



Environmental Action Report 2005



NTN corporation

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Editorial Line

At NTN Group, we have been conducting our business activities with the concept "Coexist with the environment" in all departments from the development and production of products to distribution and service. Since we issued our first Environmental Action Report in 1999, we have used this report to disclose important information to all our stakeholders -- our investors, stockholders, suppliers and customers, subcontractors and those residing near our plants. In this report, we will introduce the environmental actions that the NTN Group and its employees have taken as part of our daily business activities.

We refer to the Environmental Report Guidelines 2003 issued by the Ministry of the Environment and focused on the results of our activities for fiscal 2004 (April 2004 thru March 2005). (*Some contents are from after fiscal 2004) In addition, we took great effort to give detailed accounts in terms that are easy to understand. We hope that through this report, the proposition "Conserving the global environment" will bring us (join us) together.

To promote better environmental activities, we await your candid opinions and suggestions. The opinions obtained through the attached questionnaire will be used to improve our activities, therefore we appreciate your cooperation.

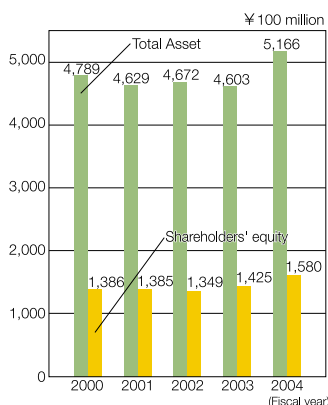
June 2005

Corporate Data

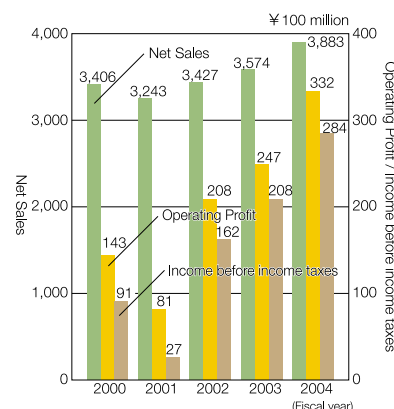
(As of March 31, 2005)

Corporate Name	NTN corporation
Head Office	1-3-17 Kyomachibori, Nishi-ku, Osaka, 550-0003 Japan
	Phone: 81-6-6443-5001 (switchboard)
Date founded	March 1918
Date incorporated	March 1934
President	Yasunobu Suzuki
Number of Employees	5,465 (NTN corporation) 12,788 (Consolidated)
Fiscal term	March 31st
Capital	¥39.6 billion
Net Sales	¥292 billion (Consolidated: ¥388.3 billion)
Stock	Listed on the first section of the Tokyo Stock Exchange and the Osaka Securities Exchange

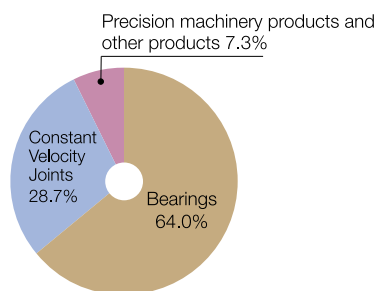
■ Total Assets and Shareholders' Equity (Consolidated)



■ Trends in Net Sales and Incomes (Consolidated)

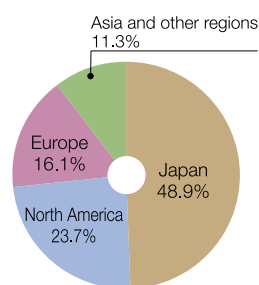


■ Sales by Division (Consolidated)



Total ¥388.3 billion

■ Sales by Region (Consolidated)



Total ¥388.3 billion

Aiming to Coexist with the Global Environment

At the NTN Group, we ask ourselves what we can do as inhabitants of this planet
-- and we understand the importance of taking action



Message from the President



Environmental problems have become increasingly serious on a global level such as global warming, increased pollution, and the depletion of resources. We must move beyond the framework of country, company and region and ask ourselves "what should we do to solve environmental problems?" and take action accordingly.

The bearings and constant velocity joints that the NTN Group provides are essentially "eco-friendly products" in that they reduce energy loss and improve efficiency and we are actively promoting the development of environmentally responsive products -- striving for compact size, low torque, high efficiency and longer life. Additionally, for future environmental conservation, we are actively introducing wind and solar power generation systems with the understanding that the utilization of natural energy is the key to conservation. Using our original technology, we are developing and commercializing "high performance bearings for wind power generators."

With regards to the main items we set up the previous fiscal year (such as global warming prevention and the reduction of waste materials), we have met our environmental targets. For CO₂ emission, at present, we have met the reduction targets of trade organizations (The Japan Bearing Industrial Association cooperating with the Japan Business Federation) and NTN's voluntary reduction targets. However with the issuance of the Kyoto Protocol this February, further voluntary efforts are anticipated and we will set still higher targets for fiscal 2010 and work to reduce CO₂ emission.

We at NTN are working to expand our environmental management from domestic to overseas and to include our suppliers. With regards to ISO14001, NTN Omaezaki Works (domestic), NTN-NIDEC (ZHEJIANG) CORP (China), and GUANGZHOU NTN-YULON DRIVETRAIN CO., LTD (China) have been newly added giving us a total of 13 domestic operating sites and 12 overseas operating sites with the certification. This fiscal year we aim to achieve the ISO certification at one domestic site and one overseas site that recently started operations. Additionally, we have requested of environmental certification from all our major suppliers and are working to expand this circle of environmental management. We support the certification process for suppliers with smaller operations and in order to reduce the expense of these processes, NTN has suggested a simpler certification level, "Eco Stage Introductory Level," to be accepted at the examining authority and we hope this will lead to an expansion in the acquisition of the certification.

The NTN Group has begun efforts with our midterm management plan "Rapid Advance 21" and through the "Monozukuri movement" we have promoted the efficient use of all production resources such as human resources, raw materials, and energy. At the NTN Mie Works, opened the previous fiscal year as a model Monozukuri plant, we worked to make the production facilities more compact and utilize natural energy and strove to reduce the environmental impact.

We have compiled these efforts into the "Environmental Action Report 2005." We have incorporated the opinions and suggestions of our past readers and tried to make the layout easier to understand. We hope that you will take the time to review this report. We invite our investors, stockholders, and suppliers and customers to submit their candid opinions and suggestions so that we can refine our environmental conservation activities.

Yasunobu Suzuki

President
NTN corporation

Basic Concept

Advocating harmony with the global environment is our most important issue and we will make constant efforts to contribute to the harmonious development of society, while aiming to reduce environmental impacts and contribute to a recycling society.

Action Guideline

In connection with its manufacture and sales of bearings, constant velocity joints and precision equipment, the NTN Group will comply with the following guidelines, which state our commitment to continuously reduce harm to the environment from our business activities, products and services and to maintain a safe environment for the future.

1. NTN will contribute to world-wide energy conservation by developing and providing eco-conscious products using state-of-the-art high precision techniques and friction-reducing technology.
2. NTN not only will comply with the standards and requirements set forth in applicable governmental laws and regulations but also with customers' requirements and internal standards, which NTN will establish as it deems necessary.
3. Beginning at the research, development, and design stages, NTN will endeavor to reduce harm to the environment.
4. In its purchases of raw materials, parts, and equipment, NTN will take into account protection of the environment, preservation of resources and more efficient use of energy. In its production and sales activities, NTN will endeavor to reduce energy consumption and waste generation and promote recycling.
5. NTN will endeavor to implement production methods and distribution systems that have less environmental effect in terms of use of resources, energy, pollution, and waste.
6. NTN will conduct environmental audits and will endeavor to maintain and improve corporate environmental management systems.
7. NTN will cooperate in programs for environmental protection conducted by national and local governmental entities and will participate actively in regional environmental activities.
8. NTN will conduct environmental education and company-wide promotion activities. NTN will promote improved awareness of this Environmental Policy and environmental protection to all persons working for and on behalf of NTN Group.

Kenji Okada

Managing Director
Chief Environmental Management Officer
NTN corporation
April 1, 2005

To Coexist with the Environment — Environmental Management —

At NTN, we aim to coexist with the global environment, and we strive to fulfill all legal standards and to achieve our voluntary targets.



Organizational Structure of Environmental Conservation and Initiatives

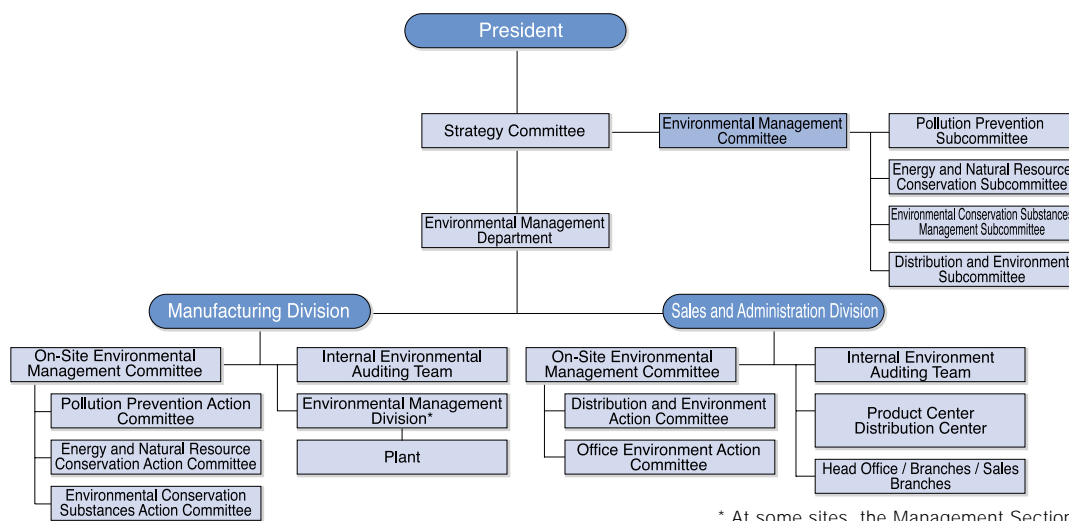
NTN Group's Environmental Conservation Structure

At NTN, we have established the "NTN Environmental Policy" and all our business activities are based on it. We have made continuous and coordinated efforts to reduce environmental hazards and our aim is to coexist with the global environment.

Our environmental conservation

activities started in 1993 with the establishment of the Environmental Conservation Committee in all departments (including the head office, R&D, manufacturing, sales and logistics). This committee was later renamed the Environmental Management Committee and promotes efforts in environmental

conservation. The Environmental Management Department is the head office for environmental conservation activities for the entire company and the Environmental Management Division* at each site plays a central role in the activities of that location.



* At some sites, the Management Section or the General Administration Office is in charge of this operation.

Chronology of the NTN Group's Environmental Conservation Initiatives

Details of Efforts	Fiscal Year	New laws, International treaties established
Environmental Conservation Committee established	1993	The Basic Environment Law is established
1,1,1-Trichloroethane phased out	1994	The Basic Environment Plan is settled
CFC113 phased out	1995	Containers and Packaging Recycling Law is established
Iwata Works begins preparations to acquire ISO14001 certification	1996	ISO14001, JISQ14001 established
Environmental Management Guide established	1997	The Kyoto Protocol is adopted
Changed the Environmental Conservation Committee to the Environmental Management Committee	1998	Legislation established for the promotion of global warming countermeasures
Iwata Works acquires ISO14001 certification		
A total of 13 operating sites acquired ISO14001 certification (multi-site)	1999	Law Concerning Special Measure against Dioxins established
Issued first edition of NTN Environmental Action Report		PRTR Law established
Development of ECO series product		
Trichloroethylene phased out	2000	The Basic Law to promote the creation of a recycling society
Disclosed Environmental Accounting		Law on promoting green purchasing established
Iwata Works transferred to ISO14001 (multi-site)		
Dichloromethane phased out	2001	Law Concerning Special Measures against PCB Waste issued
PRTR Law Countermeasures (database)		Law for Promotion of Effective Utilization of Resources established
Zero emission targets established	2002	Soil Contamination Countermeasures Law established
Respond to EU's End-of-Life Vehicles Directive		Automobile Recycling Law established
Start manufacture and distribution of grinding swarf briquetting machine		
Achieved zero emission for all domestic operating sites	2003	Revision of the Waste Disposal and Public Cleaning Law
Incorporated NTN Casting into ISO14001 (multi-site)		Implementation of Soil Contamination Countermeasures Law
Incorporated NTN Omaezaki Works into ISO14001 (multi-site)		Kyoto Protocol was put into effect
Completed cleanup of polluted ground at old operating sites (Kishiwada and Kawachi Nagano, Osaka)	2004	ISO14001 revised
		Implementation of Automobile Recycling Law

Results for Fiscal 2004 and Targets for Fiscal 2005

Results for Fiscal 2004

As our environmental goal for fiscal 2004, NTN upheld 13 concrete targets (domestic: 11 items, overseas: 2 items) in three categories: "Conservation of global environment," "Contribution to a recycling society," and "Maintenance and improvement of environmental management system." As a

result, we were able to meet our targets for 11 items, such as the reduction of CO₂ and maintaining zero emission (domestic).

Concerning the promotion of zero emission, we were able to maintain a high standard of 99% in Japan, but for overseas, which we added to our target last year, we were unable to achieve zero emission. In the future, we will promote activities to improve various forms of recycling overseas.

In addition, with regards to the conservation of resources such as with packing materials and recoverable resources (Styrofoam, cardboard, paper, etc.), we have met all our number targets. Our voluntary target of phasing out coolants that contain chlorine is not a legal restriction, and we were unable to meet our target. We will continue to work towards an early phase out of chlorine in coolants.

Objective		Target for Fiscal 2004		Result for Fiscal 2004	Evaluation*1)	Page
Conservation of Global Environment	Reduce CO ₂ emission	Domestic	• CO ₂ emission rate:*2) 17% reduction relative to fiscal 1997	• CO ₂ emission rate: 18% reduction relative to fiscal 1997		P17
		Overseas	• CO ₂ emission rate: 2% reduction relative to fiscal 2002	• CO ₂ emission rate: 4% reduction relative to fiscal 2002		
	Prevent air, water and ground pollution	Domestic	• Number of halon extinguishers replaced with carbon dioxide extinguishers: 175 units or more	• Number of halon extinguishers replaced with carbon dioxide extinguishers: 198 units or more		P18
		Domestic	• Complete phase out of coolants that contain chlorine	• Number of switches from coolants containing chlorine: 3 (2 switches left)		P18
		Domestic	• Complete decontamination of the two closed operation sites	• Decontamination of the two closed operation sites completed		P19
Create Recycling society	Reduce waste	Domestic	• Promote zero emission: recycle rate 98% or more*3)	• Promote zero emission: recycle rate 99%		P18
		Overseas	• Promote zero emission: recycle rate 94% or more	• Promote zero emission: recycle rate 87%		
	Protect resources	Domestic	• Styrofoam: 75% reduction relative to fiscal 1999	• Styrofoam: 79% reduction relative to fiscal 1999		P19
		Domestic	• Use of cardboard boxes: 18% reduction relative to fiscal 1998	• Use of cardboard boxes: 19% reduction relative to fiscal 1998		P20
		Domestic	• Paper consumption: 20% reduction relative to fiscal 1998	• Paper consumption: 23% reduction relative to fiscal 1998		
		Domestic	• Paper recycle rate: maintain 100% or more	• Paper recycle rate: 143%		
Maintain and improve environmental management structure	Promote green procurement	Domestic	• Switching from various controlled substances	• Promoting switchover from phthalate esters		P13
	Promote environment management of the supply chain	Domestic	• Support the acquisition of ISO14001 and Eco Stage for suppliers	• Held EMS establishment seminars • Started certification support for Eco Stage Introductory Level as a trial activity		P14

*1) Symbols for evaluation: achieved/promoted, not achieved

*2) CO₂ emission rate (ton/million yen) = $\frac{\text{CO}_2 \text{ emission (ton)}}{\text{Sales added value amount (million yen)}}$

*3) Recycling percentage (%) = $\left(1 - \frac{\text{Final amount disposed of by landfill (tons)}}{\text{Total amount discharged (tons)}}\right) \times 100$

Environmental Target for Fiscal 2005

The environmental targets for fiscal 2005 were based on the efforts and results of fiscal 2004. This year's targets also included concrete items to further reduce environmental hazard.

For "Conservation of global environment," we are working to reduce environmental hazards by

promoting activities such as CO₂ emission reduction and development of eco-friendly products. Additionally, we have expanded the regional environmental preservation activities at Iwata Works and started participating in local greening activities on a corporate level.

For "Create a recycling society," we continued our efforts to maintain zero emission in Japan and expanded use of the grinding swarf

briquetting machine to overseas sites in order to promote zero emission.

For "Maintaining and improving the environmental management system," we enhanced our environmental hazardous substance management system and promoted voluntary elimination to improve green procurement.

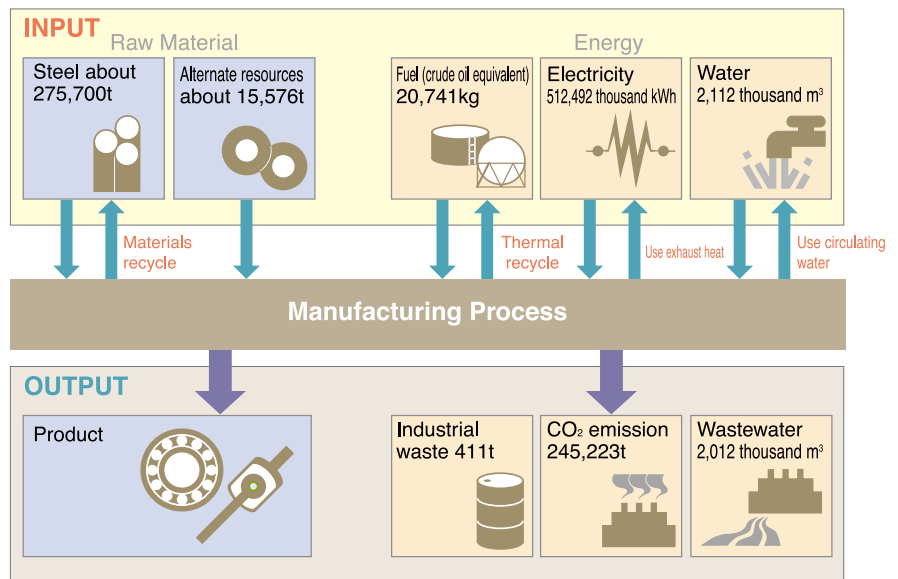
Objective		Target for Fiscal 2005		Target for Fiscal 2010
Conservation of the global environment	Reduce CO ₂ emission	Domestic	<ul style="list-style-type: none"> • CO₂ emission rate: 20% reduction relative to fiscal 1997 • Energy conservation diagnosis and improvements for major Works 	<ul style="list-style-type: none"> • CO₂ emission rate: 25% reduction relative to fiscal 1997
		Overseas	<ul style="list-style-type: none"> • CO₂ emission rate: 2% reduction relative to fiscal 2004 	<ul style="list-style-type: none"> • CO₂ emission rate: 10% reduction relative to fiscal 2002
	Prevent air, water and ground pollution	Domestic	<ul style="list-style-type: none"> • Number of halon extinguishers replaced with carbon dioxide extinguishers: 115 units or more 	<ul style="list-style-type: none"> • Phasing out of halon extinguishers
		Domestic	<ul style="list-style-type: none"> • Elimination of coolants with chlorine: phase out (2 remaining) 	
		Domestic	<ul style="list-style-type: none"> • Response to Soil Contamination Countermeasures Law 	
	Promote the development of eco-friendly products	Domestic	<ul style="list-style-type: none"> • Sales amount for eco-friendly products: +10% relative to fiscal 2004 	<ul style="list-style-type: none"> • Sales amount for eco-friendly products: +60% relative to fiscal 2004
Participation in Regional Environmental Preservation Activities	Domestic	<ul style="list-style-type: none"> • Participation in regional green activities 		
Create a Recycling society	Reduce waste materials	Domestic	<ul style="list-style-type: none"> • Promote zero emission: recycle rate 98% or more 	<ul style="list-style-type: none"> • Continue Zero emission
		Overseas	<ul style="list-style-type: none"> • Promote zero emission: recycle rate 94% or more 	<ul style="list-style-type: none"> • Promote zero emission: recycle rate 98% or more (target for fiscal 2006)
	Protect resources	Domestic	<ul style="list-style-type: none"> • Styrofoam: 84% reduction relative to fiscal 1999 	<ul style="list-style-type: none"> • Complete phase out of Styrofoam
		Domestic	<ul style="list-style-type: none"> • Paper consumption: 28% reduction relative to fiscal 1998 	<ul style="list-style-type: none"> • Paper consumption: 50% reduction relative to fiscal 1998
Maintain and improve environmental management structure	Promote green procurement	Domestic	<ul style="list-style-type: none"> • Establish environmental hazardous substance management structure • Establish green procurement policy • Respond to customers' audits • Promote elimination of phthalate esters 	
	Promote ISO14001 Multi-Site Certification	Domestic	<ul style="list-style-type: none"> • Acquired the certification for NTN Mie Works 	
	Promote environment management of the supply chain	Domestic	<ul style="list-style-type: none"> • Support suppliers' acquisition of ISO14001 and others 	
	Respond to new laws	Domestic	<ul style="list-style-type: none"> • Respond to ISO14001 (2004 version) • Respond to revised Energy Conservation Law • Respond to VOC emission control 	

Business Activities and Environmental Hazard/ Environmental Accounting

Business Activities and Environmental Hazard

● INPUT and OUTPUT in Manufacturing

For fiscal 2004, the production amount (INPUT) for NTN as a whole increased 12% in relation to the previous year. However, as a result of energy conservation measures and efforts towards zero emission, we were able to keep CO₂ emission (OUTPUT) down to a 9% increase.



Environmental Accounting

● Increased economic effect through environmental accounting

In NTN's environmental accounting for fiscal 2004, the total cost for

environmental equipment and environmental preservation was ¥4,376 million. The financial effect of environmental preservation activities exceeded that of the previous year at ¥356 million.

■ Environmental preservation costs

Unit: million yen / year

Classification of Environmental Preservation Costs		Environmental Equipment Investment	Environmental Preservation Costs
1) Cost of in-factory facilities (Environmental preservation cost for inhibiting environmental hazards caused by business activities)	Pollution prevention costs	46	138
	Global environmental preservation expenses	207	144
	Resource recycling expenses	41	507
2) Upstream/downstream expenses (Environmental preservation cost for inhibiting environmental hazard caused upstream and downstream from the business activities)		0	11
3) Management activity expenses (Environmental preservation cost for management activities)		0	217
4) R&D expenses (Environmental preservation cost for R&D)		681	2,315
5) Social activity expenses (Environmental preservation cost for social activities)		0	24
6) Environmental remediation expenses (Cost for environmental remediation)		0	45
Grand total		975	3,401
(Reference) Grand total for previous year		2,086	3,482

■ Impact of environmental preservation

Indicator	Result (for fiscal 2004)
CO ₂ emission rate	18% reduction relative to fiscal 1997
Reduction of waste	Recycle rate 99%
Reduction in cardboard box purchase factor	19% reduction relative to fiscal 1998

■ Financial effect of environmental preservation activities

Unit: million yen / year

Items	Amount
Cost reductions through resource conservation	71
Cost reductions through energy conservation	149
Cost reductions of waste treatment through the recycling	136
Grand total	356
(Reference) Grand total for previous year	320

Actively Developing Products that are Eco-friendly

Significantly Improved Yield Rate "Multi-Repair System for LCD Color Filters"

— NTN Is Everywhere You Look —

NTN has developed a multi-repair system that reduces the failure rate (number rejected) by automatically correcting minute defects in the LCD color filter used in LCD screens of television sets and personal computers (joint development with Takano Co., Ltd.).

The size of Color filter boards used in devices such as LCD television sets is getting larger and larger and the demand for LCD television sets is growing and there is an increasing need for defect correction equipment to reduce the failure rate of LCD color filters. There are three major types of defects in LCD color filters, "black defect,"^{*1)} "white defect,"^{*2)} and "particle defect"^{*3)} and thus far there was no single solution to correct all defect types so it was necessary to combine the use of several types of equipment depend-

ing of the type of defect. Because of issues such as investment costs, installation area and correction time when using several different types of equipment, the appearance of equipment that could correct all types of defects was greatly anticipated.

Under these circumstances, NTN developed and commercialized a multi-repair system that can correct the three major defect types of color filters by fusing NTN's "Ink coating technology" and "Laser cutting technology" with Takano's "Tape polishing technology".

We were awarded the Grand Prize in the test/repair category of the "Advanced Display of the Year Awards 2004"^{*4)} in recognition of this outstanding function.



*4) An award given to exceptional products out of all the new flat panel display related products (screen display devices such as LCDs and plasma) released in fiscal 2003.

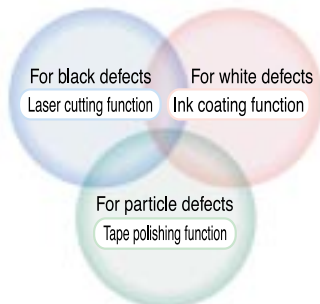
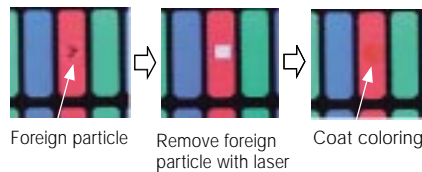


9th Advanced Display of the Year 2004

Color filters are made up of four colors, R (red), G (green), B (blue) and BK (black) and each pixel of RGB is lined up regularly and the border of each color is separated with BK.

- *1) Black defects: when BK is mixed in R, G and B pixels turning it black, or when other colors are mixed.
- *2) White defects: when a pixel is not colored.
- *3) Particle defects: when the colored part of the pixel sticks out of the surface or when a foreign particle is attached and sticking out.

Example of the correction of white defect using ink coating



Actively Developing Products that are Eco-friendly

Development of Environmentally Responsive Products

- **Ball screws for mechanical automatic transmission electromotive actuator**

Improved fuel-efficiency

Improved fuel-efficiency in mechanical automatic transmission vehicles and operating performance

We began the commercial production of ball screws for electromotive actuators for gear switching in mechanical automatic transmission installed in trucks. The electromotive types allow for a simpler structure than conventional types (air and hydraulic) and by using NTN ball screws we were able to reduce drive train loss significantly and improve the fuel-efficiency of the automobile.

We are currently developing ball screw units for electromotive actuator of control devices surrounding the brakes and engine, and so on.



- **Lightweight compact constant velocity joint "EPTJ"**

Compact & lightweight

World's lowest vibration and lightweight & compact

Constant velocity joints convey the engine's power to the wheels. Through optimal design using computer analysis, we were able to improve vibration characteristics which affect the ride quality (NVH performance) of the automobile (50% reduction in vibration value relative to conventional CVJs) and at the same time made it lightweight (8% reduction relative to conventional CVJs), and compact (4% reduction in overall size relative to conventional CVJs).



- **"Double row thrust needle roller bearing" for car air conditioning and A/T transmission**

Long life, low torque

Attained longer life and lower torque for bearing by making the rollers double row

In recent years, the lubrication conditions for automobile bearings have become increasingly severe and there is a greater need for bearings with longer life. Through the double alignment of rollers and the optimization of the roller shape, we have achieved longer life, lower torque, and lower noise. This contributes to resource and energy conservation.



For car air conditioner compressors



For automatic transmissions

● **"RustGuard™" Improved corrosion-resistance in bearings for steel mill machinery**



Improved corrosion-resistance and realized 3.5 times longer life relative to conventional goods

NTN attained longer life for bearings used in steel mill machinery used in harsh environments -- such as exposure to excessive water or scales (iron powder). We use special heat treatment and improved resistance to rolling fatigue while improving corrosion-resistance significantly by applying NTN's proprietary manganese phosphate coating.



Wing turbine bearing



Proprietary technology incorporated into high-performance bearings

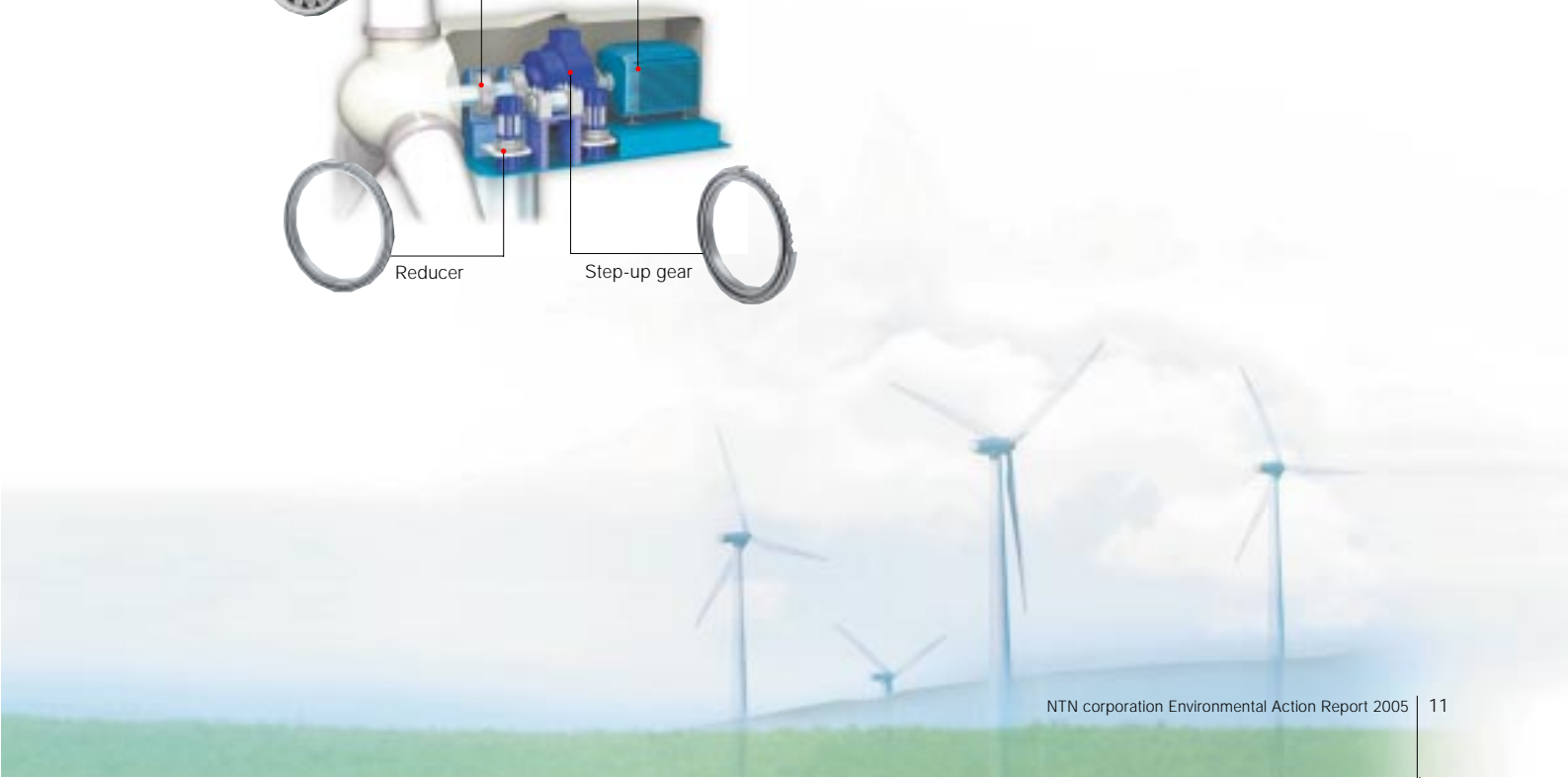
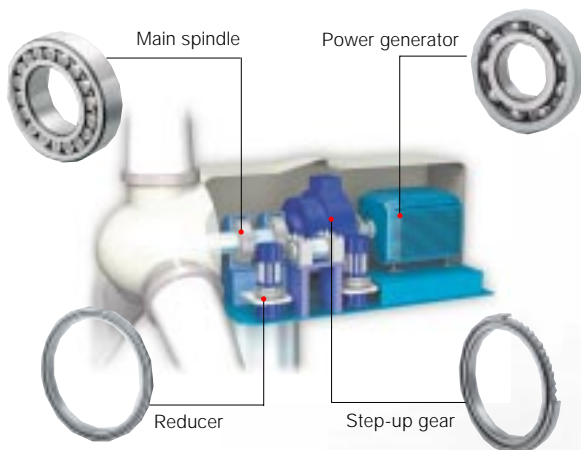
Used in the nacelle (the section where the power generator, accelerator, and brakes are stored) of wind power generators, this technology encourages the use of natural energy. Spherical roller bearings are used for the main shaft, angular contact ball bearings for reducers, cylindrical roller bearings for accelerators, and insulated bearings for power generators (MEGAOHM® series).

● **New Series of Spherical Roller Bearings "S-TITAN™"**



Adapt long-life steel and optimal design to productworld's longest life and highest dynamic load rating

Spherical roller bearings are bearings with barrel shaped rollers that are self-aligning and used in various industrial machines. By adopting long-life, high-temperature steel for S-TITAN, we were able to increase life by a factor of 30 at a temperature of 200°C and improve load carrying capability by 50% compared with conventional bearings.



Environmental Management System

Present State of ISO14001 Certifications

In 1999, NTN acquired multi-site ISO14001 certification for 11 domestic operating sites (headquarters, 5 plants and 5 affiliates) and we are working to expand this circle.

In 2004, NTN Omaezaki Works (domestic), NTN-NIDEC (ZHEJIANG) CORP (China), and GUANGZHOU NTN-YULON DRIVETRAIN CO., LTD. (China) acquired certification.

For details on the location and

certification of our domestic and overseas operating sites, please refer to pages 22 to 36.



NTN-NIDEC (ZHEJIANG) CORP ISO14001 Certificate



GUANGZHOU NTN-YULON DRIVETRAIN CO., LTD. ISO14001 Certificate

Comprehensive Auditing System

At NTN Group, we have an environmental audit system so that our environmental management structure functions properly. We conduct both "reviews by external organizations" and "internal audits at operation sites" and starting from fiscal 2004 we have "cross auditing" in which operating sites audit each other.

● ISO14001 Periodic Maintenance Evaluation

The domestic NTN Group operating sites have completed the acquisition of multi-site ISO14001 certification.

At the maintenance evaluation conducted last November, NTN Omaezaki Works received its certification and was incorporated into the NTN Group multi-site certification.



Receiving ISO14001 Periodic Maintenance Evaluation

● Customers' Environmental Auditing

We underwent environmental audits by two of our customers in fiscal 2004. NTN's environmental management structure received high ratings and we received accreditation as a supplier.



Customer's certificates

Compliance with Legal Requirements

● Compliance with Regulations and Voluntary Measures

For the "ELV directive,"*1) which targets automobiles, and the "RoHS directive,"*2) which targets electric and electronic devices, we have switched all bearing parts to those that do not contain toxic substances (starting in October 2003). For automobile CVJs, we have proposed replacement materials (lead-free grease) to our users from March 2003 and realized complete phase out of toxic substances.

At present, we are promoting the complete phase out of phthalate

ester*3), which was newly added to CMR substances*4) targeted by EU restrictions. This is a chemical substance that is used as an additive in rubber seals and boots for CVJs and we are promoting a switch to replacement materials in preparation for complete phase out by the end of 2007 (NTN voluntary target).

At NTN, we not only comply with legal requirements but also actively set voluntary targets and phase-outs ahead of other companies for any substance with a heavy environmental hazard or that are suspected of being toxic.

*1) targets of the ELV directive (End of Life Vehicles): lead, mercury, cadmium, and hexavalent chromium.

*2) targets of the RoHS directive (Restriction of the use of certain Hazardous Substance in electrical and electronic equipment): the substances above + brominated flame retardants

*3) Phthalate esters: a type of organic chemical that is partially restricted by the EU directive (2003/36/EC) for suspicions raised about human toxicity.

*4) CMR substances: substances that are considered to be C (Carcinogenic), M (mutagenic) or R (Toxic to Reproduction).



Lead-free grease for CVJ



Rubber seals and boots for CVJ that are phthalate ester switchover targets

● NTN employees with qualifications

At NTN, in order to deal with the legal requirements, we are promoting the acquisition of various qualifications.

Major Qualifications		Number of Employees with Qualification
Energy Management Qualifications	Qualified electrical energy manager	17
	Qualified thermal energy manager	19
Pollution Prevention Manager	Air (categories 1-4)	28
	Water (categories 1-4)	47
	Noise	22
	Vibration	17
High-pressure Gas Manufacturing and Security Manager	Refrigerating equipment categories 2, 3	11
	Categories A and B Chemical	12
	Category C Chemical/liquefied petroleum gas	76
	Category C Chemical/special test items	47
	Category B Machinery	2
Chief Electrical Engineer	Categories 1, 2	6
	Category 3	44
Environmental Measurement Analyzer		5
Working Environment Measurement Expert (Type 1, Type 2)		2
Manager of Specially Controlled Industrial Waste		23
Manager of intermediate treatment facility for industrial waste		5
Manager of poisonous and harmful substances		15
Assistant Auditor for ISO14001 Specification		3
Total		401

(As of March 31, 2005)

2005年(平成17年)3月3日(木曜日)

NTNは欧州連合(EU)の自動車部品の規制に先んじて、2005年3月1日より、自動車部品の製造に使用するCMR物質(Phthalate ester)の削減に着手し、2007年末までに完全廃止を目標として取り組んでいます。

CMR物質代替品を耐用試験

CVJやベアリングのゴム部品でCMR物質の使用を防止する

2007年末までに完全廃止

NTNは、自動車部品の製造に使用するCMR物質(Phthalate ester)の削減に先んじて、2005年3月1日より、自動車部品の製造に使用するCMR物質(Phthalate ester)の削減に着手し、2007年末までに完全廃止を目標として取り組んでいます。

2005年(平成17年)3月3日(木曜日)

Newspaper article on the elimination of phthalate ester (March 3, 2005 Nikkei Sangyo Shinbun)

Expansion of Our Environmental Management System

Supporting Environmental Management System Certifications

At NTN, in efforts to expand our environmental management system to include our suppliers, we have asked our major suppliers to acquire Environmental Management System Certifications (ISO14001 or private certification such as Eco Stage^{*1)} and at the same time we have provided support for these certifications through the NTN Technical Service^{*2)}. These efforts are the first of their kind in the bearing industry and about 50% of our major suppliers have acquired certification.

Through these efforts we have reconfirmed the importance of taking the first step in environmental management and the reality that it is

difficult for small companies to take the first step because the cost is too high. With this in mind we approached the Eco Stage Institute and advocated the need for a simpler certification level and as a result the "Eco Stage Introductory level" that we proposed was introduced last year as a trial certification level.

In the future, by accruing cases of NTN's support activities, it is expected that this will be approved as an official certification level. We believe that this will contribute to environmental management efforts not only at our suppliers but at small companies nationwide.

*1) A consumer specification of the Eco Stage Institute (Limited Responsible Intermediate)

*2) A wholly owned subsidiary of NTN. It conducts support activities such as certification consulting as an Eco Stage certification authority.



Environmental Management System Seminar

The newly-established NTN Environmental Award

Starting from the previous fiscal year, we established the "NTN Environmental Award" and awarded suppliers and operating sites that have achieved significant results from exceptional environmental activities. The suppliers that received awards were Komori Seiki Co., Ltd., which acquired ISO14001 certification in a short period of time, and three companies that received the Eco Stage Level 1 -- Koide Ironworks Co.,

Ltd., Goto Chemical Co., Ltd., and Matsumura Ironworks Co., Ltd.

In addition, three operating sites were presented the award including Iwata Works, which was actively involved in greening activities.

We will continue to present the NTN Environmental Award to exceptional environmental efforts in hope of raising awareness about the environment and improving the level of our environmental conservation activities.



1st NTN Environmental Award Ceremony

Environmental Information-sharing Meetings with Denso Corp.

Last November, Denso Corp. (Daian Plant) and NTN (Kuwana Works) held an environmental information-sharing meeting. We shared valuable information related to the theme of energy conservation by presenting examples of our efforts onsite and introducing new equipment.

NTN presented examples of energy conservation through the use of demand control (collective management system) to conduct centralized control of air conditioning packages and the effects of the grinding swarf briquetting machine. There was a vigorous exchange of ideas and we have continued communication since then.



Demand Control System that conducts centralized control of air conditioning packages

Environmental Communications

Environmental Communication Tools

At the NTN Group, to let all of our stakeholders know our environmental activities, we conduct various press activities such as issuing an Environmental Action Report and maintaining a website.

Additionally, we have a page for environmental issues in our company newsletter with the basic information we would like our employees to understand, such as the contents of the EU Directive to regulate toxic substances and our countermeasures, written in easy to understand terms so that each of our employees understands the background and importance of our environmental activities.



NTN Group Newsletter

Created Poster to Heighten Environmental Consciousness

At NTN Transmissions Europe (France), we created a poster that presented our targets based on our environmental policy in a beautiful visual format and worked to familiarize our employees with our targets. Specifically, we listed our number targets for the reduction of electricity, gas and water use and industrial waste and declared that "the entire company will strive together to meet our targets."



Environmental Education and Social Contribution

At NTN, we are committed to educating our employees and their families about the environment. By being actively involved in local beautification efforts and planting activities, we hope to raise environmental awareness in the NTN Group as a whole while at the same time contributing to the local communities.

● Iwata Works Regional Greening Activities

At Iwata Works, we are conducting greening activities such as improving the local woodlands. In fiscal 2004, 160 people, including 100 employees and their families and the local volunteer group "Green Youth Group," took part in the planting of 450 azaleas in the woodlands near Iwata city and built and installed 6

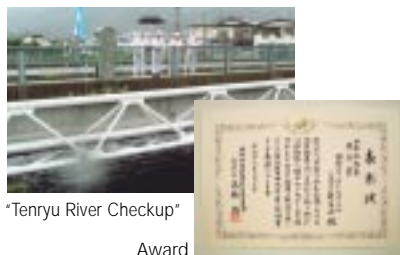


Planting Azaleas

benches made from thinned wood. Through a 3-year greening project, we were able to plant our target of 1,000 azaleas and install a total of 11 benches.

● Water Quality Conservation Activities in the Kamiina Area

The Kamiina area, where the Nagano Works is located, is rich with natural features such as the Tenryu River system, and the conservation of the river's water quality is an important issue for the local community.



"Tenryu River Checkup"

Award

At Nagano Works, 24 employees and their families took part in the "Tenryu River Picnic," a riverside clean up activity supported by about 90 local companies. Additionally, we monitored the water quality of Tenryu River and cooperated 24 hours a day in the "Tenryu River Checkup," the water quality measurement conducted around the clock as a joint effort of the community to improve the water quality.

These river beautification efforts by the local community in the Tenryu River area were awarded the "Japan Water Award" encouragement prize in 2004 in acknowledgement of our contribution to the restoration of a healthy water cycle.

● "Monozukuri" Support Activities at Unisiversities

At NTN, we support "Monozukuri" activities of students in university clubs related to motor sports.

Not only do we provide our company's automobile products such as bearings and constant velocity joints free of cost, but we also provide technical advice and have provided support at a total of 14 universities.

At the "2nd Student Formula SAE Competition of Japan" held in Tochigi, last August and September, 12 of those universities participated and the Shibaura Institute of Technology team (a team supported by NTN) came in fourth place.



Nagoya Institute of Technology Racing Car

To Coexist — Environmental Conservation Activities —

At NTN, we aim to coexist with the global environment.
We work with our communities to protect the earth's rich natural features,
blessed land, and beautiful water.



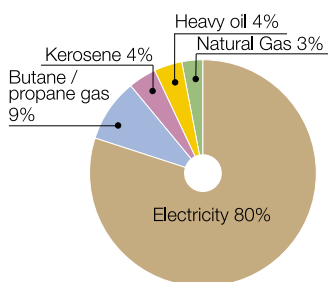
To Prevent Global Warming

Surpassed CO₂ Reduction Targets

In fiscal 2004, for the CO₂ emission rate*), we achieved 18% reduction, surpassing our target of 17% reduction (relative to fiscal 1997). However, the Kyoto Protocol was brought into effect this February, raising expectations for more voluntary efforts and we will continue to make efforts to reduce CO₂, by setting more aggressive targets (fiscal 2005 goal: 20% reduction).

Major energy conservation measures for the previous year include efficient use of electricity and exhaust heat through co-generation, use of engine compressors during summer months when the energy demand is at its peak and energy conversion from heat treatment furnaces.

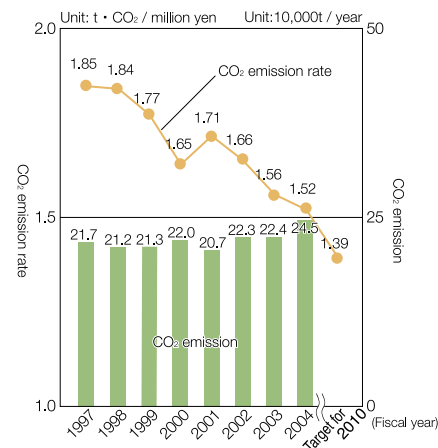
■ NTN's CO₂ emission by Energy Source



■ Energy Consumption (Yearly)

Electricity		512,492,000 kWh
Petroleum	Heavy oil A	3,519 kl
	Kerosene	4,245 kl
Gas	Butane/propane	7,305 t
	Natural gas	3,217 km ³

■ Annual trends in CO₂ emission rate



* CO₂ emission rate (ton/million yen) = $\frac{\text{CO}_2 \text{ emission (ton)}}{\text{Sales added value amount (million yen)}}$

Major Energy Conservation Measures

● Introduction of Co-generation facilities

In the past, the NTN Group has introduced co-generation facilities at four operating sites. The power generated is used onsite and by utilizing heat exhaust, we are able to reduce CO₂ emission.



Co-generation facilities (NTN Powder Metal Corporation)

● Reduced Electricity Costs through the Mebius Link System

At Iwata Works, we introduced the Mebius Link System that conducts centralized control of air conditioning compressors and were able to reduce CO₂ emission from excessive cooling.

This system conducts centralized control of several compressors in the building using computers. Randomly selected compressors are switched off for several minutes during a given period of time and air conditioning is switched to fan and as a result we were able to maintain a comfortable room temperature while reducing energy consumption.

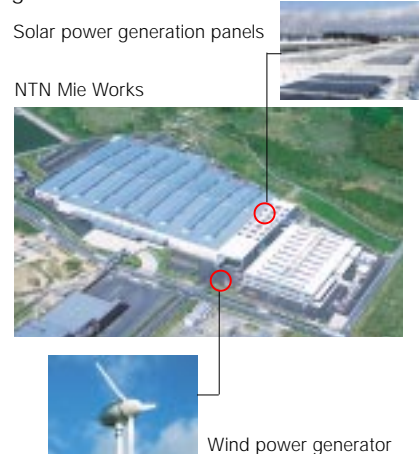


Control equipment installed in outdoor air conditioning units (3 unit group)

Computer for central control

● Constructed Up-to-date Energy Saving Plant

NTN has completed the construction of the Mie Works as an up-to-date plant with reduced environmental hazard. At this plant, we are improving productivity through the "Monozukuri" movement and we are actively utilizing natural energy by introducing wind and solar power generation.



Solar power generation panels

NTN Mie Works

Wind power generator

Reduce Waste/Prevent Air, Ground and Water Pollution

Reduce Waste

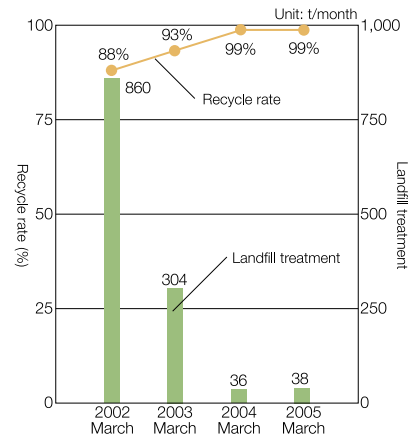
At NTN, we defined "zero emission" as a recycle rate of 98% or more and we have promoted efforts in waste reduction. Last year, of the ten domestic operating sites where we set zero emission as a target, we were able to realize zero emission at all the sites. However, we were not able to achieve zero emission at NTN Casting, where ISO14001 certification was acquired the previous year. We are working to improve our recycle rate by utilizing waste slag and waste sand discharged from the casting process as base course material.

Concerning the achievement of zero emission at each operating site,

the effect of introducing the grinding swarf briquetting machine was especially significant and we were able to recycle grinding swarf that would otherwise have ended up in landfill treatment. This is because the swarf that was briquetted with this equipment is recycled and used as raw material (made into a valuable resource) at steel manufacturers and the recovered grinding coolants are also reused in the process. With regards to cost, we were also able to significantly reduce waste treatment costs for landfills and such.

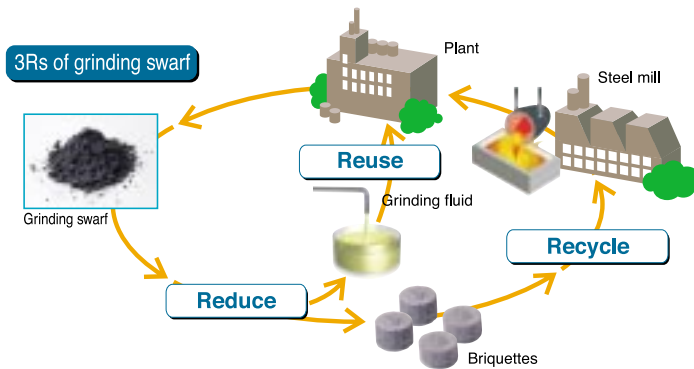
In fiscal 2005, we will actively advance our efforts to maintain and achieve zero emission and spread our efforts to our overseas sites and suppliers.

■ Recycle rate and amount of landfill treatment



● New release of ultra compact grinding swarf briquetting machine

NTN released an ultra compact grinding swarf briquetting machine (GSB-15S) that has an installation area that is 40% of the conventional equipment. By meeting our customers' needs such as price, processing power and installation area, we are able to compete with conventional equipment.

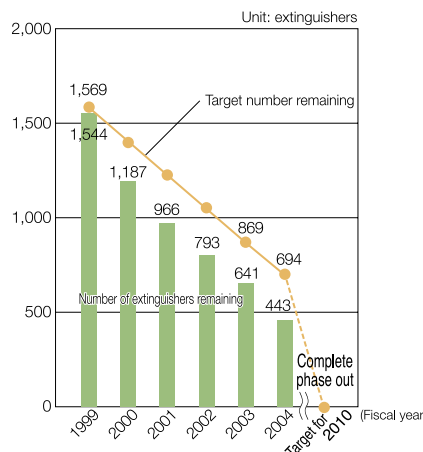


Efforts to Prevent Air Pollution

● Going forward with our plan to completely phase out halon extinguishers

At NTN, we are working to switch extinguishers to those that do not use halon, an ozone-depleting substance, by fiscal 2010. In fiscal 2004, we switched 198 units compared to our target of 175. This means we are progressing ahead of our plan.

■ Number of halon extinguishers remaining



● Efforts to phase out coolants containing chlorine

At NTN, starting in fiscal 2000, we set a voluntary target to completely phase out coolants containing chlorine and have worked to meet this target. This is not an item that is legally restricted, but because there is a possibility that toxic dioxins are generated during the processing of solid residue and waste fluids, NTN has been unique in dealing with this item.

Last year, we were able to switch out three (of our target of complete phase out), and we will phase out the remaining two to complete phase out during fiscal 2005.

Efforts to completely decontaminate ground

Minor contamination with volatile organic compound was found at two closed NTN operating sites, and as a result of a voluntary effort to decontaminate the ground, we were able to completely decontaminate the sites last fiscal year.

The targets were old operating sites located in Kishiwada and Kawachi Nagano in Osaka and we used the Kimitsu method*) to conduct a detailed investigation into the contamination and to decontaminate the ground. Before beginning our investigation and decontamination, we held a briefing session for the local residents and supervisory authorities, got their consent and worked to provide information on the decontamination process in a timely manner.

As a result, the decontamination was completed in Kishiwada in August 2004 and in Kawachi Nagano this January, and we have received formal approval of a complete decontamination from the supervisory authorities. We also released this result to the residents and got their understanding.

Concerning the discovery of minor volatile organic compound contamination during our periodic inspection of the groundwater at Kuwana Works, in compliance with the ordinance of Mie Prefecture, we held briefing sessions for the local residents' associations and placed an announcement in the newspapers. We then conducted an investigation of the groundwater and the extent of contamination and we are now conducting decontamination by drawing water from the wells and utilizing activated carbon absorption.

In addition, as a result of conducting detailed investigation of the extent of contamination within the entire site, we discovered three locations (including the one mentioned above) with the same minor contamination. We will start decontamination work using the Kimitsu method and expect to complete decontamination by the latter part of 2006.

*) This is a method in which complete decontamination can be done efficiently by pinpointing the contaminated area through detailed investigation and contamination studies and decontamination can be conducted while operating. We plan on using this method for the decontamination work at Kuwana Works.



Ground gas investigation



Ground water remediation equipment



Ground water analysis

Environmental Conservation Activities

Promotion Activities to Protect Resources

Reduction of packing materials

1 Reduction of the use of Styrofoam

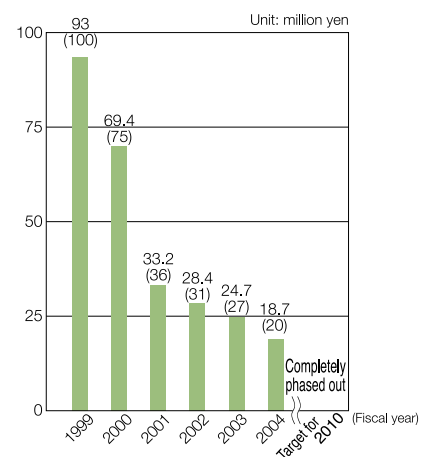
Last year we reached a 79% reduction (compared with our longterm target of 75%) compared to fiscal 1999.

Some of our major measures include the use of alternative materials such as "Oka Pack" which is made out of soy pomace and recycling/reusing Styrofoam.



"Oka Pack"

Trends in Amount of Styrofoam used



Figures in parentheses indicate percentages of the basic figure, 100, in 1999.

Promotion Activities to Protect Resources

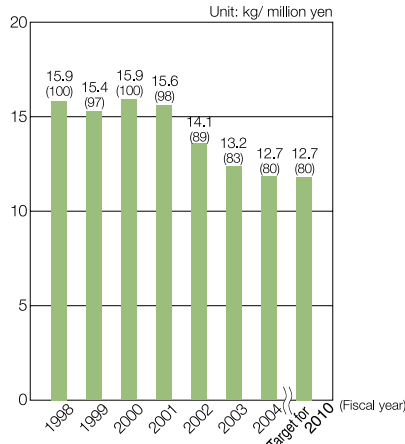
2 Reduction in cardboard box usage

We achieved a 20% reduction compared to our target of an 18% reduction in the amount of cardboard boxes used relative to fiscal 1998. Some of our major measures are the promotion of the use of "reusable containers" with customers and reduction of the weight of cardboard boxes. In fiscal 2005, we will continue to work to reduce our consumption of cardboard boxes.



Reusable containers packaging style

Reduction of cardboard boxes



The figures in parentheses indicate percentages of the baseline figure (100) in 1998.

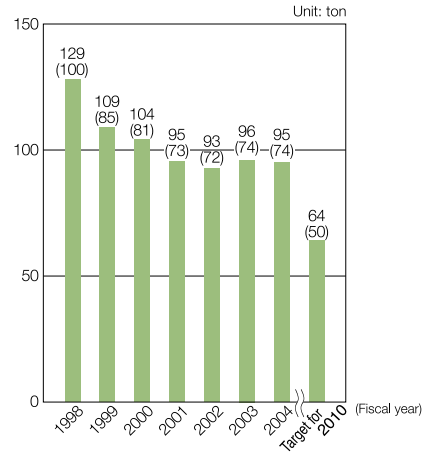


Opened reusable container

3 Reduced paper consumption

As a result of conservation measures such as using both sides of photocopy paper, aspiring to a "paperless office" by using computers, and reducing the amount printed, we achieved a 23% reduction compared to our target of 20% reduction in paper consumption compared to fiscal 1998.

Annual trends in paper consumption



The figures in parentheses indicate percentages of the basic figure, 100, in 1998.

Activities to Reduce Environmental Impact of Transportation

New Export Distribution Center

Aiming for environmental hazard reduction and streamlined logistics



The new "Export Distribution Center" that was completed in Kuwana, Mie in May 2005, takes advantage of its convenient location near the Port of Nagoya, the shipping port, and production plants to streamline logistics for our company as a whole. NTN has improved logistics efficiency by 22% on a ton-kilometer base (t-km)^{*)} for domestic shipments.

Additionally, in order to reduce environmental hazards, we installed an output 10kW vertical axis wind power generator (SVAT Wing Turbine) at the plant site and use it to power the lighting within the center. We also adopted low power consumption light-emitting diodes for our company sign on the exterior wall to conserve energy.

^{*)} Weight of shipped load (t) times the shipping distance (km)



Wind power generator



Light-emitting diode exterior wall sign

Constructing the NTN R&D Center to strengthen the development of eco-friendly products

■ “Creating Value”

NTN is currently implementing the medium term business plan “Rapid Advance 21” as a priority measure and conducting reforms to “create value” under the concept “design determines everything.”

The NTN R&D Center that was completed September 2005 in the Iwata area, will support rapidly developing technical innovations worldwide, respond to borderless markets and will serve as the “mother center” for the global supply of new products and technologies. Overseas, in addition to our America Technical Center in the North American area, in 2005 we will reorganize our technology base in Europe and in 2006 we plan on constructing a technical center in the China Changzhou area. Once these centers are completed at the end of fiscal 2006, we will have established our research and technology system at four points worldwide including China.

■ Development of Next Generation Environmental Energy Products

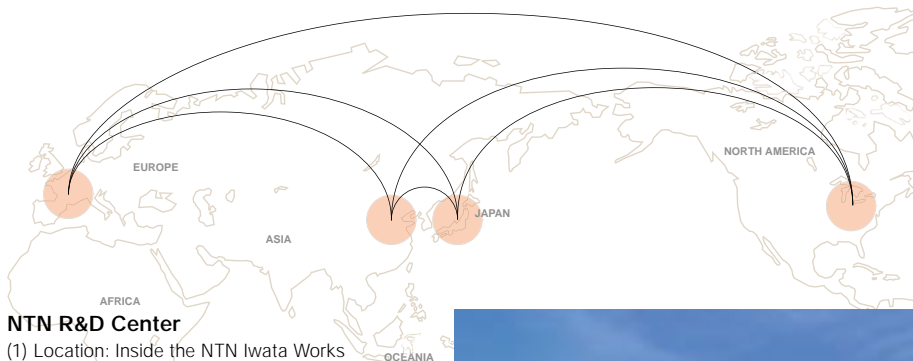
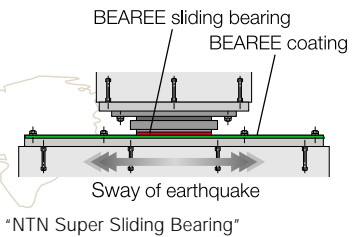
At this center, not only do we conduct technological development for existing operations, we will strengthen the development of new products in the cutting-edge fields of next-generation automobiles, environmental energy, medical care and robotics. We have reinforced our specialty division for the purpose of applied research in electronics and we will develop new products which have substantial market potential or a major technological application potential in cutting-edge areas such as next-generation automobiles, environment, and welfare.

■ “Living Research Lab” does not sleep

We operate 24 hours a day dealing with development items and responding to customers worldwide and we created a real time network with our overseas technical centers in an effort to share technological information and utilize testing facilities globally. At this center, we promote speed in the development of new products through the latest IT environment, testing facilities, and flexible management.

■ A Place to Experiment using Environmental Design

Concerning the facilities and design of the building, we considered it an opportunity to experiment with environmental devices such as seismic isolation, natural energy and eco-air conditioning. The building is environmentally friendly with rooftop greening, the green procurement of the equipment used, and the introduction of NTN environmental equipment. Additionally, it has a seismic isolated design using seismic isolation equipment developed by NTN to provide against an earthquake like the Great Hanshin Earthquake and has crisis management functions so that it can operate as a disaster control center for the Iwata area operation site (refer to picture and diagram below).



NTN R&D Center

- (1) Location: Inside the NTN Iwata Works (1578 Higashi Kaizuka, Iwata City, Shizuoka Prefecture)
- (2) Total floor area: Aggregate floor space for 5 floors = 16,800m²
- (3) Structure: The building will be built on a seismically isolated structure using the “support system with sliding type seismic isolator” manufactured by NTN Engineering Plastics Corp.
- (4) Facilities: In-house power generation, well water supply systems and other emergency response equipment designed for use during accidents and natural disasters, Roof greenery, Eco-friendly air-conditioning
- (5) Total construction costs: Approx. ¥3 billion



Illustration of NTN R&D Center

Environmental Conservation Efforts at NTN Operating Sites

Every operating site of the NTN Group, including those overseas, is committed to actively preventing global warming while reducing environmental impact through waste reduction, recycling, and reuse. NTN operating sites are seeking to eliminate environmental pollution by satisfying not only legally regulated standards but also our more stringent voluntary internal standards for substances of environmental concern.

In addition, NTN takes part in community activities, cooperating with local residents' efforts to preserve the environment.

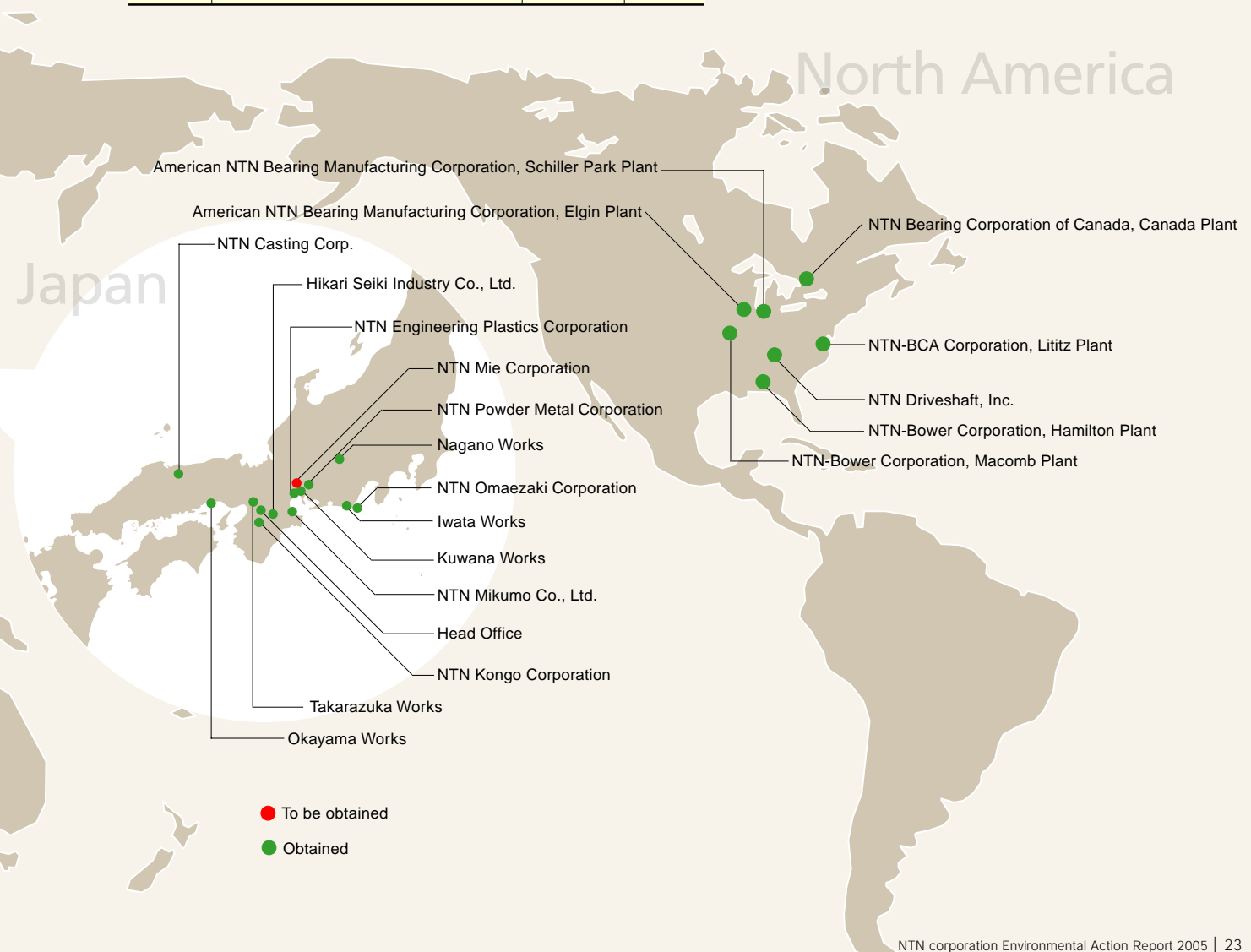


■ Certified Operating Sites

Area	Operating Site		Year/Month Obtained		Registration	
	Company Name	Plant Name	Year	Month	Registration No.	Registration Agency
Domestic	Obtained collectively through the multi-site method		1999	11	JSAE176	JSA
	(Operating sites included are: Kuwana Works, Iwata Works, Okayama Works, Takarazuka Works, Nagano Works, NTN Kongo Corporation, NTN Mikumo Co., Ltd., NTN Engineering Plastics Corporation, NTN Powder Metal Corporation, Hikari Seiki Industry Co., Ltd., NTN Casting Corp., NTN Omaezaki Corporation, and the Head Office.)					
USA	American NTN Bearing Manufacturing Corporation	Elgin Plant	2000	6	111994	LRQA
		Schiller Park Plant	2000	9	112115	LRQA
	NTN-BOWER Corporation	Macomb Plant	2000	6	111998	LRQA
		Hamilton Plant	2000	6	111999	LRQA
	NTN-BCA Corporation, Lititz Plant		2000	7	A8699	UL
NTN Driveshaft, Inc.		1999	12	A8478	UL	
Canada	NTN Bearing Corporation of Canada, Canada Plant		1999	7	287	KPMG
Germany	NTN Kugellagerfabrik (Deutschland) GmbH, Mettman Plant		1999	6	201167-2	LRQA
France	NTN Transmissions Europe		2003	1	19479	AFAQ
Thailand	NTN Manufacturing Thailand		2003	8	31634	TÜV
China	NTN-NIDEC (ZHEJIANG) CORP.		2005	1	02005E10013R0L	CNAB
	GUANGZHOU NTN-YULON DRIVETRAIN CO., LTD.		2005	4	104 043247	TÜV

■ Operating Sites expected to be certified.

Area	Operating Site	To be obtained	
		Year	Month
Domestic	NTN Mie Corporation	2005	11
China	SHANGHAI NTN CORP.	2005	6
	CHANGZHOU NTN-GUANGYANG CORP.	2006	9



Environmental Conservation Efforts at NTN Domestic Operating Sites

Kuwana Works

2454 Tsuchijima, Higashikata, Kuwana, Mie

Operation started: 1918 Site area: 177,935m²

Main products: Ball bearings, cylindrical roller bearings, constant velocity joints, steel balls

Actively Promoting Energy Conservation and Waste Reduction

In fiscal 2004, we introduced four grinding swarf briquetting machines in order to increase swarf recycling and coolant reuse.

Additionally, we renovated two compressors into high-efficiency turbo types to improve energy conservation, and at the same time, we switched the heat source for our heat treating furnace from electricity to city gas as an effort to reduce CO₂ and cost.

We received an award from the Mie Prefecture Industrial Waste Association in recognition of our active efforts towards waste treatment that span over 10 years.



Grinding swarf briquetting machine



Environmental training for new recruits



Award from the Mie Prefecture Industrial Waste Association

Iwata Works

1578 Higashikaizuka, Iwata, Shizuoka

Operation started: 1960 Site area: 226,860m²

Main products: Constant velocity joints, needle roller bearings, ball bearings, and various precision equipment

Green Activities to Create Woodlands

We are actively promoting the recovery of exhaust heat from the co-generation process for use in heating rinse water used in the forging process.

In addition, in an aim to coexist with the local community, we actively participate in local greening activities. The woodland improvement campaign, conducted by Green volunteers, is one of them. Our employees and their families participated in planting azaleas in the woodlands near our plant, made benches out of thinned wood and paved areas near the arbor using old grinding stones.



Heat exchanger to use co-generation exhaust heat



Planting Azaleas

● Okayama Works

500-1 Hatakeda, Bizen, Okayama

Operation started: 1971 Site area: 175,323m²

Main products: Tapered roller bearings, axle unit bearings, constant velocity joints

Created New Tapered Roller Bearing Plant; Next Generation Equipment with Improved Productivity in Operation

At the new tapered roller bearing plant, in an effort to balance the reduction of environmental hazards and productivity, we introduced next generation equipment with increased workability and production efficiency while at the same time realizing energy conservation while taking up less space to produce axle bearings for automobiles.

Additionally, we have taken measures to green the grounds such as planting pressure resistant grass on our plant's west parking lot.



Next generation equipment

Parking lot with pressure resistant grass

● Takarazuka Works

2-1 Toyo-cho, Takarazuka, Hyogo

Operation started: 1938 Site area: 88,340m²

Main products: Tapered roller bearings, ball bearings, inner rings and pins for needle roller bearings

Contribute to Society by Joining and Supporting Local Activities

We have created community-conscious voluntary standards for noise and vibration that go beyond the legal standards and promoted the recycling of resources through separating waste streams within the workplace.

In an effort to coexist with our local community, we have opened our company playing fields to our local sports groups (Takarazuka Little League, rugby team) and supported youth activities. We have also created environmental activities with the residents of our community, taking part in activities such as clean up volunteers for the "Mukogawa Riverside Park Beautification Committee."



Waste Storage

Clean up volunteer activities

Nagano Works

14017-11 Nakaminowa, Minowa-machi, Kamiina-gun, Nagano

Operation started: 1985 Site area: 125,500m²

Main products: Miniature ball bearings, small size ball bearings, cam followers, autotensioners, and parts feeders

Confirmed Energy Conservation Effect through the Application of Heat Shielding Paint

Last summer, we conducted the trial application of heat shielding paint that reflects 70% to 80% of the solar rays on part of the roof of our miniature bearing plant. As a result, we were able to confirm a 30°C drop in the surface temperature of the roof in the summer. We will continue to apply this paint to our roofs as an effective measure to reduce energy consumption in the summertime.

In addition, our employees and their families took part in the 12th annual Tenryu River Picnic, with the proposal of "Let's make Tenryu River safe for swimming and create a recycling society," and helped clean up the river bank.



Heat shield paint (the white part)



Tenryu River Picnic Opening Ceremony (clean up activities)

NTN Kongo Corporation

1-3-13 Kido Nishimachi, Kawachi Nagano, Osaka

Operation started: 1925 Site area: 38,700m²

Main products: Ball bearings, bearing units, double row angular contact ball bearings, clutch release bearings

Significant Impact through the Introduction of Grinding swarf briquetting machine

We introduced two "grinding swarf briquetting machines" to the two plants that have started full-scale operation in fiscal 2004. As a result, the waste treatment cost for the entire works was cut in half compared with the previous year. Additionally, through the collection of oil based grinding fluids, we were able to double our cost savings compared to the previous year.

At the same time, we are dedicated to the beautification of the surrounding areas and conduct clean up activities four times a year.



Grinding swarf briquetting machine



Community Beautification Activities

● **NTN Engineering Plastics Corporation**

970 Ano, Toin-cho, Inabe-gun, Mie

Operation started: 1965 Site area: 20,486m²

Main products: High performance plastics products made of the original compounds

Emphasis on Environmental Education

At NTN Engineering Plastics, we emphasize environmental education. In order to promote the recycling and reuse of waste plastics, we provide a place for education at the waste storage location, have programs to educate our employees on the proper way to separate waste and work to motivate our employees.

In addition, we conducted emergency training, "specifically reenacting an accident where waste alkaline fluids have leaked from the ammonia treatment equipment to the gutters."



Waste separation program



Emergency response training

● **NTN Powder Metal Corporation**

101 Katsutaba, Kanie-cho, Ama-gun, Aichi

Operation started: 1966 Site area: 21,000m²

Main products: Oil impregnated sintered bearings, hydrodynamic bearings, and sintered mechanical components

Conduct Periodic Emergency Response Training

We conducted emergency response training for liquid ammonium, which can have a grave effect on the environment in the event of a disaster. In continuation of our efforts in the previous fiscal year, we promoted energy conservation efforts with electricity and gas, demand control for air conditioning, and the recycling of component waste materials.

Additionally, we are actively involved in greening activities in our community.



Emergency response training



Greening activities

NTN Mikumo Co., Ltd.

750-1 Onoe, Matsusaka-shi, Mie

Operation started: 1988 Site area: 33,000m²

Main products: Needle roller bearings for rocker arms, torque diodes, various clutches, spherical rings for constant velocity joints, PTJ roller cassettes, plastic molding

Recycling of Used Oils

To efficiently use resources, we are reducing the amount of oil used. By putting oils through distillation renewal equipment, we have obtained the same quality as new oil. This has also been effective in reducing costs and we plan on expanding its application.

As part of our contribution to society, our employees and their families took part in the "River and Ocean Clean Up Mission" sponsored by the local government and helped clean up the seaside.



Distillation renewal equipment for oils

Seaside clean up activities

NTN Casting Corp.

Hirata plant : 475-1 Nadabun-cho, Izumo-shi, Shimane

Kisuki plant : 231-29 Yamagata, Kisuki-cho, Unnan-shi, Shimane

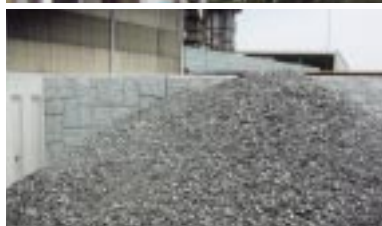
Operation started: 1967 Site area: 27,223m²

Main products: Bearing units, plummer blocks, casting material for general industrial machinery

Created an environment in line with the demand characteristics of waste slag.

We promoted the recycling of waste slag and waste sand created during casting as foundation for roads. There is a large fluctuation in demand, therefore we have created a temporary storage space exclusively for March 2005 and have created an environment for recycling.

Additionally, we installed an air dryer in the compressor in an effort to make more efficient use of air.



Temporary storage space for waste slag

Air dryer

● **Hikari Seiki Industry Co., Ltd.**

8 Higashikata, Sanmaiden-cho, Tenri-shi, Nara

Operation started: 1945 Site area: 9,100m²

Main products: Bearing adaptors, constant velocity joint components, and seal wear ring for Shinkansen rail cars

Introduced Compressors with Inverters to Conserve Electricity

As one of our energy conservation measures, we introduced compressors with inverters. As a result, we were able to reduce our electricity usage by about 20% and we were also able to reduce noise during operation.

In addition, in cooperation with neighboring companies, we are actively involved in local beautification activities.



Compressor with inverter 75kW

● **NTN Omaezaki Corporation**

4681-3 Sakura, Omaezaki-shi, Shizuoka

Operation started: 1966 Site area: 13,437m²

Main products: Needle roller bearings

Acquired ISO14001 and Incorporated Multi-Site Certification

Last November, we received ISO14001 certification and were incorporated in the NTN multi-site certification. We worked to educate all employees about the environment and to raise awareness by conducting activities such as distributing "Environmental Action Guideline" cards to all new employees and having them repeat it in chorus.

Additionally, in order to protect the rich natural environment of our site location, we pay particular attention to the sewage treatment discharged from our plant.



Sewage treatment facilities



Clean up activities

● Head Office

1-3-17 Kyomachibori, Nishi-ku, Osaka

Operation started: 1918 Site area: 969m²**Participated in “Clean Osaka 2004”**

Through the environmental activities of the Office Environment Action Committee, we have promoted resource and energy conservation activities in the office. For example, we have set targets for the reduction of electricity, gasoline, paper and general waste and worked to meet these targets. Also, by using an ice storage air conditioning system, we are reducing daytime power consumption.

In addition, we took part in Osaka’s environmental event, “Clean Osaka 2004,” and helped clean up the local parks.



Ice storage air conditioning system



Clean up activities in parks

Environmental Conservation Efforts at NTN Overseas Operating Sites

American NTN Bearing Manufacturing Corporation, Elgin Plant

1500 Holmes Road, Elgin, Illinois 60123-1206, U.S.A.

Operation started: 1975 Site area: 137,000m²

Main products: Hub bearings, angular units, steel balls

ISO14001 Certification: June 2000

Donated Hickory Seedlings

We have been cooperating with the charity operation called "Food Drive" since 2001. Food donated by our employees have been distributed to people facing danger such as victims of domestic violence and homeless people through a local organization.

In addition, we donated hickory seedlings to Elgin and our employees planted them in our local parks on Earth Day held this April.



Our employees planting seedlings in local parks



A scene from Earth Day

American NTN Bearing Manufacturing Corporation, Schiller Park Plant

9515 Winona Avenue, Schiller Park, Illinois 60176-1024, U.S.A.

Operation started: 1971 Site area: 9,713m²

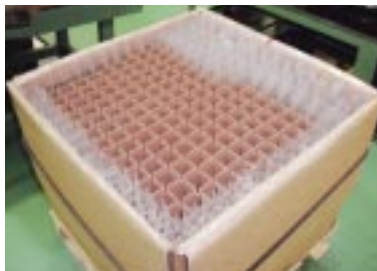
Main products: Radial ball bearings

ISO14001 Certification: September 2000

Reusing Crates (large size cardboard boxes)

We worked on recycling activities such as using incoming crates used to ship parts from Japan to ship out completed products and recovering waste materials.

We also worked to conserve energy by eliminating thermal drying after assembly, and switching the fluorescent lighting in the workplace to an energy saving type.



Crates



Energy saving fluorescent lighting

**NTN-Bower Corporation,
Macomb Plant**

711 North Bower Road, Macomb, Illinois 61455-2511, U.S.A.

Operation started: 1985 Site area: 408,500m²

Main products: Cylindrical roller bearings, tapered roller bearings

ISO14001 Certification: June 2000

Reduced Electric and Gas Consumption Costs

We enhanced energy conservation by periodically adjusting the gas burners in the heat-treating furnaces and boilers to improve combustion efficiency and changed the burners in the rotary hearth furnaces to high efficiency burners.

Additionally, we installed radiant heating in our plant. Through effective heating, we were able to cut our natural gas consumption costs by about 9,000 dollars compared to the previous fiscal year.



Radiant heaters installed above the work area

**NTN-Bower Corporation,
Hamilton Plant**

2086 Military Street South, Hamilton, Alabama 35570, U.S.A.

Operation started: 1985 Site area: 208,000m²

Main products: Tapered roller bearings

ISO14001 Certification: June 2000

Significant Reduction in Consumption of Oil

We are actively promoting oil recycling; and in 2004, we recycled a total of 30,800 gallons of quenching oil and other hydraulic oils.

In the future, we will continue to work to conserve energy by reducing the gas consumption in carburizing furnaces and introducing high efficiency motors.



Used hydraulic oil recovery

● **NTN Driveshaft, Inc.**

8251 South International Drive, Columbus, Indiana 47201, U.S.A.

Operation started: 1991 Site area: 485,623m²

Main products: Constant velocity joints

ISO14001 Certification: December 1999

Significantly Reduced Solid Waste Materials

By improving the recycle rate of cardboard boxes and wood pallets, we reduced the amount of solid waste material that is sent to landfills by 31%.

Additionally, last November, we received the 2004 Governor's Award for the State of Indiana to commend our outstanding environmental efforts. This recognized our continuous (5 year) improvement in environmental management and is our second award in this category.



Promote recycling activities

2004 Indiana Governor's Award

● **NTN-BCA Corporation, Lititz Plant**

401 West Lincoln Avenue, Lititz, Pennsylvania 17543-7020, U.S.A.

Operation started: 1997 Site area: 24,919m²

Main products: Radial ball bearings, needle roller bearings, rocker arm bearings, EM couplings

ISO14001 Certification: July 2000

Promote Energy Conservation by Switching to New Type Compressor

We are promoting energy conservation by switching several of the existing piston type air compressors to two modern scroll compressors.



Modernized scroll compressor

NTN Bearing Corporation of Canada, Canada Plant

6740 Kitimat Road, Mississauga, Ontario, L5N 1M6, Canada

Operation started: 1973 Site area: 61,500m²

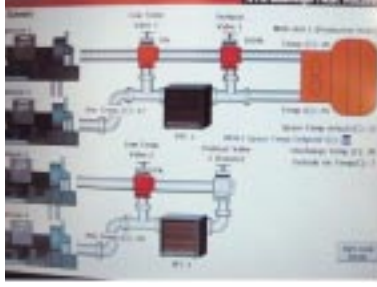
Main products: Radial ball bearings, angular units

ISO14001 Certification: July 1999

Introduced compressor waste heat recovery heating system

We constructed a new building for the production of angular unit bearings. In doing so, we introduced a compressor waste heat recovery heating system and were able to reduce 20,000 CAN\$/year on gas fuel costs and reduce CO₂.

Additionally, by utilizing the grinding swarf briquetting machine we are working towards the efficient usage of resources and zero emission.



Compressor waste heat recovery heating system



Grinding swarf briquetting machine

NTN Kugellagerfabrik (Deutschland) GmbH, Mettmann Plant

NTN Strasse 1-3 40822 Mettmann, F.R. Germany

Operation started: 1971 Site area: 62,312m²

Main products: Ball bearings, angular units, autotensioners

ISO14001 Certification: June 1999

Donated alders to the Mettmann community

At the 1100th anniversary of the first official record of the town of Mettmann in 2004, citizens and companies donated 1100 trees to be planted in the area. Our plant participated by donating 7 alders and a bench.



Planting trees in town

NTN Transmissions Europe

Z.A. des Tremelieres Communaute Urbaine du Mans 72704 Allonnes Cedex, France

Operation started: 2000 Site area: 456,000m²

Main products: Constant velocity joints

ISO14001 Certification: January 2003

Significant results Environmental management

We shortened the length of time the shutters to the forklift exit are opened to prevent heat from leaking out of the plant and drastically reduced gas consumption.

In addition, we installed an oil/water separator to renew and reuse used cleansing water and as a result achieved zero emission to the natural world.



Automatic shutter



Oily water separator

NTN Manufacturing Thailand

111/2 Moo 4, Tambol Pluakdaeng, Amphur Pluakdaeng, Rayong 21140, Thailand

Operation started: 1999 Site area: 114,846m²

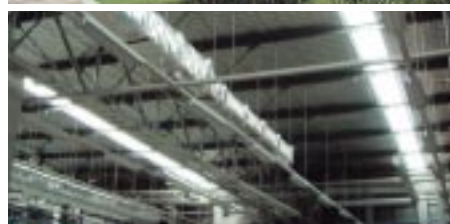
Main products: Constant velocity joints, hub bearings, needle roller bearings, autotensioners, timing belt pulley, needle rollers for rocker arms, electromagnetic clutch bearings, hydrodynamic BEARPHITE, shaft, housing

ISO14001 Certification: August 2003

Utilize natural light to reduce daytime lighting usage

We have adopted a skylight (clear roof material) for the roof of our new plant and were able to reduce daytime lighting usage by letting in natural light.

Additionally, we installed wastewater treatment equipment for the surface treatment of wastewater that is in line with Thailand's domestic law.



Skylights



Wastewater treatment equipment

**NTN-NIDEC
(ZHEJIANG) CORP.**

Pinghu Economic-Development Zone, Pinghu City, Zhejiang Province, China

Operation started: 2003 Site area: 43,000m²

Main products: Hydrodynamic bearing units

ISO14001 Certification: January 2005

**Acquired ISO14001
Certification in January
2005**

We set up a preparation team for the ISO14001 certification last August and began preparing for the acquisition of the certificate. Additionally, selected staff members from each department took part in internal auditor training and received qualification. After sufficient preparations of our environmental management system in September, we received ISO14001 environmental management system certification in January of this year.



Emergency response training (fire drill)

**GUANGZHOU NTN-
YULON DRIVETRAIN
CO., LTD.**

No.11 Jun Da Road, East Dong-Peng Avenue, East District of Guangzhou Economic and Technological Development Zone, Guangzhou, Guangdong Province, China

Operation started: 2003 Site area: 52,821m²

Main products: Constant velocity joints

ISO14001 Certification: April 2005

**Environmental Education
for Employees**

We launched the ISO14001 Certification Preparation team last August and built up our Environmental Management structure and successfully received certification this April.

We are actively involved in the environmental education of employees, and make efforts to sort garbage and effectively use resources.

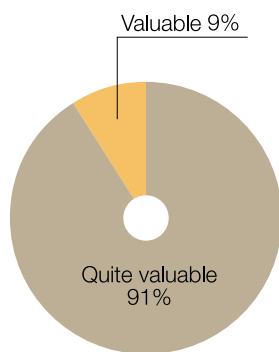


Waste sorting

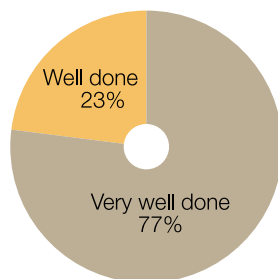
Results of the NTN Environmental Action Report 2004 Questionnaire

NTN conducted this survey in order to hear everyone's opinions through the Environmental Action Report. We would like to thank everyone who cooperated in this survey and present the following results.

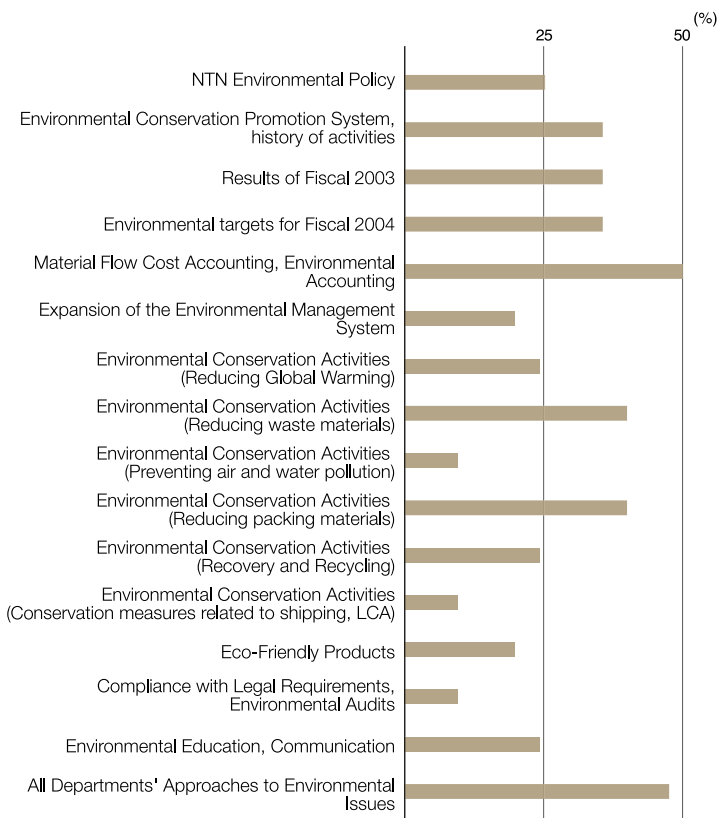
1. Impressions



2. How the readers' felt about the NTN Group's approach to environmental issues



3. Contents that interested the readers (Multiple answers allowed)



4. A sampling of the comments

- Well organized and easy for an outside party to understand.
- Can see you are returning to your main line of business, EMS.
- It covers all aspects of Environmental issues.
- I give you credit for your high recycle rate.
- I believe it would be clearer if illustrations were used to show how the major waste materials are being reused with regards to zero emission.
- I would like to know more about your activities within the local communities.
- Why don't you open your seminars and training to companies, organizations, and schools in the local communities?
- Please tell us about your activities with regards to Green Procurement activities.

Target Locations of this Report

Kuwana Works	NTN Mikumo Co., Ltd.
Iwata Works	NTN Casting Corp.
Okayama Works	Hikari Seiki Industry Co., Ltd.
Takarazuka Works	NTN Omaezaki Corporation
Nagano Works	NTN Mie Corporation
NTN Kongo Corporation	Head Office
NTN Engineering Plastics Corporation	
NTN Powder Metal Corporation	

Period of the Report

April 2004 to March 2005 (with some exceptions)

* This report is based on all operating sites that produce NTN-brand products.

American NTN Bearing Manufacturing Corporation, Elgin Plant
 American NTN Bearing Manufacturing Corporation, Schiller Park Plant
 NTN-Bower Corporation, Macomb Plant
 NTN-Bower Corporation, Hamilton Plant
 NTN Driveshaft, Inc.
 NTN-BCA Corporation, Litzitz Plant
 NTN Bearing Corporation of Canada, Canada Plant
 NTN Kugellagerfabrik (Deutschland) GmbH, Mettman Plant
 NTN Transmissions Europe
 NTN Manufacturing Thailand
 NTN-NIDEC (ZHEJIANG) CORP.
 GUANGZHOU NTN-YULON DRIVETRAIN CO., LTD.

For New Technology Network



NTN corporation

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