

DNP

DNP Group Environmental Report 2019



DNP Group Environmental Report 2019

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Editorial Policy

- The DNP Group Environmental Report 2019 was created to announce all of the environmental activities of the DNP Group, and is based on the Environmental Reporting Guidelines (2018 Edition) issued by Japan's Ministry of the Environment.
- The DNP Group Environmental Report 2019 is published in a page format designed to be easy to read on the Web.
- 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, 2018 to March 31, 2019. 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, 2018 to December 31, 2018.

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. 23 domestic manufacturing companies plus one distribution company (see pages 33–34), the non-manufacturing sites (three development centers, office buildings, sales offices, etc.) of all domestic Group companies and our overseas manufacturing companies (see page 35) were included in the scope. However, the scope of tabulation for reduction of environmental pollutants, reduction of environmental impact incurred during transport and activities at offices covers operations in Japan.

Standards for Calculating Environmental Performance Indices

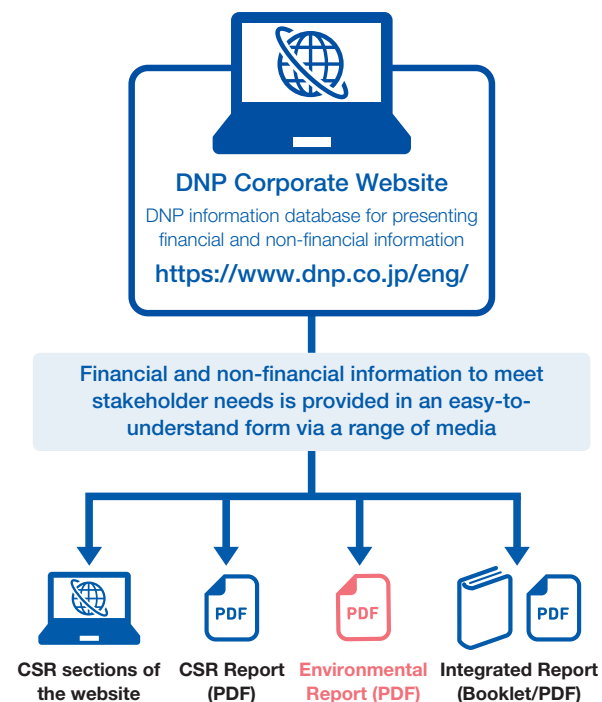
The standards used for calculating environmental performance indices are published separately on the Web.

<https://www.dnp.co.jp/eng/corporate/csr/report/>

In this report "DNP" indicates the DNP Group and is differentiated from Dai Nippon Printing Co., Ltd.

Issued

August 2019 (Next scheduled issue: August 2020)



About the cover design

DNP is progressing with the creation of a vast green belt, the Ichigaya Forest, as an initiative to create a new form of urban "forest" on the premises of our head office in Shinjuku-ku, Tokyo. The photo shows Japanese yellow roses blooming in the green belt.

Corporate Profile (As of March 31, 2019)

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

Website: <https://www.dnp.co.jp/eng/>

Established: October 1876

Incorporated: January 1894





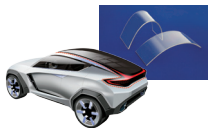


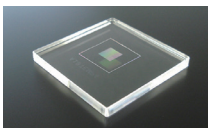
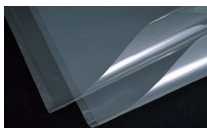

Paid-in Capital: ¥114,464 million

Number of Employees: 38,051 (Consolidated) 10,757 (Non-consolidated)

Financial Data: Consolidated Net Sales ¥1,401.5 billion (down 0.8% year-on-year)
(FY ended March 2019) Consolidated Operating Income ¥49.8 billion (up 7.6% year-on-year)
Consolidated Ordinary Income ¥58.2 billion (up 14.3% year-on-year)
Net income attributable to shareholders of the parent ¥-35.6 billion

Business segments:

Percentage of total sales

Printing	Information Communication Books and magazines, commercial printing, smart cards, network businesses, imaging communication, etc.	54.1 %	 Hybrid bookstore network "honto"	 Smart cards and magnetic cards	 Ki-Re-i ID photo kiosk
	Lifestyle and Industrial Supplies Packaging, housing interior/exterior materials, industrial supplies, etc.	28.2 %	 Packaging	 Curved resin glass	 Exterior materials for buildings
	Electronics Display components, electronic devices, optical films, etc.	13.7 %	 Semiconductor photomask	 Master template for nanoimprinting	 Optical films used for displays
Beverages	Beverages Manufacturing and sales of soft drinks by Hokkaido Coca-Cola Bottling Co., Ltd., etc.	4.0 %	 Soft drinks		

Message from the CSR-Environment Committee Chairman

Going Beyond Society's Expectations

Chairman of the CSR-Environment Committee
Managing Director

Satoru Inoue



Responding to Climate Change and Realizing a Recycling Society

The DNP Group is always looking to achieve coexistence with the environment in order to increase the sustainability of its business. Embracing “environmental conservation and the realization of a sustainable society” as one tenet of our DNP Group Code of Conduct, we ensure legal compliance first and foremost and are working to reduce environmental impact by carefully examining the effects of our business activities on the environment throughout our entire supply chain. To undertake specific activities, we perform risk assessment from the perspective of impacts on stakeholders and DNP giving consideration to such global social issues as SDGs as well as to ESG trends. As environmental risks based on the results of this assessment, we recognize that responding to climate change and building a recycling society are urgent issues and are implementing priority initiatives in these areas.

As a response to climate change, we have set FY2030 targets for reducing greenhouse gas (GHG) emissions and in July 2018 we were accredited by the Science Based Targets (SBT) initiative. Moreover, in March 2019 we expressed our affirmation of the recommendations of TCFD (Task Force on Climate-related Financial Disclosures). We are committed to maintaining transparency regarding the risks and opportunities arising from our businesses

and will reflect these in our financial information and proactively disclose climate change information.

As we work to build a recycling society, we are focusing on product designs that emphasize resource-savings and high recyclability as well as on the use of sustainable raw materials and biomass materials. As a company that handles numerous plastic products, DNP seriously addresses the problem of ocean plastic waste, which is recently emerging as a particularly major global issue. As part of these efforts, DNP is participating as secretariat in Japan Clean Ocean Material Alliance (CLOMA), which was established to help solve the problem of ocean plastic waste. Besides reducing unneeded plastic, we are developing plastic alternative materials and technologies, providing easy-to-recycle products as well as proactively developing technologies and creating structures for promoting recycling. Furthermore, as a corporate citizen, we will also work to reduce unneeded plastic and will promote sequential initiatives such as reducing the use of shopping bags at in-house stores and eliminating plastic cups at our cafes.

Through its products and services, DNP also strives to help solve various social issues, such as reducing environmental impacts and responding to climate change. In April 2019, the DNP Multifunctional Insulation Box, which enables long-distance transportation at a constant

temperature without using a power source, earned the 28th Grand Prize for the Global Environment Award, Grand Prize. This prize was received based on acclaim for reducing environmental impacts through high thermal insulation performance and for enhancing transportation efficiency.

Principal Activities in FY2018 and Future Initiatives

DNP has set targets in eight categories that include reduction of GHG emissions and reduction of water usage and is undertaking activities in these areas. Regarding reduction of GHG emissions, a priority initiative, we have achieved significant reductions up to FY2018 and are steadily moving toward the attainment of FY2030 targets. As the environment surrounding companies is undergoing a drastic change with various social issues becoming increasingly prevalent, in the future DNP will strive to achieve further reductions in environmental impact through our business activities and across the entire supply chain. Simultaneously, we will combine DNP's P&I strengths and the strengths of our partners to create new value that will help provide solutions to various social issues while continually taking into consideration the latest trends. In the future, DNP will deepen communication with its stakeholders and work to remain a sustainable company that is trusted by society.

Risks and Opportunities

Based on its corporate philosophy, DNP aims to resolve social issues and continues to provide new value that meets people's expectations. In doing so, we will correctly recognize economic, social and environmental issues and risks and respond to rapid changes in the business environment through activities directly linked to "value creation" and those serving as a "foundation to support value creation."

As part of its "value creation," through its products and services DNP is working to provide new value

that contributes to the attainment of SDGs. Additionally, as a "foundation to support value creation," we are implementing measures that minimize the impact of all assumed risks.

While considering SDGs and other global issues as well as ESG trends, DNP performs risk assessment from the perspectives of the interests of and impact on stakeholders and the level of importance for DNP. DNP's risk assessment focuses on the countries and regions where it undertakes business. In Japan and

Asia in particular, where we have many sites, the expansion of business is one of our priority measures and therefore we consider this an important region in considering risks.

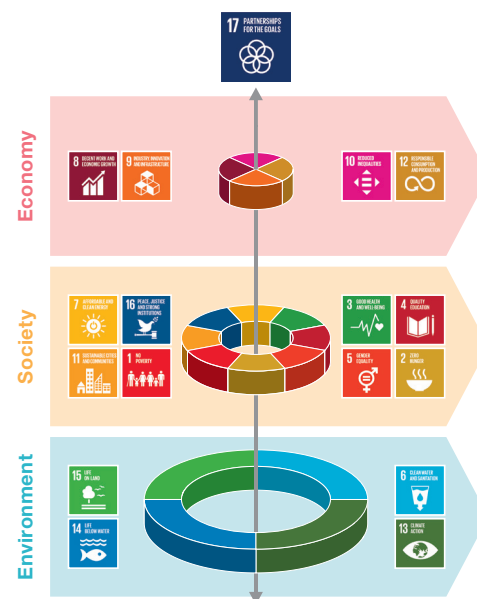
Based on the results of our risk assessment, as environment-related risk, we recognize that responding to climate change and building a recycling society are pressing issues and we will promote priority measures in these areas.

Business Risks Assumed from the Perspective of the SDGs

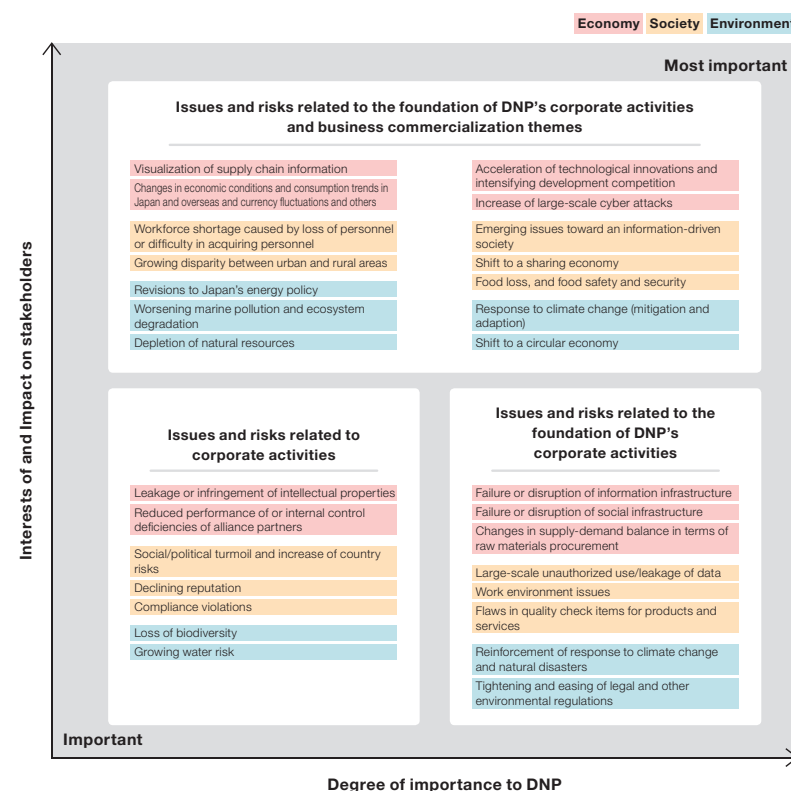
Identification of risks

We analyze global social issues and environmental, social and governance (ESG)* trends and broadly identify economic, social and environmental issues that represent risks. We then prioritize activities and define targets based on the interests of stakeholders and the impact on them as well as the degree of importance to DNP.

*Including the Sustainable Development Goals (SDGs), Global Reporting Initiative (GRI) Guidelines, the UN Global Compact, ISO 26000, Dow Jones Sustainability Indexes (DJSI), FTSE4Good Global Index and MSCI Global Sustainability Indexes



Reference: SDGs "wedding cake" illustration presented by Johan Rockström and Pavan Sukhdev



Risks and Opportunities

Responding to Climate Change

As transitional risk associated with climate change, there is a high probability that the tightening of emissions regulations will have an impact on the operations of entire companies and their business planning. GHG emissions are particularly large in Japan, where we operate numerous production bases, and we thus recognize that the introduction of a carbon tax and the tightening of regulations will have a major impact. DNP is implementing reduction activities globally, including at overseas production bases, under its GHG emission reduction targets and in July 2018 it was accredited by the SBT initiative. Meanwhile, physical risk such as abnormal weather will also have a significant impact on individual production bases and we are promoting BCP countermeasures and related initiatives, including flooding and flood-control measures at production bases in Asia.

We are also responding to climate change from a variety of other perspectives such as product provision strategies linked to market interests.

Taking into consideration the Special Report on Global Warming of 1.5°C published by the Intergovernmental Panel on Climate Change (IPCC) in October 2018, we are undertaking further reduction activities that include reviewing targets and expanding the use of renewable energy. DNP also affirms the recommendations of the TCFD and will analyze the business risks and business opportunities arising from climate change over the medium and long terms. At the same time, we will reflect these in our business strategies and proactively disclose this climate change-related information and thereby contribute to the realization of a sustainable society.

Building a Recycling Society

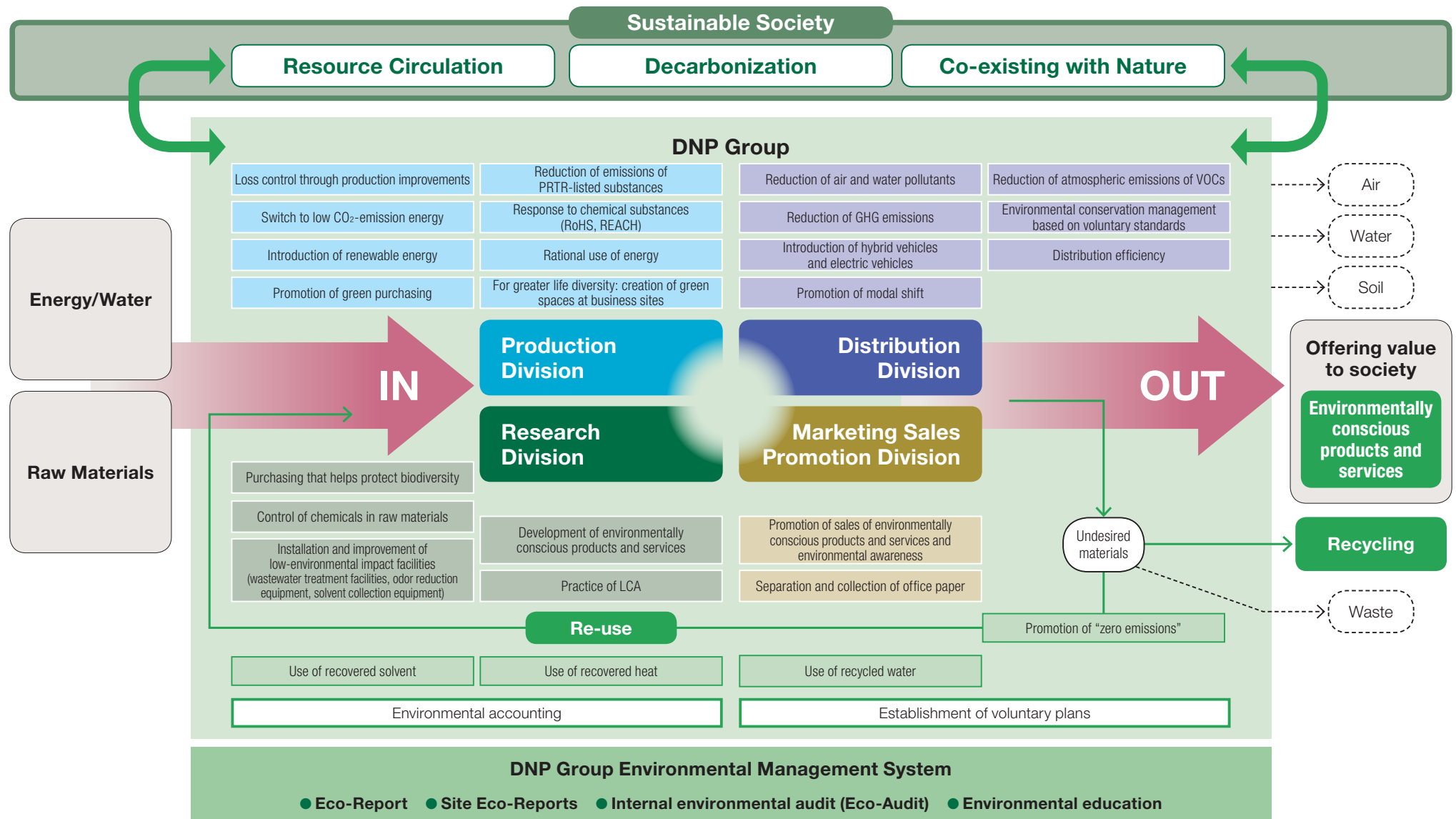
Curbing consumption of natural resources and reducing impacts on the environment are essential for building a recycling society. Presently, increased discharge of waste materials accompanying global population increases and economic development is affecting oceans and there are concerns about the impacts of ocean waste materials on marine ecosystems.

DNP uses paper and plastics as raw materials and believes that extensive resource recycling throughout the entire product lifecycle is important. We are improving resource productivity, promoting recycling, adopting product designs that emphasize resource saving and high recyclability and using sustainable raw materials and biomass materials. We are also proactively carrying out activities for using sustainable plastic materials and developing and introducing alternative materials. These activities include participating as secretariat in CLOMA (Japan Clean Ocean Material Alliance), a business group for solving the problem of ocean plastic waste.

Identified Issues	Risks	Countermeasures taken by DNP	
		Defense	Offense
Response to climate change	<ul style="list-style-type: none"> •Strengthening of domestic and overseas regulations concerning GHG emissions •Increase in carbon prices •Transition to low emission technologies •Change in consumer/market awareness •Occurrence and expansion in scale of abnormal weather 	<ul style="list-style-type: none"> •Reduce GHG emissions throughout the entire supply chain •Expand usage of renewable energy •BCP countermeasures at production bases 	<ul style="list-style-type: none"> •Develop environmentally conscious products and services that contribute to a reduction in GHG emissions throughout the entire supply chain •Use renewable energy •Procure sustainable raw materials, etc.
Building a Recycling Society	<ul style="list-style-type: none"> •Tightening of resource constraints accompanying population increase •Strengthening of domestic and overseas laws and regulations •Shift to a circular economy •Change in consumer/market awareness •Ocean plastic problem 	<ul style="list-style-type: none"> •Reduce volume of waste materials discharged •Use renewable resources 	<ul style="list-style-type: none"> •Participate in corporate collaboration and technology development for plastic resource recycling, industry-government-government associations and international initiatives •Establish structure for using recycled resources

Environment Management Structure

Business and Environmental Activities



Environmental Management Structure

DNP Group Environmental Policy

DNP has prescribed “environmental conservation and the realization of a sustainable society” as one tenet of our DNP Group Code of Conduct and has formulated the DNP Group Environmental Policy to link this Code to specific activities. We consider relationships with the environment in all our business activities and aim to reduce environmental impact and realize a sustainable society.

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

Environmental Management Structure

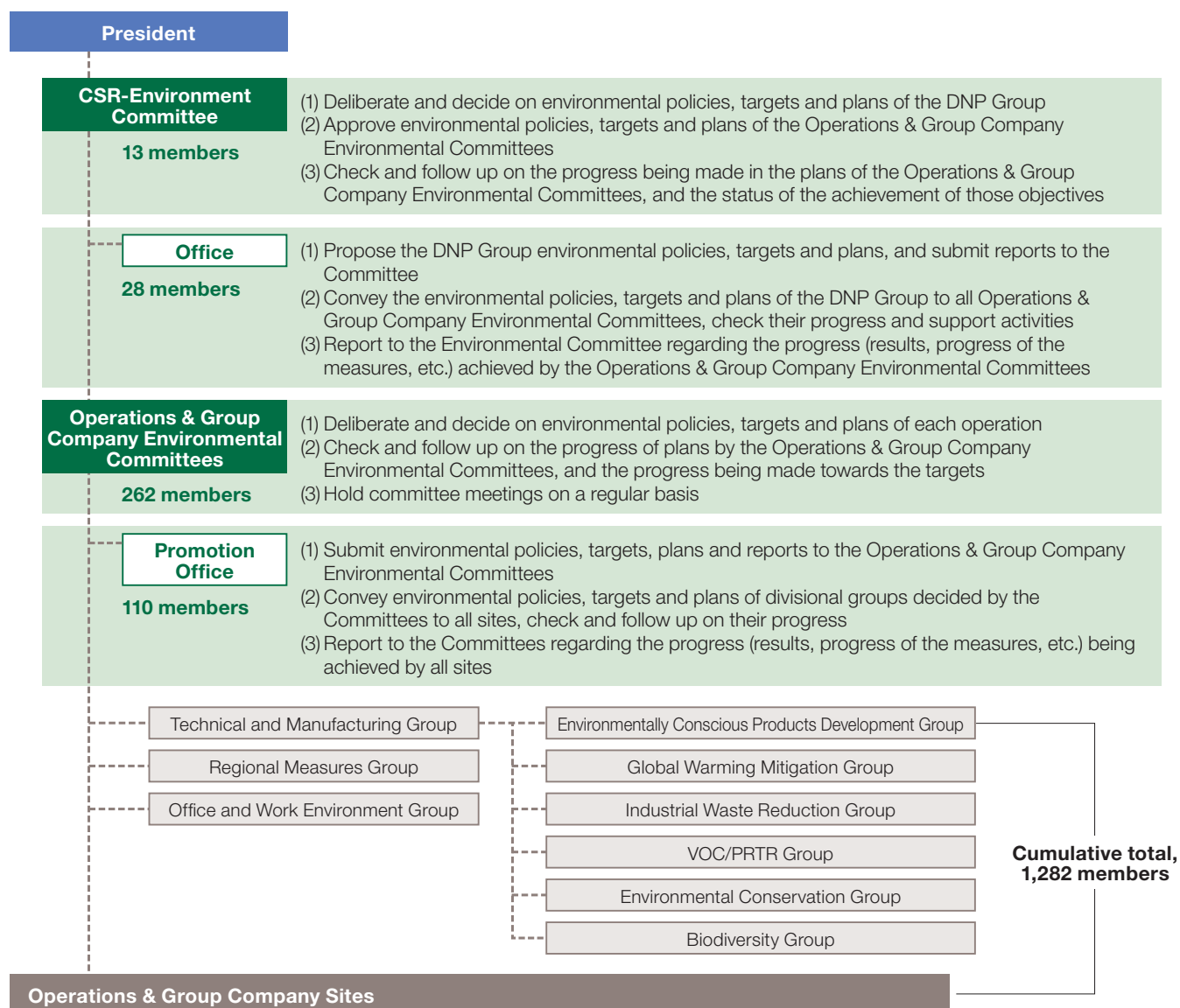
The DNP Group has established the CSR-Environment Committee to coordinate Group-wide environmental activities and the Operations & Group Company Environmental Committees as a body to promote activities within each business segment. Each committee has its own office or promotion office.

• 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 Structure

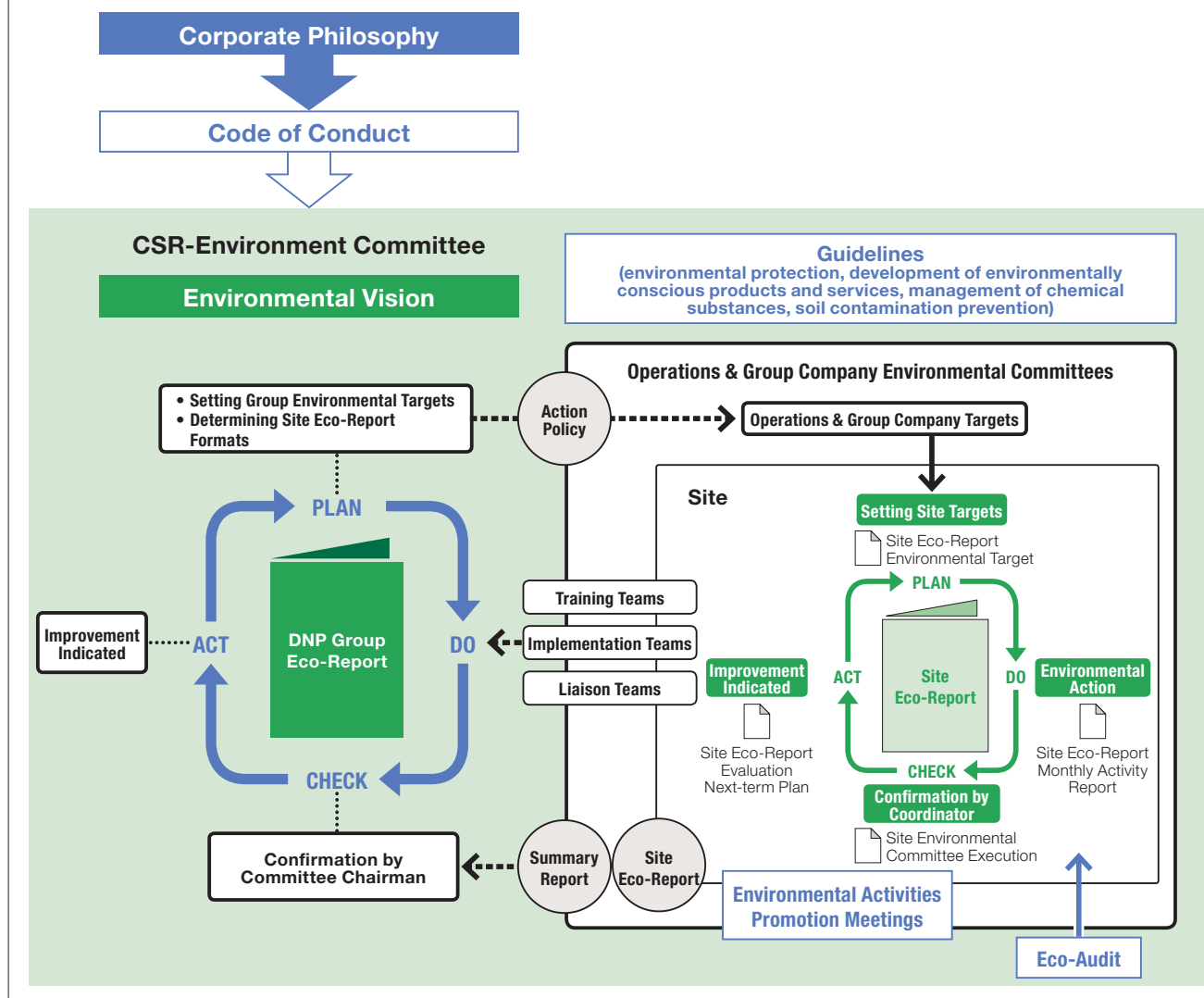
Environmental Management System

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-Act” 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



Environmental Management Structure

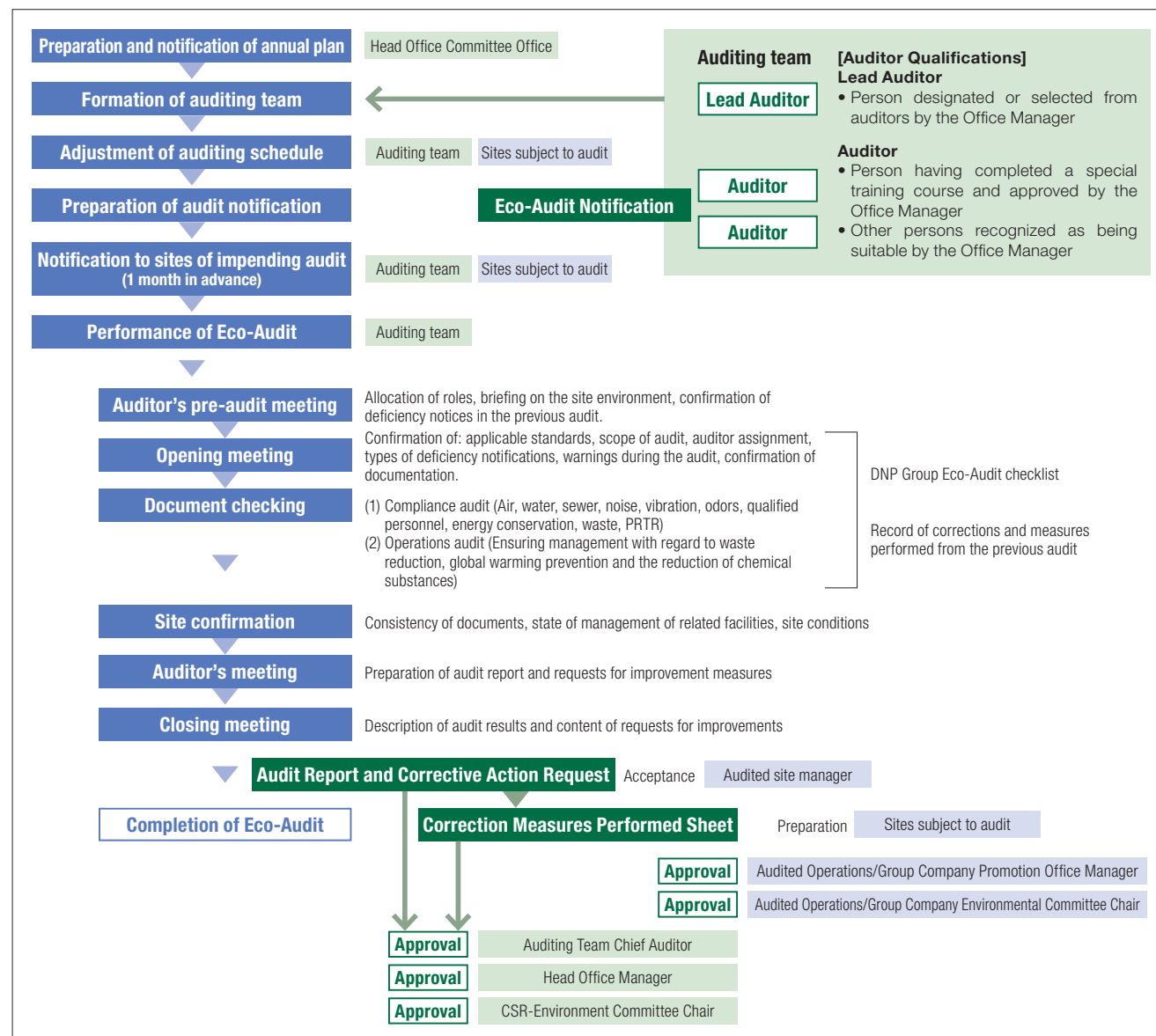
Eco-Audit Content and Flow

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) Auditors are DNP employees with no conflict of interest with the sites being audited and who possess specialized knowledge about products and processes, which produces meaningful and objective results maintaining an independent perspective.
- (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.



Environmental Management Structure

Eco-Audit Performance

Number of sites audited	66 sites
Number of attendees at sites	479 persons
Cumulative auditor numbers	120 persons
Cumulative auditing hours	354 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 FY2019.

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

ACT**Status of reviews by term**

- Review of previous term results and reflection in plan

Environmental Management Structure

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 FY2018, 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 15 sites, with 200 condensers and 15 transformers for a total of 215 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 Raw 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 two 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)

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.

March 5, 2018

Tsuruse Plant, Publication Printing Operations

Official survey of VOC concentrations in exhaust air → VOC concentrations exceeded regulatory standards, and we submitted an improvement report.

It was caused by a decline in the VOC absorption ability of activated carbon used in the VOC recovery and treatment equipment. To prevent a recurrence, we improved VOC removal efficiency by increasing the amount of VOCs absorbed by activated carbon used in the solvent recovery equipment, and are now periodically monitoring the absorption capability of the activated carbon. We have confirmed that VOC concentration levels remain below regulatory standards in the subsequent surveys.

Environmental Management Structure

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, 2019)

ISO 14001 Certification

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
D.T. 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, DNP Data Techno	Mar. 2002	JIA-QA
Tokai Plant, DNP Technopack	Mar. 2002	SGS
Chikugo Plant, DNP Technopack	Jun. 2002	SGS
Sayama Plant, Imaging Communications Operations	Oct. 2002	JIA-QA
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, DNP Data Techno	Mar. 2005	JIA-QA
Nara Plant, DNP Data Techno	Jun. 2005	JIA-QA
Tien Wah Press (Johor Bahru)	Nov. 2005	TÜV
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

Site	Date Registered*1	Registration Organization
DNP Fine Chemicals Utsunomiya	Mar. 1997	JCQA
Akabane Area, DNP Logistics	Dec. 2006	AJA
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
PT DNP Indonesia (Pulogadung/Karawang)	Aug. 2009	AJA
Hokkaido Coca-Cola Bottling	Feb. 2010	JACO
DNP Imagingcomm America Corporation	Jun. 2013	NSF ISR
Kyoto-Minami Plant, DNP Data Techno	Dec. 2013	JIA-QA
Hagiwara Plant, DNP Tamura Plastic	Aug. 2000	JAER
Iwata Plant, DNP Tamura Plastic	Aug. 2000	JAER

Eco Action 21 Certification

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

Green Key Certification

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

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.

TÜV

TÜV SÜD Asia Pasific TÜV SÜD Group

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

JAER

Japan Automobile Research Institute

*1 Indicates the first registration date.

*2 Kawasaki Plant and Kitakami Plant of D.T. Fine Electronics are registered as a part of Toshiba Electronic Devices & Storage Corporation.

Environmental Management Structure

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.

• **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).






















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 8,685 persons	When joining the company
Technical Seminar	Environment/Chemicals (optional) Environmental Laws and Regulations	1999	Technicians	Total Attendance 1,440 persons	Once yearly
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
In-company seminars	Information of global risks and SDGs, etc.	2015	All DNP Group members		As needed

Environmental Management Activities

Environmental Activity Targets and Results

DNP has prescribed targets with the following categories as priority issues and is undertaking activities in these areas.

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 *GHG emissions reduction target set for FY2030	FY2018 results		Evaluation
Reduction of GHG emissions	P 20	To reduce GHG emissions by 25% from the FY2015 levels by FY2030 (includes overseas locations)	Emissions in FY2015: 1.201 million tons Emissions in FY2018: 0.961 million tons 	20.0% decrease from that in FY2015	
Reduction of environmental impact incurred during transport	P 21	To reduce per-unit fuel use for transport (fuel use/amount of sales) by 1% per annum and 10% compared to FY2010	Per unit in FY2010: 16.1 kl/billion yen Per unit in FY2018: 14.9 kl/billion yen 	7.8% decrease from that in FY2010	
Reduction of VOC emissions	P 26	To reduce emissions of VOCs (except for methane) by 35% compared to FY2010	Emissions in FY2010: 6,729 tons Emissions in FY2018: 4,040 tons 	40.0% 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 the introduction of technologies and other measures	Continue operation of VOC recovery equipment at DNP Indonesia's Karawang Plant		
Reduction of industrial waste	P 23	To reduce per-unit waste emissions (waste emissions/amount of sales) by 20% compared to FY2010. (Includes overseas locations)	Per unit in FY2010: 42.4 tons/billion yen Per unit in FY2018: 36.9 tons/billion yen 	13% 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 FY2018: 0.04% 	Maintained zero emissions	
Reduction of water usage	P 24	To reduce per-unit water use by 25% compared to FY2010 (Includes overseas locations)	Per unit in FY2010: 10.8 m ³ /million yen Per unit in FY2018: 6.2 m ³ /million yen 	43% decrease from that in FY2010	
Development and sales of environmentally conscious products and services	P 18	Development and sales of environmentally conscious products and services to totaling 600 billion yen	Sales of 570.8 billion yen in FY2015 Sales of 603.2 billion yen in FY2018 	5.7% 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 FY2018 (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 FY2018 (voluntary target)		
		To keep the maximum concentration of odors at our site perimeters at 70% of the required standard or less	99% achievement rate of targets for FY2018 (voluntary target)		
		To keep the maximum level of noise at our site perimeters at 70% of the required standard or less	98% achievement rate of targets for FY2018 (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 FY2018 (voluntary target)		
Office environment	P 23	To increase the rate of the fractional recovery of waste paper to 70% of that for general waste	81.8% recovery of waste paper in FY2018		

GHG Emissions Reduction Target of the DNP Group Recognized by the Science Based Targets (SBT) Initiative

In July 2018, the above target for reduction of GHG emissions was accredited by the international organization Science Based Targets (SBT) initiative as "science-based" in helping to achieve the goal of the Paris Agreement, which is to keep global warming below two degrees Celsius. DNP will continue to augment its GHG emissions reduction activities by saving energy and introducing energy-saving facilities.

"Dai Nippon Printing commits to reduce Scope 1 and 2 GHG emissions 25% by FY2030 from a FY2015 base-year. The company also commits to engage with key suppliers representing 90% of purchase value, to ensure these will have SBTs in place by FY 2025."



Environmental Management Activities

Current Status of Environmental Impact

Main raw materials (Unit: 1,000 tons)

	2017	2018	
Paper	1,468.6	1,423.3	(3.1% decrease)
Film	158.1	162.1	(2.5% increase)
Plastic	119.4	122.3	(2.4% increase)
Metal	50.5	54.0	(6.9% increase)
Ink	107.5	104.4	(2.9% decrease)
Others	94.7	86.1	(9.1% decrease)

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

	2017	2018	
Solvent	28.9	26.2	(9.3% decrease)
Acid and alkaline	9.4	8.6	(8.5% decrease)

Utilities

	2017	2018	
Electricity (million kWh)	1,390	1,340	(3.6% decrease)
City gas (million Nm ³)	72.3	66.1	(8.7% decrease)
LNG (million kg)	20.6	18.9	(8.6% decrease)
LPG (million kg)	7.9	6.6	(16.2% decrease)
Fuel oil (kl)	462	516	(11.7% increase)
Steam (TJ)	126	59	(53.2% decrease)
Kerosene (kl)	1,300	1,210	(6.9% decrease)
Water (million m ³)	10.1	8.7	(14.1% decrease)

**Product Manufacturing
Process****Information Communication**Books and magazines, commercial printing,
business forms, etc.**Lifestyle and Industrial Supplies**Packaging, decorative materials, industrial supplies,
etc.**Electronics**

Displays, electronic devices, etc.

Other

Ink, beverages, etc.

Current Status of Recycling in the DNP Group★

	2017	2018
Recycled solvent (1,000 tons)	6.6	6.0
Usage ratio *1	1.2	1.2
Recycled acid and alkaline (1,000 tons)	7.4	7.4
Usage ratio	1.8	1.9
Recycled water (million m ³)	303.29	259.47
Usage ratio	32.7	32.9
Vapor generated from waste heat recovery (tons)	165,000	152,000

*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 coefficients for the fiscal years prior to the tabulated fiscal years. (Details are listed in the margins on page 20.)

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

★ Scope limited to within Japan only

Emissions into the air

	2017	2018	
GHG*2 emissions (1,000 tons-CO ₂)	1,027	961	(6.4% decrease)
NOx emissions (tons)★	565	524	(7.3% decrease)
SOx emissions (tons)★	5.4	4.1	(24.1% decrease)
Atmospheric emissions of VOCs (tons)	15,422	14,626	(5.2% decrease)

Emissions into bodies of water

	2017	2018	
Water discharged (million m ³)	8.0	6.9	(14.3% decrease)
COD emissions (tons)★	28.0	28.4	(1.4% increase)
Nitrogen emissions (tons)★	5.7	5.4	(5.3% decrease)
Phosphoric emissions (tons)★	0.3	0.3	(-)

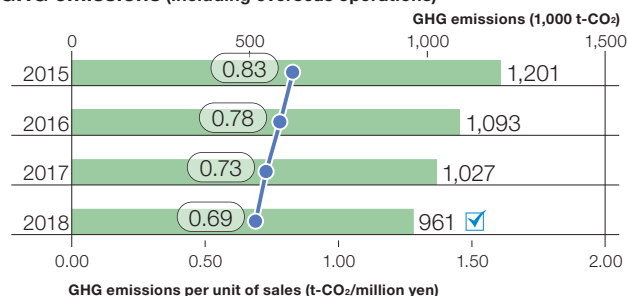
Undesired materials generated (Unit: 1,000 tons)

	2017	2018	
Total amount of undesired materials	309	300	(2.9% decrease)
Waste emissions	48.4	51.7	(6.8% increase)
Landfill waste amount	3.8	5.3	(40% increase)

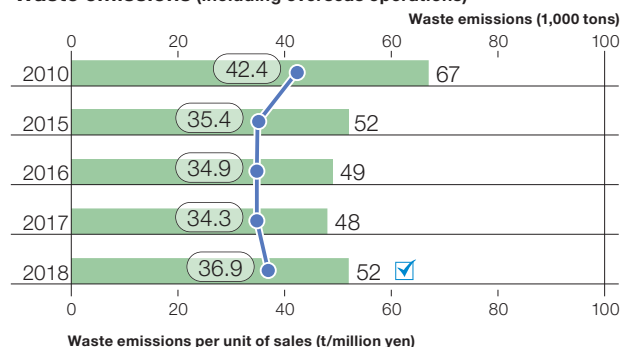
Environmental Management Activities

Environmental Impact and Environmental Efficiency

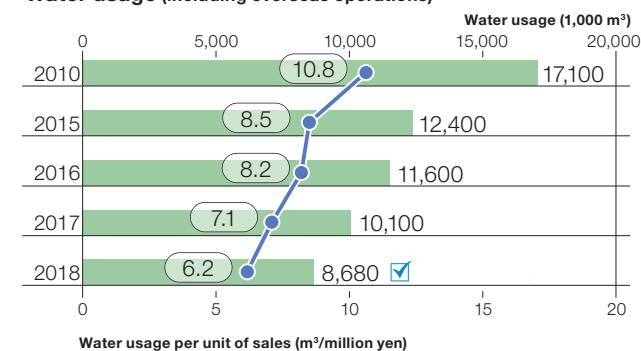
GHG emissions (including overseas operations)



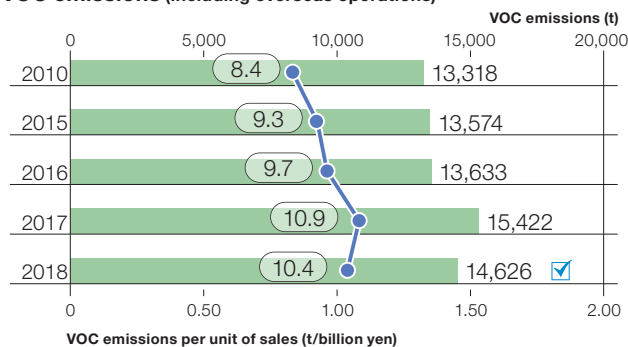
Waste emissions (including overseas operations)



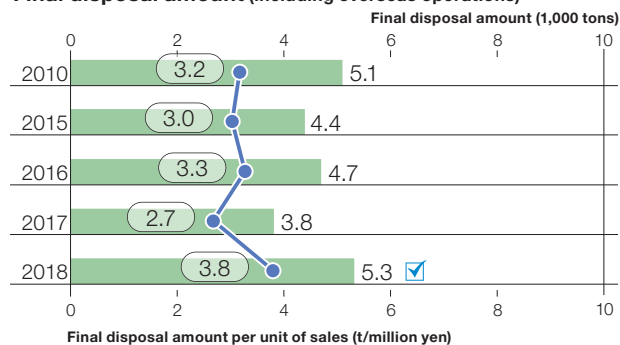
Water usage (including overseas operations)



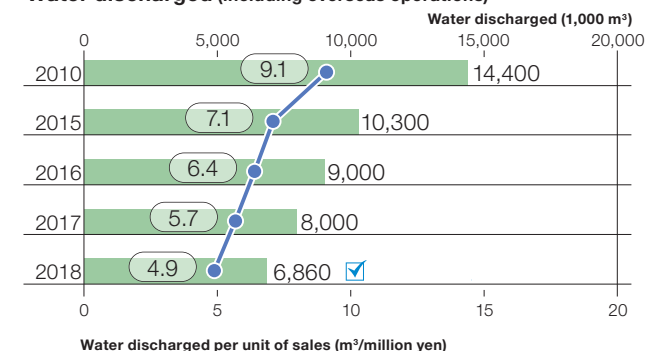
VOC emissions (including overseas operations)



Final disposal amount (including overseas operations)



Water discharged (including overseas operations)



Environmental Management Activities

Businesses that Contribute to the Attainment of SDGs

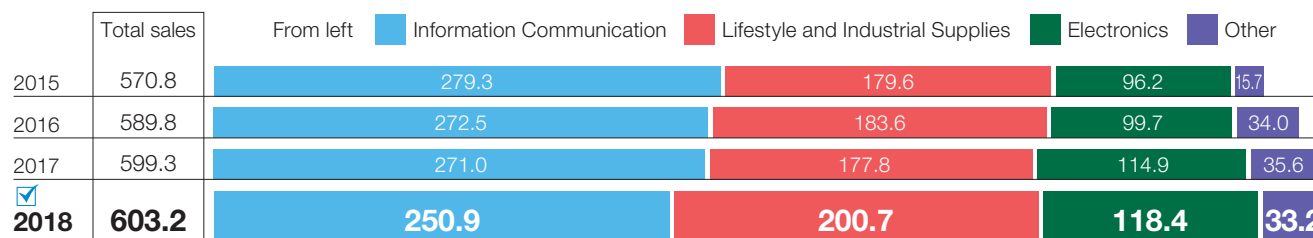
At DNP, we have created the Environmentally Conscious Products and Services Development Guidelines in order to create environmentally conscious products and services from the design stage, so as to reduce the environmental impact of our products and services throughout their lifecycle.

• Sales of Environmentally Conscious Products and Services

FY2018 results: ¥603.2 billion

The FY2020 target of ¥600.0 billion was attained ahead of schedule.

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



Guidelines for developing environmentally conscious products and services

1 Reduction of environmental pollutants

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

2 Resource and energy conservation, reduction of GHG emissions

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

3 Sustainable use of resources

Utilize natural resources in a sustainable way.

4 Long-term usability

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

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.

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?

7 Use of recycled materials, etc.

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

8 Ease of treatment and disposal

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

9 Making environmental burden visible and taking into consideration biodiversity

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

10 Supporting and promoting environmental education and awareness

Helping to create a sustainable society.

Environmental Management Activities

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	Acquired for FSC and PEFC

🔍 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
CoC: FSC	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
CoC: PEFC	DNP SP Tech	May 14	JIA
	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 June 30, 2019

*² Date of initial registration. However, this is the date that Information Innovations Operations (August 2003) switched to multisite certification.

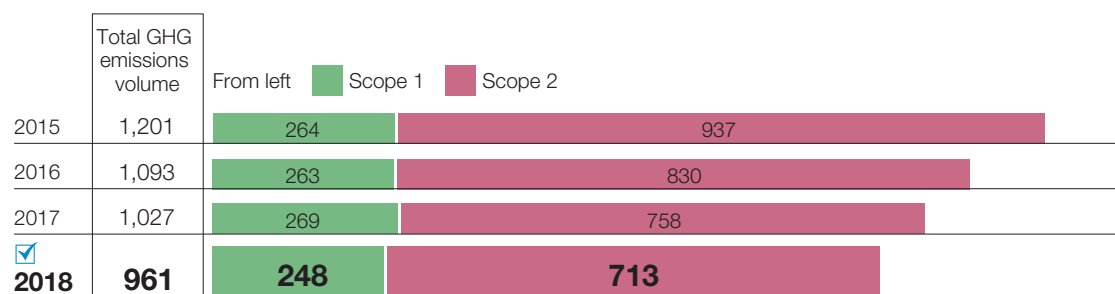
Environmental Management Activities—Achieving a Low-Carbon Society

Reduction of GHG emissions

Important steps that the DNP Group has taken leading to a low-carbon society include reducing the consumption of forms of energy that generate CO₂ (energy conservation), switching to low CO₂-emission fuels and introducing renewable energy sources.

In introducing renewable energy, in 2009 a solar power generation system was installed at DNP High-performance Materials' Izumizaki Plant, while in FY2011 DNP Ichigaya Kagacho No. 2 Building and Tanabe Plant, DNP Technopack each installed solar systems with respective capacities of about 30 kW. Furthermore a 10 kW solar system has been installed at the DNP Ichigayatamachi Building, and in FY2015, systems were installed at the DNP Ichigaya Kagacho Building (36 kW), DNP Ichigayatacashomachi Building (24 kW) and Sayama Plant (6 kW). We also currently purchase 1.86 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) and other facilities.

• GHG emissions volume

Scope 1 and 2 GHG emissions volume FY2018 results: 961 [thousand tons-CO₂]

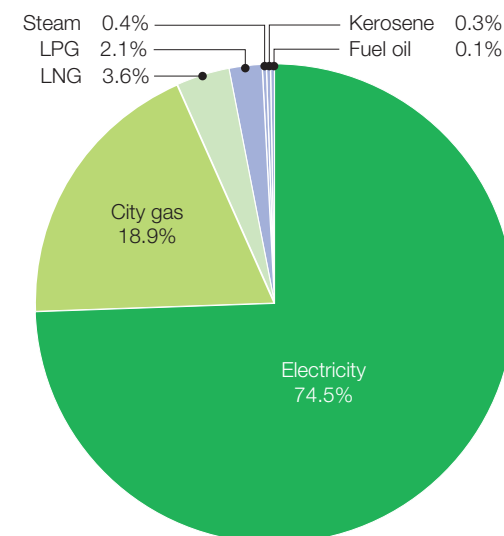
GHG emissions volume GHG emissions in Japan due to electricity use, fuel use/combustion, burning of waste and atmospheric emissions of HFCs/PFCs/SF₆/NF₃ are calculated based on the Manual for Calculating and Reporting Greenhouse Gas Emissions, Ver.4.3.2 (June 2018). For electricity emission factors in FY2018, the emission factor for each electric power company is used at manufacturing sites based on the emission factor for each electric power utility (FY2017 results) (announced on December 27, 2018) and a common emission factor is used for offices and the Bookstore Group. Overseas, the emission factor for each country is used based on GHG Protocol (Ver1.0 of Compilation of emission factors used in the cross-sector tools) of 2006. (For FY2015–FY2017 as well, the domestic portion uses the same emission factor used in the fiscal years prior to the tabulated fiscal years.)

*Scope 1 emissions attributable to transportation and distribution carried out by group companies are tabulated as Scope 3 emissions.

• Domestic GHG emissions volume by category

Unit: tons-CO₂

Total GHG emissions volume	849,700
Energy source	827,200
Non-energy source	22,000
Methane	34
N ₂ O	471
HFC	0
PFC	28
SF ₆	1
NF ₃	0

• Domestic fuel composition ☒

*Gasoline and diesel fuel for automobile use are also used (less than 0.1%) in addition to these fuels above.

Environmental Management Activities—Achieving a Low-Carbon Society

Reduction of GHG emissions

• **Transport volume**

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.

Domestic manufacturing sites FY2018 results

Cargo transport volume: 4.2 million ton-kilometers

Amount of fuel used for transport: 20,930 kl
(converted to crude oil)

CO₂ emissions: 52,130 tons

Per-unit fuel use for transport

(amount of fuel used/sales): 14.9 kl/billion yen

7.8% reduction compared with FY2010

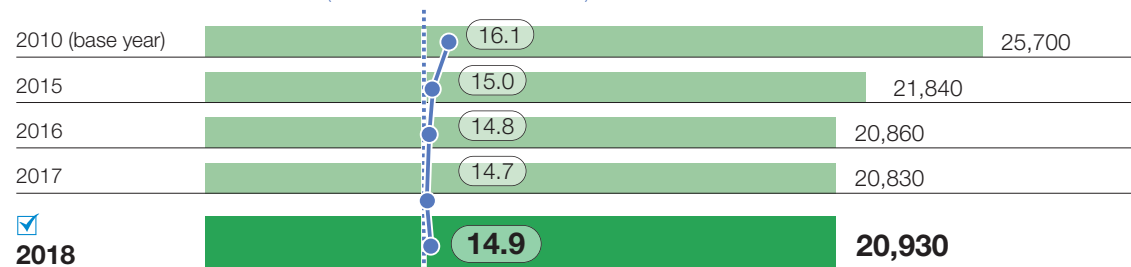
• **Global warming measures for offices**

The DNP Group has been engaged in efforts to reduce CO₂ emissions for offices since FY2005. We established a target of a 20% reduction in power consumed at our offices throughout Japan compared with FY2010. Specific actions that we are implementing, include completely revising the number of lighting fixtures and level of illumination needed, extending the “cool biz” dress code period (May–October), reviewing how air conditioning is run and expanding the use of LED lighting.

Fuel use for transport*
(Unit: kl converted to crude oil)

Bar graph / **Per-unit fuel use for transport**
(Unit: kl/billion yen)

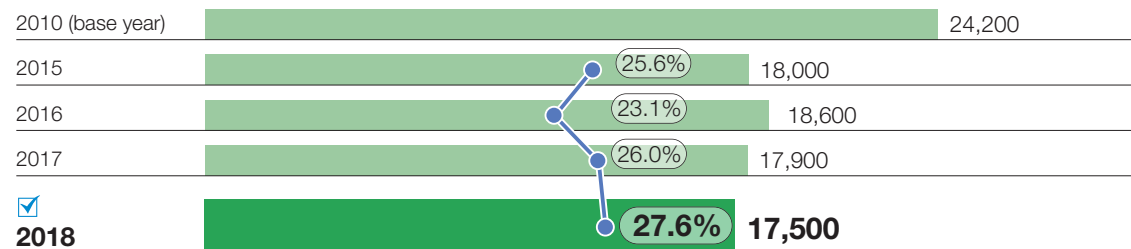
Target value to be achieved in 2020
(10% reduction from FY2010)



*Amount used for domestic cargo transport

Power consumption at major offices*
(Unit: 1,000 kWh)

Bar graph / **Reduction rate compared with FY2010**

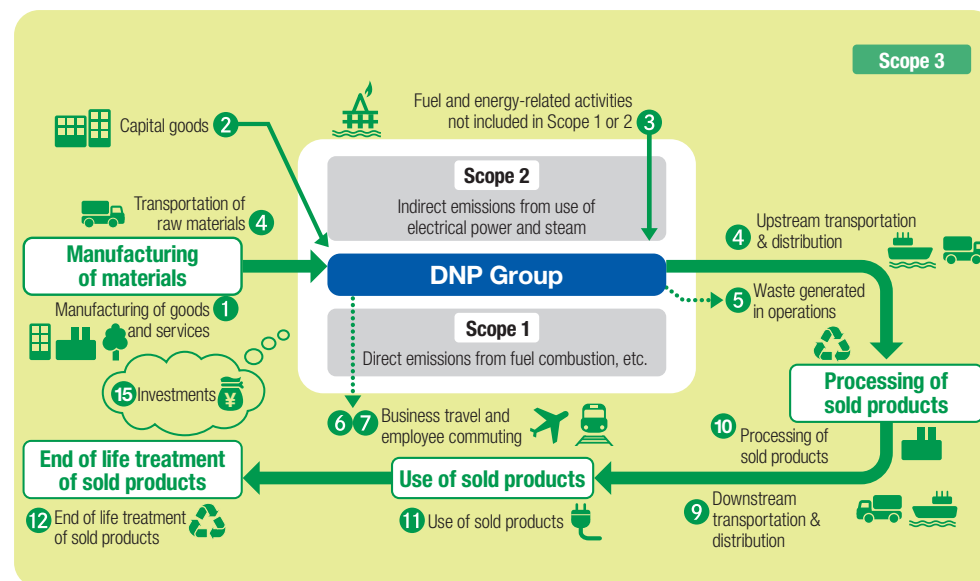
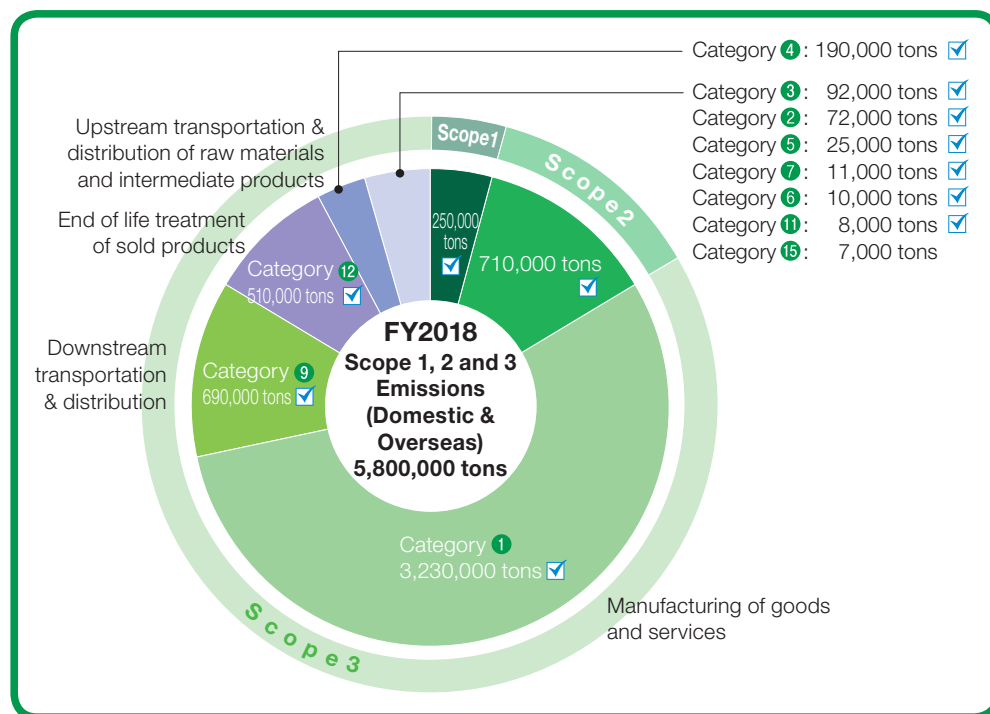


*38 major offices in Japan under continuous operation during the period FY2010–FY2018

Environmental Management Activities—Achieving a Low-Carbon Society

Reduction of GHG emissions Across the Entire Supply Chain

• GHG emissions across the entire supply chain



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 2.3” the standards of which our calculations are based upon.

- Of the 15 Scope 3 categories, Categories 8, 10, 13 and 14 were not applicable.
- Scope 1 emissions attributable to transportation and distribution carried out by group companies were included under Category 4.

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/estimate_tool.html#no00 (in Japanese)

Scope of calculations

Main DNP business sites in Japan (excluding Hokkaido Coca-Cola Products and the Bookstore Group among others), and key overseas sites (PT DNP Indonesia, DNP Imagingcomm America Corporation, DNP Imagingcomm Asia Sdn. Bhd. and Tien Wah Press (Pte.) Ltd.).

Environmental Management Activities—Building a Recycling Society

Reduction of Waste Products

To 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.

• Resource productivity

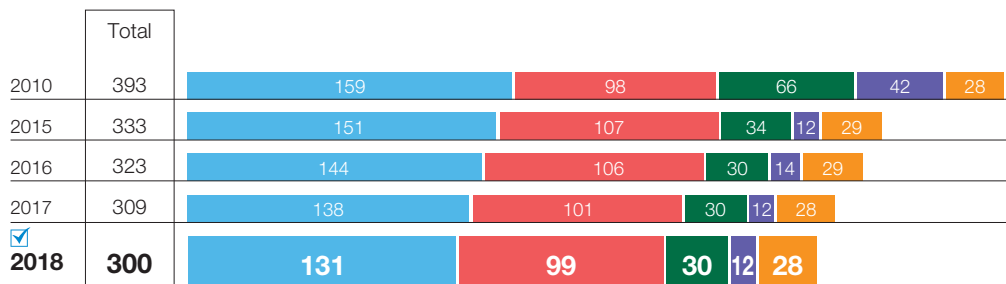
We use waste per unit of production as a productivity indicator and implement activities which set out to create a resilient production system in terms of quality, cost, delivery and other factors. In addition, we intend to reduce waste volume through the extraction of valuable materials such as waste plastic and waste oil.

Waste per unit of production

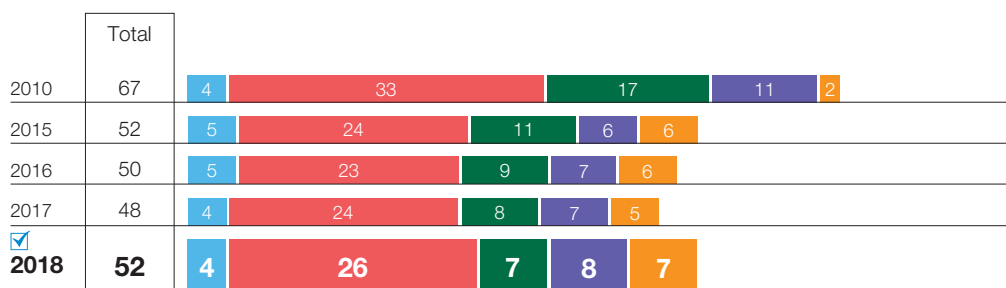
(Waste emissions: E + F [in the right chart] /production volume)

FY2018 results: 36.9 [tons/billion]

Undesired material generation (Unit: 1,000 tons)



Waste emissions (Unit: 1,000 tons)



From left
■ Information Communication ■ Lifestyle and Industrial Supplies ■ Electronics
■ Other ■ Overseas

• Recycling undesired materials

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 [in the right chart])/undesired materials production volume A [in the right chart] to 0.5% or less.

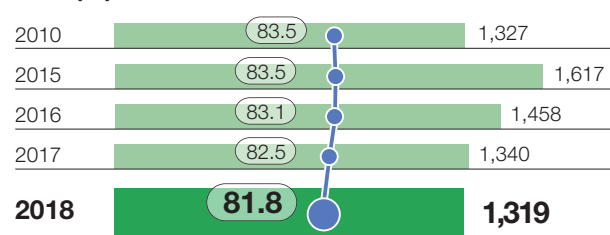
Zero emissions FY2018 results: 0.04%

• Office paper recycling

The business of the DNP Group is closely connected to paper, and we have been separating and collecting paper at our domestic offices for some time. In FY2018, waste paper was collected at 50 offices, primarily large-scale offices, for a recycling rate of 81.8%, exceeding our target of 70%.

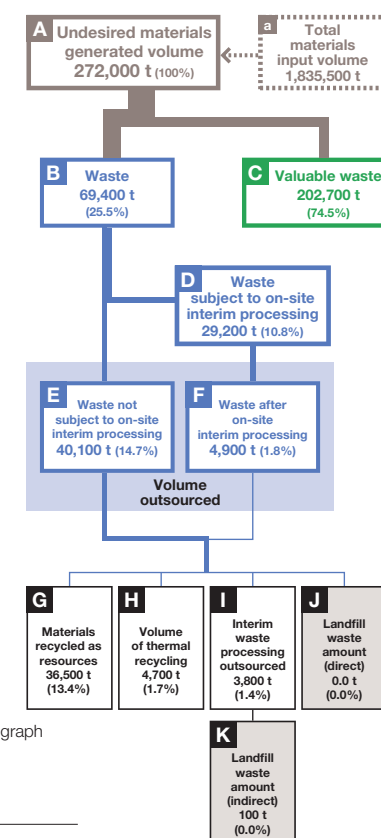
Amount of waste paper collected (Unit: tons)

Used paper collection rate (Unit: %)



Waste paper collection:

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



Environmental Management Activities—Building a Recycling Society

Effective Use of Water Resources

The levels of risk and access to water resources differ by country and region. Therefore, DNP carries out surveys of water risk at its manufacturing sites, including its overseas manufacturing sites. Based on the results of these surveys, we take measures that include water saving and water recycling in manufacturing processes as well as wastewater management. Also, we implement flooding counter-measures in regions with a high risk of flood damage.

• Reducing volume of water used

The DNP Group strives to reduce its water consumption by conserving water, reducing the amount of water supplied to utility systems and increasing the use of recycled water. In the Electronics and Other segments that require a large amount of water, we are making particular efforts to reduce consumption, such as optimizing the amount of water used in manufacturing processes, refining each process, installing water meters to eliminate loss as well as increasing the recovery and reuse of water.

Water used FY2018 results: 8,680 [1,000 m³]

• Use of recycled water

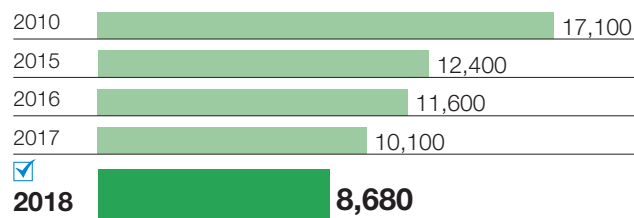
We are working hard to conserve water resources by promoting a closed-loop system in which water is recycled and reused instead of released. In this way we have been able to cut down on the high volume of water required for cleaning our products, air conditioning, and heating and cooling production machinery.

We are also making effective use of rainwater in our office buildings and other sites.

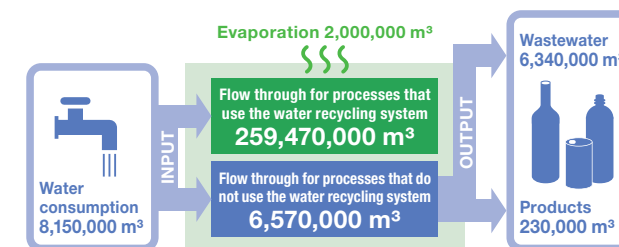
Water use by intake source (Unit: 1,000 m³)

	River	Groundwater	Clean water, industrial water	Rainwater	Seawater
Domestic	0	3,241	4,911	19.1	0
Overseas	0	0	529	0	0

Water use (Unit: 1,000 m³)



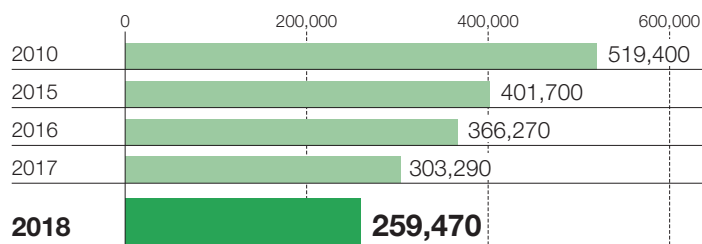
Water input-output in domestic sites



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

Recycled water use in domestic manufacturing sites

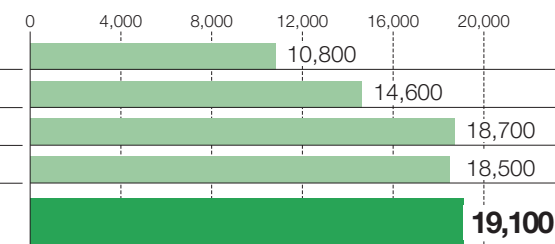
(Unit: 1,000 m³)



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

Use of rainwater in domestic office buildings, etc.

(Unit: 1,000 m³)

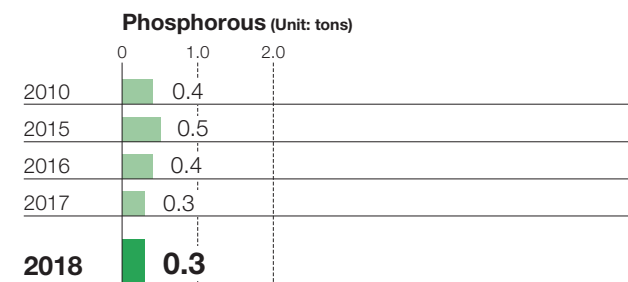
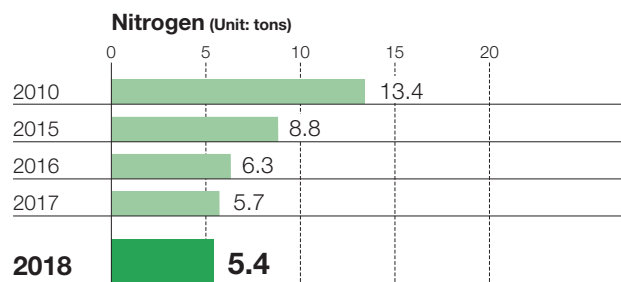
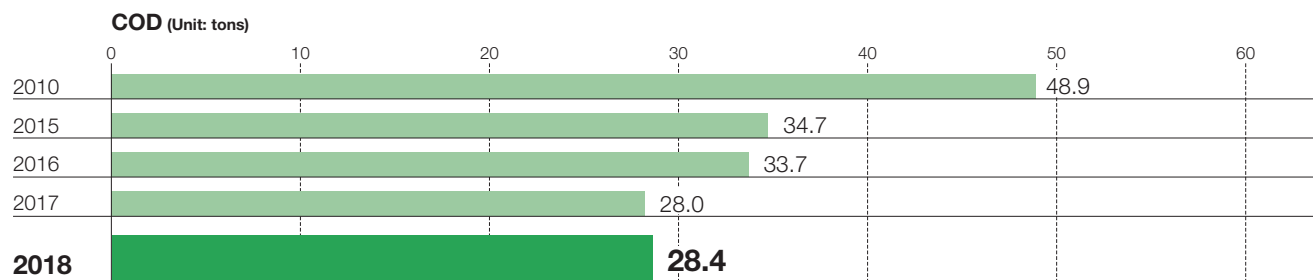


Environmental Management Activities—For Reduction of Environmental Pollutants

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 continue to conduct measures, such as changing out the filtration membranes and absorbent materials in wastewater processing equipment, improving wastewater treatment in our kitchens.

Water pollutant emissions



Environmental Management Activities—For Reduction of Environmental Pollutants

Reducing Air Pollutants

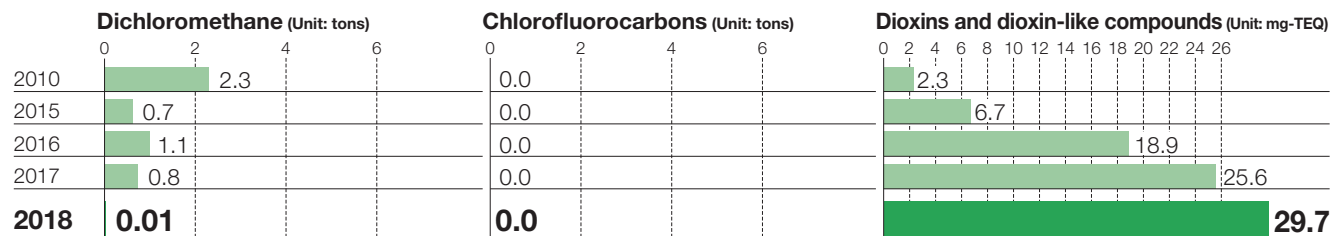
The Air Pollution Control Act regulates substances such as toxic air pollutants and ozone depleting substances, including sulfur oxides (SOx) and nitrogen oxides (NOx), as well as volatile organic compounds (VOCs). These substances have an impact on health and the global environment, causing problems 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.

Atmospheric emissions of VOCs (domestic)
FY2018 results: 4,040 (tons)

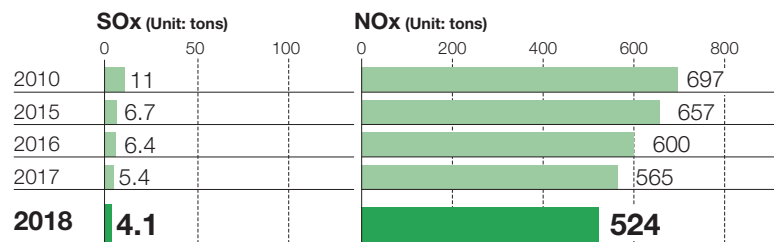
Air pollutant emissions



Although dichloromethane was mainly used for washing in the printing process, we have pursued a switchover to substitutes and terminated using dichloromethane for washing. At present a certain amount is used as a solvent.

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.

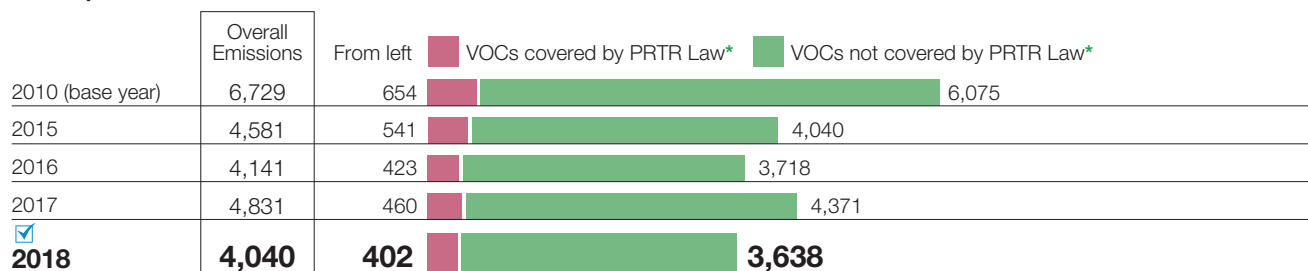
We totally eliminated small furnaces, for which burning control is difficult, and currently have five large-scale furnaces in operation, which are compliant with 2002 regulations. Atmospheric emissions in FY2017 amounted to 25.6 mg-TEQ.



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

Environmental Management Activities—For Reduction of Environmental Pollutants

Chemical Substances Subject to the PRTR Law

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

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).

Substance	Handled	Consumed	Removed/ consumed	Recycled	To atmo- sphere	Public waterways	Soil	Sewer	Waste
2-Hydroxyethyl acrylate	4,400	2,300	1,600	410	100	—	—	—	34
Acrylonitrile	1,200	700	—	—	—	—	—	—	470
Acetonitrile	4,300	—	260	—	43	—	—	—	4,000
2-aminoethanol	3,100	—	—	—	—	—	—	1,900	1,100
Indium and its compounds	1,700	230	—	1,400	—	—	—	—	23
Ethylbenzene	200,000	—	130,000	61,000	2,200	—	—	—	1,900
Ferric chloride	3,000,000	860,000	590,000	1,500,000	—	—	—	—	51,000
Epsilon-caprolactam	4,900	2,400	1,800	—	82	—	—	—	620
Xylene	170,000	—	120,000	45,000	1,700	—	—	—	7,500
Chromium and chromium (III) compounds	31,000	9,500	23	9,900	—	—	—	1.3	11,000
Hexavalent chromium compounds	11,000	5,800	5,100	—	—	—	—	—	92
Inorganic cyanide compounds (except complex salts and cyanate)	4,500	—	430	—	460	—	—	—	3,600
N,N-dimethylformamide	83,000	—	3,500	—	410	—	—	—	79,000
Bromine	2,400	2,400	—	—	1.0	—	—	—	—
Dioxins and dioxin-like compounds	—	—	—	—	30	—	—	—	110
Water soluble copper salts (except complex salts)	180,000	43,000	18,000	120,000	—	—	—	0.4	630
Triethylamine	2,700	—	—	—	0.7	—	—	—	2,700
1,2,4-trimethylbenzene	30,000	—	16,000	13,000	330	—	—	—	—
1,3,5-trimethylbenzene	8,300	—	5,900	2,200	100	—	—	—	81
Toluene	8,800,000	1,400,000	5,500,000	880,000	390,000	—	—	—	670,000
Naphthalene	17,000	—	15,000	1,700	85	—	—	—	52
Hexamethylene diacrylate	1,400	1,100	—	270	—	—	—	—	—
Nickel	35,000	19,000	2,900	13,000	—	—	—	—	—
Nickel compounds	11,000	1,200	—	2,900	—	—	—	—	6,500
N-hexane	21,000	—	1,300	—	210	—	—	—	19,000
1,2,4-benzenetricarboxylic acid 1,2-anhydride	2,100	1,800	—	310	—	—	—	—	—
Boron compound	1,000	—	—	—	—	960	—	—	68
Poly (oxyethylene) alkyl ether*	1,500	1,500	—	—	—	—	—	—	14
Formaldehyde	1,100	—	—	—	1,100	—	—	—	—
Manganese and its compounds	2,000	890	—	490	—	—	—	130	510
Methacrylic acid	22,000	22,000	—	—	2.0	—	—	—	34
2,3-Epoxypropyl methacrylate	1,100	1,000	—	—	2.0	—	—	—	49
n-Butyl methacrylate	4,900	4,900	—	—	—	—	—	—	—
Methyl methacrylate	35,000	35,000	—	—	—	—	—	—	—
Methylenebis (4,1-phenylene) diisocyanate	1,900	1,900	—	—	—	—	—	—	—
Morpholine	59,000	5,600	2,800	—	2,000	—	—	—	49,000
<input checked="" type="checkbox"/> PRTR-listed substances	12,770,000	2,399,000	6,373,000	2,684,000	402,700	960	—	2,070	904,700

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

Environmental Management Activities—Realizing a Society in Symbiosis with Nature

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.

Raw 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 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.

DNP's Ichigaya Forest Certified as SEGES Urban Oasis

Our Ichigaya Forest, an initiative to create a “new form of urban forest” on the premises of our head office in Shinjuku-ku, Tokyo, has been certified as a SEGES (Social and Environmental Green Evaluation System) Urban Oasis by Organization for Landscape and Urban Green Infrastructure. This is an accreditation given to companies involved in greenery businesses that contributes to society and the environment.

Ichigaya Forest is a vast 6,000m² green belt completed in December 2015 as a result of a redevelopment project in the Ichigaya district of Shinjuku-ku, Tokyo. Projecting an image of a forest of miscellaneous trees in Musashino, this is a natural forest filled with diversity and interwoven evergreen trees centering on broad leaved deciduous trees. Ichigaya Forest was recently certified as a SEGES Urban Oasis based on the high acclaim for the following initiatives.

1. Largest-scale green belt in an inner-urban district

An approximately 6,000m² area, or one third of the total site area of around 17,000m², serves as a greenery space that gives consideration to biodiversity.

2. Planting configured only with regional native species

The greening design gives consideration to the topography of the region and vegetation consists entirely of regional native species from the Kanto region.

3. Diligent upkeep and management by employees

Biological surveys are implemented by experts while employees continually make daily visits and perform “awareness record-keeping” that emphasizes observations that are helpful in planting management and discovering issues.

4. Holding observation tours for neighborhood residents

We hold greenery observation tours for persons outside the company that include neighborhood residents.



Q About SEGES “Urban Oasis”

The Organization for Landscape and Urban Green Infrastructure examines greenery areas established or managed by private business operators based on the three criteria of “openness to the public, safety and consideration of the environment” and judging is performed by a third-party committee.

Comment from a SEGES judging committee member

DNP has prescribed a management policy of Today's Innovation is “Tomorrow's Basic.” I acclaim DNP's efforts to share across the entire company its vision of creating a forest for the future and to demonstrate that it steadily implements initiatives for green space management against a background of the trust and expectations as a company it has built up in the Ichigaya community over the course of more than 100 years.



Environmental Activities Data

Environmental Accounting

As an environmental management tool and as a tool for communicating with society, the DNP Group calculates and publicizes its environment-related costs in accordance with the Ministry of the Environment's *Environmental Accounting Guidelines* (2005 Edition). The scope of calculation covers DNP and its consolidated subsidiaries (more specifically, manufacturing sites, development centers, office buildings and sales offices of manufacturing companies and a distribution company in Japan).

Category	Investment (million yen)		Expense (million yen)		Details of major efforts	Page(s) on which data is listed
	FY2017	FY2018	FY2017	FY2018		
(1) Business area costs						
1) Pollution prevention costs	498	318	1,600	1,148	VOC collection and disposal equipment, wastewater treatment facility	16, 26
2) Global environmental conservation costs	181	405	267	244	Conversion to inverters, waste heat recovery, switching to energy-saving lighting	15-17
3) Resource circulation costs	162	88	557	450	Furnace improvements, separation recycling, zero emissions (conversion to RPF/cement ingredients), resource recycling	16, 17, 23
(Total business area costs)	841	811	2,424	1,842		
(2) Up/downstream costs	0	0	121	120	Container and packaging recycling expense burden, recycling system development	17, 22
(3) Administration costs	1	1	2,330	2,431	ISO 14001 inspection and registration costs, environmental education costs, environmental report composition costs	8-11, 13-14, 19
(4) R&D costs	0	0	3,213	3,481	Research and development into environmentally conscious products and services and production methods	15, 18
(5) Social activities costs	0	0	18	16	Environmental conservation of areas outside plant compounds, biodiversity conservation, support for activities of environmental conservation groups	28
(6) Environmental remediation	0	0	0	0		12
Total	842	812	8,106	7,890		

● **Environmental conservation costs to total costs ratio**

Category	Consolidated total costs (million yen)	Costs (million yen)	Ratio
Investment of current period (FY2018)	41,103	812	2.0%
R&D cost of current period (FY2018)	33,786	3,481	10.3%

Environmental Activities Data

Environmental Accounting

(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
		FY2017	FY2018	Difference		

1) Benefit arising from supplied resources

Total energy input volume	Energy consumption (TJ)	18,522	17,561	-961		15-17
	Unit consumption per domestic production for the above (TJ/billion yen)	13.1	12.5	-0.6	Energy consumed per billion yen of domestic production	15-17
Input volume of water	Water usage (1,000 m³)	10,100	8,680	-1,420		16, 17, 24
	Unit consumption per domestic production for the above (1,000 m³/billion yen)	7.2	6.2	-1.0	Water usage per billion yen of domestic production	16, 17, 24
Input volume of main raw materials	Supplied amount (1,000 tons)	1,999	1,952	-47		16, 22
	Amount of undesired materials generated/supplied (%)	15.5	15.4	-0.1	Ratio of undesired materials to main raw materials	16, 22

2) Environmental conservation benefit related to waste or environmental impact originating from business activities

Emissions to the air	SOx emissions (tons)	5.4	4.1	-1.3		16, 26
	NOx emissions (tons)	565	524	-41		16, 26
	Environmental pollutant emissions volume (tons)	15,422	14,626	-796	VOC emissions volume	16, 26
Water quality	COD discharge (tons)	20.8	28.4	7.6		16, 25
	Emissions of environmental pollutants (PRTR-listed substances) (tons)	0.0	0.1	0.1		26
Waste emission volume	Generated undesired materials (1,000 tons)	309	300	-9	Including undesired materials other than main raw materials	16, 23
	Discharged waste (1,000 tons)	48.4	51.7	3.3		16, 17, 23
	Unit consumption per domestic production for the above (tons/billion yen)	34.3	36.9	2.6	Discharged waste per billion yen of domestic production	16, 17, 23
	Recycle rate (%)	99.7	99.4	-0.3	By category: paper (100%), waste plastics (98.2%), metals (95.2%) and glass (99.2%)	16, 17, 23
	Emissions of environmental pollutants (PRTR-listed substances) (tons)	1,000	905	-95	Total for 27 substances reported	27
Volume of GHG emission	GHG emissions (1,000 t-CO₂)	1,027	961	-66		16, 17, 19
	Unit consumption per domestic production for the above (tons/billion yen)	730	690	-40	Emissions per billion yen of domestic production	16, 17, 19

Environmental Activities Data

Environmental Accounting

(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
		FY2017	FY2018	Difference		
Benefit related to goods produced by business activities						
CO ₂ emissions after product shipment	CO ₂ emissions (1,000 t-CO ₂)	1,236	1,398	162		17, 22
	CO ₂ emissions / domestic sales (1,000 t-CO ₂ /billion yen)	0.87	1.00	0.13	CO ₂ emissions per billion yen of domestic production	17, 22

(3) Other environmental conservation benefit

Category of indicator showing benefit	FY2017	FY2018	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)	20,830	20,860	30		15, 21
Energy usage amount during transport / gross sales (kl/billion yen)	14.7	14.9	0.2	Energy usage amount per billion yen of consolidated production	15, 21

Economic benefits of environmental conservation activities	Amount (million yen)			Remarks	Page(s) on which data is listed
	FY2017	FY2018	Difference		
(1) Increased sales 1) Economic benefit of R&D costs					
Sales of environmentally conscious products and services	599,300	603,200	3,900		15, 18
(2) Increased income 2) Benefit of resource recycling costs					
Income from recycling undesired materials	3,142	3,075	−67	Shift toward valuable materials such as waste plastics, etc.	23
(3) Cost saving 3) Benefit of resource recycling costs					
Saving disposal costs by resource conservation	−14	−29	−15		23

Environmental Activities Data

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 towards comprehensive environmental issues, including product liability
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 Environmental Agency, 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

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

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 GHG 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
FY2017	Hokkaido Coca-Cola Bottling wins a Special Review Panel Award in the 19th Japan Water Awards
FY2018	Ichigaya-Forest certified by the ABINC Ichigaya-Forest certified by the SEGES DNP wins a Prize of Excellence (Judge's Prize) at the 22nd Environmental Communication Awards DNP wins 28th Grand Prize for the Global Environment Award, Grand Prize

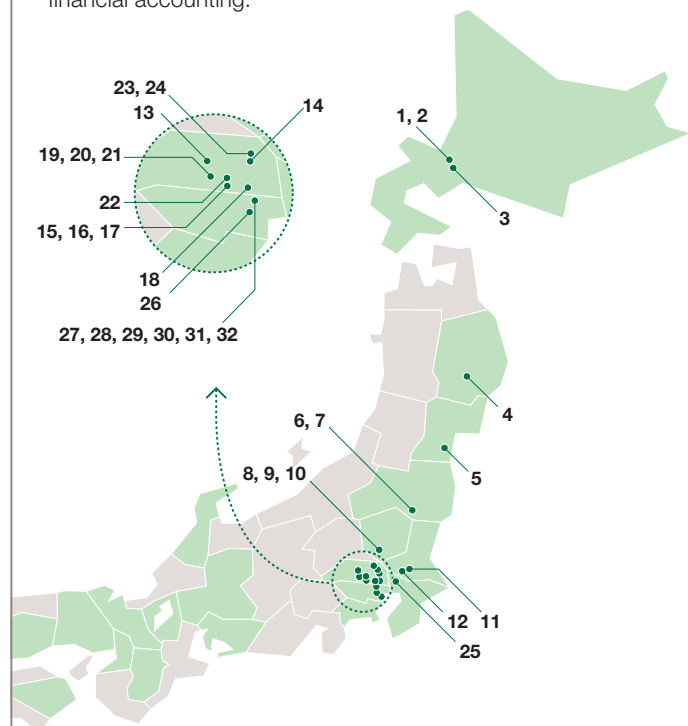
Environmental Activities Data

Manufacturing Sites with Required Business Performance Data Disclosure

Domestic Manufacturing Sites with Required Business Performance Data Disclosure (1)

Organizations and the names used for them are current as of March 31, 2019.

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	1	●	Sapporo Plant, DNP Graphica Sapporo Plant, DNP Data Techno	Printing / bookbinding
	2	▲	Sapporo Plant, DNP Technopack	Manufacturing of packaging
	3	□	Sapporo Plant, Hokkaido Coca-Cola Products	Manufacturing of beverages
Iwate	4	■	Kitakami Plant, D.T. Fine Electronics	Manufacturing of electronic precision parts
Miyagi	5	●	Sendai Plant, DNP Graphica	Plate-making / printing / bookbinding
Fukushima	6	▲	Izumizaki Plant, DNP Technopack	Manufacturing of packaging
	7	▲	Izumizaki Plant, DNP High-performance Materials	Manufacturing of solar cell filler
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	11	●	Ushiku Plant, DNP Data Techno	Manufacturing of various types of smart cards
	12	□	Tsukuba Techno Center, DNP Engineering	Manufacturing of printing machines and machine tools
Saitama	13	●	Higashimatsuyama Plant, Oguchi Book Binding & Printing	Bookbinding
	14	●	Shiraoka Plant, DNP Book Factory	Printing / bookbinding
	15	●	Tsuruse Plant, Publication Printing Operations	Plate-making / printing plate / printing / bookbinding
	16	▲	Tokyo Plant, DNP Living Space	Plate-making / printing plate / printing / processing
	17	●	Miyoshi Plant, Oguchi Book Binding & Printing	Bookbinding
	18	●	Warabi Plant, DNP Data Techno	Plate-making / printing / processing
	19	▲	Sayama Plant No. 1, DNP Technopack	Manufacturing of packaging
	20	▲	Sayama Plant No. 2, DNP Technopack	Manufacturing of packaging
	21	●	Sayama Plant, DNP Imagingcomm	Manufacturing of thermal transfer carbon ribbons and dye-sublimation transfer materials
	22	■	Kamifukuoka Plant, DNP Fine Optronics	Manufacturing of electronic precision parts
	23	●	Kuki Plant, Publication Printing Operations	Printing plate / printing / bookbinding
	24	▲	Kuki Plant, DNP High-performance Materials	Manufacturing of solar cell filler
Chiba	25	▲	Kashiwa Plant, DNP Technopack	Manufacturing of packaging
Tokyo	26	●	Enoki-cho Plant, DNP Graphica	Plate-making / printing / bookbinding
	27	●	Kamiya Plant, DNP SP Tech	Manufacturing of all types of advertising items
	28	●	Oji Plant, DNP Graphica	Plate-making / printing / bookbinding
	29	●	Kamiya Plant, DNP Book Factory	Bookbinding
	30	□	DNP Logistics	Packaging / shipping
	31	▲	DNP Hoso	Processing filling and packaging
	32	●	Kamiya Plant, DNP Data Techno	Printing / bookbinding / processing

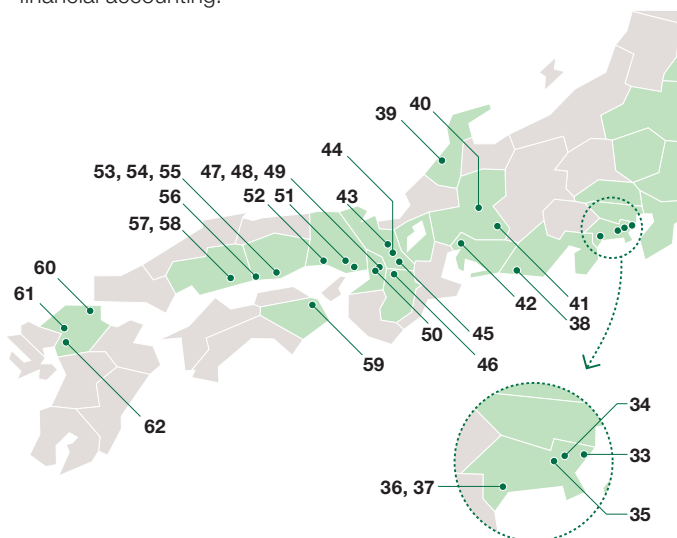
Environmental Activities Data

Manufacturing Sites with Required Business Performance Data Disclosure

Domestic Manufacturing Sites with Required Business Performance Data Disclosure (2)

Organizations and the names used for them are current as of March 31, 2019.

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	33 ■	Kawasaki Plant, D.T. Fine Electronics	Manufacturing of electronic precision parts
	Tsuzuki-ku, Yokohama	34 ▲	Yokohama Plant, DNP Technopack	Manufacturing of packaging
	Midori-ku, Yokohama	35 □	Tokyo Plant, DNP Fine Chemicals	Manufacturing of chemicals, etc.
	Odawara	36 ▲	Sagami Yoki	Manufacturing of laminated tubes
	Aikawa, Aiko	37 ▲	Tokyo Plant, DNP Ellio	Printing and processing metal sheets
Shizuoka	Iwata	38 ▲	Iwata Plant, DNP Tamura Plastic	Manufacturing of car supplies and various types of plastic products
Ishikawa	Hakusan	39 □	Hokuriku Techno Center, DNP Engineering	Manufacturing of printing machines and machine tools
Gifu	Gero	40 ▲	Hagiwara Plant, DNP Tamura Plastic	Manufacturing of car supplies and various types of plastic products
	Nakatsugawa	41 ▲	Tokai Plant, DNP Technopack	Manufacturing of packaging
Aichi	Moriyama-ku, Nagoya	42 ●	Nagoya Plant, DNP Graphica	Plate-making / printing / bookbinding
Kyoto	Ukyo-ku, Kyoto	43 ▲	Kyoto Plant, DNP Technopack	Manufacturing of packaging
	Minami-ku, Kyoto	44 ●	Kyoto Plant, DNP Data Techno	Manufacturing of various types of smart cards
	Kyotanabe	45 ▲	Tanabe Plant, DNP Technopack	Manufacturing of packaging
Nara	Kawanishi, Shiki	46 ●	Nara Plant, DNP Data Techno	Manufacturing of various types of smart cards
Osaka	Neyagawa	47 ▲	Neyagawa Plant, DNP Technopack	Manufacturing of packaging
		48 ▲	Osaka Plant, DNP Ellio	Printing and processing metal sheets
		49 ●	Neyagawa Plant, DNP SP Tech	Manufacturing of all types of advertising items
	Kadoma	50 ●	DNP Media Support	Manufacturing of magnetic cards
Hyogo	Ono	51 ●	Ono Plant, DNP Graphica	Printing plate / printing / bookbinding
	Himeji	52 ■	DNP Precision Devices Himeji	Manufacturing of electronic precision parts
Okayama	Okayama	53 ●	Okayama Plant, DNP Imagingcomm	Manufacturing of dye-sublimation transfer materials
		54 ▲	Okayama Plant, DNP Living Space	Plate-making / printing plate / printing / processing
		55 ■	Okayama Plant, DNP Fine Optronics	Manufacturing of electronic parts
	Kasaoka	56 □	Kasaoka Plant, DNP Fine Chemicals	Manufacturing of chemicals, etc.
Hiroshima	Mihara	57 ■	Mihara East Plant, DNP Fine Optronics	Manufacturing of electronic precision parts
		58 ■	Mihara West Plant, DNP Fine Optronics	Manufacturing of electronic parts
Tokushima	Tokushima	59 □	DNP Shikoku	Plate-making / printing / manufacturing of packaging
Fukuoka	Tobata-ku, Kitakyushu	60 ▲	Tobata Plant, DNP High-performance Materials	Manufacturing of solar cell filler
	Minami-ku, Fukuoka	61 ●	Fukuoka Plant, DNP Graphica Fukuoka Plant, DNP Data Techno	Plate-making / printing / bookbinding
	Chikugo	62 ▲	Chikugo Plant, DNP Technopack	Manufacturing of packaging

Environmental Activities Data

Manufacturing Sites with Required Business Performance Data Disclosure

Overseas Manufacturing Sites with Required Business Performance Data Disclosure**Business segments**

●	Information Communication
▲	Lifestyle and Industrial Supplies
■	Electronics

Country	City	No	Business segment	Site	Work content
Italy	Agrate Brianza	①	■	DNP Photomask Europe S.p.A.	Manufacturing of photomasks
Denmark	Karlsunde	②	■	DNP Denmark A/S	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
Malaysia	Johor Bahru	⑥	●	DNP Imagingcomm Asia Sdn. Bhd.	Manufacturing of information media supplies
		⑦	●	Tien Wah Press (Pte.) Ltd.	Offset printing and binding
Indonesia	Pulo Gadung	⑧	▲	PT DNP Indonesia	Manufacturing of packaging
	Karawang	⑨	▲	PT DNP Indonesia	Manufacturing of packaging
Vietnam	Binh Duong Province	⑩	▲	DNP Vietnam Co., Ltd.	Manufacturing of packaging

①, ②, ④–⑥ April 2018–March 2019 totals ③, ⑦–⑩ January 2018–December 2018 totals

Independent Review Report Comments by an Independent Institution

On-site visit



Kyoto Plant, DNP Technopack



Utsunomiya Plant, DNP Graphica



Kamifukuoka Plant, DNP Fine Optonics

INDEPENDENT ASSURANCE STATEMENT

To: Dai Nippon Printing Co., Ltd.



Bureau Veritas Japan Co., Ltd. (Bureau Veritas) has been engaged by Dai Nippon Printing Co., Ltd. (DNP) to provide limited assurance over sustainability information selected by DNP. This Assurance Statement applies to the related information included within the scope of work described below.

Selected information

The scope of our work was limited to assurance over the following information included within DNP Group Environmental Report 2019 (the 'Report') for the period of April 1, 2018 through March 31, 2019 (the 'Selected Information'):

- Environmental performance data marked with the symbol "E2" in the Report

Reporting criteria

The Selected Information included within the Report needs to be read and understood together with the reporting criteria stated in the Report.

Limitations and Exclusions

Excluded from the scope of our work is any verification of information relating to:

- Activities outside the defined verification period;
- Any other information within the Report, which is not listed as the 'Selected Information'.

This limited assurance engagement relies on a risk based selected sample of sustainability data and the associated limitations that this entails. This independent statement should not be relied upon to detect all errors, omissions or misstatements that may exist.

Responsibilities

This preparation and presentation of the Selected Information in the Report are the sole responsibility of the management of DNP.

Bureau Veritas was not involved in the drafting of the Report or of the Reporting Criteria. Our responsibilities were to:

- obtain limited assurance about whether the Selected Information has been prepared in accordance with the Reporting Criteria;
- form an independent conclusion based on the assurance procedures performed and evidence obtained; and
- report our conclusions to the Directors of DNP.

Assessment Standard

We performed our work in accordance with International Standard on Assurance Engagements (ISAE) 3000 (Revised), Assurance Engagements Other than Audits or Reviews of Historical Financial Information (Effective for assurance reports dated on or after December 15, 2015) issued by the International Auditing and Assurance Standards Board.

For the greenhouse gas emissions data, we undertook verification in accordance with the requirements



of ISO14064-3 (2006): Greenhouse gases - Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions.

Summary of work performed

As part of our independent verification, our work included:

1. Conducting interviews with relevant personnel of DNP;
2. Reviewing the data collection and consolidation processes used to compile Selected Information, including assessing assumptions made, and the data scope and reporting boundaries;
3. Reviewing documentary evidence provided by DNP;
4. Reviewing DNP systems for quantitative data aggregation and analysis;
5. Verification of sample of data back to source by carrying out four physical site visits, selected on a risk based bases at the following locations:
 - DNP Head Office
 - DNP Technopack Co., Ltd. Kyoto Plant
 - DNP Fine Optonics Co., Ltd. Kamifukuoka Plant
 - DNP Graphica Co., Ltd. Utsunomiya Plant
6. Reproducing a selection of aggregation calculations of the Selected Information;
7. Comparing the Selected Information to the prior year amounts taking into consideration changes in business activities, acquisitions and disposals.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement.

Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

Verified greenhouse gas emissions

We performed our verification work on greenhouse gas emissions data in accordance with the requirements of ISO14064-3(2006).

Verified data in greenhouse gas assertion made by DNP are as follows.

	Greenhouse gas emissions [kt-CO ₂ e]	Boundary
Scope 1	248	GHG emissions generated through business operations of the DNP Group's following sites for the period of April 1, 2018 through March 31, 2019:
Scope 2	689 (location-based)	- 62 sites for manufacturing and R&D, 108 offices and three companies for book store and publishing within Japan
	713 (market-based)	- 10 sites for manufacturing outside Japan
Scope 3	4,833	However, GHG emissions generated from some sites outside Japan are for the period of January 1, 2018 through December 31, 2018.
		Categories 1, 2, 3, 4, 5, 6, 7, 9, 11 and 12 of Scope 3 GHG emissions accounted and reported within the boundaries defined by DNP for each category for the period of April 1, 2018 through March 31, 2019



The breakdown of Scope 3 emissions are as follows.

Category	kt-CO ₂ e	Category	kt-CO ₂ e	Category	kt-CO ₂ e
1	3,230	5	25	11	8
2	72	6	10	12	510
3	92	7	11		
4	189	9	687		

Conclusion

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

- Nothing has come to our attention to indicate that the Selected Information has not been properly prepared, in all material respects, in accordance with the Reporting Criteria;
- It is our opinion that DNP has established appropriate systems for the collection, aggregation and analysis of quantitative data within the scope of our work.

Statement of Independence, Integrity and Competence

Bureau Veritas is an independent professional services company that specialises in quality, environmental, health, safety and social accountability with over 190 years history. Its assurance team has extensive experience in conducting verification over environmental, social, ethical and health and safety information, systems and processes.

Bureau Veritas operates a certified Quality Management System which complies with the requirements of ISO 9001:2015, and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Bureau Veritas has implemented and applies a Code of Ethics, which meets the requirements of the International Federation of Inspections Agencies (IFIA), across the business to ensure that its employees maintain integrity, objectivity, professional competence and due care, confidentiality, professional behavior and high ethical standards in their day-to-day business activities.

Bureau Veritas Japan Co., Ltd.
Yokohama, Japan
July 26, 2019



Dai Nippon Printing Co., Ltd.

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