DNP

DNP Group Environmental Report
2017

DNP Group Environmental Report 2017

Editorial Policy

- The DNP Group Environmental Report 2017 was created to announce all of the environmental activities of the DNP Group, and is based on the Environmental Reporting Guidelines (2012 edition) issued by Japan's Ministry of the Environment.
- The DNP Group Environmental Report 2017 is published in a page format designed to be easy to read on the Web.
- We have interspersed columns throughout, covering specific topics.
- The information in this report was subjected to a third-party-review conducted by Bureau Veritas Japan. A check mark ☑ indicates indices that have undergone third-party audits.

Period covered by this report
This report focuses on activities carried out in the period of April 1, 2016 to March 31, 2017. It may also include reporting on important items not occurring within this period. The report also covers activities carried out at some overseas business locations in the period of January 1, 2016 to December 31, 2016.

Scope of environmental data
Environmental accounting was applied to DNP and to all domestic companies in the Group that are subject to consolidated financial accounting. Twenty-two domestic manufacturing companies plus one distribution company (see pp. 40, 41), the non-manufacturing sites (three development centers, office buildings, sales offices, etc.) of all domestic Group companies, and our overseas manufacturing companies (see p. 42) were included in the scope.

Standards for Calculating Environmental Performance Indices
The standards used for calculating environmental performance indices are published separately on the Web.
http://www.dnp.co.jp/csr/index02.html

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Message from the Director in Charge of the Environment

Going Beyond Society's Expectations

Chairman of the CSR-Environment Committee

Satoru Inoue

Protecting the environment and bringing sustainability to society are part of the Code of Conduct of the DNP Group. We are working to reduce environmental impact throughout the supply chain from a global standpoint, carefully considering the relationship between our business activities and the environment. In fiscal 2016 our activities included efforts to prevent global warming, reduce the volume of water used, and protect biodiversity, based, naturally, on regulatory compliance. In carrying out our business activities, we found that there is still a strong need for comprehensive solutions to a range of economic and social problems, in addition to environmental problems, as represented by the Sustainable Development Goals (SDGs) adopted at the 2015 United Nations Sustainable Development Summit. The 2015 DNP Group Vision outlines four growth areas for generating new value, one of them being Environment and Energy. The aim here is to help solve social problems by reducing environmental impact and addressing climate change as we expand our business and through our products and services. One example is DNP Lighting Film, which effectively reflects and diffuses sunlight entering rooms from windows, thereby reducing power consumption and enhancing the comfort in a room. This product received the 26th Grand Prize for the Global Environment Award, the Japan Business Federation Chairman's Prize. Going forward, we aim to utilize DNP's strengths in P&I (printing & information) to provide new value in the environmental field.

Efforts in Fiscal 2016

The record of our actions in fiscal 2016 is presented in this report. In all areas we have achieved our targets.

We have been taking group-wide action to conserve energy in the effort to mitigate global warming. Such actions have reduced emissions of greenhouse gases from the previous year, which includes our sites outside of Japan. We have reduced emissions of volatile organic compounds (VOCs) from the previous year, both inside and outside of Japan, thanks to the installation and upgrading of VOC processing systems. Regarding industrial waste, productivity improvements have limited the amount of waste generated, and sorting and recovery efforts have turned potential waste into usable resources. These improvements have lowered our per-unit emissions year-on-year. Our landfill rate has also improved as we continue to maintain zero emissions. DNP has expanded the number of designated environmentally conscious products and services, for which sales increased from the previous year. Improvements were also made in reducing impact from transportation and the volume of water used.

With regard to protecting biodiversity, the DNP Group has focused on two key areas that are closely tied to our business activities: the procurement of raw materials and creating green spaces on the premises of our business sites. In the area of raw materials procurement, based on the DNP Guidelines for Procurement of Paper for Printing and Converting set in 2012, we are working with our suppliers to promote the use of forest resources confirmed as lawfully harvested. In the creation of green spaces at business sites as natural habitats for wildlife and to protect rare and endangered species, we have carried out activities with employee participation in 31 locations. We also have been maintaining the Fujimae Tidal Flat in the Shonai River downstream basin by trimming reeds and using the pulp to create graduation certificates for a local elementary school. This effort was recognized and approved as a partnership project of the Japan Committee for United Nations Decade on Biodiversity. We also received a Biodiversity Action Award Japan in fiscal 2016 for efforts to expand the use of certified fair trade coffee (which supports biodiversity in developing countries) at our company cafeterias and cafés.

Future Efforts

In less than one year since the Paris Agreement was adopted and implemented, measures to combat climate change have become one of the most important global issues. DNP has set targets for fiscal 2030 and we will strive to achieve further reductions that include our entire supply chain. At the same time, we will pursue environmental business practices that create new value and provide answers to social problems. We also plan to communicate closely with our stakeholders to build deeper trust, meet our ideals, and remain consistently worthy of society's high confidence in DNP as a corporation.

Outline of the DNP Group

DNP Corporate Profile (as of March 31, 2017)

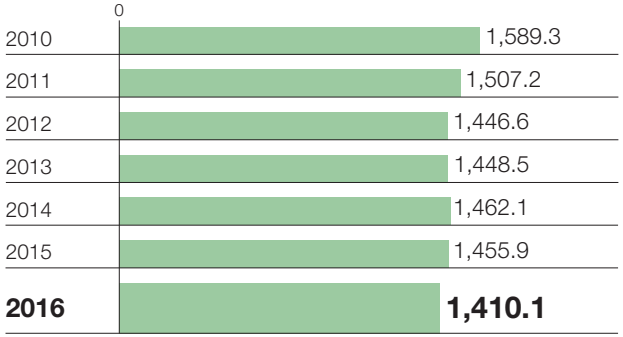
Company Name Dai Nippon Printing Co., Ltd.

Head Office 1-1, Ichigaya Kagacho, 1-chome, Shinjuku-ku, Tokyo, 162-8001, Japan
Tel: +81-3-3266-2111 (general information)
URL http://www.dnp.co.jp/

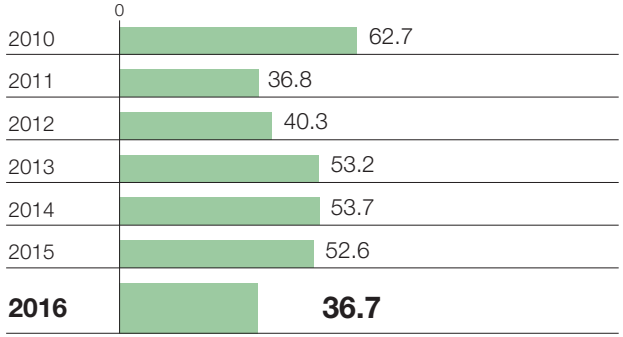
Established October 1876
Incorporated January 1894
Paid in Capital ¥114.464 billion
Number of Employees 10,800 (Non-consolidated)
38,808 (Consolidated)
Sales Offices 40 locations in Japan
25 locations overseas (including local affiliates)
Main Plants 56 domestic plants
14 overseas plants (including local affiliates)
R&D Facilities 3 locations in Japan

FY2016 Financial Data (FY ending March 2017)

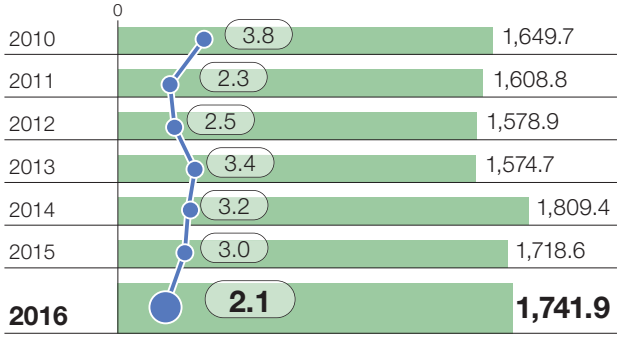
Net sales (Yen billions)



Net ordinary income (Yen billions)

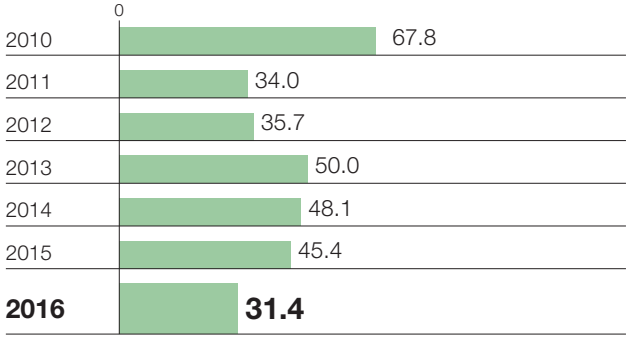


Total assets (Yen billions) Bar graph / **ROA** (%) Line graph

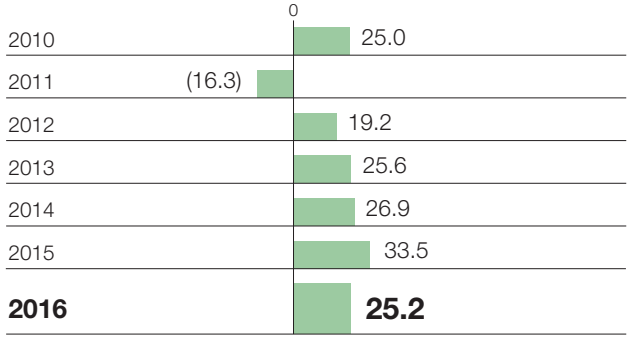


ROA (Return On Assets): Calculated using ordinary income.

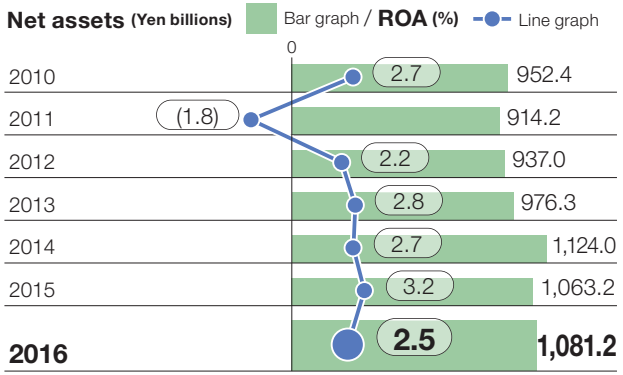
Net operating (Yen billions)



Net income attributable to parent company shareholders (net loss) (Yen billions)



Net assets (Yen billions) Bar graph / **ROE** (%) Line graph



ROE (Return On Equity): Calculated using net income.

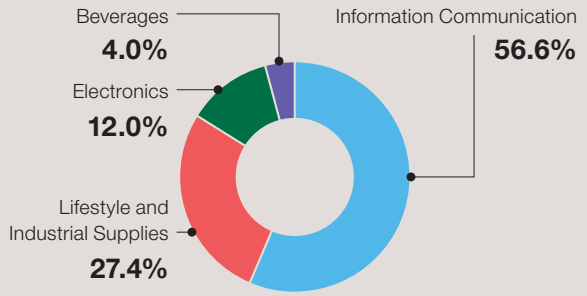
The DNP Group's Fields of Business

The business of the DNP Group is made up of our Printing Operations and Beverages Operations.

Printing: We are developing our printing business across a broad range of applications. These include the Information Communication segment, made up of operations such as publishing/commercial printing, smart cards, network businesses, and imaging communication; the Lifestyle and Industrial Supplies segment, which includes packaging, housing interior/exterior materials, and industrial supplies; and the Electronics segment, which includes display products, electronics devices, and optical film.

Beverages: We produce and market carbonated beverages, coffee, tea, and other beverage products, mainly through Hokkaido Coca-Cola Bottling.

Sales distribution (FY ending March 2017)

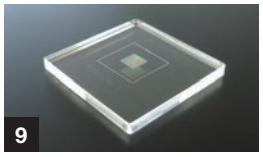
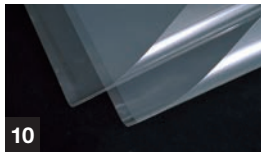


Printing	**Information Communication** Books and magazines, commercial printing, smart cards, network businesses, imaging communication, etc.	1 2 3
	Lifestyle and Industrial Supplies Packaging, housing interior/exterior materials, industrial supplies, etc.	4 5 6 7
	Electronics Display components, electronic devices, optical film, etc.	8 9 10
Beverages	**Beverages**	11








1 Hybrid comprehensive bookstore (honto)

2 Personal mail

3 ID photographs (Ki-Re-i)

4 PET bottles and preforms

5 Aseptic filling systems for PET bottles

6 Automotive interior materials

7 Interior and exterior materials for buildings

8 Photomasks for semiconductors

9 Master templates for nanoimprints

10 Optical film for displays

11 Soft drinks

DNP Group Vision 2015

The DNP Group Vision 2015 consists of our Corporate Philosophy, Business Vision, and Guiding Principles, and is an expression of our basic philosophy of co-existence and co-development with society and the environment.

Our Corporate Philosophy is the DNP Group's social mission, and is an expression of the most important value held by all DNP employees. Our Business Vision and Guiding Principles provide direction for the business and employee conduct that will enable us to make our Corporate Philosophy a reality.

The DNP Group Code of Conduct establishes the behavioral standards for all activities undertaken in realizing our Corporate Philosophy. The Code is intended to ensure that all employees conduct themselves with integrity at all times.

Corporate Philosophy

The DNP Group connects individuals and society, and provides new value.

The DNP Group
provides society with what individuals need,
provides individuals with what society needs.

Business Vision

Use P&I Innovations to expand business, primarily around four growth areas.

P&I Innovations

"P&I Innovation" refers to the creation of new value—value that never existed before—by combining printing (P) and information (I) as DNP's strengths along with diversified partners.

DNP's Four Growth Areas

- Knowledge and Communication: Supporting people's lifestyles and fostering culture within an advanced information society by conveying valuable information reliably, safely, and in optimal formats.
- Food and Healthcare: Supporting safer and higher-quality living and lifelong health maintenance amid changing population dynamics, including the increasing aging of society.
- Lifestyle and Mobility: Aiming to achieve greater comfort in response to increasing desire for personal space as a result of consumers' diversifying values.
- Environment and Energy: Aiming to make environmentally friendly society a reality in order to simultaneously achieve economic growth and environmental preservation.

DNP Group Guiding Principles

Taiwa (dialog) and Cooperation

Each member of DNP becomes a professional in his or her field. Actively and repeatedly engaging in *Taiwa* and working together with people both inside and outside the company leads to the generation of original products and services that never existed in the past.

DNP Group Code of Conduct

The DNP Group has established the DNP Group Code of Conduct as the set of principles upon which our efforts toward realizing our Management Concept are based. The Code of Conduct is founded upon strong ethical principles in accordance with our own rules as well as the law of the land, and is built around themes we consider to be of mutual importance to both the DNP Group and society as a whole.

The conduct of business with integrity at all times in accordance with this Code of Conduct is the foundation of our CSR activities.

1. Contributing to the development of society	We shall contribute to the development of society by offering new values through our business.
2. Social contribution as a good corporate citizen	We, as good corporate citizens living in harmony with society, shall deepen our ties with society and make social contributions through our solutions to various social issues and through our cultural activities.
3. Compliance with the law and social ethics	We shall contribute to the sustainable development of free and orderly market competition while assuming a fair and honest attitude at all times, in compliance with the law and social ethics.
4. Respect for human dignity and diversity	The dignity of humanity is of supreme importance to us. We shall respect diversity in the culture, nationality, creed, race, ethnicity, language, religion, gender, age, and ways of thinking of all persons, and conduct ourselves in a disciplined manner.
5. Environmental conservation and the realization of a sustainable society	We are contributing to building a sustainable society so as to pass on the rich blessings of the Earth to future generations.
6. Realization of a "universal society"	We shall work on the development and diffusion of easy-to-use functional products, services and systems so that everyone can live in safety and comfort, and thus contribute to the realization of a "universal society" in which all kinds of people can lead pleasant lives.
7. Ensuring the safety and quality of our products and services	We shall strive to win over the satisfaction and trust of consumers in general and of our corporate clients by ensuring the safety and quality of our products and services.
8. Ensuring information security	We shall strive to ensure thorough security measures to protect information assets entrusted to us by our clients as well as those retained by the DNP Group itself (industrial secrets, personal information, intellectual property, etc.).
9. Proper disclosure of information	We shall take the initiative to disclose information in a timely and appropriate manner so as to have our own business and activities properly understood by our various stakeholders with the goal of maintaining a high degree of transparency.
10. Realization of a safe and vibrant workplace	We shall exert ourselves for the maintenance and improvement of the safe and hygienic conditions of our workplace and shall always endeavor to seek ways to implement new improvements. At the same time, we shall respect working styles suited to the diversity of our employees and make efforts to create a safe, healthy and vibrant working environment.

DNP Group Environmental Policy

Rapid economic progress and a rising global population are bound to continue through the twenty-first century, so we must do what we can to protect biodiversity and prevent further degradation of the environment. Different groups and organizations work to protect the global environment in different ways; we all must do what we can to pass on a healthy planet to future generations.

We follow the DNP Group Code of Conduct, which guides us toward environmental conservation and the realization of a sustainable society. The DNP Group Environmental Policy links this code to specific activities. We take the environment into consideration in all of our business activities, and focus on those that not only reduce environmental impact, but also preserve the global environment.

The DNP Group seeks to minimize the impact our businesses have on the environment and supports biodiversity, first by complying with environmental laws and regulations and also by recognizing the relationship that each of our business activities has with the environment. In this way we hope to create a sustainable society in a world with limited resources.

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. We shall also make aggressive efforts to use renewable energy.
3. When carrying out research, development, design, manufacture, and sales of a new product, we consider the impact of the product on the environment throughout its lifecycle, including materials procurement, production, distribution, use, and disposal, especially in terms of 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.

CSR-Environment Committee (March 21, 2000, revised March 16, 2010)

The DNP Group is a signatory of the United Nations Global Compact and a “promotion partner” of the Nippon Keidanren’s 2009 Declaration on Biodiversity.

Environmental Management Structure

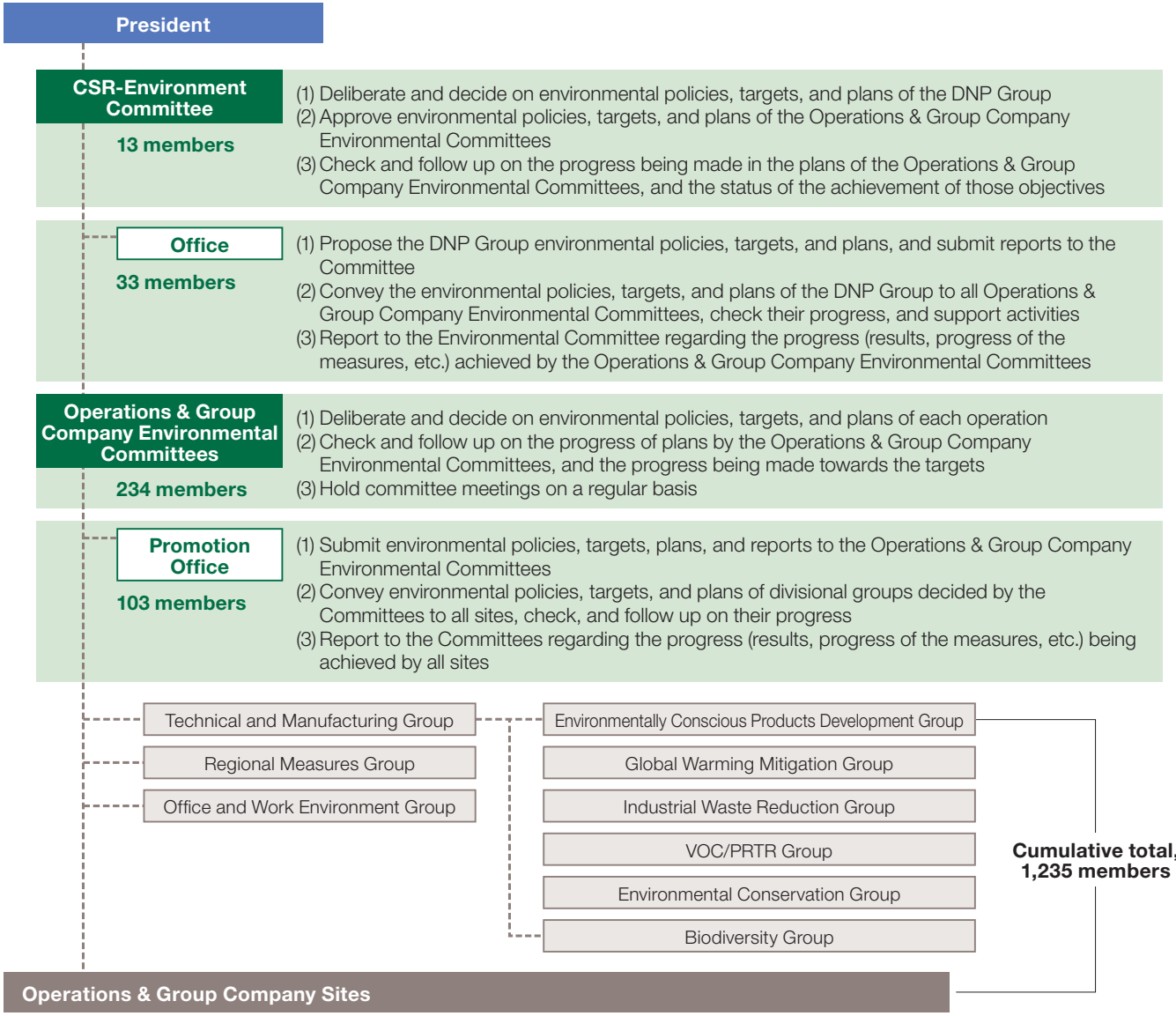
In the DNP Group, the CSR-Environment Committee was established to coordinate group-wide environmental activities, while Operations & Group Company Environmental Committees preside over domestic and overseas activities within each business area. Each committee has its own office or promotion office.

• CSR-Environment Committee

This is made up of the directors of the basic organizations at company headquarters, who are responsible for the environment. The Committee deliberates and makes decisions concerning the environmental policies, objectives, and plans of the entire Group, and monitors the progress of the plans and the status of the achievement of those objectives.

• Operations & Group Company Environmental Committees

We carry out such activities based on decisions made by the CSR-Environment Committee and the characteristics of different business areas, including activities at our locations outside of Japan.



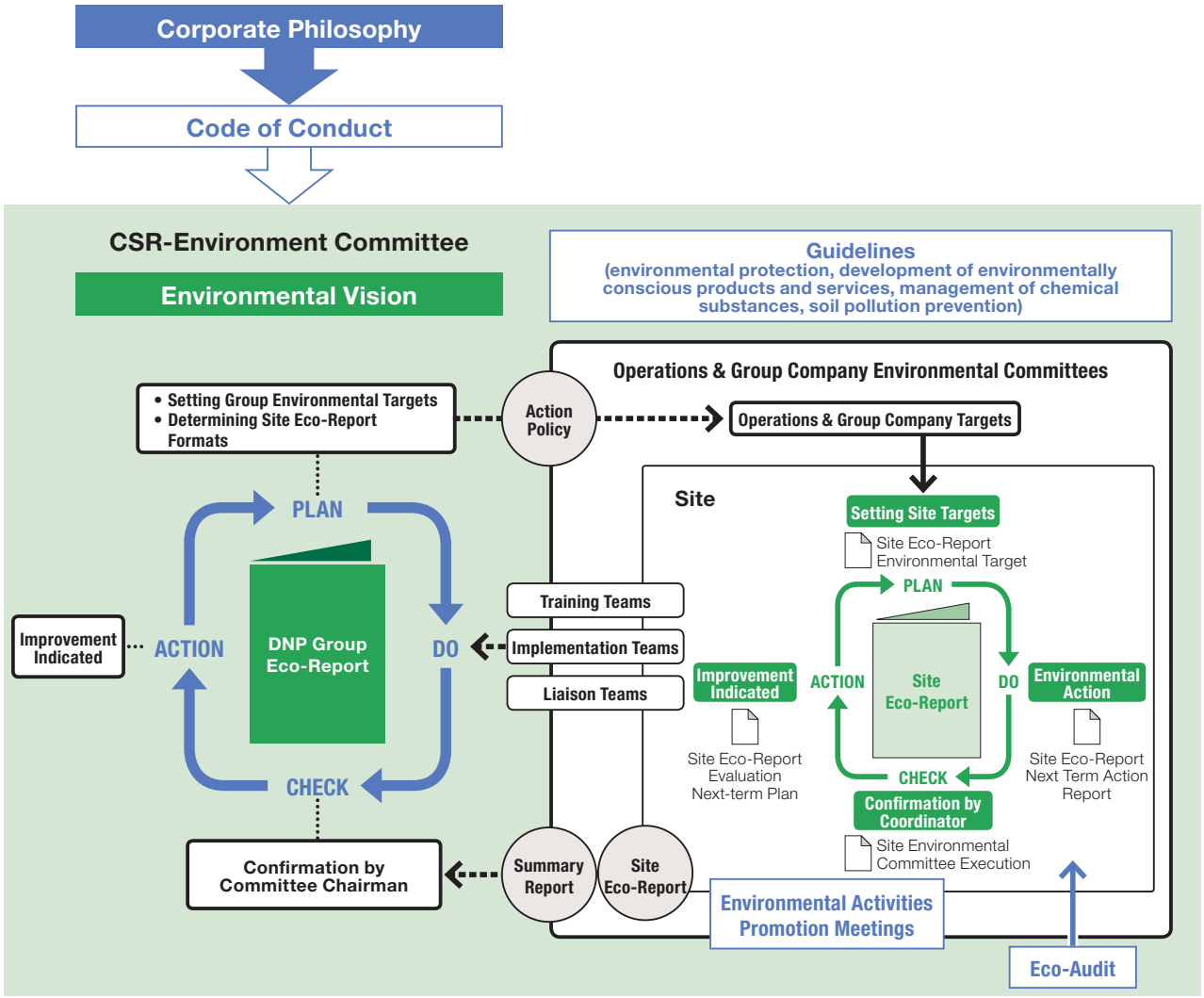
Environmental Management System

The DNP Group created its own environmental management system (EMS) in 1993, prior to the publication of ISO 14001. Our EMS uses the twin tools of Eco-Reports and Site Eco-Reports set up by the CSR-Environment Committee Office as a framework. We also execute the “Plan-Do-Check-Action” cycle every six months.

The Eco-Reports cover trends in environmental issues and changes in applicable laws, our courses of action, and how well the DNP Group overall has achieved its targets. The Eco-Reports are distributed to the Operations & Group Company Environmental Committees and to every business site. The Site Eco-Reports document each site’s targets, plans, and status of activities. The Operations & Group Company Environmental Committees use the Site Eco-Reports to gain an understanding of the situation at each site and submit a summary report to the CSR-Environment Committee.

The CSR-Environment Committee and the Operations & Group Company Environmental Committees carry out continuous improvement activities through training teams, implementation teams, liaison teams, etc. Progress is checked through periodic environmental activities promotion meetings.

Outline of the DNP Group Environmental Management System



Eco-Audit Content and Flow

We began implementing “Eco-Audits” in 1996, so as to make our Environmental Management System (EMS) more effective.

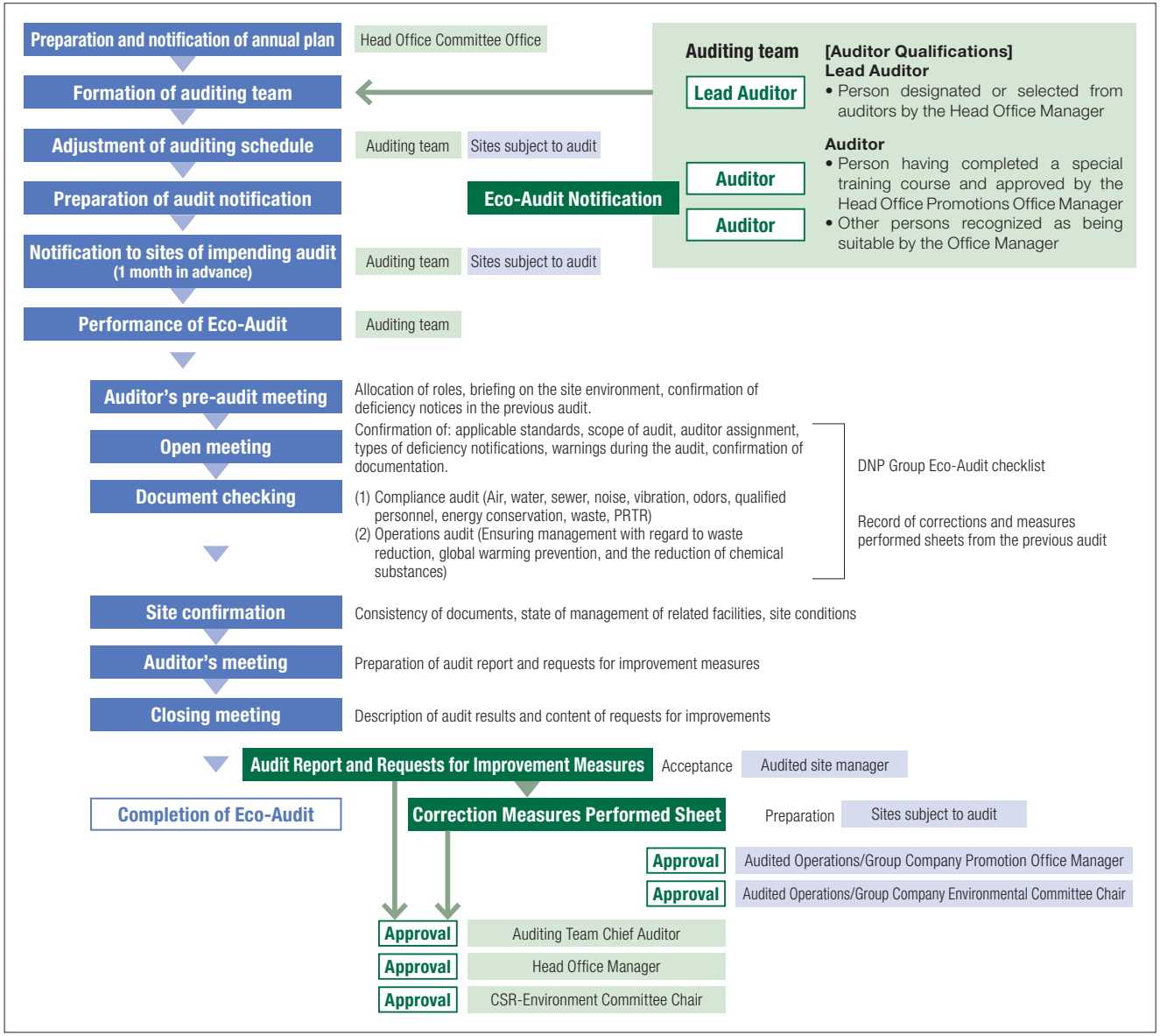
Eco-Audits have the following features.

(1) Because auditors are DNP employees from sites not being audited, they have specialized knowledge about the products and processes and are able to maintain an independent perspective, which produces meaningful, objective results from the audit.

(2) In the Eco-Audit we place importance on on-site confirmation of actual items. In addition, we point out factors for which danger is projected and request preventive action when needed.

(3) In addition to confirmation of compliance, we confirm the status of continuous improvements and corrections being made towards the achievement of the environmental targets. When necessary, we require audited sites to review plans.

Under this system, when an audit reveals that corrective measures are needed at a site, a “corrective action request” is issued in writing and such actions as necessary are managed by the CSR-Environment Committee.



Eco-Audit Performance

Number of sites audited	**67 sites**
Number of attendees at sites	**498 persons**
Cumulative auditor numbers	**122 persons**
Cumulative auditing hours	**247 hours**

• Notification level and improvements required

Improvement required	➡	**Submission of a written description of correction measures performed or improvement plans**
Improvement consideration & examination	➡	**Submission as necessary of a written description of results of consideration/ examination or improvement plans**

Indications of “improvement required” included items such as insufficient reporting by qualified personnel and at specific sites and other legal violations, but we confirmed that the necessary improvement measures were being taken in each case.

The areas indicated as requiring improvement are analyzed and follow-up Eco-Audits will be carried out in FY2017.

Eco-Audit Content

Compliance Audit

(1) Document Audit
- Site location
- Type and number of legally-designated facilities
- Types of waste
- Energy consumption
- Exhaust and wastewater channels
- Changes in facilities, production processes since the last audit
- Applicable laws and their range
- State of improvement of notifications of deficiencies in previous audit
- State of submission of and changes to legal notifications and reports
- Frequency of measurement, validity and traceability 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
- Appropriateness of actual work performed

Operations Audit

PLAN
Validity of Policy, Targets and Action Plans
- Consistency with DNP Group policies and targets
- Consistency with action plans and targets
- Implementation system and schedule
- Awareness level of employees

DO
Confirm status of plan implementation and target achievement
- Progress status of plan
- Achievement of targets

CHECK
Status of progress management of plan
- Holding of environment-related meetings
- Content of environment-related meetings

ACTION
Status of reviews by term
- Review of previous term results and reflection in plan

Environmental Risk Management

The DNP Group publishes regular Eco-Reports which cover trends in environmental regulations, and also conducts Eco-Audits to ensure full compliance with all laws and regulations. Our compliance efforts also include the establishment of and strict adherence to our own voluntary standards (air, water, noise, vibration, odor) and voluntary guidelines (chemical substance management, soil contamination measures), which exceed what is legally required.

The DNP Group handles many chemicals in its production processes. We have drawn up a Chemical Substance Management Guide for chemical substance handling, and have set up levees and emergency shutoff systems to prevent liquids from overflowing and installed two-tier holding tanks for the prevention of accidents at plants handling chemicals. We also stock up on materials that can be used during emergencies and hold emergency response drills to ensure the proper response in the event of an occurrence.

• Soil and Groundwater Contamination

The DNP Group conducts soil inspections based upon our voluntary management guidelines. When soil contamination is discovered, we file a report with the office of the governor or mayor in charge of that prefecture or city, and upon receiving instructions from the local authorities, we implement appropriate measures for removing the contamination.

In addition to continuing the purification of pump water at one site in FY2016, we also inspected tanks, waste storage sites, and areas for storing equipment that handles waste PCBs to prevent soil contamination.

• PCB Storage

PCBs are currently in storage at 17 sites, with 130 condensers and 27 transformers; a total of 157 units. The PCBs are contained in electrical equipment formerly used in substation facilities at our plants. Fluorescent lighting ballasts and other equipment containing PCBs have also been placed in storage. Storage consists of special containers in designated storage rooms at each site, managed under the strictest conditions in accordance with applicable regulations to ensure there is no leakage or loss. The PCBs in storage will gradually be disposed of as required by law according to the disposal plans for each region.

• Management of Chemical Substances in Products and Materials

Companies like DNP are being called on to properly ascertain and control the chemical substances contained in raw materials and products in use throughout the supply chain.

DNP has put into operation a management system in accordance with standards issued by JIS and the JAMP Guidelines for the Management of Chemical Substances in Products.

JAMP (Joint Article Management Promotion-consortium)
This organization promotes cross-industry action aimed at creating and spreading the use of a framework for properly managing information on chemicals contained in products and for easily disclosing and transmitting that information through supply chains.

• Status of Legal Compliance

While we make all efforts to comply with environmental laws and regulations, over the past three years we have experienced three incidents in which air or water quality standards were exceeded and in each case improvement reports were submitted to the government. There are no ongoing legal disputes involving environmental issues. We have unfortunately had some complaints from areas neighboring our plants concerning noise and odors. Whenever we receive such complaints, we respond promptly by launching a thorough investigation into the cause of the problem and by working to make improvements and prevent recurrence.

Occurrences (causes, improvements, and recurrence prevention measures)

July 24, 2015
Tanabe Plant, DNP Technopack
Governmental measurement of concentration of volatile organic compounds (VOCs) in exhaust air → Values for VOC concentration exceeded the legal limit, so an improvement report was submitted.

The cause of the problem was found in the equipment that recovers and treats VOCs in exhaust gas. The adsorption ability of the activated carbon that adsorbs the VOCs had deteriorated. To prevent a recurrence, we are changing the operational conditions of the activated carbon regeneration equipment to improve the adsorption ability of the activated carbon, and are periodically monitoring its adsorption ability. After implementation of these steps, we were able to confirm that VOC concentration levels were within standard limits.

November 12, 2015
Chikugo Plant, DNP Technopack
Governmental water analysis → pH measurement values exceeded regulatory standards for draining systems, so an improvement report was submitted.

The cause of excessive pH levels was the failure of the wastewater neutralizing apparatus on the waste heat boiler. To prevent a recurrence, we repaired the controller and alarm device and will conduct periodic inspections. After implementation, we were able to confirm through water quality tests that the values met regulatory standards.

December 22, 2016
Tanabe Plant, DNP Technopack
Governmental water analysis → n-hexane extracted substance content (animal and plant oils and fats) exceeded regulatory standards for draining systems, so an improvement report was submitted.

The likely cause was the discharge of oil content not captured by kitchen grease traps. To prevent a recurrence we reexamined our cleaning procedures. After implementation, we were able to confirm through water quality tests that the values met regulatory standards.

Certification Acquisition Status

The DNP Group has established an independent environmental management system and is pursuing the acquisition of ISO 14001 certification at specific sites, depending on the type of work performed at those sites. (DNP organization names are as of June 30, 2017)

ISO 14001 Certificates

Site	Date Registered*1	Registration Organization
Okayama Plant, Imaging Communications Operations	Nov. 1997	JIA-QA
Mihara East Plant, Fine Optronics Operations	Jul. 1998	DNV
Okayama Plant, Living Space Operations	Jul. 2000	JIA-QA
DT Fine Electronics*2	Mar. 1997	JACO
Sayama Plant No. 1, DNP Technopack	Dec. 2001	SGS
Tokyo Plant, DNP Fine Chemicals	Jan. 2002	JCQA
Ushiku Plant, Information Innovation Operations	Mar. 2002	DNV
Tokai Plant, DNP Technopack	Mar. 2002	JCQA
Tien Wah Press (Singapore)	May 2002	PSB
Chikugo Plant, DNP Technopack	Jun. 2002	DNV
Sayama Plant, Imaging Communications Operations	Oct. 2002	JIA-QA
Kurosaki Plant No. 2, DNP Fine Optronics Co., Ltd.	Jan. 2004	DNV
Tokyo Plant, Living Space Operations	Jan. 2004	JIA-QA
Kamifukuoka Plant, Fine Optronics Operations	Mar. 2004	AJA
Itabashi Area, Sales Division 1, DNP Logistics	Oct. 2004	AJA
Tokyo Plant, DNP Ellio	Jan. 2005	LRQA
Osaka Plant, DNP Ellio	Jan. 2005	LRQA
Warabi Plant, Information Innovation Operations	Mar. 2005	DNV
Nara Plant, DNP Data Techno Kansai	Jun. 2005	DNV
Tien Wah Press (Johor Bahru)	Nov. 2005	PSB
Kashiwa Plant (incl. Utsunomiya Site), DNP Technopack	Mar. 2006	JACO
Neyagawa Plant (incl. Tanabe Site), DNP Technopack	Mar. 2006	JACO
DNP Photomask Europe S.p.A.	Apr. 2006	CISQ
DNP Fine Chemicals Utsunomiya	Mar. 1997	JCQA
Akabane Area, DNP Logistics	Dec. 2006	AJA
Izumizaki Plant, DNP High-performance Materials Co., Ltd.	Mar. 2007	DNV
Yokohama Plant, DNP Technopack	Dec. 2007	JIA-QA
Izumizaki Plant, DNP Technopack	Aug. 2008	SGS
Kasaoka Plant, DNP Fine Chemicals	Jan. 2009	JCQA
DNP Imagingcomm Europe B.V.	Mar. 2009	LRQA
Mihara West Plant, Fine Optronics Operations	May 2009	DNV
Okayama Plant, Fine Optronics Operations	May 2009	DNV
DNP Indonesia (Pulogadung/Karawang)	Aug. 2009	AJA
Hokkaido Coca-Cola Bottling	Feb. 2010	SGS
Sayama Plant No. 2, DNP Technopack	Dec. 2011	JIA-QA
DNP Imagingcomm America Corporation	Jun. 2013	NSF ISR
Kyoto Plant, DNP Data Techno	Dec. 2013	DNV

Eco Action 21 Certificates

Site	Date Registered*1	Registration Organization
Tokyo Head Office, DNP Trading	Jan. 2006	IGES

Green Key Certification Status

Site	Date Registered*1	Registration Organization
Hakone Training Center 2	May 2010	FEE

*1 Indicates the first registration date.
*2 DT Fine Electronics registered as part of Toshiba Corporation (Semiconductor Company) (Kawasaki City, Kanagawa Pref.)

Registration Organization

JIA-QA
Japan Gas Appliances Inspection Association, QA Center

DNV
Det Norske Veritas AS (Norway)

JACO
Japan Audit and Certification Organization for Environment and Quality

JCQA
Japan Chemical Quality Assurance Ltd.

PSB
PSB Certification Pte Ltd. (Singapore)

AJA
Anglo Japanese American Registrars Ltd.

LRQA
Lloyd's Register Quality Assurance Ltd.

CISQ
Federazione Certificazione Italiana dei Sistemi Qualità Aziendali (Italy)

SGS
SGS Japan

IGES
The Institute for Global Environmental Strategies

FEE
Foundation for Environmental Education

NSF-ISR
NSF International Strategic Registrations

Environmental Education

The DNP Group conducts environmental education programs according to level, working group, and function concerning the DNP Group's environmental conservation efforts, environmental knowledge, environmental laws, and domestic and overseas trends concerning environmental issues. Our goal is for employees to gain the knowledge and management know-how necessary to improving employee environmental conservation consciousness and achieving our environmental goals. A correspondence course is held twice a year for everyone in the DNP Group on ISO 14001, lifecycle assessment (LCA), and other topics.

• Awards System Instituted

In FY2012 we introduced an internal awards system. The awards are presented once a year and are reserved for plants that have made a special contribution through their environmental activities. Such contributions include notable improvements in environmental performance, biodiversity protection activities, and renewable energy utilization. Winners are selected not only for specific accomplishments, but also in light of their results in internal environmental audits by meeting voluntary standards for environmental conservation (additional to legal requirements for air and water quality). In FY2016 awards were made to one plant for improvements in environmental performance.

Type of Training	Course Name/Description	First Held	Eligibility		Time of Year
Education for New Recruits	**Environmental Activity Overall (required)** Basic environmental knowledge and conservation efforts of the DNP Group	1994	All new recruits	Total Attendance 8,080 people	When joining the company
Technical Seminar	**Environment/Chemicals (optional)** **Environmental Laws and Regulations**	1999	Technicians	Total Attendance 1,231 people	Once yearly
Network Learning	**Biodiversity**	2010	All employees of the DNP Group		At irregular Intervals
Eco-Report Training	**Environmental Issues of the Group (required)** Domestic and international trends in environmental issues, revisions in environmental laws, degree of achievement of environmental targets, new targets, issues concerning specific sites	1993	Environmental Committee Promotion Office members and site members		Twice yearly on issue of Eco-Report

The DNP Group's Business and Environmental Activities

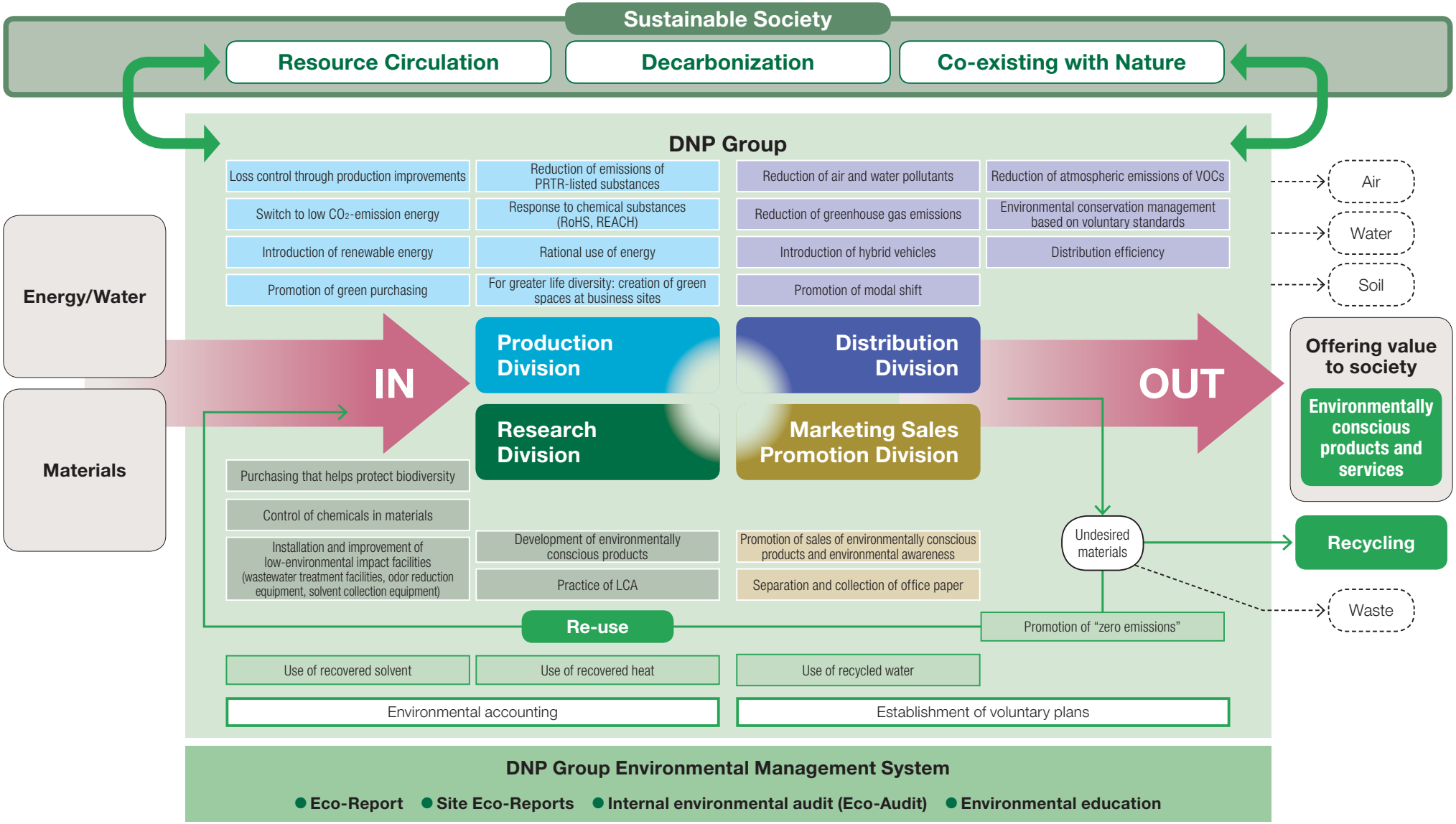


Table: Environmental Activity Targets and Results

Evaluation criteria ◎ Target exceeded by a wide margin ○ Target achieved or making steady progress toward target △ Making active efforts but target not achieved × Efforts insufficient

Topic	Reference page	Targets through FY2020	FY2016 results		Evaluation
Global warming prevention	P 20 - 21	To reduce GHG emissions by 10% from the FY2005 levels and 20% by FY2030. (Includes overseas locations)	Emissions in FY2005: 1.110 million tons Emissions in FY2016: 0.929 million tons ☑	16.3% decrease from that in FY2005	◎
Reduction of environmental impact incurred during transport	P 22	To reduce per-unit fuel use for transport by 1% per annum and 10% compared to FY2010.	Per unit in FY2010: 16.1 kl/billion yen Per unit in FY2016: 14.8 kl/billion yen ☑	8.1% decrease from that in FY2010	○
VOCs	P 23	To reduce emissions of VOCs (except for methane) by 35% compared to FY2010.	Emissions in FY2010: 6,729 tons Emissions in FY2016: 4,141 tons ☑	38.5% decrease from that in FY2010	◎
		Overseas, based on local laws and regulations, we plan to reduce atmospheric emissions of VOCs to the greatest extent possible through introduction of technologies and other measures.	Continue operation of VOC recovery equipment at DNP Indonesia's Karawang Plant		○
Reduction of industrial waste	P 26 - 27	To reduce per-unit waste emissions (waste emissions/production) by 20% compared to FY2010. (Includes overseas locations)	Per unit in FY2010: 42.4 tons/billion yen Per unit in FY2016: 34.9 tons/billion yen ☑	18% decrease from that in FY2010	◎
		To maintain zero emissions for the entire DNP Group.	Landfill waste rate in FY2015: 0.06% Landfill waste rate in FY2016: 0.05% ☑	Maintained zero emissions	◎
Reduction of water usage	P 28	To reduce per-unit water use by 25% compared to FY2010. (Includes overseas locations)	Per unit in FY2010: 10.8 m³/million yen Per unit in FY2016: 8.2 m³/million yen ☑	24% decrease from that in FY2010	◎
Development and sales of environmentally conscious products and services	P 29 - 30	Development and sales of environmentally conscious products and services to achieve 600 billion yen.	Sales of 570.8 billion yen in FY2015 Sales of 589.8 billion yen in FY2016 ☑	3.3% increase from that in FY2015	◎
Environmental conservation	P 12	To keep the maximum concentration of air emissions subject to emissions regulations at 70% of the required standard or less.	99% achievement rate of targets for FY2016 (voluntary target)		○
		To keep the maximum concentration of water emissions subject to wastewater regulations at 70% of the required standard or less.	98% achievement rate of targets for FY2016 (voluntary target)		○
		To keep the maximum concentration of odors at our site perimeters at 70% of the required standard or less.	98% achievement rate of targets for FY2016 (voluntary target)		○
		To keep the maximum level of noise at our site perimeters at 70% of the required standard or less.	99% achievement rate of targets for FY2016 (voluntary target)		○
		To keep the maximum level of vibration at our site perimeters at 70% of the required standard or less.	100% achievement rate of targets for FY2016 (voluntary target)		◎
Office environment	P 28	To increase the rate of the fractional recovery of waste paper to 70% of that for general waste.	83.1% recovery of waste paper in FY2016 ☑		◎

Current Status of Environmental Impact

Main materials (Unit: 1,000 tons)

	2015	☑ 2016	
Paper	1,670.9	**1,565.5**	(6.3% decrease)
Film	152.6	**151.8**	(0.5% decrease)
Plastic	109.8	**110.1**	(0.3% increase)
Metal	43.2	**45.2**	(4.6% increase)
Ink	96.5	**102.5**	(6.2% increase)
Others	96.0	**92.3**	(3.9% decrease)

Main secondary materials (Unit: 1,000 tons)★

	2015	☑ 2016	
Solvent	29.0	**28.3**	(2.4% decrease)
Acid and alkaline	8.6	**8.1**	(5.8% decrease)

Utilities

	2015	☑ 2016	
Electricity (million kWh)	1,593.4	**1,463.4**	(8.2% decrease)
City gas (million Nm³)	70.5	**69.6**	(1.3% decrease)
LNG (million kg)	20.1	**20.4**	(1.5% increase)
LPG (million kg)	7.6	**8.3**	(9.2% increase)
Fuel oil (kl)	5	**5**	(—)
Steam (TJ)	4	**3**	(25.0% decrease)
Kerosene (kl)	1.1	**1.2**	(9.1% increase)
Water (million m³)	12.4	**11.6**	(6.5% decrease)

INPUT

Product Manufacturing Process

Information Communication
Books and periodicals, commercial printing, business forms

Lifestyle and Industrial Supplies
Packaging, decorative materials, industrial supplies

Electronics
Displays, electronic devices

Other
Ink, beverages, etc.

OUTPUT

Current Status of Recycling in the DNP Group★

	2015	2016
Recycled solvent (1,000 tons)	7.1	**6.9**
Usage ratio[*1]	1.3	**1.2**
Recycled acid and alkaline (1,000 tons)	4.5	**6.0**
Usage ratio	1.5	**1.7**
Recycled water (million m³)	401,700	**366,270**
Usage ratio	35.0	**34.3**
Vapor generated from waste heat recovery (tons)	174,200	**171,000**

*1 **Usage Ratio:** This is a calculation of (input+recovery and recycling)/input. It does not include vapor or solvent in ink.

*2 **GHG:** Greenhouse Gases
Emissions from the use of electricity were recalculated to include past years using the FEPC's FY2005 coefficient.

*3 Water discharge channels to which the Water Pollution Control Act applies.

★ Scope limited to within Japan only

Emissions into the air

	2015	☑ 2016	
GHG[*2] emissions (1,000 tons-CO_2)	981	**929**	(5.3% decrease)
NOx emissions (tons)★	657	**600**	(8.7% decrease)
SOx emissions (tons)★	6.7	**6.4**	(4.5% decrease)
Atmospheric emissions of VOCs (tons)	13,574	**13,633**	(0.4% increase)

Emissions into bodies of water

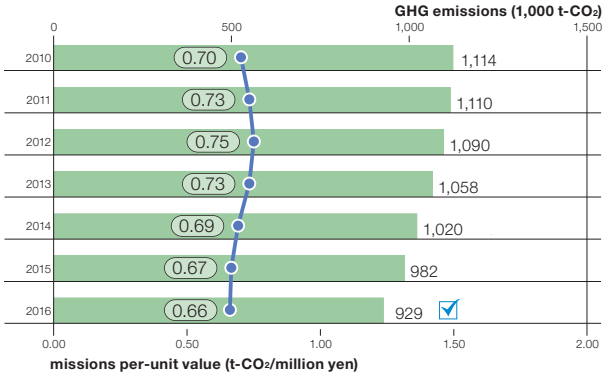
	2015	☑ 2016	
Water discharged (million m³)	10.3	**9.0**	(13.0% decrease)
COD emissions (tons)★	34.7	**33.7**	(2.9% decrease)
Nitrogen emissions (tons)★ [*3]	8.8	**6.3**	(28.0% decrease)
Phosphoric emissions (tons)★ [*3]	0.5	**0.4**	(20.0% decrease)

Undesired materials generated (Unit: 1,000 tons)

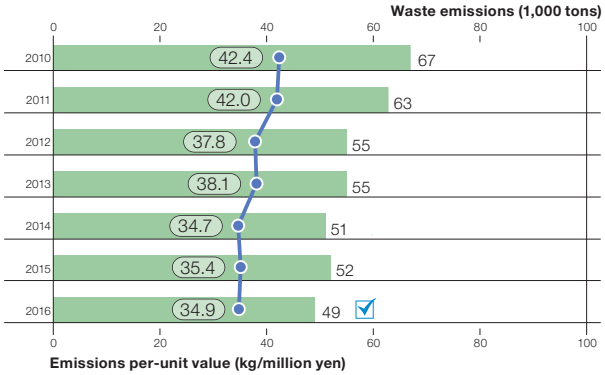
	2015	☑ 2016	
Total amount of undesired materials	332	**322**	(3.1% decrease)
Waste emissions	51.5	**49.2**	(4.5% decrease)
Landfill waste amount	4.4	**4.7**	(6.8% increase)

Environmental Impact and Environmental Efficiency

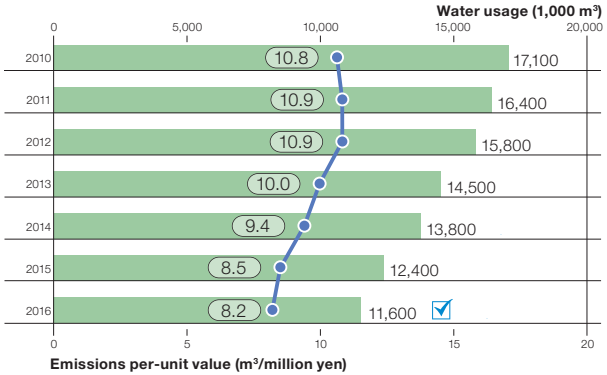
DNP Group's GHG emissions (including international operations)



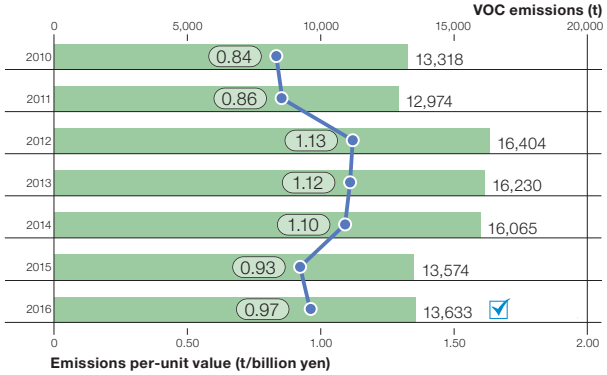
DNP Group's waste emissions (including international operations)



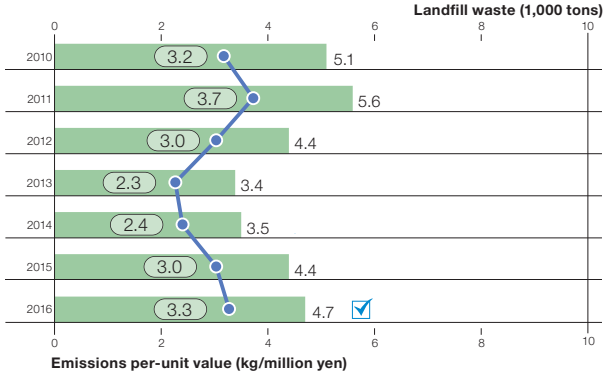
DNP Group's water usage (including international operations)



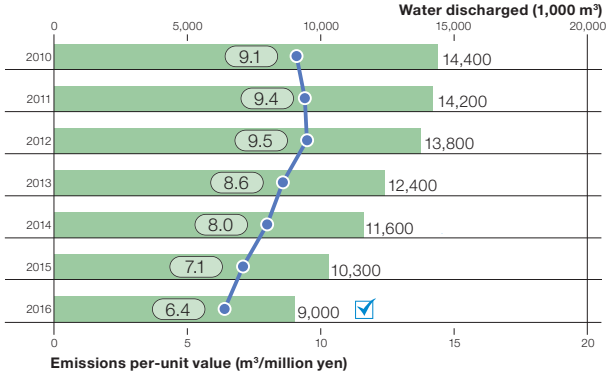
DNP Group's VOC emissions (including international operations)



DNP Group's landfill waste (including international operations)



DNP Group's water discharged (including international operations)



Note: VOC emission calculation methods have been revised.

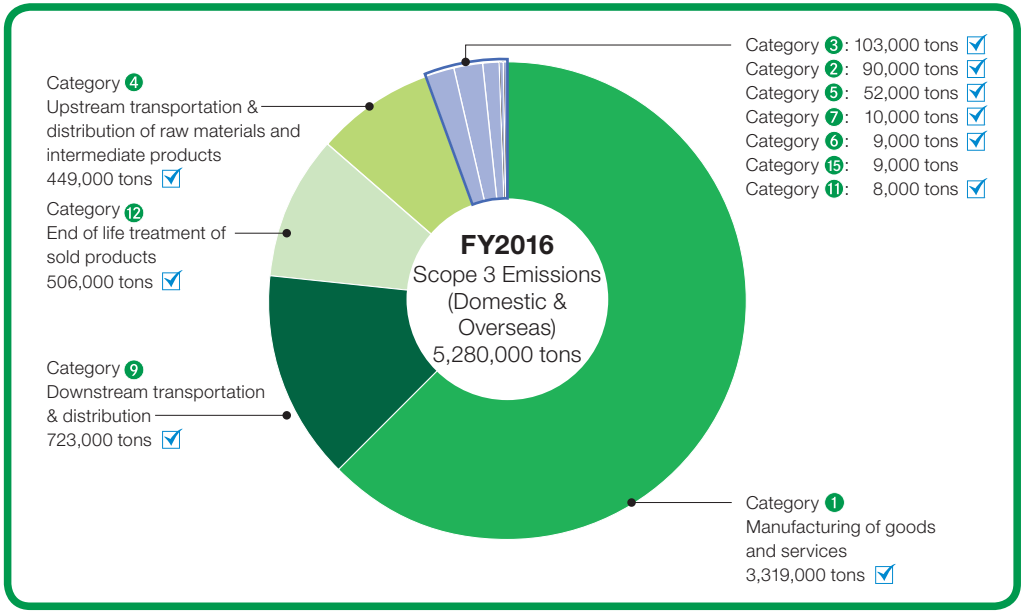
Efforts to Reduce GHG Emissions Across the Entire DNP Group Supply Chain

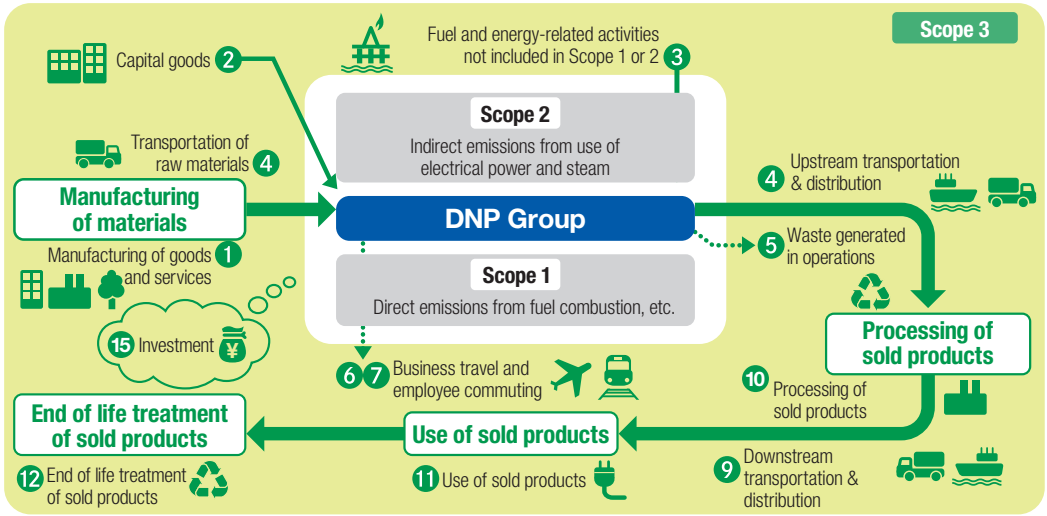
Greenhouse gas (GHG) emissions are one cause of global warming. The DNP Group is taking active steps to reduce GHG emissions on a global scale.

In developing environmentally conscious products, we consider it vital to understand GHG emissions in the overall lifecycle of a product. We therefore calculate GHG emissions across our entire supply chain including main overseas sites (Scope 3), not only at the stage of manufacturing but also including indirect emissions.

The Scope 3 emissions for FY2016 stood at 5.28 million t-CO_2 and break down as follows: “Manufacturing of goods and services” (Category 1) at 63%, which accounted for the largest portion; “Downstream transportation & distribution (finished products)” (Category 9) at 14%; “End of life treatment of sold products” (Category 12) at 10%; “Upstream transportation & distribution of raw materials and intermediate products” (Category 4*1) at 9%. These four categories together accounted for 95% of the total.

We will continue to promote the reduction of emissions across our entire supply chain in the future based on these results.





Calculation Method

The Ministry of Economy, Trade and Industry (METI) and the Ministry of the Environment (MOE) formulated and released the “General Guidelines on Supply Chain GHG Emission Accounting, Ver 2.2”*2 the standards of which our calculations are based upon. (Of the 15 Scope 3 categories, Categories 8, 10, 13 and 14 were not applicable.)

*1 Scope 1 emissions attributable to transportation and distribution carried out by group companies were included under Category 4.

*2 Main DNP business sites in Japan were set as the scope of calculations (excluding Hokkaido Coca-Cola Products and the Bookstore Group among others), in addition to key overseas sites (PT DNP Indonesia, DNP Imagingcomm America Corporation, DNP Imagingcomm Asia Sdn. Bhd. and Tien Wah Press (Pte.) Ltd.).

In addition, the unit values database used for our calculations can be viewed on the MOE’s Green Value Chain Platform.
(http://www.env.go.jp/earth/ondanka/supply_chain/gvc/business/estimate.html)

Greenhouse Gas Emissions Reduction

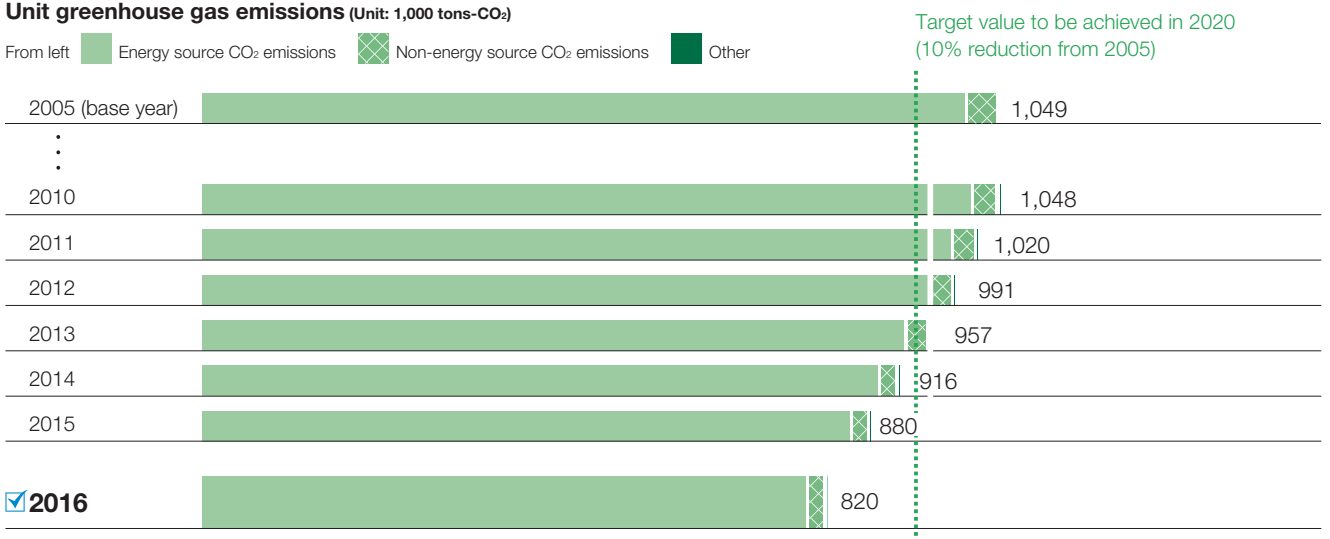
Important steps that the DNP Group has taken leading to a low-carbon society include reducing the consumption of forms of energy that generate CO_2 (energy conservation), switching to low CO_2-emission fuels, and introducing renewable energy sources.

• Reducing Consumption of CO_2-Generating Energy

The DNP Group's overall greenhouse gas emissions in FY2016 totaled 820,000 tons. This breaks down as follows: energy source CO_2 emissions, 799,000 tons; non-energy source CO_2 emissions, 20,300 tons; methane converted to CO_2 emissions equivalent, 38 tons; N_2O emissions, 436 tons. There were 9 tons of emissions of hydrofluorocarbons (HFCs), 27 tons of perfluorocarbons (PFCs) and 6 tons of sulfur hexafluoride (SF_6), but no emissions of nitrogen trifluoride (NF_3).

In FY2016, our main efforts to reduce CO_2 emissions included conserving energy used for air conditioning and power, improving production line operations, efficient heating units, etc. Energy conservation subcommittees adapted to the characteristics of each business area were also formed. In FY2017, we will continue our aggressive efforts to limit greenhouse gas emissions by continuing with the switch to low CO_2-emission fuels, introducing energy-saving equipment such as inverters, efficient air conditioners, and heating units, and improving production efficiency.

Unit greenhouse gas emissions (Unit: 1,000 tons-CO_2)



Greenhouse gas emissions volume The calculation of greenhouse gas emissions at domestic production sites due to electricity use, fuel use/combustion, burning of waste, and atmospheric emissions of HFCs/PFCs/SF_6 is performed according to type of energy. For city gas, the computation is performed according to the quantity of heat in Appendix 4, "List of City Gas Suppliers and Supplied Quantity of Heat" (revised April 15, 2013) of the Requirements for Filling Out Periodic Reports Based on Articles 15 and 19-2 of the Act on the Rational Use of Energy. For other types of energy, the calculation is performed using the calorific value and emission factors contained in the revised Act on Promotion Global Warning Countermeasures (an enforcement ordinance published March 31, 2010 by the Ministry of the Environment and Ministry of Economy, Trade and Industry). Additionally, for electricity emission factors, the FEPC's 2005 point-of-use CO_2 emissions unit value of 0.423 (kg-CO_2/kWh) was used uniformly. Also, the Guideline for Greenhouse Gas Emissions Calculation for Businesses (Draft Ver. 1.6) (July 28, 2005, partially revised; Ministry of the Environment) is used for recalculating the base year greenhouse gas emissions due to the change in our aggregate accounting range resulting from M&As. The 2005 (base year) figure in the graph above is the sum of FY2005 domestic production site emissions and FY2009 non-production site emissions. Furthermore, Scope 1 emissions attributable to transportation and distribution carried out by group companies are not included.

Energy Conservation Subcommittee Activities

DNP carried out subcommittee activities extensively to support energy conservation activities at our plants. At Information Communication plants a system was implemented to reuse the previously unutilized high-temperature waste heat from deodorizing equipment for the offset rotary press in the drying equipment, thereby reducing gas usage. We also reduced the amount of compressed air by fixing leaks and by linking blow molding machines, thereby reducing compressor power usage. At Lifestyle and Industrial Supplies plants, the exhaust gas processing settings were optimized for the deodorization equipment used to incinerate the drying exhaust gases from gravure printing machines and the like, thereby reducing fuel usage. At Electronics plants, a change in methods for controlling the air volume of clean room air conditioners (switching to an inverter system for damper adjustment) reduced the amount of power used by the air conditioning fan. To achieve further energy savings, efforts have been started to verify energy conservation measures using IoT. There have also been calls for better compressed air leakage prevention from plants, so talks were given to plants on how to diagnose air leaks and how to use diagnostic equipment.


Session on saving energy in plants


Training on use of compressed air leakage diagnostic equipment

Switching to Low CO_2-Emission Fuels

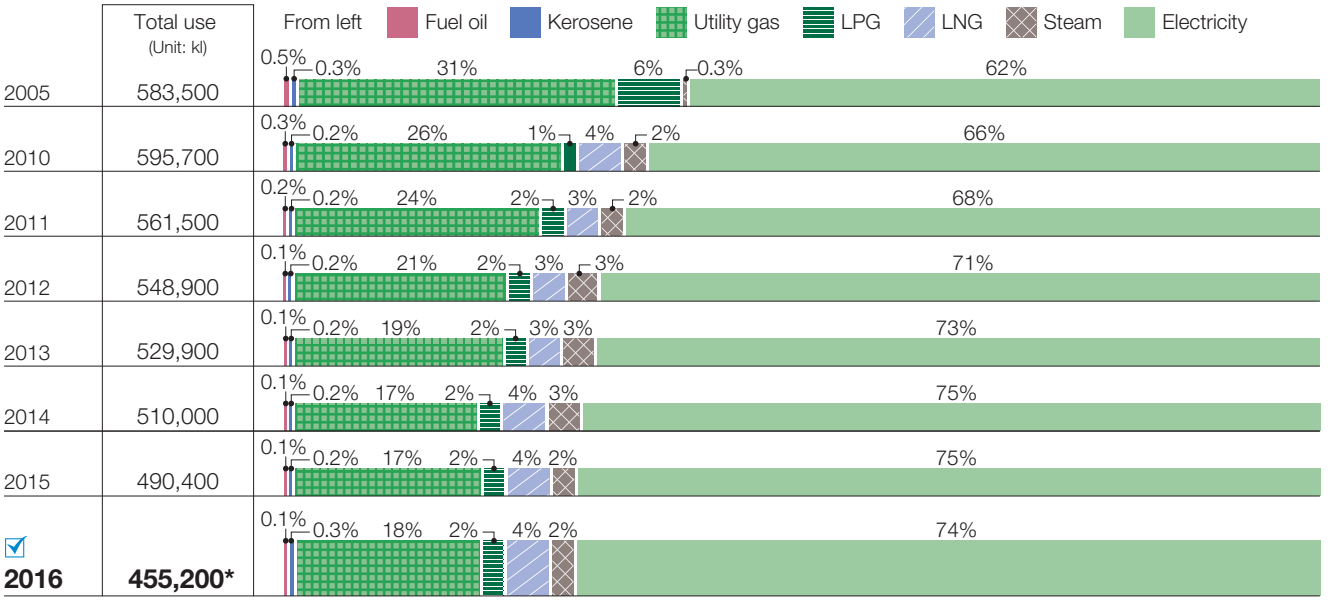
• Shift to Energy with Lower CO_2 Emissions

The DNP Group is making progress in the switch to low CO_2-emission fuels to reduce emissions of greenhouse gases.

We have been making the switch from diesel, kerosene, and similar high CO_2-emission petroleum fuels into low CO_2-emission utility gas, LPG (liquefied petroleum gas), and LNG (liquefied natural gas) since before 1990, and plan to continue to do so.

We are also moving ahead with renewable energy. DNP High-performance Materials' Izumizaki Plant installed a solar power generation system in 2009, while in FY2011 DNP Technopack Tanabe Plant and Ichigaya Kagacho No. 2 Building each installed solar systems with respective capacities of about 30 kW. Furthermore a 10 kW solar system has been installed at the Ichigayatamachi Building, and in FY2015, systems were installed at the Ichigaya Kagacho Building (36 kW), Takashomachi Building (24 kW), and Sayama Plant (6 kW). We also currently purchase 1.82 million kWh of Renewable Energy Certificates annually to cover part of the power consumption used by manufacturing processes within the group (for printing, bookbinding, and processing), the showroom of the Ichigayatamachi Building and other facilities.

Fuel composition

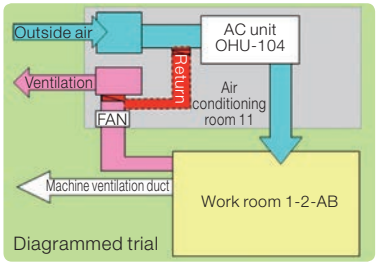


Note: Gasoline and diesel fuel for automobile use are also used (less than 0.2%) in addition to these fuels above.
*Corrected from 510,000 kl in October 2016.

The Recycling of Vented Air Conditioning (DNP Data Techno Ushiku Plant)

Sadaharu Hamadate, No. 2 Engineering Dept., Ushiku Engineering Section 2, Group 4, Information Innovations Operations

The Ushiku Plant specializes in cards—everything from credit cards to point cards, from card manufacturing to card issuance. To ensure that no foreign matter adheres to the surface of a card and to prevent defects due to uneven levels of humidity, a clean room and stable hygrothermal manufacturing environment is required for certain processes. We therefore adopted an all-fresh-air conditioning system that takes in air whose temperature and humidity has been adjusted to the inside of the room and discharges the equivalent amount to the outdoors. We recognized, however, that directly discharging the conditioned air outside constitutes a loss, so we looked into a system that would return the vented air through an air duct. We found that both the cleanness and CO_2 concentration (less than 1,000 ppm) of the air remained below the standard value, so we began recycling the conditioned air using this return system. This improvement helped to reduce energy use for cooling in the summer (air conditioners) and heating and humidifying in the winter (boilers), and also achieved an annual reduction in gas usage of 6,300 m^3. This fiscal year we plan to extend this achievement horizontally by conducting a survey on the operation and load status of other air conditioning equipment.



Anti-Global Warming Measures in Transport and at Our Offices

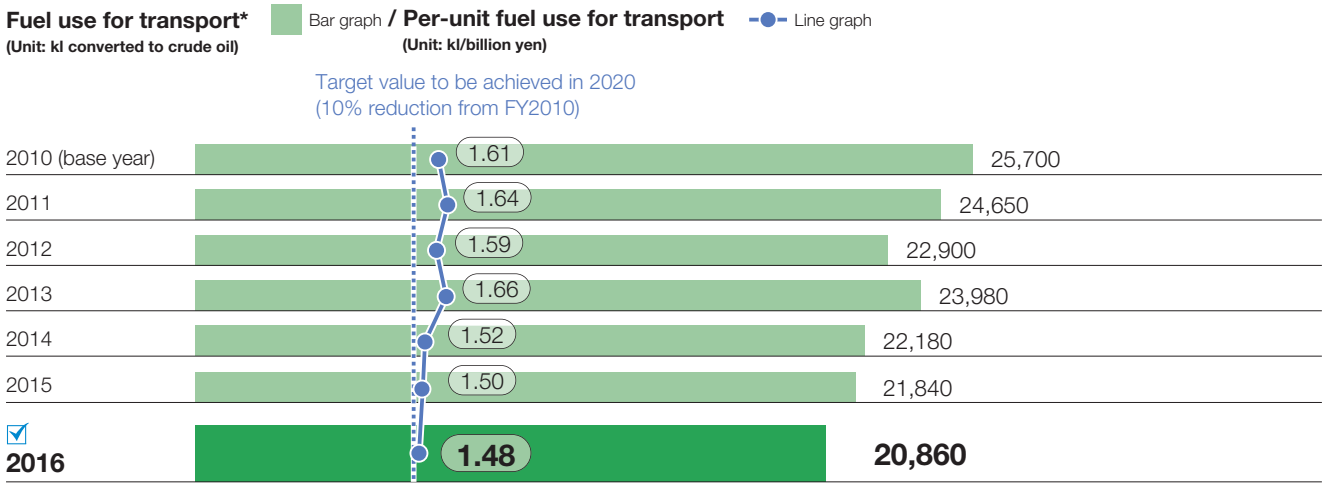
• Efforts in Transport

In FY2016, the group's overall transport volume (at domestic manufacturing sites) was 318 million ton-kilometers. 20,860 kiloliters of energy (converted to crude oil) was used in shipping, producing 51,800 tons of CO_2 emissions. Additionally, emissions attributable to transportation and distribution carried out by group companies (Scope 1) came to 2,400 tons. The per-unit fuel use for transport (amount of fuel used/sales) was 14.8 kl/billion yen, a decrease of 8.1% from FY2010.

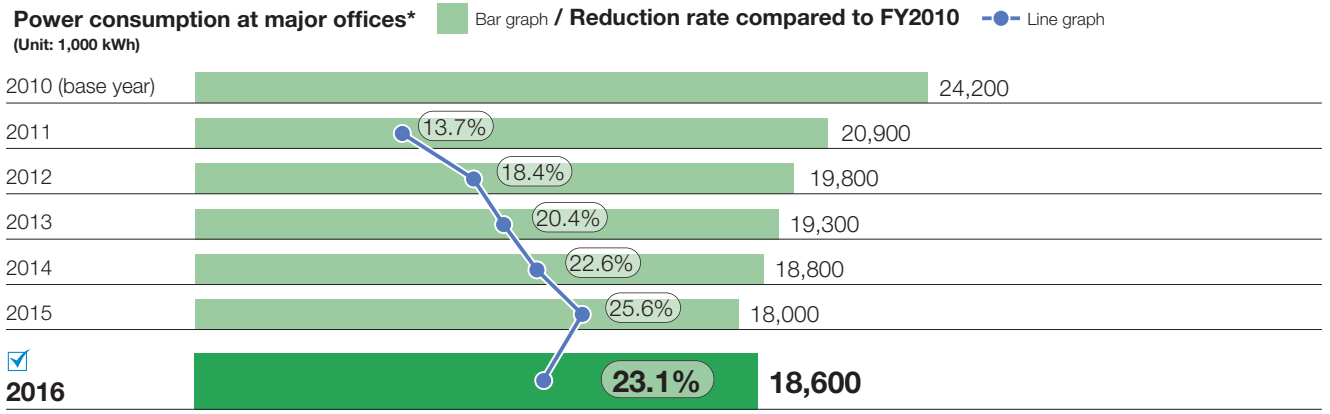
We will continue to implement distribution-related environmental impact reduction measures such as the optimization of vehicle distribution and transport routes, improved efficiency through the installation of digital tachometers, an idling-stop campaign, a modal shift to rail transport, and the introduction of hybrid vehicles.

• Global Warming Measures for Offices and Homes

The DNP Group has been engaged in efforts to reduce CO_2 emissions both for offices and homes since FY2005. In FY2011, we established a target of a 20% reduction in power consumed at our offices throughout Japan relative to FY2010. Specific actions that we are implementing, beyond regular energy-saving measures, include completely revising the number of lighting fixtures and level of illumination needed, extending the "cool biz" dress code period, reviewing how air conditioning is run, and expanding the use of LED lighting.



*Amount used for domestic cargo transport



*38 major offices in Japan under continuous operation during the period FY2010–FY2016

Reducing Air Pollutants

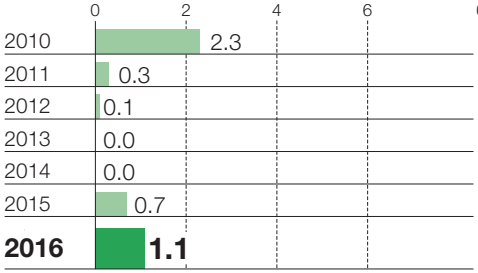
The Air Pollution Control Act regulates substances such as toxic air pollutants and ozone depleting substances, including sulfur oxide (SOx) and nitrogen oxide (NOx), as well as volatile organic compounds (VOCs). These substances have an impact on health and the global environment, causing problems such as photochemical smog and ozone layer depletion. We at the DNP Group are working hard to monitor and reduce emissions of such substances.

• Reducing VOC Emissions

Inks, solvents, adhesives, and cleaning solutions used in the printing process contain toluene and other VOCs. The DNP Group's anti-VOC measures not only seek to regulate concentrations as required under the Air Pollution Control Act, but also to reduce emissions overall. We have been switching to substitute products with a lower environmental impact and installing equipment for VOC treatment and collection. In FY2016, these efforts have resulted in a 38.5% reduction in VOC emissions to 4,141 tons compared to FY2010 (base year).

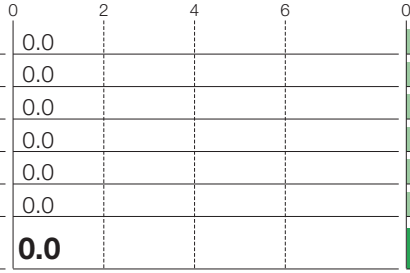
Air pollutant emissions

Dichloromethane (Unit: tons)



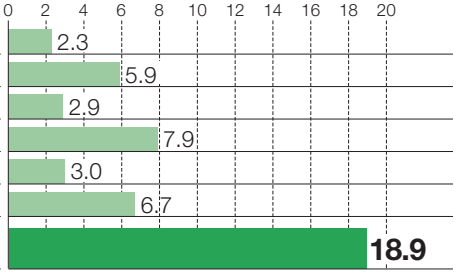
Although dichloromethane was mainly used for washing in the printing process, we have pursued a switchover to substitutes. At present a certain amount is used as a solvent. Our atmospheric emissions have fallen from 53 tons in FY2001 to 1.1 tons in FY2016.

Chlorofluorocarbons (Unit: tons)



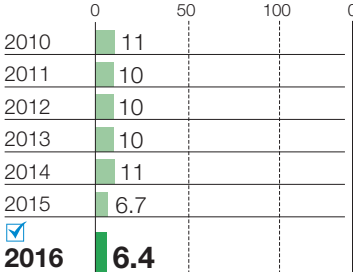
The ozone-depleting chemical HCFC-141b (1,1-dichloro-1-fluoroethane) is used as a cleaner, but our switch to substitutes in FY2010 caused emissions to drop to zero.

Dioxins and dioxin-like compounds (Unit: mg-TEQ)

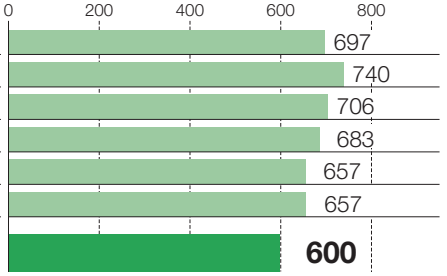


We totally eliminated small furnaces, for which burning control is difficult, and currently have five large-scale furnaces in operation, which are compliant with 2002 regulations. Atmospheric emissions in FY2016 amounted to 18.9 mg-TEQ.

SOx (Unit: tons)



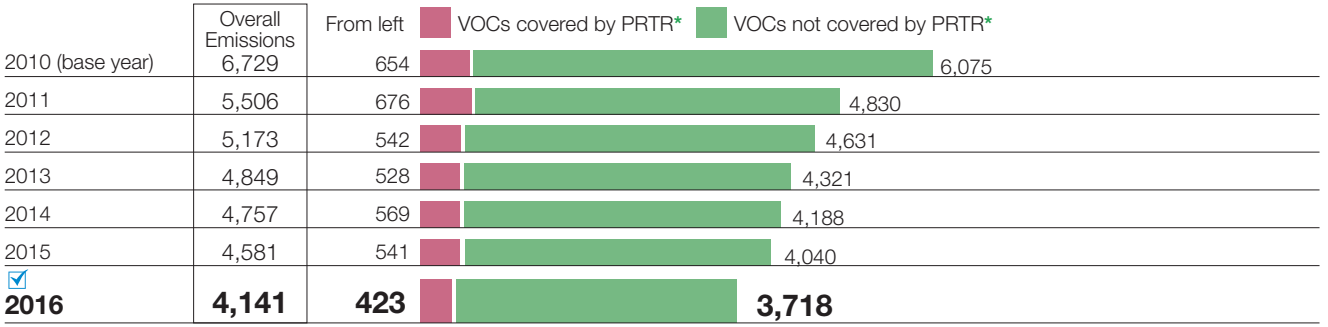
NOx (Unit: tons)



Sulfur oxide is emitted through burning high-sulfur fuel oil and kerosene.

Nitrogen oxide is emitted when fuel is burned in production processes or when electric power is consumed.

Atmospheric emissions of VOCs (Unit: tons)

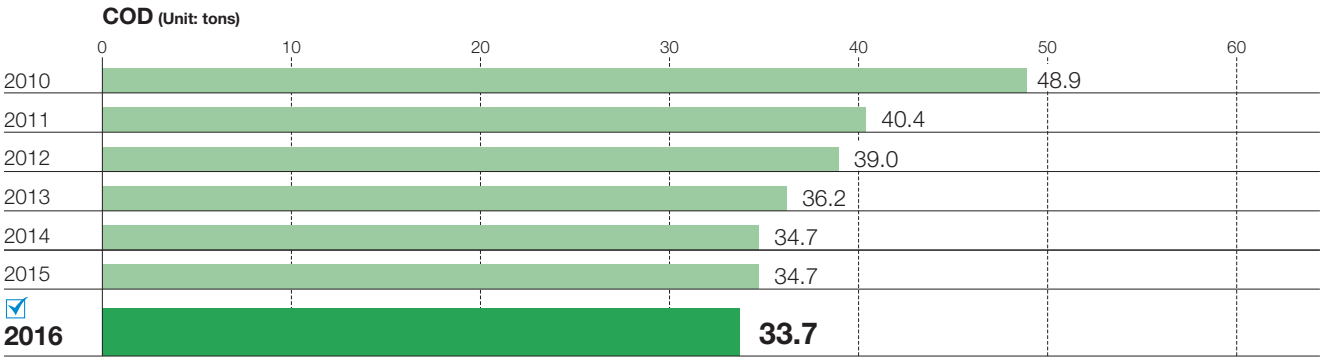


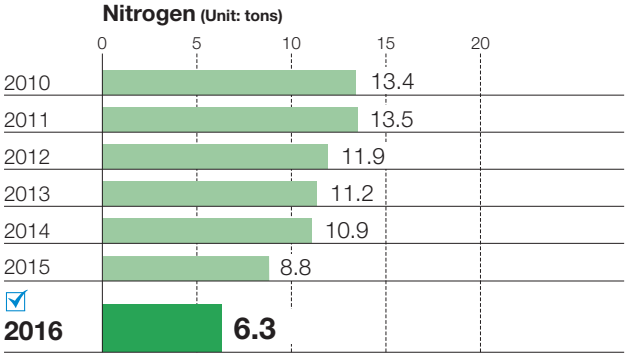
*PRTR: Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

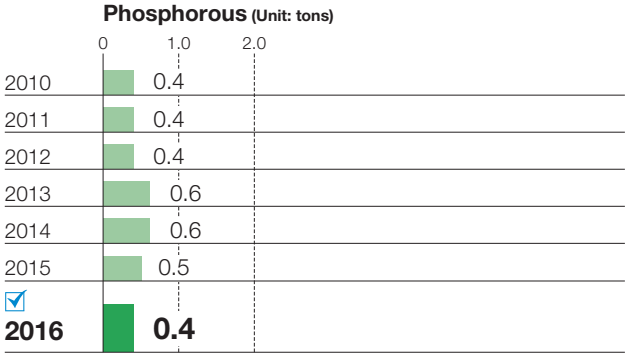
Reducing Water Pollutants

We detoxify and reduce the pollution load of the wastewater from our industrial processes and dining halls by using purification tanks and wastewater treatment equipment. We continued to conduct measures in FY2016, such as changing out the filtration membranes and absorbent materials in wastewater processing equipment, improving wastewater treatment in our kitchens, and reducing COD, nitrogen, and phosphorous emissions.

Water pollutant emissions







Chemical Substances Subject to the PRTR Law

Annual amounts of chemical substances handled at each plant above the defined reporting levels set by the PRTR Law are tallied here (amounts listed to 2 significant figures, or to the nearest 0.1 for figures under 1).

(Unit: kg, Dioxin and dioxin-like compounds only: mg-TEQ)

Substance	Handled	Consumed	Removed/ Consumed	Recycled	To Atmo-sphere	Public Waterways	Soil	Sewer	Waste
Acetonitrile	1,100	–	65	–	11	–	–	–	1,000
2-aminoethanol	42,000	–	–	–	–	–	–	28,000	14,000
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	1,400	1,400	–	–	2.5	–	–	–	20
Indium and its compounds	5,200	1,300	–	3,800	–	–	–	–	130
Ethylbenzene	190,000	–	130,000	57,000	2,700	–	–	–	2,200
Ferric chloride	2,100,000	280,000	680,000	1,100,000	–	–	–	–	120,000
Epsilon-caprolactam	5,100	2,700	1,500	–	88	–	–	–	730
Xylene	160,000	–	120,000	40,000	2,000	–	–	–	5,500
Chromium and chromium(III) compounds	38,000	13,000	–	10,000	–	–	–	2.5	14,000
Hexavalent chromium compounds	14,000	6,800	6,900	–	–	–	–	–	160
Vinyl acetate	1,200	1,200	0.7	–	–	–	–	–	8.6
Inorganic cyanide compounds (except complex salts and cyanate)	2,700	–	420	–	470	–	–	–	1,800
Dichloromethane	3,400	–	–	–	1,100	–	–	–	2,300
N,N-dimethylformamide	67,000	–	4,900	–	340	–	–	–	62,000
Bromine	3,300	3,300	–	–	0.9	–	–	–	–
Dioxins and dioxin-like compounds	–	–	–	–	19	–	–	–	180
Water soluble copper salts (except complex salts)	270,000	54,000	18,000	200,000	–	–	–	1.2	690
Sodium dodecyl sulfate	1,200	1,100	–	–	–	–	–	–	69
Triethylamine	2,900	–	–	–	–	–	–	–	2,900
1,2,4-trimethylbenzene	22,000	–	8,800	13,000	140	–	–	–	–
1,3,5-trimethylbenzene	7,200	–	4,600	2,300	51	–	–	–	150
Toluene	11,000,000	1,800,000	6,600,000	1,300,000	410,000	–	–	–	770,000
Naphthalene	16,000	–	14,000	1,800	82	–	–	–	95
Nickel	39,000	27,000	1,400	11,000	–	–	–	–	–
Nickel compounds	12,000	850	–	1,400	–	–	–	–	10,000
Hydrazine	2,600	2,500	–	–	–	–	–	–	130
Bis(2-ethylhexyl)phthalate	2,900	1,400	1,100	–	63	–	–	–	420
N-hexane	7,700	–	460	–	78	–	–	–	7,100
1,2,4-benzenetricarboxylic acid 1,2-anhydride	3,200	2,800	–	–	–	–	–	–	410
Benzophenone	2,400	2,400	–	–	–	–	–	–	–
Boron compound	3,200	–	–	–	–	2,700	–	–	480
Poly(oxyethylene) alkyl ether*	1,500	1,500	–	–	–	–	–	–	11
Formaldehyde	1,100	–	–	–	1,100	–	–	–	–
Manganese and its compounds	4,100	1,300	–	430	–	–	–	42	2,400
Methacrylic acid	16,000	16,000	–	–	2.8	–	–	–	30
n-Butyl methacrylate	3,500	3,500	–	–	2.0	–	–	–	23
Methyl methacrylate	31,000	31,000	–	–	13	–	–	–	110
Methylenebis(4,1-phenylene) diisocyanate	2,300	2,300	–	–	–	–	–	–	–
Morpholine	25,000	2,300	2,000	–	870	–	–	–	20,000
☑ **PRTR-listed substances**	**14,000,000**	**2,200,000**	**7,600,000**	**2,700,000**	**420,000**	**2,700**	**0**	**28,000**	**1,000,000**

*Limited to alkyls of carbon 12 through 15 or their compounds

Reducing Waste Products in Manufacturing Processes

To help build recycling into society we are engaged in efforts to improve resource productivity and increase the recycling of undesired materials. These efforts are premised on the waste-free use of raw materials that go into manufacturing processes. Undesired materials are recycled as much as possible to utilize limited resources efficiently.

We use waste per unit of production (waste emissions (E+F [next page])/production volume) as a productivity indicator. In FY2016 waste per unit of production was 30.9 t/billion yen (domestic waste emissions/production), which is an improvement over 40.8 t/billion yen in FY2010. This reduction was achieved in part thanks to activities which set out to create a resilient production system in terms of quality, cost, delivery, and other factors. It was also the result of a reduction in waste volume through the extraction of valuable materials such as waste plastic and waste oil.

We use "zero emissions" as the indicator for the promotion of recycling undesired materials. Zero emissions represents an effort to reduce the landfill waste amount (J+K [next page])/undesired materials production volume A [next page] to 0.5% or less; the rate for the group overall in FY2016 was 0.05%, maintaining zero emissions. Two of our domestic manufacturing sites did not achieve zero emissions.

From left: Information Communication, Lifestyle and Industrial Supplies, Electronics, Other

Undesired material generation (Unit: 1,000 tons)

	Total	Information Communication	Lifestyle and Industrial Supplies	Electronics	Other
2010	365	159	98	66	42
2011	358	158	98	62	40
2012	327	151	94	42	40
2013	326	147	115	39	25
2014	314	151	110	42	11
2015	304	151	107	34	12
☑ **2016**	**293**	**144**	**106**	**30**	**14**

Waste emissions (Unit: 1,000 tons)

	Total	Information Communication	Lifestyle and Industrial Supplies	Electronics	Other
2010	65	4	33	17	11
2011	59	4	31	15	9
2012	51	4	25	13	9
2013	51	4	28	13	6
2014	46	4	24	13	5
2015	46	5	24	11	6
☑ **2016**	**44**	**5**	**23**	**9**	**7**

Breakdown of Generated Waste Volume

Okayama Plant, DNP Living Space

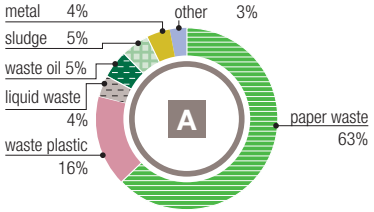
Masahiro Onizuka
General Affairs Department

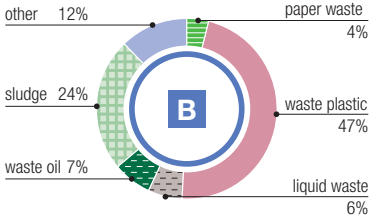
At the Okayama Plant of DNP Living Space, we produce interior and exterior finishing materials using DNP's unique electron beam (EB) technology. Supplied worldwide, such interior materials help to create more comfortable spaces in homes and offices, medical and care institutions, commercial establishments, hotels, and other facilities, while the exterior materials enhance the balance with our living environments.

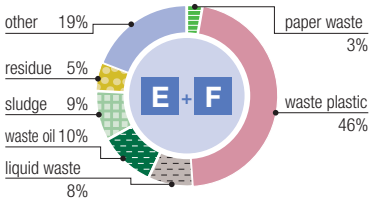
In our efforts to reduce waste, we aim to achieve a 5% reduction in per-unit emissions in FY2020 as compared to FY2015.

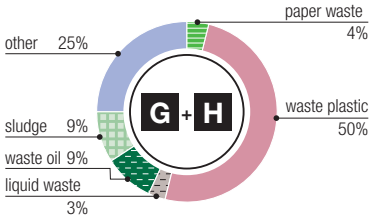
In FY2016, we reduced our per-unit emissions by 9.2% from the previous year. Specific activities included narrowing down the defects and losses by product to about 10 individual areas, and discussing conditions of occurrence, number of occurrences, and relevant issues. We unified the quality control section, equipment group, and manufacturing workplace to decide on a specific improvement plan, introduce high-performance inspection machines, improve equipment, review work methods, and take other step-by-step measures to reduce defects and losses.

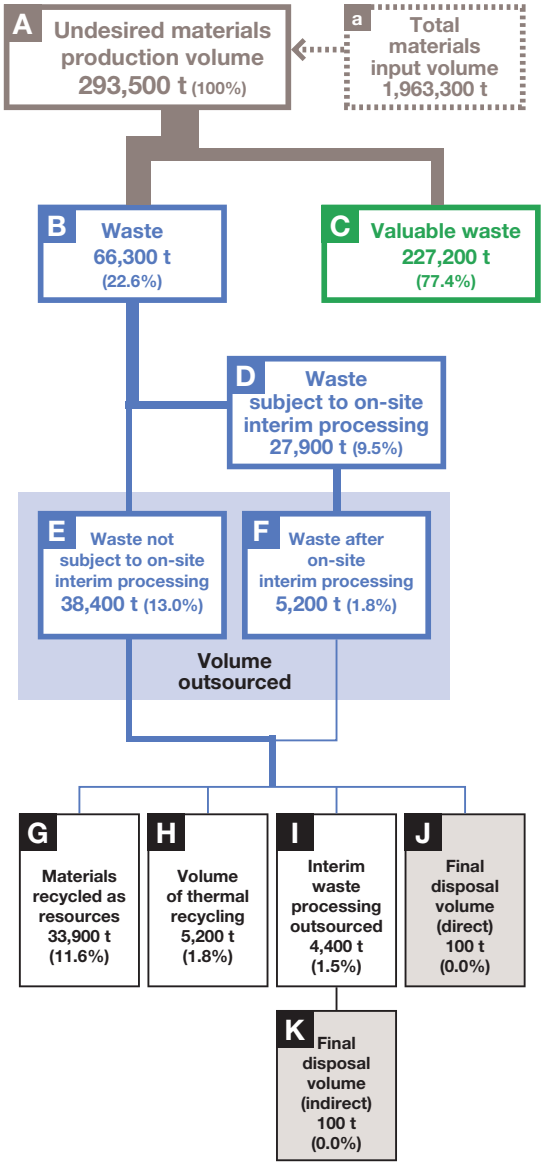
We will continue such efforts to prevent the generation of waste and to supply better products to the world.

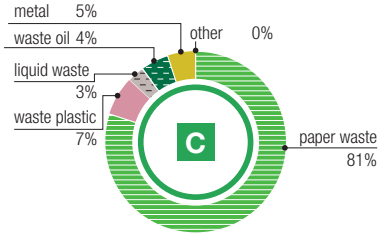


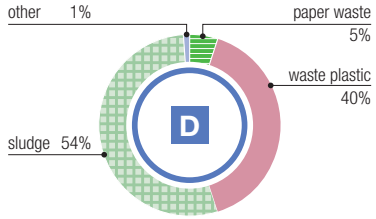


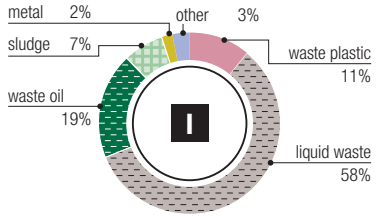


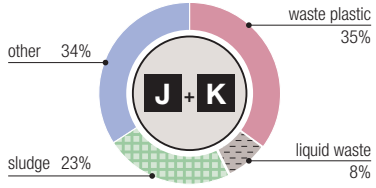












Use of Recycled Resources

• Office Paper Recycling

The business of the DNP Group is closely connected to paper, and we have been separating and collecting paper at our offices for some time. In FY2016, waste paper was collected at 55 of 168 eligible offices, primarily large-scale offices, for a recycling rate of 83.1%, exceeding our target of 70%.

• Reducing Volume of Water Used

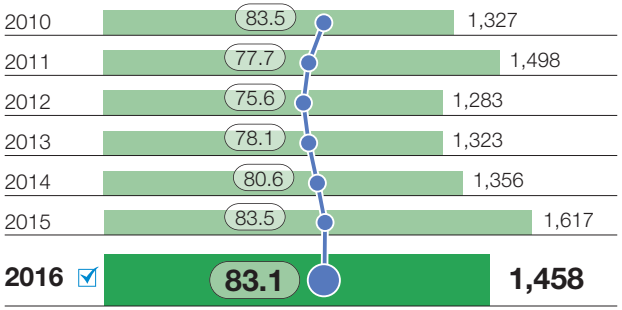
The electronics division requires large volumes of water, so we are working to optimize the volume of water used in each manufacturing process, and to expand the collection and reuse of water. We are also looking at expanding water conservation and cyclic usage efforts throughout the DNP Group. In FY2016, the amount of water used domestically was 11 million m^3, a reduction of 900,000 m^3 from the previous year.

• Use of Recycled Water

We are working hard to conserve water resources by promoting a closed-loop system in which water is recycled and reused instead of released. In this way we have been able to cut down on the high volume of water required for cleaning our products, air conditioning, and heating and cooling production machinery. We used 306.6 million m^3 of recycled water in FY2016, about 34.3 times the amount of pipe water we used.

We are also making effective use of rainwater in our office buildings and other sites. In FY2016 we used 18,700 m^3 of rainwater for toilet flushing and the watering of grounds.

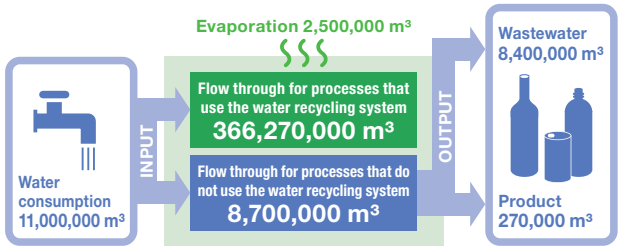
Amount of waste paper collected (Unit: tons) Bar graph
Used paper collection rate (Unit: %) Line graph



Waste paper collection				General waste	Waste paper collection + general waste amount	Number of sites
Cardboard	Magazines	Newspapers	High quality paper			
336	874	29	88	262	1,589	34
337	995	38	129	431	1,929	49
225	886	37	135	413	1,696	55
235	919	33	136	370	1,693	58
182	1,003	30	141	326	1,682	60
204	1,234	29	150	320	1,937	62
215	**910**	**28**	**305**	**296**	**1,754**	**55**

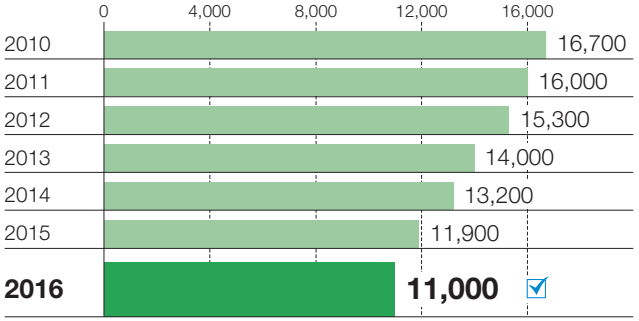
Waste paper collection: Waste paper collection/{waste paper collection + general waste amount (excluding cans, bottles, and garbage)} × 100

Water Input-Output

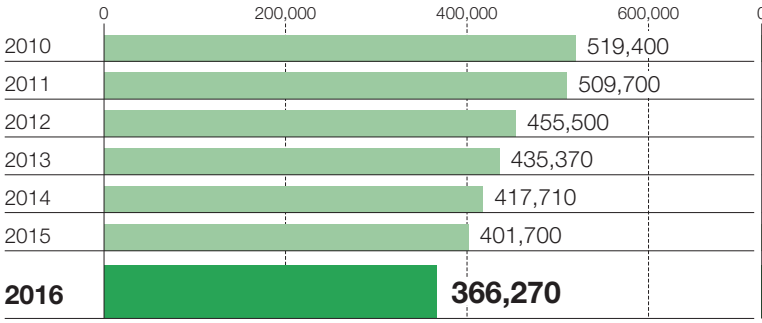


Note: Hokkaido Coca-Cola Bottling and DNP Fine Chemicals use water in products.

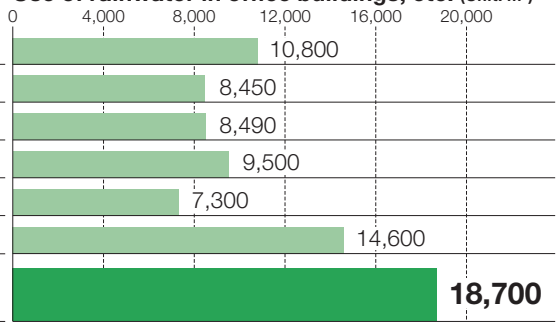
Domestic water use (Unit: 1,000³)



Recycled water use (Unit: 1,000 m³)



Use of rainwater in office buildings, etc. (Unit: m³)



Recycled water: The total volume of water that flows through the heat exchange or cleaning equipment in our closed-cycle system in one year.

Environmentally Conscious Products and Services

• Development and Sales of Environmentally Conscious Products and Services

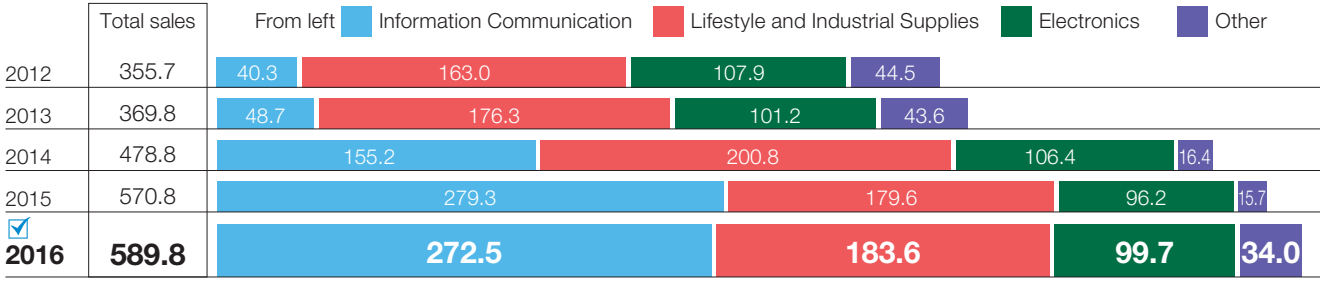
At DNP we have created the Environmentally Conscious Products and Services Development Guidelines to direct from the design stage the creation of environmentally conscious products, so as to reduce the environmental impact of our products throughout their lifecycle. To develop more eco-friendly products and services, we introduced an in-house point rating system for products and services, according to which certain products earn the designation “Super Eco-Product” or “Eco-Product.”

Sales of environmentally conscious products and services reached 589.8 billion yen in FY2016 and have achieved targets. Moreover, thirty-five products have so far been designated as Super Eco-Products as of March 2016.

In FY2016, DNP Lighting Film, which effectively reflects and diffuses light coming in from windows, was recognized for its ability to reduce power consumption and enhance the comfort in a room; it won the 26th Grand Prize for the Global Environment Award, the Japan Business Federation Chairman’s Prize.

DNP intends to continue developing more of such environmentally conscious products and services.

Sales of environmentally conscious products and services (Unit: billion yen)



DNP Recycling System

DNP has built a recycling system for making paper-recycled products at DNP Group plants by utilizing excess blank paper and unused white paper generated in the manufacturing process.

There is 100% traceability of resources in all processes, from paper used as a raw material to the creation of paper-recycled products from the plant’s waste paper. The Forest Stewardship Council (FSC) has also granted use of its mark for the products. The first such implementation was the production of coasters at the Tanabe Plant (Kyoto), which manufactures packaging materials. The coasters are used in the plant’s reception room and at other domestic DNP business sites.

These FSC® coasters are manufactured entirely from recycled waste paper, primarily from paper that comes from the DNP plant.

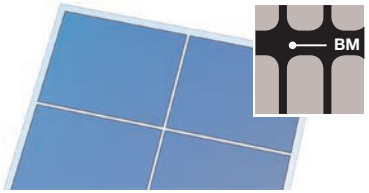
FSC (Forest Stewardship Council)
The FSC is an international body that certifies wood product-producing forests around the world for environmentally sound management, along with certifying the many stages of distribution and processing of the wood products from those forests. Only recycled products using materials recognized by FSC standards are FSC certified.

Guidelines for Developing Environmentally Conscious Products and Services with Example Products

1 Reduction of environmental pollutants

Elimination of ozone layer-damaging substances, heavy metals, volatile organic compounds, and prevention of release into the environment of nitrous oxides and other substances.

Example product • BM Color Filters



These are color filters using a black matrix (BM) made of resin instead of metal. Development of this product has resulted in reduced environmental impact and cost.

2 Resource and energy conservation, reduction of GHG emissions

Reduce the use of metals and fossil fuels. Promote energy-conserving products and systems.

Example product • Refill Pouch with Spout

Our Elbow Pouch is a refill-use pouch with improved opening and pouring features. It is useful in saving bottle resources, and post-refilling volume is reduced.

3 Sustainable use of resources

Utilize natural resources in a sustainable way.

Example product
• Biomass Plastic Packaging Material

These film products are made partially from plant-based materials. Their production and use will help reduce emissions of CO_2, a greenhouse gas, and the use of petroleum, a depleting natural resource.

4 Long-term usability

Consider the ease of repair and parts replacement, length of maintenance and repair service, and the expandability of functions.

Example product • Decorative Sheeting

Safmalle is our line of olefin-based decorative sheets for construction or decorative use, which meet the need for healthy, hygienic, and safe living space creation.

5 Reusability

In the case of sites and parts, considerations regarding disassembly, cleaning, and refilling; establishment of a collection and reuse system that is easy for the purchaser to use.

Example product • Peel-off Shipping Labels

These are shipping labels that are easily peeled off of packing paper or cardboard. The labels are one-ply, saving paper, and they make the recycling of cardboard and other packaging easy because they peel off cleanly.

6 Recyclability

Are the materials used in the product easy to recycle? Does the design allow for easy breakdown, disassembly, and separation of materials? Is there a collection and recycling system that is easy for the purchaser to use?

Example product
• Environmentally Conscious Calendars

These calendars are made with recycled paper and low environmental impact ink. No metal or plastic need be removed post-use, because neither is used in their production.

7 Use of recycled materials, etc.

Use as many collected and recycled materials and parts as possible.

Example product
• Paper Carton Using Recycled Paper

These are printed materials that use composites of used paper, such as used magazines and newspapers. Not only do they require fewer paper resources, but the use of low environmental impact soy ink and non-VOC ink is increasing.

8 Ease of treatment and disposal

Attempt to place as little burden as possible on incinerator facilities and landfill sites.

Example product
• Transparent Vapor Deposition Film

This is a packaging-use clear cling film which cuts dioxin use because it is non-PVC. It is widely used in the packaging of food, toiletries, or daily items requiring a barrier.

9 Making environmental burden visible and taking into consideration biodiversity

Making visible any burden that should be reduced, and aiming to protect biodiversity.

Example product
• Ultra Lightweight Injection-Molded Cup

The lightest injection-molded cup in the industry. The Carbon Footprint (CFP) Mark was acquired for the cup as an intermediate product. The lightened weight directly conveys the reduced use of resin.

10 Supporting and promoting environment education and awareness

Helping to create a sustainable society.

Example product
• Energy-Saving Apps and Other Services

This smartphone app helps you to check the use of electricity in your home to raise awareness of saving electricity.

Environmental Label Certification

We have earned environmental labeling certifications such as CoC (Chain of Custody) certification and the Japan Environment Association's Eco Mark. We are working to expand the sale of products with this labeling, so that their packaging and advertising can serve as a means to educate consumers properly about the environmental aspects of our goods and services.

• Main Certification Acquisition Results

Eco Mark (Type 1 Environmental Label)	
This environmental label is attached to products recognized as having low environmental impact throughout their lifecycle, from production through disposal, and as being useful to environmental conservation.	**Acquired for DNP's biomass plastic packaging material, Biomatech®, a blend with plant-based materials**
CoC Certification	
CoC (Chain of Custody) This is a certificate of control throughout each stage of processing and distribution, by which wood products and materials (including paper products) taken from FSC-certified forests contain a fixed percentage or greater of certified material, and have no wood products or materials derived from illegally harvested sources mixed in.	**Acquired by a total of 12 business units**

Environmental Labeling
Environmental Labeling: This is broadly divided into three types: Type 1, such as the Eco Mark (third party certification); Type 2, in which a company itself makes the declaration (self-declaration); and Type 3, in which environmental information is provided on the label, such as the EcoLeaf (environmental information labeling), with each having specifications under ISO or JIS. Reference information: "Environmental Labeling Database" of the Central Environment Council of the Ministry of the Environment

CoC Certification

Certification Type	Acquired by*1	Acquisition Date*2	Registration Organization
FSC-CoC	DNP Trading	Dec. 03	SGS
	Packaging Operations	Dec. 05	SGS
	Publication Printing Operations	Mar. 06	SGS
	DNP Multi Print	Apr. 07	SGS
	Tien Wah Press (Pte.) Ltd.	May 08	DNV
	Information Innovations Operations	Aug. 08	SGS
	Living Space Operations	Aug. 09	SGS
	DNP Shikoku	Dec. 11	SGS
	DNP SP Tech	May 14	JIA
PEFC-CoC	Packaging Operations	Jan. 04	JIA
	DNP Trading	Jan. 08	SGS
	Publication Printing Operations	Mar. 11	SGS
	Living Space Operations	Nov. 11	SGS

FSC
Forest Stewardship Council

PEFC
Programme for the Endorsement of Forest Certification Schemes

SGS
SGS Japan

DNV
Det Norske Veritas (Norway)

JIA
Japan Gas Appliances Association

*1 Organizations and the names used for them as of March 31, 2017.
*2 Date of initial registration. However, this is the date that Information Innovations Operations (August 2003) switched to multisite certification.

Biodiversity Efforts

At DNP we understand that we gain many benefits from ecosystems that are supported by abundant biodiversity, and we believe that working to coexist harmoniously and protect the environment is essential for the company to maintain sustainable growth. Based on this way of thinking, we work to protect biodiversity through our business activities.

In every process, including product development, material procurement, manufacturing, sales, transport, product use, and disposal of waste, we have examined the relationship with biodiversity. We established two key themes, both of which affect our reliance on ecosystem services and seriously impact biodiversity—the improvement of material procurement practices and the creation of green spaces at our business sites.

Material Procurement

• Guidelines for Procurement of Paper for Printing and Converting

Paper is a principal raw material essential to the ongoing continuation of DNP's business operations. We are committed to the conservation of forest resources and effective use of raw materials. To this end, we actively encourage use of products made using timber from thinned trees and FSC-certified paper. We are aiming for 100% conformity to our Guidelines for Procurement of Paper for Printing and Converting for all raw material paper products. We are also strengthening our communication with paper manufacturers, sales companies, and other suppliers in an effort to assure traceability.

Partnership Project Approved by the Japan Committee for United Nations Decade on Biodiversity (UNDB-J)

DNP has partnered with local governments, an elementary school, paper makers, and others to protect the Fujimae Tidal Flat in the Shonai River downstream basin. Specifically, we trim the reeds that grow in the reed beds of the tidal flat to maintain their function of purifying the water. We then pulp and make paper from the cut and collected reeds. The paper is used to make graduation certificates printed for a local elementary school that participates in the reed cutting (Nagoya Tochi Elementary School). In 2016 this effort was approved as a partnership project as recommended by the Japan Committee for United Nations Decade on Biodiversity (UNDB-J), highly praised for the partnership with diverse groups, the project's importance, and its awareness-raising impact.

UNDB-J logo

Recipient of Biodiversity Action Award Japan

DNP uses fair trade coffee in its reception rooms and cafés, and has served more than 900,000 cups in total. Fair trade coffee is coffee certified as having been produced to international fair trade standards, which include standards for biodiversity in developing countries and protection of producers' human rights. On World Fair Trade Day held in May every year, DNP holds an in-house fair trade campaign that includes dishes on the menu at employee cafeterias around the country made with fair trade sesame seeds, plus the sale of fair trade chocolate and macarons at DNP cafés. In FY2016 DNP received the Biodiversity Action Award Japan for its active selection of products that are people- and environment-friendly.

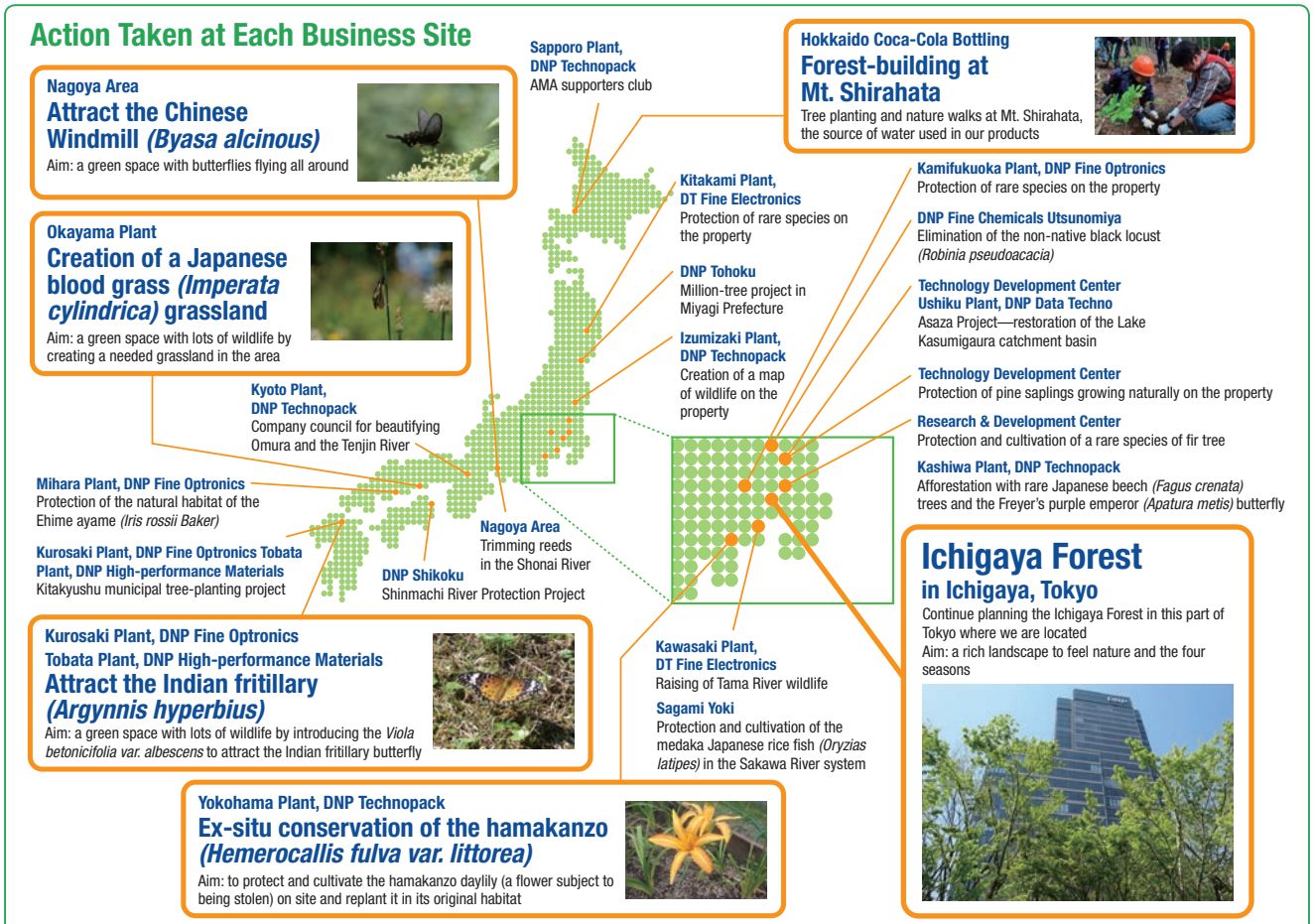
Creation of Green Spaces at Business Sites

• Creating Green Spaces to Broaden the Diversity of Life in the Local Area

The land use and site management of plants and offices affect a region's ecosystem, but they can also contribute to improving the quality and sustainable use of ecosystem services.

The DNP Group creates green spaces at business sites for the benefit of wildlife in the local area. Plant and wildlife surveys will also be conducted at business sites to improve their green spaces, to select suitable plants and trees, and to update maintenance practices. These surveys will be used in creating green spaces that promote biodiversity at our business sites.

Action Taken at Each Business Site



Ichigaya Forest Wildlife Survey Report

In FY2016 we conducted wildlife surveys in winter, spring, and autumn to ascertain what bird and insect species were inhabiting the area.

The bird survey uncovered the habitation of 17 species of birds in 14 families and six orders. Most were so-called urban birds—species that have adapted to urban environments. Small birds of prey were also observed, and it was assumed that they use high-rise buildings as resting places.

The insect survey uncovered the habitation of 110 species of insects in 61 families and 12 orders, including butterflies, grasshoppers, and other large insects. The number of species confirmed is still relatively low. As the green space grows the insect fauna are expected to thrive. We plan to continue carrying out surveys on a regular basis in the future.

Tsugumi (dusky thrush)

Kawara hiwa (Oriental greenfinch)

Nami ageha (Asian swallowtail)

Aosuji ageha (common bluebottle)

Target and Calculation Items

Targets

1. As an environmental management tool for the DNP Group

(1) To evaluate and confirm the effectiveness of environmental conservation activities
(2) To determine the cost of and investment in individual conservation measures and the Group's overall environmental activities
(3) To monitor and evaluate the effects and achievements of activities performed throughout the year to ensure continuous improvement in our environmental performance

2. As a tool for communicating with society

(1) To publicly announce the cost-benefit relationship of environmental conservation efforts
(2) To reflect the opinions of shareholders, business partners, local residents, and others in environmental conservation activities

Environmental Accounting Calculation Standards

(1) Period covered: April 1, 2016 through March 31, 2017 (Environmental facilities are those considered as of March 31, 2017)

(2) Scope of coverage: At DNP and among its domestic group companies subject to consolidated financial accounting, 22 domestic manufacturers and one distribution company (pp. 41, 42), plus non-manufacturing sites (three development centers, office buildings, sales offices, etc.). However, newly built plants are included in the capital investment.

(3) Monetary unit: All monetary figures are expressed in millions of yen, rounded off to the nearest million.

(4) Announcement format: We used the format designated in the Ministry of the Environment "Environmental Accounting Guideline" 2005 edition.

(5) Standards for calculation of environmental conservation costs

1) Environmental conservation costs include depreciation expenses for investments.
2) Personnel costs for full-time workers were calculated at the average labor cost 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 three R&D centers and development departments within each operations field in the development of environmentally conscious products and manufacturing equipment.

(6) Standards for calculation of environmental conservation benefits

1) DNP uses domestic consolidated per unit of sales as an efficiency 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.
2) Benefits apply to all volatile organic compounds (VOCs), including chemical substances subject to the PRTR Law among the atmospheric environmental pollutant emissions volume corresponding to business area costs.
3) The benefit related to goods produced by business activities was reduction of the volume of greenhouse gases emitted from all products shipped. Specifically, of the GHG emissions calculated according to the Scope 3 standards listed on p. 19, the categories used were: part of Category 4 (Upstream transportation & distribution), Category 9 (Downstream transportation & distribution), Category 10 (Processing of sold products), Category 11 (Use of sold products), and Category 12 (End of life treatment of sold products).
4) The benefit corresponding to the transportation environmental impact is converted to the energy usage reduction benefit to the shipper at the time the goods, etc., are transported.

(7) Standards for calculation of economic benefit of environmental conservation activities

1) The benefit corresponding to resource circulation costs is calculated as the benefit from savings on waste disposal costs. The amount of reduction is calculated as follows: (Benchmark period unit consumption – unit consumption for current period) × amount of business activity for current period.
2) Amount of business activity is based on domestic consolidated sales.
3) Unit consumption is calculated as: waste disposal cost / domestic consolidated sales.
4) The benchmark period unit consumption is the gross average value for the three-year period up to and including the previous term.

Table (1) Environmental Conservation Costs (categories corresponding to business activities)

Category	Investment		Expense		Details of major efforts	Page(s) on which data is listed
	FY2015	☑FY2016	FY2015	☑FY2016		
(1) Business area costs						
1) Pollution prevention costs	611	**217**	2,023	**1,817**	VOC collection and disposal equipment, wastewater treatment facility	23-25
2) Global environmental conservation costs	463	**137**	374	**320**	Introduction of solar power generation equipment, conversion to inverters, waste heat recovery, switching to energy-saving lighting	20-22
3) Resource circulation costs	141	**119**	1,620	**1,548**	Furnace improvements, separation recycling, zero emissions (conversion to RPF/cement ingredients), resource recycling	26-28
(Total business area costs)	1,215	**474**	4,017	**3,685**		
(2) Up/downstream costs	0	**0**	108	**115**	Container and packaging recycling expense burden, recycling system development	29-31
(3) Administration costs	0	**0**	2,206	**2,315**	ISO 14001 inspection and registration costs, environmental education costs, environmental report composition costs	8-14, 31, 43
(4) R&D costs	0	**0**	2,084	**1,928**	Research and development into environmentally conscious products and production methods	29-31
(5) Social activities costs	0	**0**	14	**18**	Environmental conservation of areas outside plant compounds, biodiversity conservation, support for activities of environmental conservation groups	32-33
(6) Environmental remediation	0	**0**	0	**0**		9-12
Total	1,215	**474**	8,430	**8,062**		

● Environmental conservation costs to total costs ratio

Category	Consolidated total costs	Costs	Ratio	Details of major environmental conservation costs	Page(s) on which data is listed
Investment of current period	57,000	474	0.83%	Introduction of solar power generation equipment, conversion to inverters, etc.	20
R&D cost of current period	31,375	1,928	6.14%	Development of photovoltaic and fuel cell parts, development of products free of toxic substances, process loss reduction, etc.	29-30

FY2016 Assessments of Performance Data of Environmental Accounting

Environmental Conservation Costs and Environmental Conservation Measures

(1) The amount of capital invested in equipment to conserve the environment decreased from the last fiscal year, when large environmental equipment was introduced.
(2) Expenses were reduced from the previous fiscal year owing to a reduction in depreciation expenses and a review of development themes.

Table (2) Environmental Conservation Benefits (1)

(1) Environmental conservation benefit related to resources input into business activities

Category of environmental conservation benefit	Category of indicator showing benefit	Indicator values			Remarks	Page(s) on which data is listed
		FY2015	FY2016 ☑	Difference		
1) Benefit arising from supplied resources						
Total energy input volume	Energy consumption (TJ)	19,000	17,645	-1,355		20-22
	Unit consumption per domestic sales for the above (TJ/billion yen)	1.56	1.46	-0.10	Energy consumed per billion yen of domestic sales	20-22
Input volume of water	Water usage (1,000 m^3)	11,900	11,000	-900		28
	Unit consumption per domestic sales for the above (1,000 m^3/billion yen)	0.97	0.91	-0.06	Water usage per billion yen of domestic sales	28
Input volume of main raw materials	Supplied amount (1,000 tons)	2,057	1,963	-94		27
	Amount of undesired materials generated/ supplied (%)	14.8	14.9	0.1	Ratio of unwanted materials to main raw materials	27
2) Environmental conservation benefit related to waste or environmental impact originating from business activities						
Emissions to the air	SOx emissions (tons)	6.7	6.4	-0.3		17, 23
	NOx emissions (tons)	657	600	-57		17, 23
	Environmental pollutant emissions volume (tons)	4,581	4,141	-440	VOC emissions volume	23
Water quality	COD discharge (tons)	34.7	33.7	-1.0		17, 24
	Emissions of environmental pollutants (PRTR-listed substances) (tons)	0.0	2.7	2.7	One substance reported	25
Waste emission volume	Generated undesired materials (1,000 tons)	304	294	-10	Including undesired materials other than main raw materials	26-27
	Discharged waste (1,000 tons)	45.9	43.6	-2.3		26-27
	Unit consumption per domestic sales for the above (tons/billion yen)	3.76	3.61	-0.15	Discharged waste per billion yen of domestic sales	26-27
	Recycle rate (%)	99.6	99.7	0.1	By category: paper (100%), waste plastics (99.7%), metals (99.2%), and glass (99.3%)	26-27
	Emissions of environmental pollutants (PRTR-listed substances) (tons)	840	1,000	160	Total for 33 substances reported	25
Volume of greenhouse gas emission	Emissions of greenhouse gases (1,000 t-CO_2)	888	820	-68		20-21
	Unit consumption per domestic sales for the above (tons/billion yen)	73	68	-5	Emissions per billion yen of domestic sales	20-21

Table (2) Environmental Conservation Benefits (2) (3)

(2) Environmental conservation benefit related to goods and services produced by business activities

Category of environmental conservation benefit	Category of indicator showing benefit	Indicator values			Remarks	Page(s) on which data is listed
		FY2015	**FY2016** ☑	Difference		
Benefit related to goods produced by business activities						
CO_2 emissions after product shipment	CO_2 emissions (1,000 t-CO_2)	1,513	1,495	-18		19, 29-31
	CO_2 emissions / domestic sales (1,000 t-CO_2/billion yen)	0.124	0.124		CO_2 emissions per billion yen of domestic sales	19, 29-31

(3) Other environmental conservation benefit

Category of indicator showing benefit	FY2015	**FY2016** ☑	Difference	Remarks	Page(s) on which data is listed
Benefit related to the environmental impact of transportation					
Energy usage amount during shipment of goods (kl)	21,840	20,860	-980		16, 22
Energy usage amount during transport / gross sales (kl/billion yen)	1.50	1.48	-0.02	Energy usage amount per billion yen of consolidated sales	16, 22

Table (3) Economic Benefits of Environmental Conservation Activities

Economic benefits of environmental conservation activities	Amount			Remarks	Page(s) on which data is listed
	FY2015	**FY2016** ☑	Difference		
(1) Increased sales **1) Economic benefit of R&D costs**					
Sales of environmentally conscious products	570,800	**589,800**	19,000		16, 29-31
(2) Increased income **2) Benefit of resource recycling costs**					
Income from recycling undesired materials	3,056	**2,903**	-153	Shift toward valuable materials such as waste plastics, etc.	26-27
(3) Cost saving **3) Benefit of resource recycling costs**					
Saving disposal costs by resource conservation	-8	**26**	34	Calculated according to basis outlined in (7) on p. 34	26-27

FY2016 Assessments of Performance Data of Environmental Accounting

Environmental Conservation Benefits

(1) Water usage and greenhouse gas emissions were again reduced from the previous year thanks to energy-saving and water-saving efforts. This resulted in an improvement in unit consumption.

(2) Emissions of VOCs into the air were reduced from the previous year as a result of the upgrading and continued maintenance of VOC collection and removal equipment and reductions in solvent use amounts. Waste emissions fell due to production efficiency improvements and expanded conversion into valuable materials, resulting in an improvement in unit consumption over the previous year.

(3) Regarding the benefits related to goods produced by business activities, CO_2 emissions decreased, while unit consumption remained the same over the previous year. The environmental burden from transport also decreased.

Economic Benefits of Environmental Conservation Activities

(1) Sales of environmentally conscious products increased from the previous year due to expanded sales of existing qualified products and the development of new products.

(2) Business income from recycling undesired materials fell from the previous fiscal year due to worsening of the market environment and a subsequent reduction in the amount of valuable materials. On the other hand, the unit consumption improvement due to the reduced volume of waste emissions had a positive effect with regard to resource recycling costs.

Ongoing Efforts

(1) Make further improvements in eco-efficiency through productivity improvements.

(2) Improve the use ratio of recyclable energy while systematically promoting replacement with energy-saving equipment to reduce greenhouse gas emissions.

Results of Efforts

FY1972	Establishes the Environment Department within the head office to promote pollution prevention measures and communication with local residents
FY1990	Makes new efforts to deal with global environmental issues by establishing the Eco-Plan Promotion Office within the Environment Department
FY1992	Establishes the DNP Group Corporate Pledge and Code of Conduct for DNP Group Employees
	Establishes the Eco-Plan Promotion Targets, the elaborated voluntary plan based on the Environmental Declaration of the Code of Conduct, and starts activities by 4 sub-committees
FY1993	Starts the Eco-Report System, which is part of the DNP Group's environmental management system
FY1994	Remodels and expands the Environment Department into the Environment & Product Liability Department to strengthen our efforts toward environmental issues, including taking responsibility for the disposal of products we produce
FY1995	DNP wins the International Trade and Industry Minister's Prize in the 4th Grand Prize for the Global Environment Award. (The award was established in 1991 by the Japan Industrial Journal and the Fuji Sankei Communications Group, with special support by WWF Japan and sponsorship by the Ministry of the Environment, the Ministry of Economy, Trade and Industry, and the Japan Federation of Economic Organizations)
FY1996	Begins performing Eco-Audits, the internal environmental audit performed by the Eco-Plan Promotion Office to upgrade the Eco-Report System
FY1997	Okayama Plant, Information Media Supplies Operations becomes the first in the printing industry to acquire ISO 14001 certification
FY1998	Mihara Plant, Display Components Operations acquires ISO 14001 certification
	Publishes the DNP Group Environmental Activity Report
FY2000	The Eco-Plan Promotion Office is dismantled and replaced with the DNP Environmental Committee to strengthen the system for promoting environmental activities
	DNP Facility Services becomes the first in the world to be certified for its comprehensive system with quality, environment, office safety, and HACCP
FY2001	DNP Tokai, and Sayama Plant, DNP Technopack acquire ISO 14001 certification
FY2002	DNP Tokai acquires FSC-CoC certification
FY2003	Environmental Report Division receives the 6th Environmental Report Grand Prize for superior reporting
	Two types of fused thermal transfer materials of the Information Media Supplies Operations receive EPD "Type III" environmental labeling certification and registration
FY2004	DNP wins the Minister for the Environment's Prize in the 14th Grand Prize for the Global Environment Award
	7th Environmental Report Prize awarded for excellence
	Eco-Report System implemented at overseas sites
FY2005	8th Environmental Report Prize / Sustainability Report Prize awarded for excellence
FY2007	PRTR 2007 Awards PRTR Honorable Mention (Tsuruse Plant)
	DNP Gotanda Building wins the Green Grand Prize in the Shinagawa-ku Green Award System
FY2009	Kanto Bureau of Economy, Trade and Industry Energy Management In Business Superiority Award (received by Akabane Plant, Commercial Printing Operations)
FY2010	DNP IMS Odawara receives the Kanagawa Prefecture Environmental Conservation (Air, Water, Soil) Award
	Revision of DNP Group Environmental Targets
	The DNP Emergent Evolution Forest Hakone Training Center 2 acquires Green Key certification
FY2011	DNP's independently developed Energy-Saving Total Management System is implemented at 36 Tokyo Electric Power locations
	New, leading-edge environmentally conscious plant for manufacturing flexible packaging is built in Kyotanabe
	Reductions in power consumption in the processes of manufacturing photomasks earns DNP the Energy Conservation Grand Prize for excellent energy conservation equipment, Jury's Special Prize awarded by the Energy Conservation Center, Japan (ECCJ)
FY2012	Guidelines for Procurement of Paper for Printing and Converting are established to protect biodiversity in our business operations, and projects to create green spaces are launched at Okayama Plant and DNP Chubu business sites
	Volume of greenhouse gas emissions are announced according to Scope 3 standards
FY2013	Targets for reduction of water usage are set
	Green Procurement Guidelines for Chemical Substances are set and management of chemical substances in products is strengthened
FY2014	Climate change prevention targets for FY2030 are set
	DNP is selected by CDP's Forest Program as sector leader in the Industrials & Autos sector
	DNP wins a Prize of Excellence (Judge's Prize) at the 18th Environmental Communication Awards
FY2015	DNP Group environmental targets are revised
	CDP places DNP on its "A List"
	DNP wins a Prize of Excellence (Judge's Prize) at the 19th Environmental Communication Awards
FY2016	DNP wins 26th Grand Prize for the Global Environment Award, Japan Business Federation Chairman's Prize
	DNP wins a Prize of Excellence (Judge's Prize) at the 20th Environmental Communication Awards
	DNP wins Biodiversity Action Award Japan 2016

Note: Organizations and the names used for them as of that time.

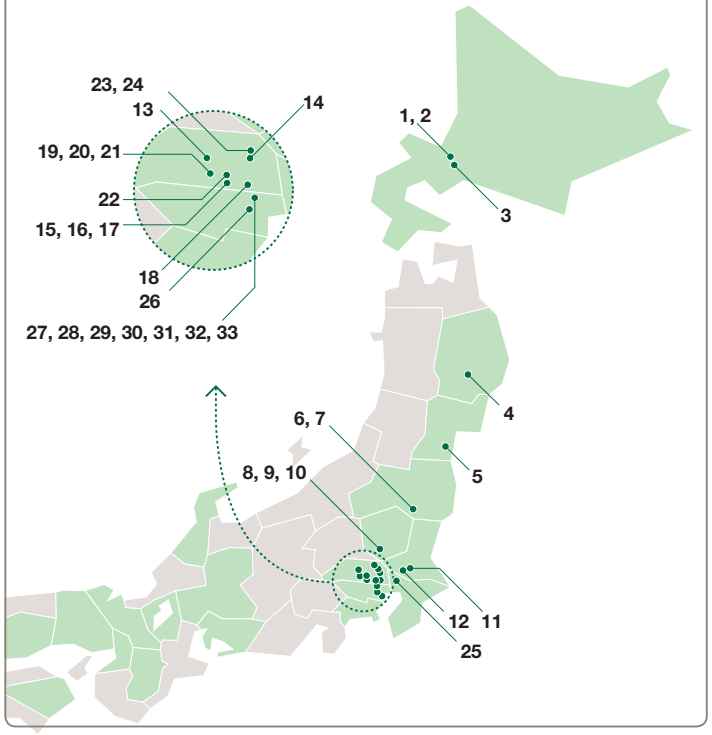
Domestic manufacturing sites with required business performance data disclosure (1)

Organizations and the names used for them are current as of March 31, 2017.

Applies to DNP and non-manufacturing sites of all domestic companies in the group that are subject to consolidated financial accounting.

Business segments

●	**Information Communication**	"Other" refers to products that do not fall under the three segments or group companies manufacturing products that span multiple segments.
▲	**Lifestyle and Industrial Supplies**	
■	**Electronics**	
□	**Other**	



Location		No.	Business segment	Site	Work content
Hokkaido	Higashi-ku, Sapporo	1	●	Sapporo Plant, DNP Graphica Sapporo Plant, DNP Data Techno	Printing / bookbinding
	Higashi-ku, Sapporo	2	▲	Sapporo Plant, DNP Technopack	Manufacturing of packaging
	Kiyota-ku, Sapporo	3	□	Sapporo Plant, Hokkaido Coca-Cola Products	Manufacturing of beverages
Iwate	Kitakami	4	■	Kitakami Plant, DT Fine Electronics	Manufacturing of electronic precision parts
Miyagi	Miyagino-ku, Sendai	5	●	Sendai Plant, DNP Graphica	Plate-making / printing / bookbinding
Fukushima	Izumizaki, Nishi Shirakawa	6	▲	Izumizaki Plant, DNP Technopack	Manufacturing of packaging
		7	▲	Izumizaki Plant, DNP High-performance Materials	Manufacturing of solar cell filler
Tochigi	Tochigi	8	●	Utsunomiya Plant, DNP Graphica	Printing / bookbinding
		9	▲	Utsunomiya Plant, DNP Technopack	Manufacturing of packaging
		10	□	DNP Fine Chemicals Utsunomiya	Manufacturing of photographic materials and pharmaceuticals
Ibaraki	Ushiku	11	●	Ushiku Plant, DNP Data Techno	Manufacturing of various types of smart cards
	Tsukuba	12	□	Tsukuba Techno Center, DNP Engineering*1	Manufacturing of printing machines and machine tools
Saitama	Higashimatsuyama	13	●	Higashimatsuyama Plant, Oguchi Book Binding & Printing	Bookbinding
	Shiraoka	14	●	Shiraoka Plant, DNP Book Factory	Printing / bookbinding
	Miyoshi, Iruma	15	●	Tsuruse Plant, Publication Printing Operations	Plate-making / printing plate / printing / bookbinding
		16	▲	Tokyo Plant, DNP Living Space*2	Plate-making / printing plate / printing / processing
		17	●	Miyoshi Plant, Oguchi Book Binding & Printing	Bookbinding
	Warabi	18	●	Warabi Plant, DNP Data Techno	Plate-making / printing / processing
	Sayama	19	▲	Sayama Plant No. 1, DNP Technopack	Manufacturing of packaging
		20	▲	Sayama Plant No. 2, DNP Technopack	Manufacturing of packaging
		21	●	Sayama Plant, DNP IMS	Manufacturing of thermal transfer carbon ribbons and dye-sublimation transfer materials
	Fujimino	22	■	Kamifukuoka Plant, DNP Fine Optronics	Manufacturing of electronic precision parts
	Kuki	23	●	Kuki Plant, Publication Printing Operations	Printing plate / printing / bookbinding
		24	▲	Saitama Plant, DNP High-performance Materials	Manufacturing of electronic parts
Chiba	Kashiwa	25	▲	Kashiwa Plant, DNP Technopack	Manufacturing of packaging
Tokyo	Shinjuku-ku	26	●	Enoki-cho Plant, DNP Graphica	Plate-making / printing / bookbinding
	Kita-ku	27	□	Kamiya Plant, DNP SP Tech	Manufacturing of all types of advertising items
		28	●	Akabane Plant, DNP Book Factory	Printing
		29	●	Akabane Plant, DNP Graphica	Plate-making / printing / bookbinding
		30	●	Kamiya Plant, DNP Book Factory	Bookbinding
		31	□	DNP Logistics	Packaging / shipping
		32	▲	DNP Hoso	Processing filling and packaging
		33	●	Kamiya Plant, DNP Data Techno	Printing / bookbinding / processing

*1 As of April 2016, D.N.K. changed its name to DNP Engineering.
*2 As of October 2016, DNP Lifestyle Materials changed its name to DNP Living Space.

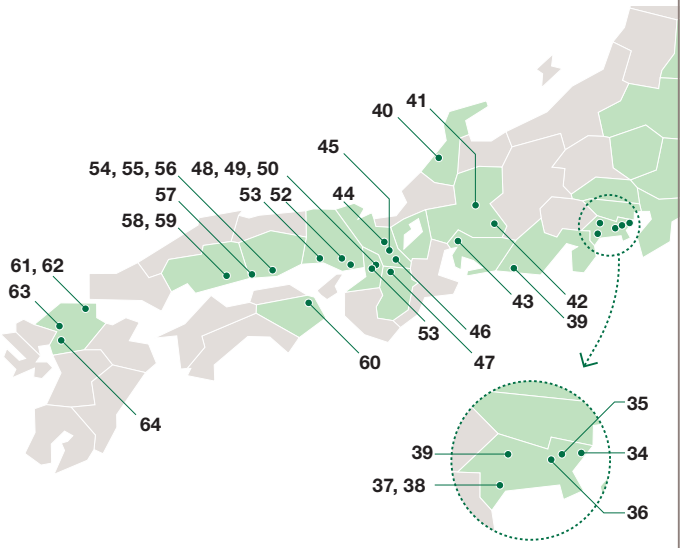
Domestic manufacturing sites with required business performance data disclosure (2)

Organizations and the names used for them are current as of March 31, 2017.

Applies to DNP and non-manufacturing sites of all domestic companies in the group that are subject to consolidated financial accounting.

Business segments

●	**Information Communication**	"Other" refers to products that do not fall under the three segments or group companies manufacturing products that span multiple segments.
▲	**Lifestyle and Industrial Supplies**	
■	**Electronics**	
□	**Other**	



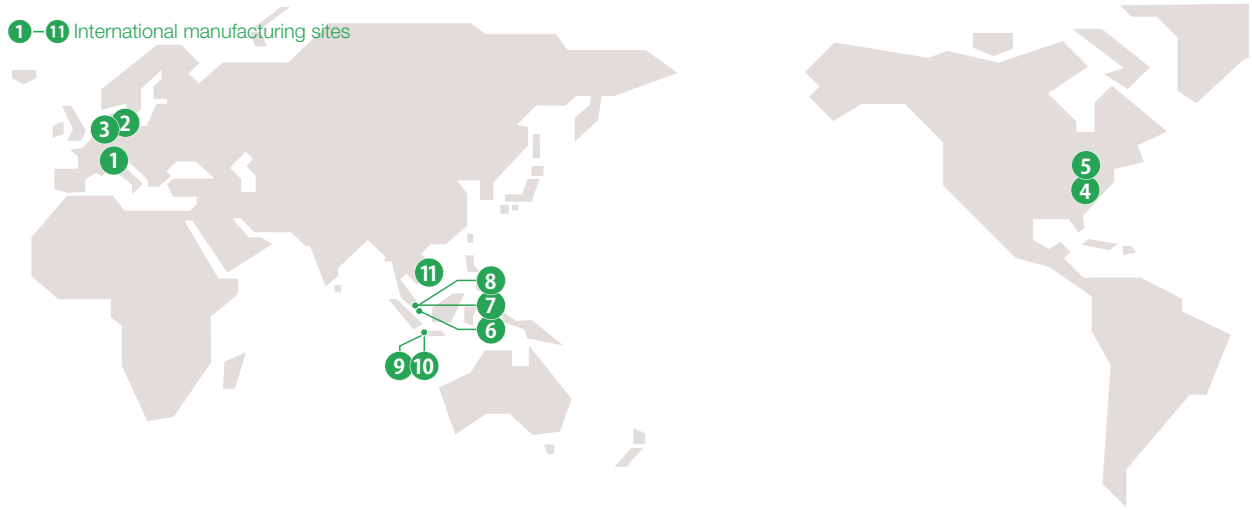
Location		No.	Business segment	Site	Work content
Kanagawa	Kawasaki	34	■	Kawasaki Plant, DT Fine Electronics	Manufacturing of electronic precision parts
	Tsuzuki-ku, Yokohama	35	▲	Yokohama Plant, DNP Technopack	Manufacturing of packaging
	Midori-ku, Yokohama	36	□	Tokyo Plant, DNP Fine Chemicals	Manufacturing of chemicals, etc.
	Odawara	37	▲	Sagami Yoki	Manufacturing of laminated tubes
	Aikawa, Aiko	38	▲	Tokyo Plant, DNP Ellio	Printing and processing metal sheets
Shizuoka	Iwata	39	□	Iwata Plant, DNP Tamura Plastic	Manufacturing of car supplies and various types of plastic products
Ishikawa	Hakusan	40	□	Hokuriku Techno Center, DNP Engineering*1	Manufacturing of printing machines and machine tools
Gifu	Gero	41	□	Hagiwara Plant, DNP Tamura Plastic	Manufacturing of car supplies and various types of plastic products
	Nakatsugawa	42	▲	Tokai Plant, DNP Technopack	Manufacturing of packaging
Aichi	Moriyama-ku, Nagoya	43	●	Nagoya Plant, DNP Graphica	Plate-making / printing / bookbinding
Kyoto	Ukyo-ku, Kyoto	44	▲	Kyoto Plant, DNP Technopack	Manufacturing of packaging
	Minami-ku, Kyoto	45	●	Kyoto Plant, DNP Data Techno	Manufacturing of various types of smart cards
	Kyotanabe	46	▲	Tanabe Plant, DNP Technopack	Manufacturing of packaging
Nara	Kawanishi, Shiki	47	●	Nara Plant, DNP Data Techno	Manufacturing of various types of smart cards
Osaka	Neyagawa	48	▲	Neyagawa Plant, DNP Technopack	Manufacturing of packaging
		49	▲	Osaka Plant, DNP Ellio	Printing and processing metal sheets
		50	□	Neyagawa Plant, DNP SP Tech	Manufacturing of all types of advertising items
	Kadoma	51	●	DNP Media Support	Manufacturing of magnetic cards
Hyogo	Ono	52	●	Ono Plant, DNP Graphica	Printing plate / printing / bookbinding
	Himeji	53	■	DNP Precision Devices Himeji	Manufacturing of electronic precision parts
Okayama	Okayama	54	●	Okayama Plant, DNP Imagingcomm	Manufacturing of dye-sublimation transfer materials
		55	▲	Okayama Plant, DNP Living Space*2	Plate-making / printing plate / printing / processing
		56	■	Okayama Plant, DNP Fine Optronics	Manufacturing of electronic parts
	Kasaoka	57	□	Kasaoka Plant, DNP Fine Chemicals	Manufacturing of chemicals, etc.
Hiroshima	Mihara	58	■	Mihara East Plant, DNP Fine Optronics	Manufacturing of electronic precision parts
		59	■	Mihara West Plant, DNP Fine Optronics	Manufacturing of electronic parts
Tokushima	Tokushima	60	□	DNP Shikoku	Plate-making / printing / manufacturing of packaging
Fukuoka	Yahatanishi-ku, Kitakyushu	61	■	Kurosaki Plant No. 1, DNP Fine Optronics	Manufacturing of electronic precision parts
	Tobata-ku, Kitakyushu	62	▲	Tobata Plant, DNP High-performance Materials	Manufacturing of solar cell filler
	Minami-ku, Fukuoka	63	●	Fukuoka Plant, DNP Graphica Fukuoka Plant, DNP Data Techno	Plate-making / printing / bookbinding
	Chikugo	64	▲	Chikugo Plant, DNP Technopack	Manufacturing of packaging

*1 As of April 2016, D.N.K. changed its name to DNP Engineering.
*2 As of October 2016, DNP Lifestyle Materials changed its name to DNP Living Space.

Overseas manufacturing sites with required business performance data disclosure

Business segments

●	Information Communication
▲	Lifestyle and Industrial Supplies
■	Electronics



1,2,4,5 April 2016–March 2017 totals 3,6–11 January 2016–December 2016 totals

Country	City	No	Business segment	Site	Work content
Italy	Agrate Brianza	1	■	DNP Photomask Europe S.p.A.	Manufacturing of photomasks
Denmark	Karlslunde	2	■	DNP Photomask Europe S.p.A.	Manufacturing of projection television screens
Netherlands	Amsterdam	3	●	DNP Imagingcomm Europe B.V.	Manufacturing of information media supplies
USA	Concord, NC	4	●	DNP Imagingcomm America Corporation	Manufacturing of information media supplies
	Pittsburgh, PA	5	●	DNP Imagingcomm America Corporation	Manufacturing of information media supplies
Singapore	Singapore	6	●	Tien Wah Press (Pte.) Ltd.	Offset printing and binding
Malaysia	Johor Bahru	7	●	DNP Imagingcomm Asia Sdn. Bhd.	Manufacturing of information media supplies
		8	●	Tien Wah Press (Pte.) Ltd.	Offset printing and binding
Indonesia	Pulo Gadung	9	▲	PT DNP Indonesia	Manufacturing of packaging
	Karawang	10	▲	PT DNP Indonesia	Manufacturing of packaging
Vietnam	Binh Duong Province	11	▲	DNP Vietnam Co.,Ltd.	Manufacturing of packaging

Independent Review Report Comments by an Independent Institution

On-site visit

Mihara East Plant, DNP Fine Optronics

Warabi Plant, DNP Data Techno

Yokohama Plant, DNP Technopack

DNP Group Environmental Report 2017
Independent Verification Report

To: Dai Nippon Printing Co., Ltd.

July 27, 2017

Bureau Veritas Japan Co., Ltd.
System Certification Services Headquarters

Bureau Veritas Japan Co., Ltd. (Bureau Veritas) has been engaged by Dai Nippon Printing Co., Ltd. (DNP) to conduct independent verification of its environmental data selected for inclusion in the DNP Group Environmental Report 2017, issued under the responsibility of DNP. The aim of this verification is to consider the accuracy of environmental data detailed in the Report and to provide a verification opinion based on objective evidence.

1. Verification Outline

Bureau Veritas conducted the following verification based on agreement with DNP.

Scope of Verification	Sites Visited	Verification Methodology
Environmental performance data for FY2016 marked with the symbol "☑" in the DNP Group Environmental Report 2017	- DNP's head office - DNP Data Techno Co., Ltd. Warabi Plant - DNP Technopack Co., Ltd. Yokohama Plant - DNP Fine Optronics Co.,Ltd Miharahigashi Plant	- Review of documentary evidence produced by DNP's head office and the sites visited - Interviews with relevant personnel of DNP's head office and the sites visited - Site inspection and review of data monitoring procedures - Comparison between the reported data and supporting documentary evidence

This verification was conducted using Bureau Veritas' standard procedures and guidelines for external verification of non-financial reporting, based on current best practice. Bureau Veritas refers to the International Standard on Assurance Engagements (ISAE) 3000 in providing a limited assurance for the scope of work stated herein.

2. Findings

On the bases of our methodology and the activities described above:

- Nothing has come to our attention to indicate that the reviewed information within the scope of our verification is inaccurate and does not provide a fair representation of the performance for the defined period.
- It is our opinion that DNP has established appropriate systems for the collection, aggregation and analysis of quantitative data within the scope of our verification.

Bureau Veritas has implemented a code of ethics across its business which is intended to ensure that all our staff maintain high standards in their day to day business activities. We are particularly vigilant in the prevention of conflicts of interest. Bureau Veritas activities for DNP are for sustainability reporting verification only and we believe our verification assignment did not raise any conflicts of interest.

Dai Nippon Printing Co., Ltd.

CSR-Environment Department

1-1, Ichigaya Kagacho 1-chome, Shinjuku-ku, Tokyo 162-8001, Japan

Tel: +81-3-3266-2111

http://www.dnp.co.jp/eng/

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