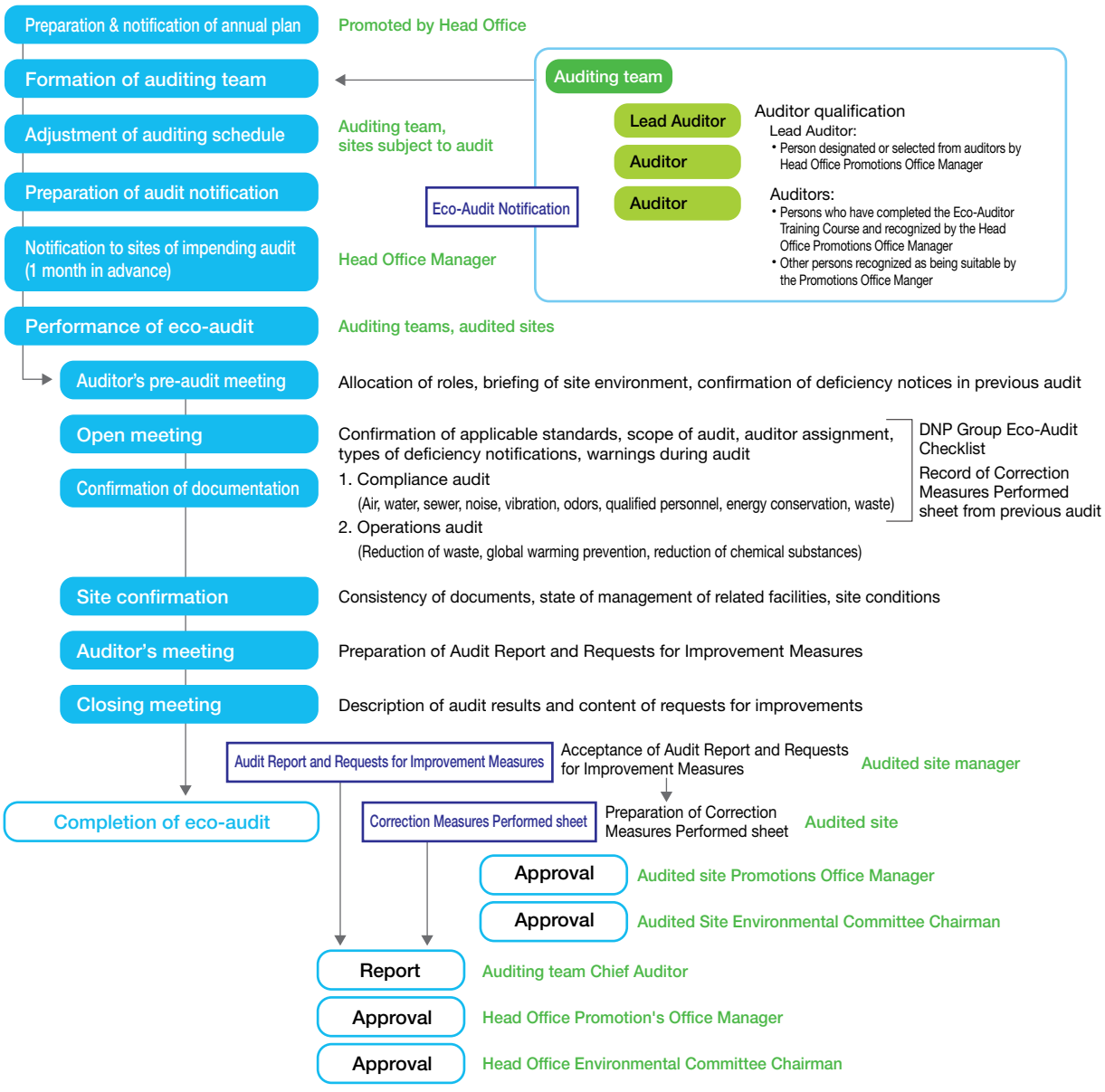
Compliance Audits

1. Document Audit	Site location Type of waste Type & number of statutory facilities Energy consumption Exhaust and wastewater channels Changes in facilities, production processes since the last audit Applicable laws State of improvement of notifications of deficiencies in previous audit State of submission of statutory notifications, reports and changes Frequency of measurement; validity of measured data Changes in management personnel due to internal transfers
2. On-site Inspections	Site location and relationship with surrounding sites Conformity to statutory facility document audit (type, number scale, etc.) State of management of individual facilities and equipment, existence of abnormalities Emergency containment in case of abnormality or emergency Site picture taking

Operations Audits

1. Confirmation of validity of site policy and established targets	Performance in previous term Consistency with DNP group policy Continuity with performance in previous term Validity of established targets
2. Confirmation of validity of implementation programs	Consistency between targets and programs Effectiveness of the programs Possibility of the programs Possibility of fulfillment of the programs Promotion system and schedule
3. Confirmation of achievement of implementation items, performance and targets	Records of activities performed State of progression of the programs Effects of the programs, performance of indicators and achievement of targets

Steps in Eco-Audit



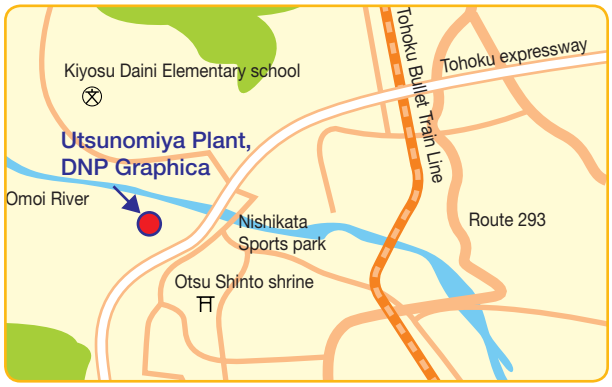
Data by Sites

Utsunomiya Plant, DNP Graphica Co., Ltd.

1062-8, Honjyo Oaza Nishikata-machi Kamitsuga-gun Tochigi Prefecture

Established: March 1998

TEL: 0282-92-1200



Review by Environmental Representative

Satoshi Yanai
Managing Director

Located within the Nishi-chukaku Industrial Park near the Omoi River in Utsunomiya, our plant has been equipped for offset printing, offset rotary printing and saddle stitching book making since March 1998 and mainly performs production activities such as printing of pamphlets, catalogues, and industrial materials.

Since FY 2000, we have participated in the Eco-Report System as a member of the environmental committee of the DNP group Commercial Printing Operations group.

Regarding reduction of waste and energy consumption, we have been focusing on improving production efficiency in connection with “Production 21,” being promoted throughout the DNP group, tracking the energy consumption of individual machines, and strict enforcement of separated recovery of waste products. At the same time, however, we are unable to avoid an annual increase in waste emissions and energy consumption, due to our gradual expansion of plant and equipment. Although we believe the efficiency of existing equipment is improving, we are unable to confirm the efficiency of new equipment, as few are operated on an individual basis. Furthermore, in all indicators, levels have fallen due to a drop in ordering unit prices.

In environmental conservation, we have seen large fluctuations in the BOD* values of wastewater, sometimes exceeding the environmental targets of the DNP group. In order to reduce the impact of wastewater treatment facilities within the industrial park, we have been devising measures to stabilize the plant wastewater treatment facilities.

In FY 2003, we will promote management of production machinery on an individual basis, aim to achieve zero energy loss and zero emissions, as well as promote programs with full staff participation aimed at achieving our voluntary standards for water and air quality.

* Biochemical Oxygen Demand is an index for indicating the amount of oxygen needed by microbes to break down the organic compounds contained in wastewater, and is also used to indicate the degree to which river water, etc., is contaminated with organic pollutants. The larger the index number, the greater the degree of pollution.

Environmental Conservation Cost

Unit: ¥1,000

Content	Capital investment	Cost
1) Prevention of air pollution	0	167
2) Prevention of water pollution	0	6,087
3) Noise prevention	0	0
4) Vibration prevention	0	0
5) Odor prevention	0	12,581
6) Prevention of global warming	0	21,529
7) Prevention of ozone layer depletion	0	0
8) Reduction, recycling, disposal of waste	0	20,362
9) Environmental management activities	0	0
10) Afforestation, beautification, cleaning	0	1,300
11) Other	0	0
Total: Environmental conservation cost	0	62,026

Air

Substance	Facility	Actual (Max)	Regulated
Dust [g/Nm³] No. K-1–K-11 Boiler	R-1-1	less than 0.002	0.1
	R-1-2	0.005	0.1
	R-2-1	0.003	0.1
	R-2-2	0.007	0.1
NOx [capacity rate: ppm]	R-1-1	109	150
	R-1-2	103	150
	R-2-1	92	150
	R-2-2	76	150

Water

Substance	Actual (Max)	Actual (Ave)	Regulated
BOD [mg/l]	24.9	10.8	25
Suspended matters [mg/l]	8.3	4.8	50
n-hexane extracts (mineral oil) [mg/l]	less than 1	less than 1	5

Release and Transfer of PRTR Chemicals

No chemicals for reporting.

Industrial Waste

Promotion Targets	Actual	Voluntary Target
Emissions per production (t/million yen)	0.215	0.227
Total unusable materials generated (t)	570.6	537.3
Final waste disposal rate (%)	0.02	0.01
Rate of unusable materials generated (%)	9.8	15.9
Recycling rate (%)	99.9	80

Prevention of Global Warming

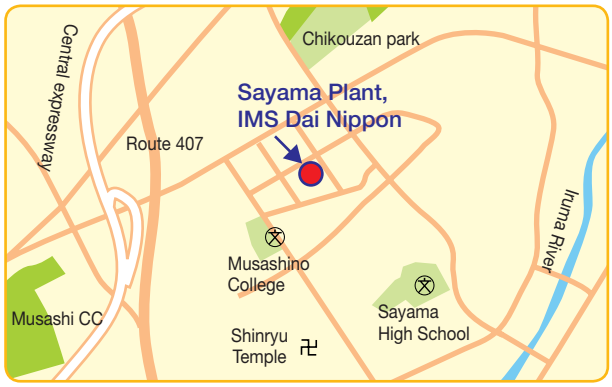
Promotion Targets	Actual	Voluntary Target
Greenhouse gas emissions (t-CO_2)	1,198	1,193
Energy Consumption Amount (kl)	687	688
Emissions per unit of production when converted to crude oil (kl/100 million yen)	237.4	226.6
CO_2 per units of production (t-CO_2/100 million yen)	413.9	393.1

Sayama Plant, I.M.S. Dai Nippon Co., Ltd.

591-2 Higashikubo Aza Kamihirose Sayama-shi, Saitama Prefecture

Established December: 1987

Tel: 042-952-9761



Review by Environmental Representative

Fumio Ootake
Sayama Plant Manager
Manging Director

Our plant is located in the Sayama industrial part near the Iruma River, where we manufacture thermal transfer ribbons and OHP sheets for use in faxes and printers, etc.

In FY 2002, we acquired ISO 14001 certification and strived to perform conservation activities in accordance with the DNP group environmental policy and Code of Conduct, as well as reduce the environmental impact of products through application of LCA.

As a measure against global warming, we converted our boilers from heating-oil to natural gas-fired systems, which produce little CO_2 emissions. (Trial operations on two boilers began in March, while trials on the remaining two began in April. Full operation began in May)

Regarding reduction of PRTR-designated substances, we implemented measures to reduce not only the toluene contained in machinery exhaust gas but that contained in the air around machines that use toluene in the production process. Thanks to these measures, we managed to reduce our year-on-year toluene emissions by 23%.

Regarding reduction of industrial waste, although we were unable to attain our target for emissions per unit of production, we achieved targets for unused product generation, unused product generation ratio, landfill use ratio and recycling ratio, thanks to efforts to improve yield* and stringent application of measures for separation, collection and disposal of unused products and waste products.

In future, we continue our efforts in global warming prevention, conservation and reduction of industrial waste.

* Yield: Ratio of products without defects out of total amount of products produced.

Environmental Conservation Cost

Unit: ¥1,000

Content	Capital investment	Cost
1) Prevention of air pollution	0	3,133
2) Prevention of water pollution	0	1,493
3) Noise prevention	0	0
4) Vibration prevention	0	0
5) Odor prevention	22,620	30,955
6) Prevention of global warming	0	5,700
7) Prevention of ozone layer depletion	0	0
8) Reduction, recycling, disposal of waste	0	36,730
9) Environmental management activities	0	1,744
10) Afforestation, beautification, cleaning	0	984
11) Other	0	0
Total: Environmental conservation cost	22,620	80,738

Air

Substance	Facility	Actual (Max)	Regulated
SOx [Nm3/h]	Boiler 1	0.52	4.54
	Boiler 2	0.57	4.33
	Boiler 3	0.56	4.76
	Boiler 4	0.5	4.26
Dust [g/Nm3]	Boiler 1	0.04	0.3
	Boiler 2	0.045	0.3
	Boiler 3	0.028	0.3
	Boiler 4	0.021	0.3
NOx [capacity rate: ppm]	Boiler 1	102	180
	Boiler 2	105	180
	Boiler 3	98	180
	Boiler 4	98	180

Water

Substance	Actual (Max)	Actual (Ave)	Regulated
BOD [mg/l]	291	124	600
Suspended matters [mg/l]	332	107	600
n-hexane extracts (mineral oil) [mg/l]	less than 1	less than 1	5
n-hexane extracts (vegetable oil) [mg/l]	10.8	3.1	30
Nitrogen [mg/l]	49.9	28.1	240
Phosphorus [mg/l]	5.4	2.4	32
Iodine consumption [mg/l]	72.5	18.1	220
Boron [mg/l]	less than 1	less than 1	10
Fluorine [mg/l]	less than 1.5	less than 1.5	8
Ammonia, ammonium compounds, nitrious acid compunds and nitrates [mg/l]	35.8	17.7	380

Release and Transfer of PRTR Chemicals

Substance	Release			Transfer	
	Air	Water	Soil	Sewer	Waste
Toluene	72	0	0	0	105

Industrial Waste

Promotion Targets	Actual	Voluntary Target
Emissions per production (t/million yen)	0.158	0.14
Total unusable materials generated (t)	1,082	1,251
Final waste disposal rate (%)	0.8	3
Rate of unusable materials generated (%)	11.9	12.2
Recycling rate (%)	99.2	97

Prevention of Global Warming

Promotion Targets	Actual	Voluntary Target
Greenhouse gas emissions (t-CO2)	11,676	12,276
Energy Consumption Amount (kl)	5,940	5,328
Emissions per unit of production when converted to crude oil (kl/100 million yen)	109.9	101.4
CO2 per units of production (t-CO2/100 million yen)	215.8	197.0

Tsuruse Plant, Ichigaya Publication Printing Operations (Information Communication Division)

311 Chikumazawa, Miyoshi-cho, Iruma-gun Saitama Prefecture

Established: July 1976

TEL: 049-258-8419

Review by Environmental Representative

Jun Nishimura
3rd Production Division
Manager,
Ichigaya Producttion Division

Our plant is located Iruma-gun, Miyoshi-cho, Saitama Prefecture, a Tokyo commuter town, and a state-of-the art factory, performing plate-making, press plates, printing, and bookmaking in one continuous operation, and is one of the key plants for gravure magazine printing.

As for environmental efforts/activities, we have actively implemented environmental facilities, including establishment and expansion of solvent recovery equipment, which allows for recycling and reuse of ink solvents, and a wastewater treatment system. Furthermore, with the aim of conserving energy and reducing CO_2 emissions, we have implemented a co-generation system that conserves energy by re-circulating waste heat to environmental facilities. These efforts have lead to an improvement in our global warming indicators as well as greenhouse gas emissions, energy consumption as well as the per-unit-of-production.

In the future, in an effort to further reduce environmental impact, we will strive to improve our solvent recovery ratio through improvement of the equipment, promote the reduction of air emissions of solvent through improvement in air conditioning systems, including those on floors with printing equipment, as well as make efforts to reduce waste through waste reduction measures. Furthermore, in regard to conservation, we will uphold laws, regulations and our own voluntary standards, and perform improvement measures in close connection with the local culture, acting as a good corporate citizen.

Environmental Conservation Cost

Unit: ¥1,000

Content	Capital investment	Cost
1) Prevention of air pollution	0	41,151
2) Prevention of water pollution	462	86,356
3) Noise prevention	0	200
4) Vibration prevention	0	220
5) Odor prevention	68,040	32,437
6) Prevention of global warming	1,680	193,047
7) Prevention of ozone layer depletion	0	158
8) Reduction, recycling, disposal of waste	4,500	41,202
9) Environmental management activities	0	1,328
10) Afforestation, beautification, cleaning	0	0
11) Other	0	0
Total: Environmental conservation cost	74,682	396,099

Economic benefit related to environmental conservation activities

Unit: ¥1,000

Content	Amount
1) Gain on sale of recyclable materials	81,780

Air

Substance	Facility	Actual (Max)	Regulated
SOx [Nm3/h]	Boiler 1	less than 0.03	14.22
	Boiler 2	less than 0.03	4.24
	Boiler 3	less than 0.21	5.26
Dust [g/Nm3]	Boiler 4	less than 0.003	0.1
	Boiler 1	less than 0.003	0.1
	Boiler 2	less than 0.005	0.05
NOx [capacity rate: ppm]	Boiler 3	67	130
	Boiler 4	70	150
	Boiler 1	8.7	70

Water

Substance	Actual (Max)	Actual (Ave)	Regulated
BOD [mg/l]	130	41.2	300
Suspended matters [mg/l]	12	3.8	60
n-hexane extracts (mineral oil) [mg/l]	less than 2.5	1.25	5
n-hexane extracts (vegetable oil) [mg/l]	4.1	2	30
Iodine consumption [mg/l]	less than 5	2.5	220
Copper [mg/l]	0.28	0.14	3
Steel [mg/l]	less than 1	0.5	10
Chrome [mg/l]	less than 0.05	0.025	2

Release and Transfer of PRTR Chemicals

Substance	Release			Transfer	
	Air	Water	Soil	Sewer	Waste
Hexavalent chromium	0	0	0	0	0.0002
1,1-dichloro-1-fluoroethane	8.2	0	0	0	0
Copper salts (water-soluble)	0	0	0	0.0055	0
Toluene	783.5	0	0	0	138.9

Industrial Waste

Promotion Targets	Actual	Voluntary Target
Emissions per production (t/million yen)	0.061	0.05
Total unusable materials generated (t)	2,159	2,320
Final waste disposal rate (%)	0.5	1
Rate of unusable materials generated (%)	12.1	11.5
Recycling rate (%)	95.1	95

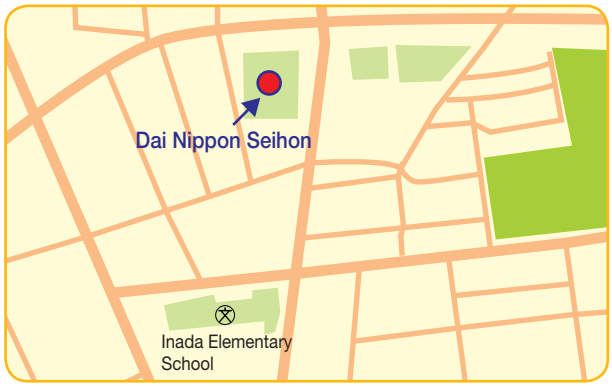
Prevention of Global Warming

Promotion Targets	Actual	Voluntary Target
Greenhouse gas emissions (t-CO_2)	3,083	3,143
Energy Consumption Amount (kl)	1,811	1,848
Emissions per unit of production when converted to crude oil (kl/100 million yen)	126.4	134.1
CO_2 per units of production (t-CO_2/100 million yen)	215.1	228

Dai Nippon Seihon Co., Ltd.
2-39-3 Kamiya Kita-ku, Tokyo

Established: May 1961

TEL: 03-3903-8806



Review by Environmental Representative

Seichi Hiraga
President

Our company is striving to perform environmental conservation measures, giving top priority to the reduction of industrial waste (promotion of 3Rs*1), energy and resource conservation, and development of eco-products, in addition to the promotion of improvements in materials, technologies, facilities and processes. We are paying particular attention to the reduction of waste, performing workplace guidance through analysis by top management and the environmental committee each month. Regarding waste, we have reduced our year-on-year used paper sales profit by 190% and reduced waste through stringent separation of PP paper*2, which we formerly treated as waste due to the mixing of PP paper and ordinary paper. In future, we will aim for further cost reductions and zero emissions through further improvement of separation methods and waste treatment methods. Regarding eco-products, we have developed a recyclable polyurethane adhesive for use in bookmaking as a substitute for conventional adhesive, which had prevented the recycling of paper. Positioning books made with the new adhesive as eco-products, we have promoted the new books among our clients. Thanks to these efforts, our year-on-year sales of environmentally-sound eco-products increased by as much as 280% to reach a total of ¥30.940 million. In addition, in PRTR-designated substances, we have been making efforts to reduce air emissions of dichloromethane, although the amount we handle is not subject to reporting. In FY 2002, thanks to measures to implement the substitute glycol ether, we reduced our year-on-year air emissions of dichloromethane by 40% to reach 155kg/year. Furthermore, although we are located in an urban area, we always make an effort to establish a rapport with local residents, and make a continual drive towards environmental conservation.

*1 3R: Acronym for the three key conservation efforts Reduce, Reuse and Recycle.

*2 PP paper: Method for protecting or improving gloss of paper by adhering polypropylene film. Often used to improve glossiness of magazine covers

Environmental Conservation Cost

Unit: ¥1,000

Content	Capital investment	Cost
1) Prevention of air pollution	0	0
2) Prevention of water pollution	0	249
3) Noise prevention	0	873
4) Vibration prevention	0	0
5) Odor prevention	0	0
6) Prevention of global warming	0	280
7) Prevention of ozone layer depletion	0	0
8) Reduction, recycling, disposal of waste	0	31,476
9) Environmental management activities	0	0
10 Afforestation, beautification, cleaning	0	0
11) Other	0	0
Total: Environmental conservation cost	0	32,878

Economic benefit related to environmental conservation activities

Unit: ¥1,000

Content	Amount
1) Gain on sale of recyclable materials	54,888

Air

Substance	Facility	Actual (Max)	Regulated
No facilities for reporting.			

Water

Substance	Actual (Max)	Actual (Ave)	Regulated
No facilities for reporting.			

Release and Transfer of PRTR Chemicals

Substance	Release			Transfer	
	Air	Water	Soil	Sewer	Waste
No chemicals for reporting.					

Industrial Waste

Promotion Targets	Actual	Voluntary Target
Emissions per production (t/million yen)	0.081	0.1
Total unusable materials generated (t)	1,463	1,500
Final waste disposal rate (%)	1.82	0.8
Rate of unusable materials generated (%)	14.3	15
Recycling rate (%)	96.6	97.7

Prevention of Global Warming

Promotion Targets	Actual	Voluntary Target
Greenhouse gas emissions (t-CO_2)	3,862	3,894
Energy Consumption Amount (kl)	2,865	2,891
Emissions per unit of production when converted to crude oil (kl/100 million yen)	69.8	64.4
CO_2 per units of production (t-CO_2/100 million yen)	94.1	87.1

Kyoto Plant, Dai Nippon Printing Fine Electronics Co., Ltd.
29-Kannondocho, Kisshoin, Minami-ku, Kyoto

Established: June 1985

TEL: 075-671-7301

Review by Environmental Representative

Kenichiro Kitagawa
Kyoto Plant Manager

Located in the semi-industrial district of Kisshoin, in the south of Kyoto, the Kyoto Plant was established as a production base for photo-masks, which are used as the negative plate for the production of ICs and LSIs. In recent years, we have been developing and producing on-chip color filters on wafers, which are used for semiconductor sensors.

Given Kyoto's significance as the place where the Protocol Agreement was adopted in December 1997, and its long history and culture, we carry out conservation measures with an added sense of social purpose.

Although our plant has relatively little environmental impact, with the expansion of operations, our consumption of energy and resources, as well as waste emissions have been increasing.

In order to address this situation, we began to make preparations for acquisition of ISO 14001 in September 2001, finally acquiring it in July 2002, and have been making ongoing improvements to our environmental management system.

Our biggest challenge at the moment is product quality and its improvement. By eliminating production of defects, part of an effort towards "Production 21," we have been making steady progress in the reduction of waste.

Along with the expansion of plant and production, our energy consumption has been increasing. Furthermore, as we have been designated an energy management plant with Type I electricity management (formerly type I) and Type II heat management since FY 2003, we have been striving to develop an energy management system.

As for waste, the unused product generation has been rising with the increase in production. We have, however, managed to improve our landfill usage rate through improvement of the recycling ratio.

In future, we intend to carry out our social responsibilities towards our stakeholders by making steady progress in all our conservation activities.

Environmental Conservation Cost

Unit: ¥1,000

Content	Capital investment	Cost
1) Prevention of air pollution	14,795	43,000
2) Prevention of water pollution	0	25,803
3) Noise prevention	0	172
4) Vibration prevention	0	6,702
5) Odor prevention	0	68
6) Prevention of global warming	175	13
7) Prevention of ozone layer depletion	0	0
8) Reduction, recycling, disposal of waste	0	1,836
9) Environmental management activities	0	1,954
10) Afforestation, beautification, cleaning	0	116
11) Other	0	89
Total: Environmental conservation cost	14,970	79,753

Air

Substance	Facility	Actual (Max)	Regulated
SOx [Nm^3/h]	Boiler 1	less than 0.02	0.63
Dust [g/Nm^3]	Boiler 4	0.0032	0.1
NOx [capacity rate: ppm]	Boiler 3	65	150

Water

Substance	Actual (Max)	Actual (Ave)	Regulated
BOD [mg/l]	48.7	10.7	600
Boron [mg/l]	0.2	0.07	1
Cadmium [mg/l]	less than 0.01	less than 0.01	0.1
Phenol [mg/l]	less than 0.5	0.21	1
Steel [mg/l]	9.72	0.42	10

Release and Transfer of PRTR Chemicals

Substance	Release			Transfer	
	Air	Water	Soil	Sewer	Waste

No chemicals for reporting.

Industrial Waste

Promotion Targets	Actual	Voluntary Target
Emissions per production (t/million yen)	0.003	0.003
Total unusable materials generated (t)	4.5	3.9
Final waste disposal rate (%)	3.9	5.1
Rate of unusable materials generated (%)	13.7	15.6
Recycling rate (%)	97.5	95

Prevention of Global Warming

Promotion Targets	Actual	Voluntary Target
Greenhouse gas emissions (t-CO_2)	827	814
Energy Consumption Amount (kl)	569	560
Emissions per unit of production when converted to crude oil (kl/100 million yen)	90.8	87.5
CO_2 per units of production (t-CO_2/100 million yen)	131.9	127.3

Kobe Plant, Dai Nippon Printing Kenzai Co., Ltd.
2446-3, Shioda, Dojocho, Kita-ku, Kobe-shi, Hyogo prefecture

Established: December 1969

TEL: 078-985-6562

Review by Environmental Representative

Katsuhiro Fukuda
Kobe Plant manager

The Kobe Plant is located near the Arima River, part of the Muko River, surrounded by rich vegetation. Starting off as Dai Nippon Can Print Co., Ltd., a can printing operation in 1970, the company was transformed into the wallpaper production base of the Construction Materials Division in 1997, changing its name accordingly.

Since its design stage, we have built environmental factors into the plant, which today contains a variety of equipment designed to conserve the environment and energy, including and exhaust gas odor-removal system, a waste-heat boiler, and a steam-absorbing cooling tower, etc.

Furthermore, in 1999 we began efforts to promote our eco-plan, in which four sectional committees promoted efforts for the reduction of environmental impact, focusing on reduction of industrial waste, energy conservation, PRTR and product environmental improvement, resulting in the acquisition of ISO 14001 certification in January 2002.

In FY 2002, following our efforts in connection with “Production 21”, being promoted on a group-wide basis, we made significant strides, improving productivity, reducing waste through reduction of processing losses, and significantly improving emissions of greenhouse gases per unit of production. We also reduced our energy consumption through rationalization of utility facilities.

Regarding release of PRTR-designated substances, we managed to reduce our emissions of toluene, which stood at 217 tons in FY 2000, to less than 5 tons, by promoting of water-based inks in our wallpaper printing operations.

In the future, we aim to curb our waste amount through further improvement of our yield ratio. Furthermore, we aim to reduce our landfill use ratio, improve our recycling ratio, and become a factory that makes emergent contributions to the recycling-oriented society.

Environmental Conservation Cost

Unit: ¥1,000

Content	Capital investment	Cost
1) Prevention of air pollution	0	4,819
2) Prevention of water pollution	0	140
3) Noise prevention	0	4,295
4) Vibration prevention	0	0
5) Odor prevention	0	2,248
6) Prevention of global warming	0	25,494
7) Prevention of ozone layer depletion	0	0
8) Reduction, recycling, disposal of waste	0	52,991
9) Environmental management activities	0	6,349
10) Afforestation, beautification, cleaning	0	15
11) Other	935	756
Total: Environmental conservation cost	935	97,107

Economic benefit of environmental conservation

Unit: ¥1,000

Content	Amount
1) Sales from recycled products	72

Air

Substance	Facility	Actual (Max)	Regulate
Dust [g/Nm^3]	Deodorizing Furnace	0.004	0.1
	Boiler	0.002	
NOx [capacity rate: ppm]	Deodorizing Furnace	36	150
	Boiler	15	

Water

No measured data available as the plant contains no facilities subject to measurement under the Sewer System Law and releases less than 50m^3 of wastewater/month.

Release and Transfer of PRTR Chemicals

No chemicals for reporting.

Industrial Waste

Promotion Targets	Actual	Voluntary Target
Emissions per production (t/million yen)	0.447	0.474
Total unusable materials generated (t)	117.8	117
Final waste disposal rate (%)	20.8	22.7
Rate of unusable materials generated (%)	12.4	13
Recycling rate (%)	12.4	14.8

Prevention of Global Warming

Promotion Targets	Actual	Voluntary Target
Greenhouse gas emissions (t-CO_2)	691	716
Energy Consumption Amount (kl)	415	430
Emissions per unit of production when converted to crude oil (kl/100 million yen)	165.7	182.3
CO_2 per units of production (t-CO_2/100 million yen)	275.8	303.8

Introduction of Overseas Sites

Summary The DNP group performs production activities in a number of overseas sites-in Southeast Asia we perform printing and binding of publications in Singapore, and make wrapping materials and toiletries in Indonesia. In Europe we produce large screens for use in rear projection TVs in Denmark; in America we produce rear projection TV-use screens in California, and finish thermal transfer ribbons in North Carolina. In these overseas countries, operate in compliance with local regulations and perform environmentally sound production.

Tien Wah Press (Pte.) Ltd.

[Tien Wah Press (Pte.) Ltd. (Established October, 1949)]

Located to the west of Singapore, Tien Wah Press (Pte.) Ltd. performs offset printing and bookmaking, its main products being children's picture books and high-quality documents bound for American and European markets.

The site obtained ISO 14001 in May 2002, the first overseas site in the DNP group to do so. Under a policy of Environment, Safety and Health (ESH), the company strives to reduce industrial waste and recycle wastepaper that arises during the production process. In addition to ISO 14001, the company has also obtained OHSAS 18001 certification.

Key Environmental Impact Items (FY 2002)

Energy consumption	Electricity	17,902,000 kWh
Waste generation	Amount emitted	6,337 t
	Amount recycled	5,576 t
	Amount sent to landfill	761 t
Chemical substance emissions		432 t
Key environmental investments	Boiler circulation water treatment system	29,000 S$
	Book off-cut waste recycling system	9,000 S$
	Preparation of solvent treatment room	15,000 S$

Factory exterior

Key environmental facilities

Wastewater treatment facilities

Waste storage facilities

Used paper recovery depot

DNP Indonesia

[P. T. Dainippon Printing Indonesia (Established February 1972)]

Located within the Progadon industrial park in the suburbs of Jakarta, P. T. Dainippon Printing Indonesia prints mainly food product wrapping and toiletries destined for markets in Indonesia, Southeast Asia and Oceania using both gravure and offset printing.

Through a private recycler, the company recycles waste products that arise during the course of production such as paper, empty cans and copper. Furthermore, as it uses liquid chemicals such as developer in the course of making printing plates, the company treats such liquids at a wastewater treatment plant before releasing.

Key Environmental Impact Items (FY 2002)

Energy consumption	Electricity	24,896,000 kWh
	Diesel	1,120 kl
	LNG	14,930 m^3
Waste generation	Amount emitted	4,970 t
	Amount recycled	2,840 t
	Amount sent to landfill	840 t
Chemical substance emissions		860 t
Key environmental investments	Waste incinerator	2,378 Mil Rp

Exterior view of factory

Key environmental facilities

Waste incinerator

Exhaust treatment system

Metal (can) recovery depot

DNP Denmark

[DNP Denmark A/S (Established January 1989)]

Located in the Karlslunde industrial park of the Gleve region in the outskirts of Copenhagen, DNP Denmark A/S manufactures large screens for use in rear projection TVs, mainly for the European market. The production process involves the following steps: The process starts with the casting stage, where acrylic lacquer* is injected into a metal mold that is hardened with heated water. In the following "surfacing stage," the acrylic sheet is coated with a UV hardened resin. Finally, the sheets are cut and packaged before being shipped. The factory has a waste incinerator.

* The basic ingredient for formation of acrylic resin, which forms through fusion of acrylic lacquer.

Key Environmental Impact Items (FY 2002)

Energy consumption	Electricity	2,383 MWh
	LNG	234,300 m^3
Waste generation	Unusable product emissions	443 t
	Amount incinerated on site	60 t
	Commercial waste	294 t
	Amount sent to landfill	89 t
Chemical substance emissions		1,352 kg
Key environmental investments	Renewal of waste containers	45,075 D/K

External view of factory

Key environmental facilities


Waste storage depot


Cyclone -type dust collectors


Incinerator

DEAL

[DNP Electronics America, LLC (Established July, 2001)]

Located in East Lake industrial park in Chulavista, a suburb of San Diego in California, 10km north of the Mexican boarder, DNP Electronics America, LLC manufactures and sells screens for rear projection TVs. Production began in April 2002. Production processes carried out by the factory include coating acrylic sheets with of UV-hardening resin, surfacing through metal molds, cutting to the specified size, packaging and shipping. Following the completion of construction, the plant invested some $16,000 on beautification of the factory grounds.

Key Environmental Impact Items (FY 2002)

Energy consumption	Electricity	1,991 MWh
	LNG	9,766 m^3
Waste generation	Amount recycled	505.9 t
	Amount sent to landfill	9.7 t
Chemical substance emissions		48.1 kg
Key environmental investments		–


Exterior view of plant

Key environmental facilities


Waste compressor


Waste storage depot

IMS America

[Dai Nippon IMS (America) Corp. (Established July 1995)]

Located in the International Business Park in Concorde, North Carolina, Dai Nippon IMS (America) Corp finishes barcode- and facsimile-use thermal transfer ribbons that have been made in Japan. Processes performed by the company include slitting to the final product size, assembly, packaging and shipment.

Key Environmental Impact Items (FY 2002)

Energy consumption	Electricity	3,113 MWh
	LNG	7,172 m^3
Waste generation	Amount sent to landfill	119 t
Chemical substance emissions		1.63 t
Key environmental investments		–


Exterior view of factory

Key environmental facilities


Waste compressor


Waste storage depot

Environmental Accounting

DNP practices environmental accounting, a highly effective tool for promoting and evaluating the effects of environmental conservation activities

Objectives

1. Environmental accounting as an environmental management tool

(1) Environmental accounting produces a breakdown of environmental conservation costs as that can be used as a reference for determining the effectiveness of environmental conservation activities.

(2) Environmental accounting data is used to determine the cost of individual environmental facilities, the Group's overall budget for environmental conservation, and the amount of investment in environmental activities.

(3) Environmental accounting is used to monitor and evaluate the effects and achievements of activities performed throughout the year in order to ensure continuous improvement in our environmental performance.

2. Environmental accounting as a tool for communicating with society

(1) Environmental accounting provides the means for public release of our environmental conservation efforts and their results.

(2) The reception to concerning our environmental accounting reports as received from shareholders, clients, and local communities we use as a reference for improving our approach to environmental conservation.

Basis for calculation of environmental accounting information

1. Period covered

   April 1, 2002 through March 31, 2003 (Environmental conservation facilities are those considered as of March 31, 2002)

2. Scope of coverage

   Environmental accounting was applied to the companies designated for consolidated accounting purposes, including the group's domestic manufacturing companies (43 companies and 54 sites), one distribution company and one meal catering company, but excluding ten other companies, including those related to trading, real estate sales, teaching material sales and software development. Furthermore, we excluded one company that has yet to begin production and two other companies bought during the term, as the system for collecting data and the companies is still under preparation and the companies are deemed to be insignificant at this stage. The two companies will be included in our environmental accounting report next fiscal year. (Please refer to pages 4 and 5).

3. Monetary unit

   All monetary figures are expressed in millions of yen, rounded off to the nearest million.

4. Announcement format

   The format for presentation this fiscal year is the Comprehensive Benefits Comparison Format as set forth in the Ministry of the Environment's "Environmental Accounting Guidelines, FY 2002." Environmental conservation equipment and sales of environmentally sound products are also shown.

5. Basis for calculation of costs of environmental conservation activities

   (1) The environmental conservation costs include depreciation expenses for investments. Depreciation is applied in accordance with corporate tax law regulations.

   (2) Personnel costs for full-time workers were calculated at the average labor costs per person, while personnel costs for workers holding two or more posts were calculated at 1/10 or 1/5 the average personnel cost per person, depending on the worker's assigned duty.

   (3) R&D costs are the total costs incurred by our 11 R&D centers (10 in FY 2000 and 2001) in the development of environmentally sound products and manufacturing equipment.

6. Basis for calculation of benefits of environmental conservation activities

   (1) DNP uses consumption per added-value as an indicator for the volume of resources (energy and water) spent on business activities, as well as for the volume of waste materials and CO_2 emissions. Furthermore, the DNP group uses the added-value total of the company concerned as an indicator of the volume of business activities, given that companies within the group perform product transactions. The added-value amount is calculated pursuant to the "Management Analysis of Japanese Corporations" issued by the Ministry of the Economy, Trade and Industry.

   (2) The recycle rate of waste materials represents the percentage of the weight of unwanted plant-generated materials that were recycled on- and off-site.

   (3) Benefits of up/downstream costs are the effects of reduced CO_2 emissions when disposing of containers or packaging.

   (4) Benefits of environmental impact of transportation are the benefits of reduced CO_2 emissions during transportation of products by the distribution companies included in DNP's consolidated accounting.

7. Basis for calculation of economic benefits of environmental conservation measures

   (1) We have calculated the benefits of energy- and resource-saving efforts using the following formula:

   (Energy consumption per added-value amount or waste processing cost per added value of benchmark period – those of this period) × value-added amount

   (2) Calculation of business activity amount was performed using the added-value amount indicated in 6 (1).

   (3) For unit consumption, we used energy costs/added-value amount and waste disposal costs/added value amount.

   (4) For the benchmark period, the consumption or cost per value is the overall average of the three years prior to this fiscal year. In calculating unit consumptions for the benchmark period, however, the energy cost was adjusted to this fiscal year's price level due to dramatic price fluctuations.

Results of Our Environmental Accounting

■ Environmental conservation cost

(Unit: ¥ millions)

Category	Expense		Investment		Details of major efforts	Pages with related information
	FY 2001	FY 2002	FY 2001	FY 2002		
(1) Business area costs						
Pollution prevention costs	1,313	663	2,267	2,267	Changing fuel (to LPG), adding deodorizing equipment and waste treatment facilities	31, 32
Global environmental conservation costs	256	1,332	924	1,000	Controlling room temperature and lighting, adding inverters to electrical equipment and implementing co-generation systems	38, 39
Resource recycling costs	79	382	3,163	3,076	Sort-and-recycle; zero-emission (using RPF as cement material) Use of recycled water	34–37
(Total business area costs)	**1,648**	**2,377**	**6,354**	**6,343**		
(2) Up/downstream costs			195	194	Designing environmentally friendly products; bearing container and packaging recycle costs	43, 44, 46
(3) Administration costs			2,044	2,014	Cost of ISO 14001 judging and registration fees; environmental measurement costs; cost of preparing environmental reports	19–22, 40–42
(4) R&D costs			1,704	1,872	Research and development of environmentally sound products and production methods	45
(5) Social activity costs			12	14	Planting of trees and landscape gardening outside the plant site; supporting activities of environmental conservation organizations*	55
(6) Environmental remediation costs			0	0	None	
Total	**1,648**	**2,377**	**10,309**	**10,437**		

*Includes ¥400,000 for WWF and ¥200,000 for Japan Greenery Research and Development Center

■ Environmental conservation costs to total costs ratio

(Unit: ¥ millions)

Category	Consolidated total costs	Environmental conservation costs	Percentage of environmental conservation costs	Details of major environmental conservation costs	Pages with related information
Amount invested during the said period	73,789	2,377	3.22%	Co-generation system, solvent and exhaust gas recovery and refining equipment, water recycling system, etc.	37–39
R&D costs during the said period	24,097	1,872	7.77%	Non-vinyl chloride decorative sheets, de-chlorinating barrier film, biodegradable plastic,	45–50

■ Environmental benefits of environmental conservation activities

(Unit: ¥ millions)

Details of benefits	Category of index showing benefits	Index value FY 2001	Index value FY 2002	Year on year Difference	Remarks	Pages with related information
(1) Benefits of costs incurred at the area of business						
Benefits arising from supplied resources						
Supplied energy	Energy consumption (TJ)	18,119	18,069	– 50	All consumed energy was converted into average value in calories	38
	Added-value unit consumption for the above (TJ/100 million yen)	4.08	3.94	– 0.14	Energy reduced by 0.14TJ per 100 million yen in added value	38
Supplied water	Water usage (in thousands of tons)	14,343		– 857	Year-on-year reduction of 6.0%	37
	Added-value unit consumption for the above (1,000 ton/100 million yen)	3.23	2.94	– 0.29	Water reduced by 290 m^3 per 100 million yen	
Supplied main raw materials (paper, plastic, metal, etc.)	Supplied amount (in thousands of tons)	2,465	2,473	8	Total weight of paper, plastic, ink and metals	26
	Amount of unwanted materials generated/supplied amount (%)	15.4	15.1	– 0.3	Ratio of unwanted materials that are main raw materials	34
Improvements in environmental impacts						
Emissions to the atmosphere	SOx emission (tons)	74.5	56.5	– 18.0	Calculated from fuel used	32
	NOx emission (tons)	620.4	626.7	6.3	Calculated from supplied energy	32
	Emissions of negative environmental impact substances (354 PRTR substances) (t)	5,115	3,521	– 1,594	Total of 10 substances subject to be reported	33
Discharges to water areas	COD discharge (ton)	32.3	41.1	8.8	Calculated from the amount of discharged water and average concentration	32
	Discharges of environmentally hazardous substances (354 PRTR substances) (t)	9.6	0	– 9.6	One substance discharged in FY 2001 (Hydrazine)	33
Discharges of waste materials	Generated unwanted materials (in thousands of tons)	519.4	506.1	– 13.3	Including unwanted materials other than main raw materials	35
	Discharged waste materials (in thousands of tons)	105.0	96.8	– 8.2	Total waste subcontracted to waste disposal company	35
	Added-value unit consumption for the above (1,000 ton / 1 million yen)	0.236	0.211	– 0.025	Waste materials reduced by 25kg per million yen in added value	34
	Recycle rate (%)	74.2	77.6	3.4	Including heat recovered on site	34
	Amount of pollutants transferred or released (of 354 substances subject to PRTR Law) (tons)	2,400	2,290	– 110	Total for 21 substances reported	33
Emissions of greenhouse- gasses	Emissions of greenhouse- gasses (1,000 t-CO_2)	850	843	– 7.0	Including amounts emitted by incinerators and drying furnaces.	38
	Added-value unit consumption for the above (Ton/100 million yen)	191.3	183.6	– 7.7	7.7 tons of emissions reduced per 100 million yen in added value	38
(2) Benefits of upstream / downstream costs						
Benefits related to goods produced by business activities						
CO_2 emissions at the time of product disposal.	CO_2 emissions (1,000 t-CO_2)	579.5	384.0	– 195.5	Emitted at incineration and recycling of used containers and packaging	47
	CO_2 emissions / volume of products shipped	2.24	1.48	– 0.76	CO_2 emissions per ton of products reduced by 0.76 ton	
(3) Other environmental conservation benefits						
Improvements in environmental impact of transportation						
	CO_2 emitted during product transportation (tons)	5,350	4,730	– 620	CO_2 emissions reduced by 620 tons	51
	CO_2 emitted during transportation: CO_2 /(Transportation weight × Transportation distance) (ton/million ton·km)	96	85	– 11	CO_2 emissions reduced by 11 tons for each ton of goods transported 1 million km	51

■ Economic benefits of environmental conservation activities

(Unit: ¥ millions)

Details of benefits	Index value FY 2001	Index value FY 2002	Year on year Difference	Remarks	Pages with related information
(1) Increased sales					
Economic benefits of R&D costs					
Sales of environmentally friendly products	75,731	101,926	26,195	34.6% increase from FY 2000	44
(2) Increased income					
Benefits of resource recycling costs					
Business income from recycling unwanted materials	919	1,080	161	Saleable unwanted materials increased	34,35
(3) Cost savings					
Benefits of global environmental conservation and resource recycling costs					
Saving energy costs by energy conservation	1,049	1,503	454	Energy cost unit consumption substantially improved.	38, 39
Saving waste-materials processing costs by resource conservation	917	650	– 267	Processing cost unit consumption improved by reducing the volume of waste generated	34, 35

Evaluation of environmental accounting performance data for FY 2002

Environmental conservation costs and measures

1. Year-on-year investments in environmental conservation equipment increased by 44.2%, or ¥729 million. New large-scale facilities included a water-recycling system and a co-generation system, both of which accounted for 60% of this amount.
2. Regarding environmental conservation costs, resource recycling cost stood at ¥87 million, a year-on-year reduction of 2.8%, anti-global warming costs stood at ¥76 million, a year-on-year increase of 8.2%, while environmental product R&D costs stood at ¥168 million, a year-on-year increase of 9.9%. Upstream/downstream costs stood at ¥194 million, of which ¥190 was paid to the Japan Container & Packaging Recycling Association in recycling fees.

Environmental benefits of environmental conservation activities

1. In FY 2002, we made a ¥1.3 billion investment in container recovery and removal facilities, which resulted in a 1,594t reduction in the atmospheric release of substances subject to the PRTR Law.
2. Sox emissions were reduced by 24.2% following our conversion to LNG fuel.
3. All benefits related to supplied resources such as energy, water and main raw materials improved.
4. Efforts towards reduction and recycling began to produce results. Non-commecial waste fell by 13,300t, waste fell by 8,200t, and waste fell by 25kg for every million yen in added value.

Economic benefits of environmental conservation activities

1. Sales of environmentally friendly products increased 34.6% greatly exceeding the target increase of 10%.
2. Year-on-year income from recycling unwanted materials increased by ¥161 million.
3. Benefits of cost reduction are calculated according to “(7) Basis for calculation of economic benefits of environmental conservation measures” on the preceding page.
   In FY 2002, the added-value amount increased 6.0% from the benchmark period (Average for three-years between FY 1999 and FY 2001). Furthermore, we achieved substantial cost reductions due to reductions in energy consumption and waste emissions as well as an improvement in the unit consumption. It should be noted, however, that the savings in waste treatment expenditure were lower as the improvement in unit consumption for the benchmark period was less than the previous year.

Future issues

1. In order to reduce the atmospheric emissions of toluene to 500 t/year or less, it will be necessary to implement solvent recovery and removal equipment.
2. Eliminate all forms of loss from the entire production process through “Production 21,” and strive to further improve environmental efficiency. (Please refer to page 25)

Environmental Targets for FY 2003

Following environmental performance through to FY 2002, the DNP Group Environmental Committee revised our "Waste Reduction Targets," including that for reduction of waste emissions per unit of production and unused product generation amount, in a bid to strengthen our efforts to address environmental issues in its meeting held in March 2003.

DNP Group Environmental Targets

Development and sale of environmentally conscious products

- To improve year-on-year sales of environmentally conscious products by 10%

Green purchasing

- To improve the year-on-year purchasing ratio of products deemed to be green according to company standards by 2.5%
- To improve the year-on-year purchasing ratio of general products (office supplies & fixtures) bearing environmental labels such as the Eco-Mark by 3.0%

Reduction of industrial waste

To achieve the following targets by FY 2005

- Reduce waste emissions per unit of production (Waste emissions/production) by 40% from the FY 2000 level
- Reduce the amount of unused materials generated by 25% from the FY 2000 level
- Achieve zero emissions at 20 sites
- Improve the reduce ratio (Unused product generation amount/total material inputs) by 20% from the FY 2000 level
- Achieve a recycling ratio (Recycle amount/unused product generation amount) of 80%

Global warming prevention

To achieve the following targets by FY 2010

- To maintain total energy consumption at the FY 2000 level
- To maintain greenhouse gas emissions a the FY 2000 level
- To reduce energy consumed per unit of production (Crude-oil converted energy consumption amount/production) by 15% from the level in FY 1990
- To reduce CO_2 emissions per unit of production (CO_2/production) by 20% from the level in FY 1990

PRTR

- To reduce air emissions of toluene for the entire DNP group to less than 500 tons/year by FY 2004
- To reduce emissions and transfers of items designated as Class I Chemical Substances (except toluene) under the PRTR law to 50% of the FY 2000 level by FY 2004

Environmental conservation

To achieve the following targets by FY 2005

- To keep maximum densities of gas emissions subject to emissions regulations at 70% of the required standard or less
- To keep maximum densities of wastewater discharges subject to wastewater regulations at 70% of the required standard or less
- To keep the maximum density of odors at site perimeters at 70% of the required standard or less
- To keep the maximum level of noise and vibration at our site perimeters at 95% of the required standard or less

Prevention of soil or underground water contamination

- To execute the measures prescribed in the DNP group Guideline for Measures against Ground Contamination

Office environment

- To improve the used paper recovery ratio by 65% in comparison to the rate for municipal waste

Reduction of environmental impact incurred during transport

To achieve the following targets by FY 2010

- To reduce CO_2 emissions per unit of transport (CO_2 emissions/transported weight/distance traveled) by 5% from the level in FY 2000
- To reduce fuel consumption per unit of sales (Fuel consumed/sales) by 20% from the amount in FY 2000

Environmental management system

- To achieve ISO 14001 certification at 30 sites by FY 2005
- To perform Eco-Audits at all sites

Milestones in Environmental Activities

1972	Establishes the Environmental Department within the head office to promote pollution prevention measures and communication with local residents
1990	Makes new efforts to deal with global environmental issues by establishing the Eco-Plan Promotion Office within the Environmental Department
1992	Establishes the DNP Group Codes of Conduct and the DNP Group Employee Codes
1992	Establishes the Eco-Plan Promotion Targets, the fundamental voluntary plan based on the Environmental Declaration of the Codes of Conduct, and starts activities by 4 subcommittees
1993	Starts the Eco-Report System, which is part of the DNP Group environmental management system
1994	Remodels and expands the Environmental Department into the Environment & Product Liability Department to strengthen our efforts towards environmental issues, including taking responsibility for the disposal of products we produce
1995	DNP wins the International Trade and Industry Minister' s Prize in the "Fourth Global Environmental Awards", which commend companies and groups that contribute to conservation of the global environment. (The Awards was established in 1991 by the Japan Industrial Journal and the Fuji Sankei Group, with special support by WWF Japan and sponsorship by the Ministry of the Environment, the Ministry of the Economy, Trade and Industry, and the Japan Federation of Economic Organizations.)
1996	Begins performing the Eco-Audit, the internal environmental audit performed by the Eco-Plan Promotion Office to upgrade the Eco-Report System
1997	Okayama Plant, the Information Media Supplies Operations becomes the first in the printing industry to acquire ISO 14001 certification
1998	Mihara Plant, the Display Components Operations acquires ISO 14001 certification
2000	The Eco-Plan Promotion Office is dismantled and replaced with the DNP Group Environmental Committee to strengthen the system for promoting environmental activities
2000	The affiliate DNP Facility Service Co., Ltd. becomes the first in the world to be certified as a comprehensive system with quality, environment, office safety and HACCP*1
2000	Okayama Plant, the Decorative Materials Operations acquires ISO 14001 certification
2001	Tokai Dai Nippon Printing Co., Ltd., and Sayama Plant, Dai Nippon Printing Technopack Co., Ltd. acquires ISO 14001 certification

[Major Activities in FY 2002]

2002	Kobe Plant, the Decorative Materials Operations, The Inctec Inc. (Tokyo, Kansai, and Utsunomiya Plants), and Ushiku Plant, the Business Form Operations acquires ISO 14001 certification
Mar. 2002	Holds DNP Group Environmental Committee meeting (report of activities for FY 2001 and review of FY 2002 Activity Policies)
Apr. 2002	Performed orientation training for new employees
May 2002	Released Eco-Report No. 18
	Performed Eco-Report seminar at sites participating in the
	Performed work training program for new employees hired during the year
	Tien Wah Press (Pte.) Ltd. acquires ISO 14001 certification
June 2002	Kyushu Dai Nippon Printing Co., Ltd., Chikugo Plant acquired ISO 14001 certification
July 2002	Eco-Audit performed at one site
	Semiconductor product Operations Division , Kyoto plant acquires ISO 14001 certification
Aug. 2002	Eco-Audits performed at seven sites
	DNP Group Environmental Committee meeting held (Report of activities in first half of FY 2002)
Sept. 2002	Eco-Audits performed at 12 sites
Oct. 2002	Data recording material Operations Division, Sayama plant acquires ISO 14001 certification
	Tokai Dai Nippon Pringing. acquired FSC-CoC certification*2
	Performed work training program for new employees hired during the year
Nov. 2002	Eco-Report No. 19 issued
	Performed Eco-Report seminar at sites participating in the Eco-Report system
Dec. 2002	Eco-Audit performed at two sites
	Technical Seminar A held
Jan. 2003	Received Prize for Excellence in Environmental Report Division of "6th Environmental Report Awards"
	Eco-Audits performed at six sites
	Technical Seminar A held
Feb. 2003	Technical Seminar A held
	Eco-Audits performed at 14 sites
Mar. 2003	DNP Group Environmental Committee meeting held (Report of activities in FY 2002; discussed and resolved policy for efforts in FY 2003)
	Established DNP Eco-label, a Type II environmental label
	DNP Media Create Kansai Co., Ltd. Ono plant acquires ISO 14001 certification
	Information Media Supplies Operations sublimation transfer ribbon type II (ID-3BP 250 screen/ABS core ID-3BP 250/PS core) achieves certified registration of Type III Environmental Eco-Labels
	Eco-Audits performed at 12 sites

*1 HACCP: Hazard Analysis Critical Control Point: Food product hygiene management system developed in America to ensure the safety of space food. It is also an international standard for food hygiene adopted by the committee jointly established by WHO and the United Nations Food and Agriculture Organization.

*2 FSC-CoC: Please refer to page 8.

DNP Group PRTR Data by Site (Performance in FY 2002)

The following data was reported to the national authorities as the amounts of PRTR-designated chemicals handled by the DNP group in FY 2002.

(Unit : Tons / year)

Substance name	Substance number	CAS No.	Handling	Consumption	Disposal	Emissions			Transferred		Recycled
						Air	Public waterways	Soil	Sewage	Waste	
[Ichigaya Plant, Ichigaya Publication Printing Operations] 1-1-1, Kaga-cho Ichigaya, Shinjuku-ku, Tokyo 162-8001											
Silver and its water soluble compounds	64	–	10.0	0.0	7.7	0.0	0.0	0.0	0.2	0.0	2.2
Hexavalent chromium compounds	69	–	1.6	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0
1,1 Dichloro-1-fluroethane	132	1717-00-6	29.3	0.0	0.0	29.3	0.0	0.0	0.0	0.0	0.0
Dichloromethane	145	1975-9-2	22.2	0.0	0.0	18.7	0.0	0.0	0.0	3.5	0.0
Water soluble copper salts	207	–	13.6	0.0	13.5	0.0	0.0	0.0	0.1	0.0	0.0
Toluene	227	108-88-3	315.1	0.0	0.0	193.1	0.0	0.0	0.0	23.4	98.6
Hydroquinone	254	123-31-9	10.9	0.0	0.0	0.0	0.0	0.0	10.9	0	0.0
[Turuse Plant, Ichigaya Publication Printing Operations] 311, Chikumazawa Miyoshi-machi Iruma-gun, Saitama Prefecture 354-8558											
Hexavalent chromium compounds	69	–	4.5	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0
1,1 Dichloro-1-fluroethane	132	1717-00-6	8.2	0.0	0.0	8.2	0.0	0.0	0.0	0.0	0.0
Water soluble copper salts	207	–	62.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.5
Toluene	227	108-88-3	3,060.5	0.0	0.0	783.5	0.0	0.0	0.0	138.9	2,138.20
[Shiraoka Plant, Dai Nippon Offset Co., Ltd.] 1100-1, Tateno, Aza, Shinozu, Ooaza, Shiraokamachi, Minamisaitama-gun, Saitama Prefecture 349-0204											
Dioxins	179	–	–	0.0	0.0	0.02425mg-TEQ	0.0	0.0	0.0	1.78680mg-TEQ	0.0
[Warabi Plant, Business Form Operations] 4-5-1, Nishiki-cho, Warabi-shi, Saitama Prefecture 335-0005											
Dichloromethane	145	1975.9.2	6.2	0.0	0.0	6.2	0.0	0.0	0.0	0.0	0.0
Dioxins	179	–	–	0.0	0.0	1.10mg-TEQ	0.0	0.0	0.0	77.0mg-TEQ	0.0
Toluene	227	108-88-3	19	0.0	18.5	0.5	0.0	0.0	0.0	0.0	0.0
[Nara plant, Business Form Operations] 712-10, Touin, Ooaza, Kawanishi-cho, Shiki-gun, Nara Prefecture 335-0005											
Toluene	227	108-88-3	15.3	0.0	14.2	0.8	0.0	0.0	0.0	0.3	0.0
[Dai Nippon Printing Technopack Yokohama Co., Ltd.] 3500, Ikebe-cho, Tsuzuki-ku, Yokohama-shi, Kanagawa Prefecture 224-0053											
Dioxins	179	–	–	0.0	0.0	0mg-TEQ	0.0	0.0	0.0	380mg-TEQ	0.0
Toluene	227	108-88-3	674.1	0.0	597.7	0.0	0.0	0.0	0.0	73.4	0.0
[Sayama Plant, Dai Nippon Printing Technopack Co., Ltd.] 591-10, Higashikubo, Kamihirose, Sayama-shi, Saitama Prefecture 350-1321											
Hexavalent chromium compounds	69	–	1.2	1.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Water soluble copper salts	207	–	18.3	14.7	0.0	0.0	0.0	0.0	0.0	3.7	0.0
Toluene	227	108-88-3	1,120.4	0.0	564.6	433.6	0.0	0.0	0.0	122.2	0.0
[Dai Nippon Cup Co., Ltd.] 591-10, Higashikubo, Kamihirose, Sayama-shi, Saitama Prefecture 350-1321											
Toluene	227	108-88-3	14.1	0.0	0.0	11.7	0.0	0.0	0.0	2.4	0.0
[Izumizaki Plant, Dai Nippon Printing Technopack Co., Ltd.] 7, Chukaku Kogyo Danchi, Izumizaki-aza, Ooaza, Izumizaki-mura, Nishishirakawa-gun, Fukushima Prefecture 969-0101											
Hexavalent chromium compounds	69	–	2.1	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dioxins	179	–	–	0.0	0.0	0.00046mg-TEQ	0.0	0.0	0.0	4.6968mg-TEQ	0.0
Water-soluble copper salts	207	–	27.6	27.5	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Toluene	227	108-88-3	1,787.6	0.0	687.6	478.1	0.0	0.0	0.0	621.9	0.0
[Sagami Yoki Co., Ltd.] 1000, Narita, Odawara-shi, Kanagawa prefecture 250-0862											
Dioxins	179	–	–	0.0	0.0	0.0003mg-TEQ	0.0	0.0	0.0	0.0	0.0
[Kashiwa Plant, Dai Nippon Polymer Co., Ltd.] 409, Juyoni, Kashiwa-shi, Chiba Prefecture 277-8565											
Dioxins	179	–	–	0.0	0.0	5mg-TEQ	0.0	0.0	0.0	14mg-TEQ	0.0
[Tokyo Plant, Dai Nippon Printing Kenzai Co., Ltd.] 311, Chikumazawa Miyoshi-machi Iruma-gun, Saitama Prefecture 354-8558											
Ethyl benzene	40	100-41-4	7.7	0.0	0.0	6.6	0.0	0.0	0.0	1.1	0.0
Ethylene glycol monoethyl ether	44	110-80-5	5.4	0.0	0.0	4.7	0.0	0.0	0.0	0.8	0.0
Ethylene glycol monomethyl ether	45	109-86-4	300.8	0.0	0.0	258.4	0.0	0.0	0.0	42.4	0.0
ε-caprolactam	61	105-60-2	7.6	6.2	0.0	0.0	0.0	0.0	0.0	1.3	0.0
Xylene	63	1330-20-7	18.1	0.0	0.0	15.6	0.0	0.0	0.0	2.6	0.0
Hexavalent chromium	69	–	1.3	1	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Toluene	227	108-88-3	313.4	0.0	0.0	269.2	0.0	0.0	0.0	44.2	0.0
Bis (2-ethylhexyl) phthalate	272	117-81-7	6.6	5.5	0.0	0.0	0.0	0.0	0.0	1.2	0.0
[Okayama Plant, Dai Nippon Printing Kenzai Co., Ltd.] 642-8, Ugaki, Mitsu-cho, Mitsu-gun, Okayama Prefecture 709-2121											
Ethyl-benzene	40	100-41-4	9.5	0.0	8.3	0.0	0.0	0.0	0.0	1.2	0.0
Ethylene glycol monoethyl ether	44	110-80-5	6.2	0.0	5.5	0.0	0.0	0.0	0.0	0.7	0.0
Ethylene glycol monomethyl ether	45	109-86-4	64.4	0.0	56.1	0.3	0.0	0.0	0.0	7.9	0.0
Xylene	63	1330-20-7	31.4	0.0	27.5	0.1	0.0	0.0	0.0	3.7	0.0
Hexavalent chromium	69	–	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Toluene	227	108-88-3	269.4	0.0	235.8	1.2	0.0	0.0	0.0	32.3	0.0
[Tokyo Plant, Dai Nippon Ellio Co., Ltd.] 4013, Nakatsu, Aikawa-cho, Aiko-gun, Kanagawa Prefecture 243-0303											
Ethyl-benzene	40	100-41-4	84.2	0.0	83.6	0.6	0.0	0.0	0.0	0.0	0.0
Xylene	63	1330-20-7	285.8	0.0	107.8	0.7	0.0	0.0	0.0	0.0	177.2
Toluene	227	108-88-3	27	0.0	6.5	0.4	0.0	0.0	0.0	0.0	20.2
Bis (2-ethylhexyl) phthalate	272	117-81-7	14.7	5.5	8.8	0.4	0.0	0.0	0.0	0.0	0.0
[Osaka Plant, Dai Nippon Ellio Co., Ltd.] 19-5, Shoei-cho, Neyagawa-shi, Osaka Prefecture 572-8522											
Ethyl-benzen	40	100-41-4	19.5	0.0	3.9	2.1	0.0	0.0	0.0	0.0	13.5
Xylene	63	1330-20-7	73.5	0.0	33.4	4.6	0.0	0.0	0.0	0.0	35.4
Toluene	227	108-88-3	16.6	0.0	1.2	0.2	0.0	0.0	0.0	0.0	15.2
Bis (2-ethylhexyl) phthalate	272	117-81-7	5.2	2.7	2.4	0.0	0.0	0.0	0.0	0.0	0.0

(Unit : Tons / year)

Substance name	Substance number	CAS No.	Handling	Consumption	Disposal	Emissions			Transferred		Recycled
						Air	Public waterways	Soil	Sewage	Waste	
[Kamifukuoka Plant, Dai Nippon Printing Fine Electronics Co., Ltd. / Dai Nippon Printing Precision Device Co., Ltd.] 2-2-1, Fukuoka, Kamifukuoka-shi, Saitama Prefecture 356-8507											
2-Aminoethanol	16	141-43-5	18.3	0.0	0.0	0.0	0.0	0.0	4.9	13.4	0.0
Chromium and chromium (III) compounds	68	–	45.8	18.8	0.0	0.0	0.0	0.0	0.0	16.4	10.7
Hexavalent chromium compounds	69	–	3.2	0.5	2.6	0.0	0.0	0.0	0.0	0.0	0.0
Water-soluble copper salts	207	–	140	0.0	0.0	0.0	0.0	0.0	0.0	140	0.0
Nickel	231	7440-02-0	208.5	156.4	0.0	0.0	0.0	0.0	0.0	0.0	52.0
Nickel compounds	232	–	64.5	0.0	0.0	0.0	0.0	0.0	0.0	64.5	0.0
Manganese and its compounds	311	–	7.4	3.0	0.0	0.0	0.0	0.0	0.0	2.6	1.7
[Kuki Plant, Dai Nippon Printing Fine Electronics Co., Ltd. / Dai Nippon Printing Precision Device Co., Ltd.] 1-5, Kiyoku-cho, Kuki-shi, Saitama Prefecture 346-0035											
Ethylene glycol	43	17-21-1	11.4	11.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ethylene glycol monoethyl ether	44	110-80-5	8.6	0.0	8.6	0.0	0.0	0.0	0.0	0.0	0.0
Chromium and chromium (III) compounds	68	–	11.0	0.0	0.0	0.0	0.0	0.0	0.0	11.0	0.0
Hexavalent chromium compounds	69	–	11.3	0.3	11.0	0.0	0.0	0.0	0.0	0.0	0.0
Water-soluble copper salts	207	–	49.2	4.8	0.0	0.0	0.0	0.0	0.0	0.0	44.4
Nickel compounds	232	–	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
[Mihara Plant, Dai Nippon Printing Precision Device Co., Ltd.] 73-1, Obara, Nutanishi-cho, Mihara-shi, Hiroshima Prefecture 729-0473											
Chromium and chromium (III) compounds	68	7440-47-3	30.0	0.3	0.0	0.0	0.0	0.0	0.0	25.8	3.9
Hexavalent chromium compounds	69	7789-9-5	25.8	17.8	8	0.0	0.0	0.0	0.0	0.0	0.1
Cobalt and its compounds	100	–	33.9	11.1	0.0	0.0	0.0	0.0	0.0	0.0	22.8
2-Enthoxyethyl acetate	101	111-15-9	9.3	0.0	0.0	9.3	0.0	0.0	0.0	0.0	0.0
Nickel	231	7440-02-0	2,669.3	1,005.2	102.5	0.0	0.0	0.0	0.0	0.0	1,561.6
Nickel compounds	232	–	815.3	0.8	0.0	0.0	0.0	0.0	0.0	102.5	712.0
[F.D.P. Dai Nippon Co., Ltd.] 1-317-6, Toyonodai, Ootone-machi, Kita Saitama-gun, Saitama prefecture 349-1148											
Chromium and chromium (III) compounds	68	7440-47-3	8.5	0.6	0.0	0.0	0.0	0.0	0.0	2.7	5.3
[Okayama Plant, DNP Industrial Supplies Co., Ltd.] 642-8, Ugaki, Mitsu-cho, Mitsu-gun, Okayama Prefecture 709-2121											
Cobalt and its compounds	100	–	186.5	152.6	0.0	0.0	0.0	0.0	0.0	3.0	30.9
Toluene	227	108-88-3	172.3	0.0	111.7	0.6	0.0	0.0	0.0	60.0	0.0
[Kyoto Plant, Dai Nippon Printing Technopack Kansai Co., Ltd.] 10, Kamikeibu-cho, Uzumasa, Ukyo-ku, Kyoto-shi, Kyoto-fu 616-8533											
Hexavalent chromium compounds	69	1333-82-0	2.2	1.2	1	0.0	0.0	0.0	0.0	0.0	0.0
Toluene	227	108-88-3	1,096.0	0.0	931.8	64.3	0.0	0.0	0.0	99.9	0.0
[Tanabe Plant, Dai Nippon Printing Technopack Kansai Co., Ltd.] 29-1, Nishikitamukai, Osumi, Kyo Tanabe-shi, Kyoto-fu 610-0343											
Dioxins	179	–	–	0.0	0.0	7.28mg-TEQ	0.0	0.0	0.0	182.17mg-TEQ	0.0
Toluene	227	108-88-3	76.9	0.0	68.9	0.3	0.0	0.0	0.0	7.7	0.0
[Sayama Plant, I.M.S. Dai Nippon Printing Co., Ltd.] 591-2, Higashikubo, Kamihirose, Sayama-shi, Saitama Prefecture 350-1321											
Toluene	227	108-88-3	1,144.7	0.1	967.9	71.8	0.0	0.0	0.0	104.9	0.0
[Okayama Plant, I.M.S. Dai Nippon Printing Co., Ltd.] 642-8, Ugaki, Mitsu-cho, Mitsu-gun, Okayama Prefecture 709-2121											
Toluene	227	108-88-3	1,738.4	3.6	1,427.3	65.9	0.0	0.0	0.0	185.7	55.9
[Hokkaido Dai Nippon Printing Co., Ltd.] 11-1-1, Kita 7 Jo Higashi, Higashi-ku, Sapporo 065-0007											
Toluene	227	108-88-3	197.6	0.0	128.0	48.1	0.0	0.0	0.0	21.5	0.0
[Tohoku Dai Nippon Printing Co., Ltd.] 3-5-1, Nigatake, Miyagino-ku, Sendai, Miyagi prefecture 983-0036											
Hexavalent chromium compounds	69	–	0.8	0.5	0.0	0.0	0.0	0.0	0.0	0.3	0.0
Dioxins	179	–	–	0.0	0.0	6.3mg-TEQ	0.0	0.0	0	6.5mg-TEQ	0.0
Water soluble copper compounds	207	–	14.7	14	0.0	0.0	0.0	0.0	0.0	0.8	0.0
Toluene	227	108-88-3	240.1	0.0	12.9	205.5	0.0	0.0	0.0	21.7	0.0
[Tokai Dai Nippon Printing Co., Ltd.] 3-902, Seko, Moriyama-ku, Nagoya-shi, Aichi Prefecture 463-8543											
Water soluble copper compounds	207	–	7	0.0	6.7	0.0	0.0	0.0	0.0	0.3	0.0
Toluene	227	108-88-3	168.5	0.0	0.0	154	0.0	0.0	0.0	14.4	0.0
[Shikoku Dai Nippon Printing Co., Ltd.] 1-15, Nakashimada-cho, Tokushima-shi, Tokushima Prefecture 770-0052											
Dioxins	179	–	–	0.0	0.0	1.6mg-TEQ	0.0	0.0	0.0	0.9mg-TEQ	0.0
[Chikugo Plant, Kyushu Dai Nippon Printing Co., Ltd.] 200, Ojino-cho, Chikugo-shi, Fukuoka Prefecture 833-0032											
Hexavalent chromium compounds	69	–	2.1	1.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Dioxins	179	–	–	0.0	0.0	0.74mg-TEQ	0.0	0.0	0.0	27.07mg-TEQ	0.0
Toluene	227	108-88-3	363.6	0.0	0.0	358.2	0.0	0.0	0.0	5.4	0.0
[Tokyo Plant The Inctec Inc.] 450, Aoto-cho, Midori-ku, Yokohama-shi, Kanagawa Prefecture 226-0022											
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	27	4098-71-9	23.0	23.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ethyl-benzene	40	100-41-4	63	58.3	0.4	1.1	0.0	0.0	0.0	3.3	0.0
Ethylene glycol monoethyl ether	44	110-80-5	5.6	5.5	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Ethylene glycol monomethyl ether	45	109-86-4	180.9	173.8	0.0	1.8	0.0	0.0	0.0	5.3	0.0
E-caprolacatam	61	105-60-2	7.5	7.4	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Xylene	63	1330-20-7	71	67.1	0.4	0.9	0.0	0.0	0.0	2.6	0.0
2-Enthoxyethyl acetate	101	111-15-9	10.7	10.5	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Toluene	227	108-88-3	2,280.7	2,112.70	4.2	3.5	0.0	0.0	0.0	160.3	0.0
Bis (2-ethylhexyl) phthalate	272	117-81-7	17.3	17.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
1,2,4-Benzenetricarboxylic 1,2-anhydride	300	552-30-7	6	5.9	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Poly (oxyethylene) nonylphenyl ether	309	9016-45-9	5.4	5.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0
[Kansai Plant, The Inctec Inc.] 1-33-1, Kasugakitamachi, Hirakata-shi, Osaka 573-0137											
Ethyl Benze	40	100-41-4	28.6	26.7	0.1	0.2	0.0	0.0	0.0	1.6	0.0
Ethylene glycol monomethyl ether	45	109-86-4	25.3	24.7	0.1	0.2	0.0	0.0	0.0	0.4	0.0
Xylene	63	1330-20-7	32.2	30.1	0.1	0.2	0.0	0.0	0.0	1.8	0.0
Toluene	227	108-88-3	540.7	475.7	0.4	3.4	0.0	0.0	0.0	50.5	10.7
Bis (2-ethylhexyl) phthalate	272	117-81-7	8.9	8.6	0.0	0.0	0.0	0.0	0.0	0.2	0.0
[D.T. Circuit Technology Co., Ltd.] 1, Toshiba-cho, Fuchu-shi, Tokyo 183-8511											
Water soluble copper salts	207	–	29.4	10.5	5.8	0.0	0.0	0.0	18	13.1	0.0

Comments of Reviewer

The following are the comments of Shin Nihon & Co., which performed the independent review of this environmental report with the Kensyou-Meidai method.

Comments on assertions

Item	DNP assertions	Part of the evidence we considered reasonable in support of each assertion	Challenges for further improvements
Greenhouse gas (p. 15)	The DNP group considers greenhouse gas emissions reduction as a Corporate Social Responsibility, and is developing data collection systems to clearly understand its greenhouse gas emissions to deal with future environmental restrictions and to ensure the group's sustainability.	Using the Greenhouse gas Protocol as a reference, the DNP group is promoting compilation of a manual for measurement and reporting of greenhouse gases. In the Mihara plant cogeneration installation project, advanced and integrated systems are being installed, and the group is accumulating know-how that may lead to the CDM/JI project.	In order to develop effective greenhouse gas emission reduction measures, it would be a good idea to perform analysis using a more detailed inventory.
Reduction of environmental pollutants (p. 31)	The DNP group is striving to reduce emissions of environmental pollutants, and has achieved significant progress in reducing toluene emissions.	The group is promoting the reduction of environmental pollutants, and is clearly prioritizing measures by taking into consideration of the current environmental burden. The group has set challenging targets especially for the reduction of toluene, and has reduced both its handling and emissions.	The group is striving to determine causes of increase in items where emissions are increasing. As for the toluene, the speed of reduction of its emissions is noteworthy, but the targets are still high. The challenge for the future is the steady execution of measures and policies.
Reduction of waste (p. 34)	The DNP group is promoting to reduce the generation and effective use of useless materials as part of its effort to contribute to the development of a recycling-oriented society.	It is noteworthy that the group has set measures and policies on reduction of useless materials to reduce waste. Also the group is promoting effective activities through target management after specifying the measures for reduction of useless materials at all relevant operational divisions. As for effective usage, some site had not set clear target, measures and policies. However, it had been promoting substantive activities, with the effective usage ratio being high.	Some aspects of the DNP group's activities towards the reduction of unused products are advanced. However, a future challenge for the company will also be to promote activities focusing on the input side of material flow such as resource efficiency as a means for contributing to the development of a recycling -oriented society.
Office Environment (p. 36)	Recognizing used paper as an important resource, The DNP group practices paper recycling operations at its offices.	For this activity, the number of sites practicing paper recycling and achieving recycling targets has increased.	A new challenge for the future will be the new target and measures, taking into account the state of target achievement at each site. Sites with targets to maintain used paper collection ratios may set new targets such as targets to reduce the generation of used paper.
Measures against global warming (p. 38)	The DNP group is promoting to reduce emissions of greenhouse gas, energy consumption and their per added value unit.	Each site is promoting activities to reduce emissions of greenhouse gas as a key issue, and the group has achieved its group target of total emissions.	Emissions per added value unit has been reduced. However, under the current trend it will be difficult to achieve targets by the target date. In the future, the group may have to set additional policies and measures.
Green purchasing (p. 43)	The DNP group is promoting the purchasing of environmentally conscious products.	The DNP group has established their own clear standards for the purchasing of green products, and is promoting effective measures to do so. The company is also persuading clients to request environmental conscious printing paper.	The DNP group's green purchasing activities has been promoted within the jurisdiction of the purchasing department. In the future, this effective activity should be promoted further within the group.
Development of environmentally conscious products and technologies (p. 44)	The DNP group is promoting the development and sale of environmentally conscious products.	The DNP group promotes the development and sale of environmentally conscious products based on a clear policy, which covers every stage of the product lifecycle from raw materials to manufacturing, usage and disposal of products.	In order to make such environmental efforts even more effective and efficient, the group should promote a more comprehensive plan such as changing from the current expansion ratio targets to goal-based targets.
Environmental impact of transport (p. 51)	DNP Logistics Co., Ltd., which handles distribution for the DNP group, has established targets and is promoting reduction of environmental burden caused by transportation.	DNP Logistics clearly focuses on CO_2, NOx and PM as the key sources of environmental burden arising from transportation, and has reduced it though target management.	The group's environmental activities in this regard are limited to in-house distribution divisions, excluding on-site distribution. In the future, we would like to see further improvement in efficiency of on-site distribution as well as developments towards the reduction of transport-related environmental burden both up and downstream, such as the ones in connection with materials suppliers and customers.

Independent Review Report

The Kensyou-Meidai Method

We describe the company's Environmental report and Sustainability report ("the Report") as a hierarchical structure of "Assertion—Description of the Report—Actual Condition of company" shown in fig.1 in the independent review with the Kensyou-Meidai Method. Here, we simply refer the main message that the company wants to communicate with stakeholders through the media as "Assertion".

A desirable Report is one where Assertions are appropriately described and Description of the Report is based on the Actual Conditions of the Company.

The scope of our independent review with the Kensyou-Meidai Method is to perform certain procedures and report the findings on "Whether the Assertion agrees with the Description of the Report" and on "Whether the Description of the Report agrees with the Actual Condition of the Company", from an independent position.

A⇒B means the Assertion (A) agrees with the Description of the Report (B) and B⇒C means the Description of the Report (B) agrees with the Actual Condition of the Company (C). Also, the Assertion should agree with the Actual Condition of the Company when the Company makes the Assertion (We describe as A⇒C).

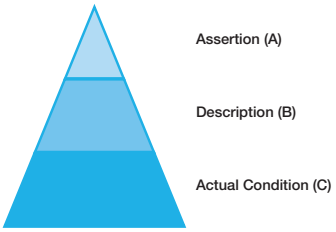


Fig. 1 Hierarchical Structure of the Report

The following three clauses are the basic clauses under this method.

1. Basic clause (1): The Assertion agrees with the Actual Condition of the Company (A⇒C)
2. Basic clause (2): The Assertion agrees with the Description of the Report (A⇒B)
3. Basic clause (3): The Description of the Report agrees with the Actual Condition of the Company (B⇒C)

In the next step, we set the propositions derived from the basic clauses of (1), (2) and (3).

1–1. Generally multiple, practical propositions derived from 1. The Assertion agrees with the Actual Condition of the Company.
2–1. Practical propositions derived from 2. The Assertion agrees with the Description of the Report.
3–1. Practical propositions derived from 3. The Description of the Report agrees with the Actual Condition of the Company.

Thus, we have the following 6 types of propositions under the Kensyou-Meidai Method with the derived propositions added to the basic propositions.

Basic Propositions

1. The Assertion agrees with the Actual Condition of the Company (A⇒C)
2. The Assertion agrees with the Description of the Report (A⇒B)
3. The Description of the Report agrees with the Actual Condition of the Company (B⇒C)

Derived Propositions

4. Practical propositions are derived from "The Assertion agrees with the Actual Condition of the Company"
5. Practical propositions are derived from "The Assertion agrees with the Description of the Report"
6. Practical propositions are derived from "The Description of the Report agrees with the Actual Condition of the Company"

The Assertions should be as concrete as possible when performing the procedures, and they must be disclosed. The independent review procedures with the Kensyou-Meidai Method are the following:

I. Understanding of the Assertions
II. Setting the Propositions
III. Performing procedures to consider whether proposition 4, 5 and 6 are proved or not.
IV. Performing additional procedures to consider whether basic propositions 1, 2 and 3 are proved or not.

*The procedures involve the process of asking the company for submission of reasonable evidences in support of each proposition, evaluating the relevance of submitted evidence, and searching for any negative evidence.

The conclusion on whether each proposition is proved would be reported as the result of the procedures performed. If we obtained reasonable evidence in support of all the propositions and did not find any negative evidences on each proposition, it means, "the Assertion agrees with the Description of the Report, and the Description of the Report agrees with the Actual Condition of the Company".

In addition, the Kensyou-Meidai Method performed included only "The Assertion agrees with the Description of the Report (A⇒B)" and "The Description of the Report agrees with the Actual Condition of the Company (B⇒C)" as an attestation, although it included "The Assertion agrees with the Actual Condition of the Company (A⇒C)" as a procedure.

*Supplementary explanation

The description of the report shown in Fig.1 may indicate the whole report, or part of the report such as each chapter and each page. In addition, the Assertion of the whole report is above the Assertion of part of the report in the hierarchical structure.

On the other hand, it is useful in practice to prepare Assertion on each page as needed without considering such complex structure. However, propositions are always set for each page in which no Assertion is set.

Independent Review Report

TRANSLATION

Independent Review Report on
the DNP Group Environmental Annual Report for the year ended March 31, 2003

August 21, 2003

Mr. Yoshitoshi Kitajima
Chairman of the Board, President and Chief Executive Officer
Dai Nippon Printing Co., Ltd.

1. Purpose and Scope of Our Review

We have performed certain procedures as described below to the DNP Group Environmental Annual Report for the year ended March 31, 2003(the "Report") of Dai Nippon Printing Co., Ltd. and its principal subsidiaries(the "Company"). The scope of the procedures are limited to, "Whether the main message that the Company wants to communicate with stakeholders through the Report(the "Assertion")agrees with the main point of the Report", and "Whether the main point of the Report agree with the Actual Condition of the Company". It is understood that this report is solely for reporting our findings based on procedures developed by us for this purpose with the Kensyou-Meidai Method, and we do not express audit opinion on any of the items in the Report because our procedures do not constitute an audit conducted in accordance with generally accepted auditing standards.

2. Procedure Performed

The procedure of Kensyou-Meidai Method requires the evaluation of the two clauses, "Whether the Assertion agrees with the main point of the Report", and "Whether the main point of the Report agree with the Actual Condition of the Company" by setting propositions. The fact that all the propositions are proved based on reasonable evidence is equal to the fact that the two clauses are proved based on reasonable evidence. For this purpose, we have performed the following procedures:

(1) We understand the Assertions prepared by the Company. The propositions vary according to the existence of a hierarchical structure in the Assertions.
(2) We set the propositions that are based the two clauses.
(3) We apply procedures for each proposition and ask the Company for submission of reasonable evidence in support of each proposition.
(4) We review the evidence, and search for any negative evidence for each proposition.
(5) We consider every proposition and report the findings to the preparer of the Report.

3. The Items in the Assertions

The Assertions are not in a hierarchical structure in this case. They are set in each chapter of the Report and are disclosed on page 72 of the Report. The propositions on each Assertion are disclosed on the Company's website.

4. Results of the Procedures Performed

As a result of the procedures performed, no matters came to our attention that caused us to believe that the evidence is neither negative nor is against the proposition. Thus, we conclude that the Assertions agree with the main point of the Report and the main point of the Report agree with the Actual Condition of the Company.

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Representative Director
Shin Nihon Environment and Quality Management
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