Environmental and Social Responsibility Report 2005

EDITORIAL POLICY

NGK Insulators, Ltd. (NGK) has issued its "Environmental Report" yearly since 1999; however, starting from 2004, this has been published as the "Environmental & Social Responsibility Report," which also includes items regarding our social responsibilities. This report is drafted in line with the Environmental Reporting Guidelines (Fiscal Year 2003 Version) issued by the Ministry of the Environment, and the data it covers is largely in accordance with the "Environment Ministry's Environmental Performance Indicators for Business (Fiscal Year 2002 Version)."
The 2005 report introduces NGK's exhibit and our technological contributions at the World Expo 2005, Aichi, Japan. In addition, it introduces both NGK's efforts in achieving the medium- and long-term goals for the reduction of greenhouse gases that we established in 2003, as well as the results of our efforts in the recycling of by-products. Furthermore, environmental data for domestic group companies is detailed at the end of the report.
This report is written primarily for readers who have a stake in NGK's operations, but it has also been edited to be more readable and easy to understand for general readers. We hope that this report will be beneficial in helping you gain a better understanding of the steps that NGK is taking in both our environmental activities and as regards our social-responsibility activities.

■Term Covered

The term covered by this report is as follows:
Japan: April 1, 2004 to March 31, 2005
Overseas: January 1, 2004 to December 31, 2004
Note: In this report, the periods described above are referred to as "2004."

■Activities Covered

(Manufacturing companies among our consolidated subsidiaries)

NGK Insulators, Ltd.
Nagoya Plant, Chita Plant, and Komaki Plant

Domestic Group Companies (13 manufacturing companies)
Energy Support Corporation
Akechi Insulators, Co., Ltd.
Ikebukuro Horo Kogyo Co., Ltd.
NGK Filtech, Ltd.
NGK Adrec Co., Ltd.
NGK Kilntech Corporation
Heisei Ceramics Co., Ltd.
NGK Optoceramics Co., Ltd.
NGK Printer Ceramics Co., Ltd.
NGK Okhotsk, Ltd.
Soshin Electric Co., Ltd.
NGK Mettex Corporation
NGK Fine Molds, Inc.

Overseas Group Companies (17 manufacturing companies)
Locke Insulators, Inc.
NGK-Locke Polymer Insulators, Inc.
NGK Europe S.A.
P.T. WIKA-NGK Insulators
NGK Insulators Tangshan Co., Ltd.
NGK Stanger Pty. Ltd.
NGK Ceramics USA, Inc.
NGK Ceramics Europe S.A.
NGK Ceramics Polska Sp. z o.o.*
P.T. NGK Ceramics Indonesia
Siam NGK Technocera Co., Ltd.
NGK Ceramics Suzhou Co., Ltd.
NGK Technocera Suzhou Co., Ltd.
NGK Ceramics South Africa (Pty) Ltd.
FM Industries, Inc.
NGK Metals Corporation
NGK Berylco France

* Added as of 2004

■Date Issued September 2005
■Planned Date of Next Issuance September 2006

NGK INSULATORS, LTD.

CONTENTS

COMPANY DATA

Corporate Name	NGK Insulators, Ltd.
Location	2-56 Suda-cho, Mizuho-ku Nagoya 467-8530 Japan Phone +81-52-872-7171
Date of Establishment	May 5, 1919
Paid-in Capital	69.8 billion yen (as of March 31, 2005)
Number of Employees	3,518 (as of March 31, 2005)
Business	Manufacture and sale of insulators and other electrical devices, industrial ceramic products, electronic components, and specialty metals, and plant engineering

Consolidated Subsidiaries

Domestic (23 companies)

Energy Support Corporation
Kansai Energys Corporation
Chubu Energys Corporation
Tokai Energys Corporation
Akechi Insulators Co., Ltd.
NGK Filtech, Ltd.
NGK Kilntech Corporation
NGK-E Solution, Ltd.
NGK Printer Ceramics Co., Ltd.
Soshin Electric Co., Ltd.
Koshin Electronics Co., Ltd.
NGK Fine Molds, Inc.
Kyusyu Energys Corporation
Hokuriku Energys Corporation
Energys Sangyo Corporation
Ikebukuro Horo Kogyo Co., Ltd.
NGK Chem-Tech, Ltd.
NGK Adrec Co., Ltd.
Heisei Ceramics Co., Ltd.
NGK Optoceramics Co., Ltd.
NGK Okhotsk, Ltd.
M. Elec Company
NGK Mettex Corporation

Overseas (28 companies)

NGK North America, Inc.
NGK-Locke, Inc.
NGK Insulators of Canada, Ltd.
P.T. WIKA-NGK Insulators
NGK Stanger Pty. Ltd.
NGK Automotive Ceramics USA, Inc.
NGK Ceramics Europe S.A.
P.T. NGK Ceramics Indonesia
NGK Ceramics Suzhou Co., Ltd.
NGK Ceramics South Africa (Pty) Ltd.
NGK Electronics USA, Inc.
Soshin Electronics (M) Sdn. Bhd.
NGK Metals Corporation
NGK Berylco U.K. Ltd.
Locke Insulators, Inc.
NGK-Locke Polymer Insulators, Inc.
NGK Europe S.A.
NGK Insulators Tangshan Co., Ltd.
NGK Ceramics USA, Inc.
NGK Europe GmbH
NGK Ceramics Polska Sp. z o.o.
Siam NGK Technocera Co., Ltd.
NGK Technocera Suzhou Co., Ltd.
FM Industries, Inc.
Soshin Electronics of America Inc.
Soshin Electronics (HK) Ltd.
NGK Berylco France
NGK Deutsche Berylco GmbH

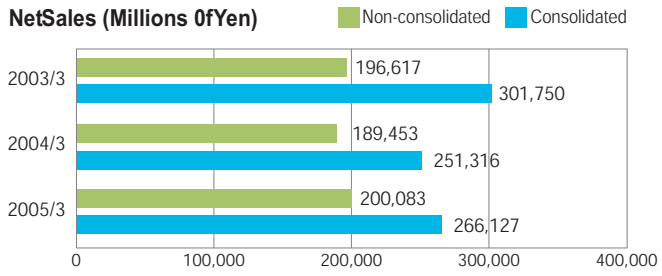
Companies Accounted for by the Equity Method

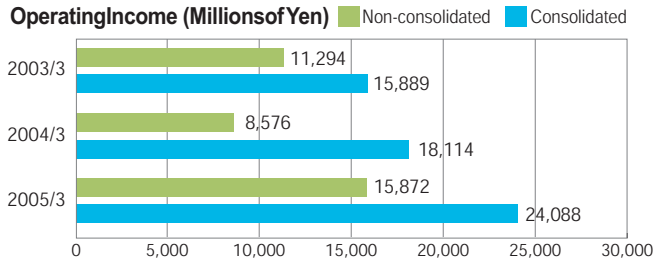
Domestic (2 companies)

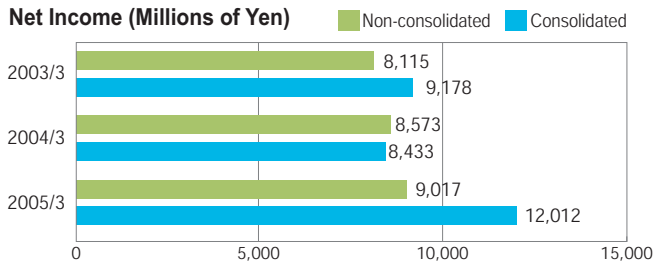
Risshin Electronics Co., Ltd.
Soritsu Electronics Co., Ltd.

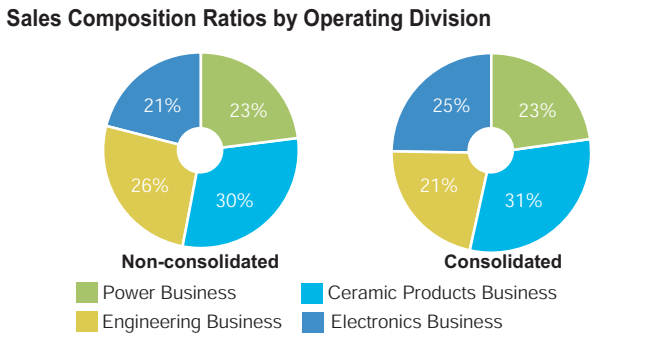
Overseas (1 company)

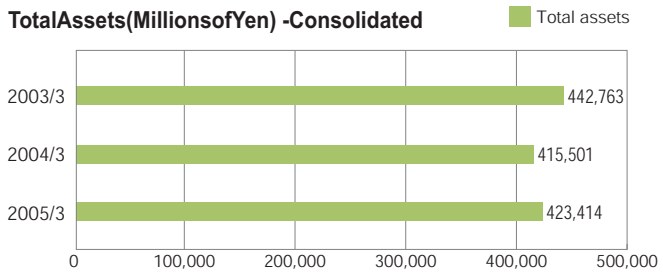
Birla NGK Insulators Pvt. Ltd.











Message from the President

Shun Matsushita
President and
Chief Executive Officer
松下 雋

Making new environmentally conscious steps, connecting us with society

February 2005 saw the start of the Kyoto Protocol coming into effect, and with it an increase in global awareness as regards the prevention of global warming. While bringing forth products and technologies that contribute towards the environment, we feel that further strengthening our efforts in protecting the environment is a necessary part of our social responsibilities.

Major features of our 2004 environmental activities were the full-scale commencement of environmental efforts which consist of the environmental management in each Business Group launched in 2003, and the environmental management by production sites that had formerly been in place, and these have started to produce results.

We achieved reductions in CO_2 emissions equivalent to the extra amounts produced as a result of increased production. However, in order to achieve the levels specified by the Kyoto Protocol, further bold measures will be required, for example in energy-reducing activities, creation of energy, use of alternative energy sources, and in emissions trading.

We have achieved a 92% recycling rate for by-products, and we expect to achieve zero emissions within 2005. Given this as a spur, we have formulated and put into operation a next-generation mid-term plan for zero emissions, aiming towards a 30% reduction of total by-products.

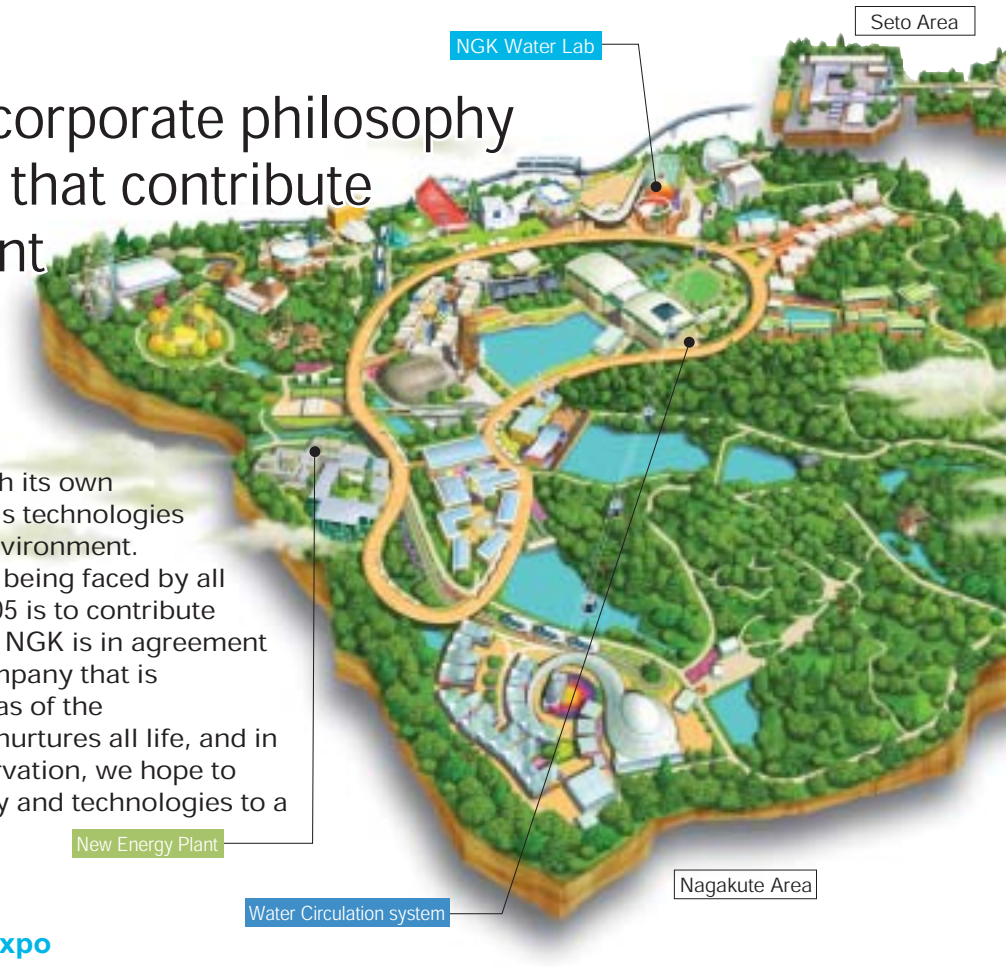
NGK has started to create a system that supports European regulations regarding the management of chemical substances. These regulations include Waste Electrical and Electronic Equipment (WEEE) and Restriction of the Use of Certain Hazardous Substances (RoHS) directives. In addition, we have revised our green procurement guidelines, and while aiming to raise the awareness of our suppliers regarding the management of chemical substances, have put in place a system to respond to customer needs.

In April 2004, one harmful substance in excess of environmental standards were detected at NGK Printer Ceramics Co., Ltd., one of our group comapanies and a producer of electronic products, and therefore notification was immediately sent to local government bodies, and nearby residents were kept informed of progress. Furthermore, necessary clean-up measures were undertaken promptly.

In 2004, a system for assessing and reporting the environmental performance of overseas plants was put in place in preparation for the implementation of integrated environmental management starting from 2005. Along with a total of four domestic group companies acquiring certification in environmental management systems, two of our overseas companies also newly acquired this certification.

At present, the 2005 World Exposition, Aichi, Japan is being held, based around the theme of "nature's wisdom." NGK has the NGK Water Lab – an exhibit that expresses the importance of water. Furthermore, as well as technical participation in the NEDO-sponsored new-energy plant with a NAS® battery and methane-fermentation system, NGK has been commissioned by the Foundation for Riverfront Improvement and Restoration for the installation of a water circulation system: environmentally conscious technologies that we are proudly showing to guests from home and abroad. World Expo 2005 has helped us to realize anew the need for communication with citizens in order to protect the environment, and we believe that we should more broadly interpret and respond to our company's social responsibilities. Furthermore, in order to continue being a company which is rewarded with society's trust, we strive to make the "Environmental & Social Responsibility Reports" useful in understanding NGK's positions and efforts on these issues.

Showing off our corporate philosophy and technologies that contribute to the environment



NGK has its NGK Water Lab exhibit at the the 2005 World Exposition, Aichi, Japan (Expo 2005), and this Expo is based around the theme of "nature's wisdom." NGK is participating with its own original environmentally conscious technologies in various efforts to protect the environment. Coexisting with nature is an issue being faced by all humanity, and an aim of Expo 2005 is to contribute towards finding solutions for this. NGK is in agreement with this philosophy, and as a company that is developing its business in the areas of the decontamination of water, which nurtures all life, and in the fields related to energy conservation, we hope to show off our corporate philosophy and technologies to a large number of people.

愛・地球博 Exhibition at the Expo

Stressing the Importance of Water with the NGK Water Lab

NGK presents the NGK Water Lab as a part of the "Mountain of Dreams" joint pavilion. This is a science show that combines 3D images on screen with a live performance on stage, where experiments are carried out in order to think about the amazing properties and the importance of water. The setting for this show is the laboratory of Doc Water, a professor of water, who knows everything there is to know about water. Visitors can learn about the water cycle that nurtures all life, as they watch scientific experiments demonstrating the amazing properties of water coupled with spectacular 3D images.

Live performance by Doc Water

Joint pavilion "Mountain of Dreams"

NGK Water Lab Science Caravan

The NGK Water Lab Science Caravan operated from December 2004 to Feb 2005 as an Expo 2005 pre-event. "Amazing Water Laboratories" were conducted at five elementary schools and science museums nationwide, and used experiments to introduce the mysterious properties of water within clouds.

Carrying out experiments at the Science Caravan

愛地球博 NGK's environmentally conscious technologies used at Expo 2005 (1)

Contributing to the Demonstration Operation of the New Energy Plant

NGK participates in the demonstration running of the New Energy Plant sponsored by NEDO (New Energy and Industrial Technology Development Organization) at Expo 2005. NGK has provided a NAS® Battery system that both stores electricity generated by fuel cells at night and absorbs fluctuations in electricity generated by photovoltaic cells. In addition, the Company has provided a Methane Fermentation System that ferments raw garbage generated at the venue and supplies generated combustible gas to the fuel cells.

NAS® batteries at the New Energy Plant (below left) and the Methane Fermentation System

NAS® Batteries

The New Energy Plant uses NGK NAS® batteries as its electrical storage system. NAS® batteries feature high energy density, high efficiency, and long-term durability. These have become more popular in recent years as large capacity, secondary batteries for use in electrical load leveling and backup power supplies.

NAS® batteries electrical storage system

Methane Fermentation System

Kitchen waste from the restaurants within the venue is fermented, and this produces methane gas. A small amount of caustic soda is added to those organic substances that are difficult to digest for microorganisms. Enhancing the hydrolysis reaction increases the amount of methane generated, resulting in fermentation at medium temperatures that is as effective as that at high temperatures.

Methane Fermentation System

愛地球博 NGK's environmentally conscious technologies used at Expo 2005 (2)

Ceramic Filters Busy Purifying Water

P. 19

NGK's water circulation system pumps water in from the Lotus Pond within the venue, and purifies it to a high level using ceramic filters. After use in the facilities along the Winding Walkway, the processed water is returned to the Lotus Pond to improve the water quality. Furthermore, study is under way into the practicalities of using water from the pond in emergencies.

Lotus Pond within the Nagakute Area of the Expo 2005 Venue

Ceramic Filter

The NGK Ceramic Filter has a diameter of 18 cm and is available in two lengths (1 m and 1.5 m). It comprises a honeycomb ceramic membrane for the purification of water. This achieves microfiltration by using ceramic membranes having pores of 0.1 μm in the walls of more than 2000 2.5 mm diameter holes, and can eliminate impurities, bacteria, and *cryptosporidium* disease-causing parasites from the water.

Ceramic filter

Participation in the Environmental Partnership Organizing Club (EPOC)

Backyard Tour

EPOC is a collaboration between NGK and companies from the Chubu region, and with the Japan Association for the 2005 World Exposition, is carrying out the Backyard Tour, which carries out tours of energy and recycling systems. NGK staff are also active as tour staff, introducing the range of environmental technologies active behind the scenes at Expo 2005.

Backyard Tour

Eco-Talk Session

Eco-Talk Session in which Aichi schoolchildren talk with top leaders of 12 EPOC companies about the environment. President Matsushita also talked with approximately 150 schoolchildren on the theme of "people and water."

"Water Overview Notebooks" prepared for the talk session.

Environmentally friendly technologies and products, contributing to people and the earth

Most of NGK's products are based around our own innovative core ceramics technologies, and these directly contribute to reducing environmental impact. Furthermore, in our business activities, we are strengthening our responses to global environmental issues, and promoting reductions in the environmental impact of our full range of business activities from development and design through to procurement, manufacturing, and logistics. At the same time, NGK is actively promoting strict adherence to laws and regulations and making contributions to society in order to fulfill its social responsibilities. Through these efforts, NGK strives to achieve corporate excellence based on global standards.

Corporate Philosophy

NGK products and technologies must create new value and contribute to the quality of life.

NGK Group Guidelines for Corporate Behavior (Excerpt)

Relationship with Society

In pursuit of more openness from management, NGK Group will improve its communication with society, and, as a good corporate citizen, will increase its contribution to the enrichment of society.
For continuous operation of the Company, NGK Group finds it essential to tackle environmental problems, and will actively deal with such issues.

Relationship with Business Activities

NGK Group will develop safe and valuable products to meet any future social demands and satisfy customers all over the world with those products. Throughout its business activities, NGK Group consistently obeys the letter and spirit of the law and conducts its business transactions fairly, transparently, and freely. As a member of the international community, NGK Group respects regional cultures and customs and seeks to coexist with local communities. Profits earned through legitimate business activity are appropriately returned to shareholders.

Relationship with Employees

NGK Group will always value people and show respect for basic human rights. All employees must obey labor laws and regulations as well as corporate regulations.
Simultaneously, they must work responsibly and in good faith, and endeavor to enhance their own abilities.

Three-year Management Plan

Speedy

Speedy Management

Together with ground-up revision of the processes for all tasks, NGK is making active use of new information tools and management methods to carry out the management decisions of the globally growing NGK Group even more rapidly.

Timely

Concentration on Development

With ceramics technology positioned as a key technology, NGK is maintaining investment in research and development within the "Triple-E" business fields at around 6% of sales. The Company is striving to achieve strategic growth through the timely development of new products.

Lean

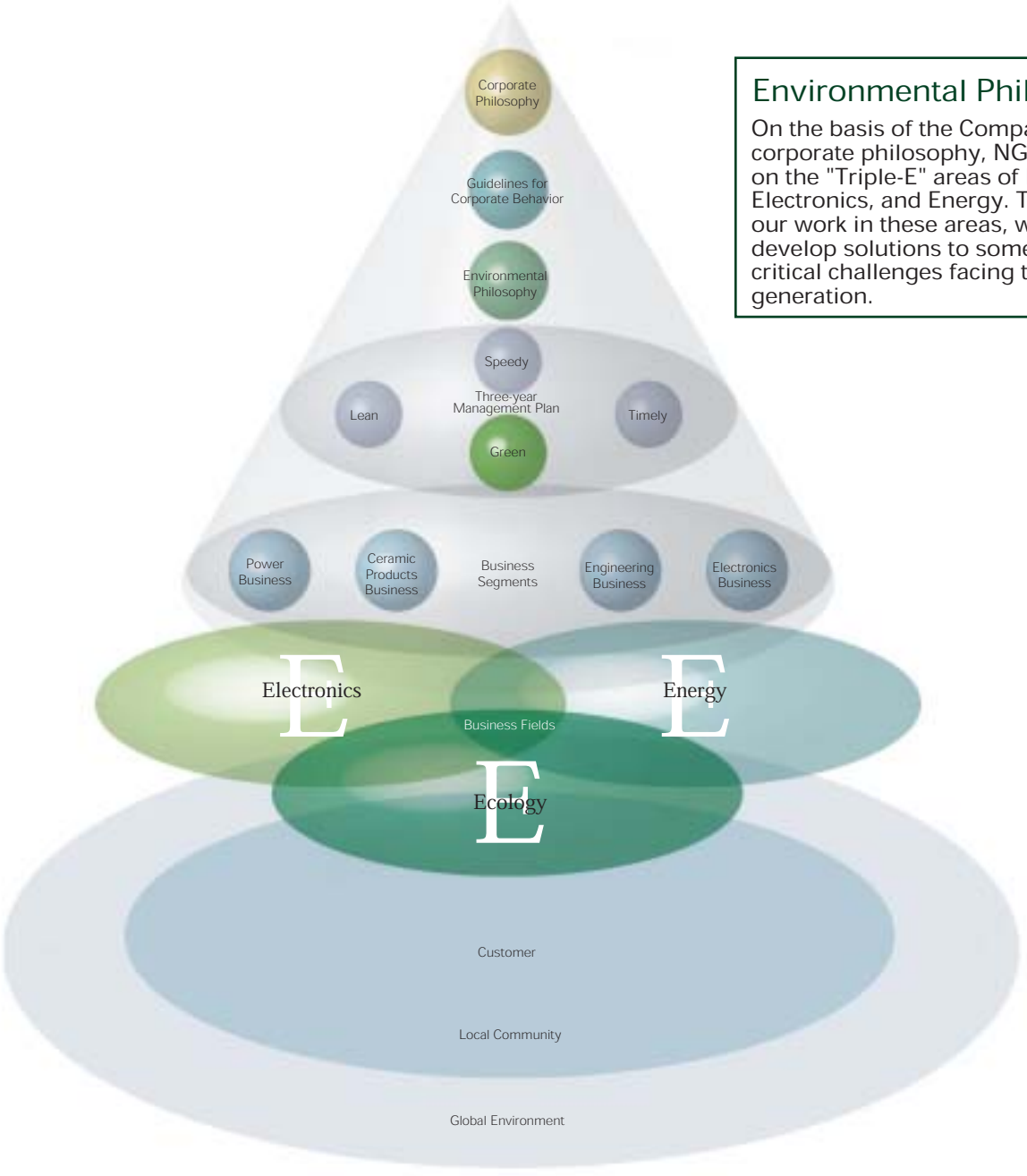
Highly-efficient Management

Aiming for a return on equity (ROE) of 10%, NGK is taking thorough steps to slim down assets through such measures as introduction of supply-chain management (SCM) and integration of equipment. The Company is further accelerating the utilization efficiency of management resources (personnel, property and funds).

Green

Green Management

In order to fulfill its responsibility to maintain corporate excellence, NGK makes every effort to reduce the impact of its business activities on the global environment through such actions as measures to prevent global warming, recovery of resources from by-products, development of environmentally conscious products, and improvement in the quality of environmental management.



Environmental Philosophy

On the basis of the Company's corporate philosophy, NGK focuses on the "Triple-E" areas of Ecology, Electronics, and Energy. Through our work in these areas, we seek to develop solutions to some of the critical challenges facing the next generation.

NGK's Four Business Segments

Power Business

NGK offers high-quality products in the area of electrical energy, such as insulators and NAS® batteries that contribute towards reliable power supply.

Ceramic Products Business

NGK offers leading-edge products based on innovative ceramics technology that support the growth of a diverse range of industries.

Engineering Business

Aiming for harmony between people and nature, NGK offers a wide array of facilities such as environmental conservation-related plants that protect people's lives and the environment.

Electronics Business

The electronics field continues to enjoy dizzying change and growth, and in this area as well NGK is making full use of fine ceramics technology to offer advanced products.

Overall Perspective of Environmental Impact

NGK's business activities are based on the Power, Ceramic Products, Engineering, and Electronics business groups. These conduct product development and design, procure components, raw materials, and other items, and manufacture and sell products. At right is a material flow chart that shows the input of materials and energy in business activities, and the output of emissions into the environment and of manufactured products.

Overview of Input

Input mainly comprises raw materials and energy used in production activities, with the majority of these materials used in ceramics production. Activities to reduce CO_2 emissions, due to their direct link to global warming, are an important business challenge, and as of 2004, NGK is pressing ahead in its efforts to achieve NGK's medium and long term targets for reductions of greenhouse gases. Additionally, chemical substances comprise a significant ratio of inputs, therefore the Company is carrying out strict and proper management in their handling, and its efforts to reduce the quantities used are achieving results. Furthermore, in the area of fossil fuel usage for logistics, NGK is aiming to reduce the impact on the environment through the employment of efficient operating systems.

Overview of Output

Output comprises emissions of CO_2 into the atmosphere, and industrial effluent into public bodies of water, both of which are as a result of production activities, and NGK is making efforts to reduce and curtail both of these. What is more, the reduction and recycling of ceramic materials and other by-products generated in the course of manufacturing are major issues for NGK, therefore, while aiming to reach the 2005 target of zero emissions, the Company is further enhancing its measures towards this end. Many of NGK's products and technologies contribute towards reducing the impact on the environment, and it will continue to be an important mission for us to develop products and technologies that contribute to a better environment.

Moreover, within the Company, it is beholden upon us to implement enhanced environmental conservation activities throughout all of our businesses, including appropriate operation of environmental management systems throughout the whole company.

Highlights of 2004 Environmental Activities

1 **Revision of Environmental Action Guidelines** P. 8

We revised the action guidelines that were established in March 1996, to reflect changes in society, and advances in environmental management.

2 **Acquisition of Certification for Environmental Management Systems by 6 Group Companies** P. 12

Four domestic, and two overseas Group companies acquired certification for their environmental management systems.

3 **Suppression of Increases in CO_2 Emissions** P. 20

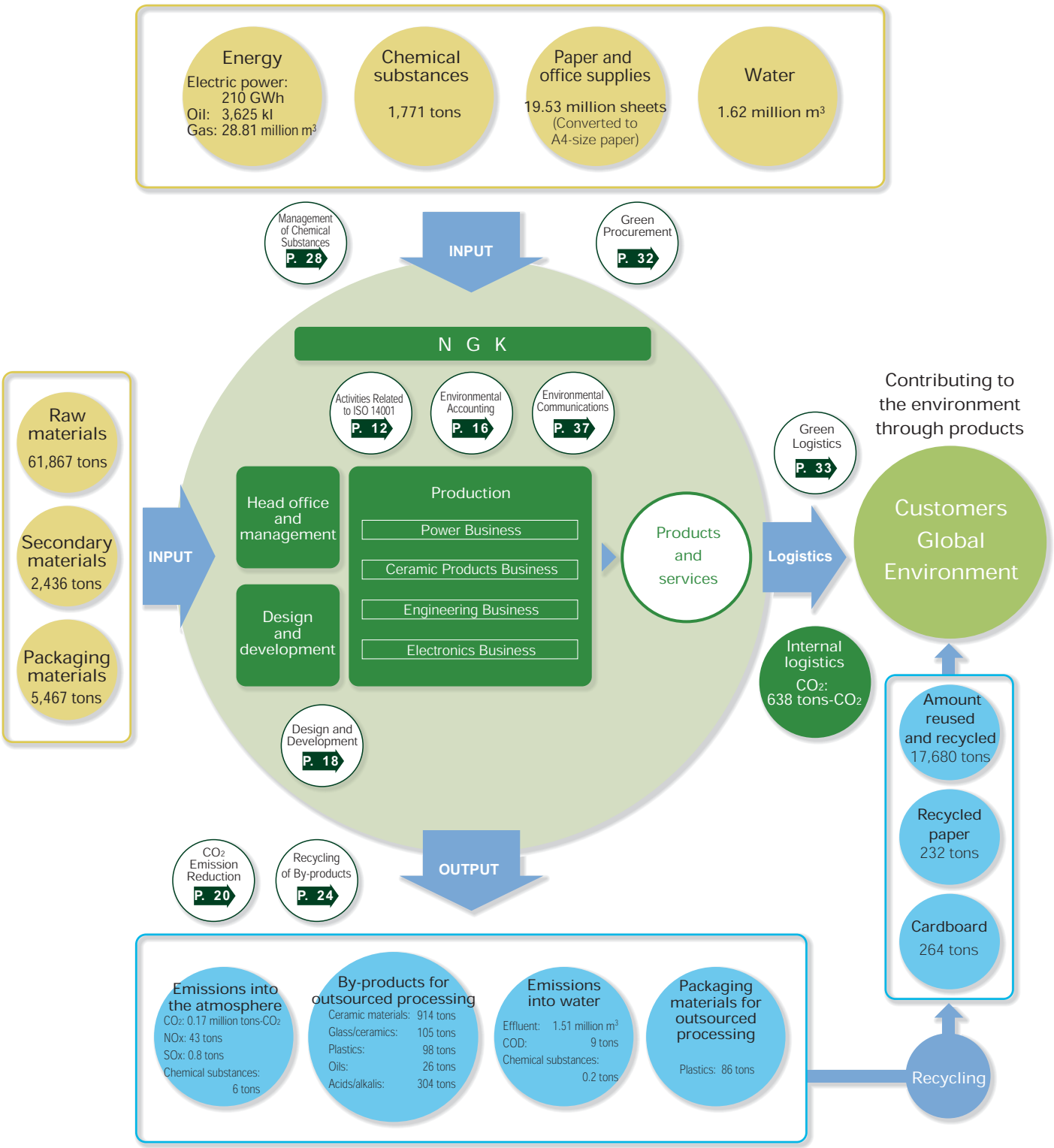
While we have achieved an increase in both the scale of our business and in production, improvements in production technology and higher-efficiency facilities have kept any increases in emissions of CO_2 in check. A 10,000-ton reduction of CO_2 was achieved (equivalent to that generated from the production increases).

4 **Zero Emissions at Hand** P. 24

By-products for outsourced processing were down to 1,579 tons, a 63% reduction from 2003, and we expect to largely achieve zero emissions in 2005 (by-products for outsourced processing: 1,000 tons or less).

5 **Revision of Green Procurement Guidelines** P. 32

Through the revision of green procurement guidelines, we are raising awareness among suppliers together with putting in place a system that enables us to meet customer needs for avoiding the risks of controlled substances.



(*) Data on this page from NGK's Nagoya, Chita, and Komaki plants
(*) Environmental performance values in this report have been rounded up for convenience; therefore they may not match totals when added together.
(*) 2003 environmental performance values in this report are revised estimates made during 2004, therefore these may differ from the values in the 2004 report.

Environmental Management System

NGK's Core Policy on the Environment

NGK views global environmental conservation as one of the most important issues currently faced by mankind, and strives to be a company in harmony with nature.
In line with NGK's Core Policy on the Environment, established in March 1996, the Company will continue its business activities in the "Triple-E" business fields of Ecology, Electronics, and Energy. In addition to reducing the environmental impact of its business activities, NGK will actively contribute to a better environment through the development of products and technologies that benefit the environment.
In 2004, we re-examined our previous Action Guidelines in order to support changes in social situations and in environmental management, and these were revised in April 2005. These added a range of enhancements including environmental management from a global perspective, strengthening of partnerships with suppliers, strict adherence to laws and regulations, strengthening of partnerships with all parties with a stake in NGK's operations, and making contributions to society.

Philosophy

NGK's positive approach to the environment begins with its basic corporate philosophy: "NGK products and technologies must create new value and contribute to the quality of life." In particular, we focus on the "Triple-E" areas of Ecology, Electronics, and Energy. Through our work in these areas, we seek to develop solutions to some of the critical challenges facing the next generation.

Action Guidelines

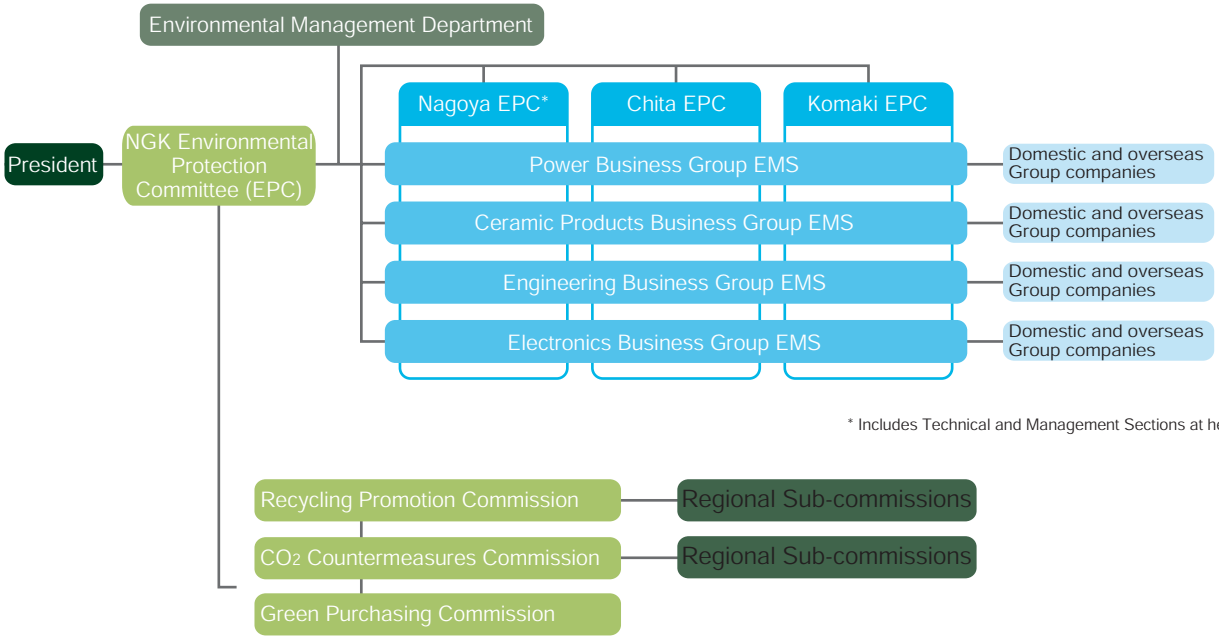
a) Strive towards the development, design, and manufacture of products that are environmentally friendly, and that have a low impact on the environment.
b) Work towards decreasing the environmental impact of our business activities.
Use design review methods to scientifically study and evaluate the environmental impact of our business activities.
1) Promote energy conservation in processes and equipment, and work towards curbing CO_2 emissions.
2) Promote resource savings and recycling, and work towards the reduction of by-products.
3) Reduce risks through the appropriate usage and management of chemical substances.
4) Give priority to the procurement and purchasing of environmentally friendly materials, parts, products, and equipment. Furthermore, strengthen partnerships with suppliers.
c) Enhance environmental management systems from a global viewpoint, and implement continuous reforms in order to reduce the impact on the environment.
d) Strictly adhere to laws, regulations, and other requirements. Furthermore, establish voluntary standards, and work towards increased environmental conservation.
e) Disclose environmental information to outside the company, and continue discussions with all interested parties.
Actively develop community relations activities. Furthermore, carry out training and publicity activities in order to increase employee awareness of environmental issues.

History of NGK's Commitment to Environmental Activities

Apr.	1972	Environmental Protection Committee and Environmental Preservation Office established
Jun.	1992	Waste Countermeasures Commission established
Mar.	1993	NGK's Voluntary Plan for Environmental Conservation established
Dec.	1994	Chlorofluorocarbons (CFCs) and 1,1,1-trichloroethane abolished
Feb.	1995	Internal environmental audit conducted
Mar.	1996	NGK's Core Policy on the Environment established
Dec.	1996	CO_2 Countermeasures Commission established
Mar.	1998	NGK's three production bases simultaneously received ISO 14001 certification
Mar.	1999	Environmental Report published
Apr.	1999	Environmental accounting introduced
Jun.	1999	Engineering Business Group received ISO 14001 certification
Oct.	1999	Green Purchasing Commission established
Nov.	1999	Environmental surveys of domestic Group companies started
Feb.	2000	Environmental Partnership Organizing Club (EPOC) established and active participation therein begun
Oct.	2000	Chemical Substances Safety Committee established
		Chemical Substances Management System introduced
Mar.	2001	Five-year Environmental Action Plan established
Apr.	2001	Compilation of environmental performance data for domestic Group companies started
Oct.	2001	Operation of Recycling Yard begun
Jan.	2002	Compilation of environmental performance data for overseas Group companies started
Apr.	2002	New "Green Management" three-year management plan instituted
Apr.	2003	Moves made toward a full business group environmental management system
		"Waste Countermeasures Commission" renamed "Recycling Promotion Commission," and "wastes" renamed "by-products"
Mar.	2004	Three-year and long-term plans for reduction of CO_2 emissions instituted
Mar.	2005	RetBP-M30 Company-wide medium-term plan for the reduction in by-products established
Apr.	2005	Environmental Action Guidelines revised
		Green Procurement Guidelines revised

Promotion System for Environmental Management

To promote its efforts with respect to environmental issues, NGK further strengthened its environmental management system from 2003, and is continuing in its work to confront environmental issues. In addition to environmental management systems created along plant lines at the Nagoya, Chita, and Komaki plants, the Company has enhanced green management organized along business-group lines.
This enables individual business groups to respond more effectively to their specific environmental issues such as reducing CO_2 emissions, reducing and recycling by-products, and enhancing management of chemical substances, working together with NGK's domestic and overseas Group companies and cooperating companies. These issues arise from procurement, development, production, logistics, and the sale of products. Additionally, in 2004, we established Chemical Substances Committees as a part of the Environmental Protection Committees at each of our three plants, and have improved management of PRTR-listed substances.
In the future, we will further improve Green Management systems in each business group, as well as existing environmental management systems at each plant, letting us enhance our efforts to protect and contribute towards the protection of the environment.



* Includes Technical and Management Sections at head office.

NGK Group and Environmental Management

NGK has established a system in which an environmental performance survey broken down into 16 areas, and with 200 items, is carried out at group company production locations both within Japan (13 companies) and overseas (17 companies). This system was put into full operation as of 2004. As a result, the Company is able to track and share both the overall status of environmental management at the group companies which are engaged in a wide range of business around the world, as well as issues relating to the reduction of the impact on the environment.
In the future, by further strengthening group efforts as regards environmental issues, the whole NGK Group aims to become an excellent company in environmental management, and will further promote Green Management.

Classifications in the Environmental Performance Survey

1. Environmental management systems (environmental management organizations, their activities, etc.)
2. By-products (treated, disposed, and recycled amounts, main causes for changes of amount, etc.)
3. Energy input and greenhouse gas emissions (CO_2 emissions, etc.)
4. Amount of PRTR-listed substances emitted and transferred
5. Material resources Input
6. Water resources Input
7. Environmental accounting (environmental costs, economic effect, etc.)
8. Environmental pollutant emissions into the atmosphere
9. Environmental pollutant emissions into water
10. Noise and vibration
11. Greenhouse gas emissions in logistics and sales activities, and introduction of low-emissions vehicles
12. Green purchasing, procurement, and green logistics
13. Storage and management of equipment containing PCB
14. Soil and groundwater pollution
15. Recycling and environmentally-conscious design of products
16. Community relations activities and administrative directives

NGK's Environmental Action Plan

NGK's Voluntary Plan for Environmental Conservation was established in March 1993, and the Core Policy on the Environment in April 1996. Both these encourage environment-related activities, and have helped the Company address environmental issues in the "Triple-E" business fields of Ecology, Electronics, and Energy. At present, we are further promoting and expanding environmental activities based upon the Five-year Environmental Action Plan that was formulated in March 2001. Furthermore, we are enhancing Business Group environmental management, including at our group companies both within Japan and overseas, in order to assist in fulfilling the environmental management objectives set out in "Green Management," which is one of the action guidelines of our mid-term management plan.

Item			Environmental Action Plan 2001	2002	2003	2004	2005	2004 Achievements Target
Internal Environmental Activities	Environmental Management	Environmental Management	Establishment and effective operation of ISO 14001, environmental management by NGK Group					1. Establish and improve ISO 14001 (1) Strengthen environmental management in administrative divisions (2) Legal compliance: no violations in external audits (3) External audits: no major faults (4) Strengthen environmental impact reduction measures (5) Continue internal environmental education, development, and communication 2. Provide support for environmental management at domestic and overseas Group companies (1) Approaches to Business Group environmental management (2) Environmental performance analysis and issue definition
		Environmental Accounting (EA)	Evaluation based on cost effectiveness		Incorporation of EA into business activities, streamlining			1. Improve utility of EA Calculate and track costs and effects on an operating division basis 2. Expand coverage of calculation Calculate and track costs and effects for domestic and overseas Group companies
	Life Cycle Activities	LCA		Investigation	Testing		Application	Expand tests
		CO_2	Restraining basic unit (total amount/sales) to within 1990 levels ($70 tons-$CO_2$/¥100 million)			Total emissions reduction target 0% change in 2006 over 2003 7% reduction in 2010 over 1990		1. Implement total emissions reduction plans 2. Investigate and introduce processes with low environmental impact 3. Improve energy management for buildings and specified facilities
		By-products	Reduction of outsourced processing by 50% from 2000 levels			Zero emissions		1. Reduce quantities of ceramic raw materials, glass, and ceramics for outsourced processing Outsourced processing amount of 1,500 tons or less 2. Promote recycling Recycling rate no less than 74% 3. Commence study into moving from management of outsourced processing amount, to management of total production amount
		Chemicals	Introduction and establishment of management system			Elimination, use of substitute materials, reduction of emissions into environment		1. Strengthen management of PRTR-listed substances in accordance with amended regulations Improve leakage countermeasures 2. Streamline the Chemical Substances Safety Committee and management system 3. Review of examination criteria in accordance with EU regulations
		Procurement and Logistics	Continued efforts as regards office supplies/ all-purpose equipment					1. Revision of Green Procurement guidelines, holding of explanatory meetings on environmental issues and green purchasing for suppliers 2. Solidly establish green packaging guidelines 3. Expand application of green procurement to manufacturing materials, etc.
					Expansion of green suppliers			
External Environmental Activities	Environmental Communications	Communications	Publication of Environmental & Social Responsibility Report, community relations activities, etc.					1. Issue Environmental and Social Responsibility Report, and improve its contents 2. Continue dialogs between plants and surrounding communities - Hold local exchange meetings - Offer plant tours - Participation in Reciprocal Study System for Environmental Promotion (Re-STEP)
		Participation in NPO activities	Participation in the Environmental Partnership Organizing Club (EPOC)					Promote activities of the Exchange Promotion Committee (1) Participate in Expo planning (2) Exchange with local communities (Nagoya City, universities, etc.), exchange with overseas trainees

Note: NGK Environmental Action Plan is centered on its three plants in Nagoya, Chita, and Komaki, but the details of the Environmental Management items shown here include domestic and overseas Group companies.

Points about the 2005 Targets

We will strengthen our efforts to reduce CO_2 emissions throughout the company and strive to keep total emissions quantities below the 2003 level of 166,000 tons-CO_2.
NGK is promoting further recycling with the aim of zero emissions of by-products during 2005 (by-products for outsourced processing; 1,000 tons or less). Additionally, the Company has put into effect the RetBP-M30 Company-wide medium-term plan for an overall reduction, with the aim of curbing total quantities generated.
The Company will increase the effectiveness of the new green procurement guidelines in order to reduce risks in distributing controlled substances.

Achievement	Self-evaluation	2005 Targets	See page
1. Strengthened environmental management (1) Headquarters site acquired ISO 14001 Made positive progress in 24 themes in administrative divisions (2) Legal compliance: no violations (3) ISO 14001 external audits: no major faults Corrective action regarding minor guidance completed (4) Internal education 2. Conducted environmental performance survey of domestic and overseas Group companies - Implemented environmental performance survey at domestic Group companies and environmental hearings by each operating division - Environmental performance survey at overseas Group companies carried out	○	1. Establish and improve ISO 14001 (1) Strengthen environmental management at headquarters divisions (2) Legal compliance: no violations (3) External audits: no major faults (4) Strengthen environmental impact reduction measures (5) Continue internal environmental education, instruction, and communication 2. Provide support for environmental management at domestic and overseas Group companies (1) Approaches to Business Group environmental management (2) Environmental performance analysis and issue definition	12
1. Improved utility of EA Implemented calculation of costs and effects on an operating division basis 2. Expanded coverage of calculation Implemented calculation of costs and effects for domestic and overseas Group companies	○	1. Improve utility of EA (1) Calculate and track costs and effects on an operating division basis (2) Study trials of internal environmental accounting methods 2. Expand coverage of calculation Calculate and track costs and effects for domestic and overseas Group companies	16
Conducted an LCA analysis of the environmental impact prior to construction of new plants, as regards the internal manufacturing processes for ceramic membranes, and applied this to abstracting problems and implementing improvements in processes	○	Expand application to new products	18
1. Implemented total emissions reduction plans 1) Total CO_2 emissions: 165,500 tons (no change from 2003) 2) Reduction volume in CO_2 emissions: 9,600 tons 2. Investigated and introduced processes with low environmental impact Introduced fast drying and firing technologies 3. Improved energy management for buildings and specified facilities 1) Implemented improved management of headquarters site (internal disclosure of energy performance and of reasons for fluctuations) 2) Expanded amount of facilities managed	◎	1. Implement total emissions reduction plans 2. Investigate and introduce processes with low environmental impact 3. Improve energy management for buildings and specified facilities	20
1. Quantities of ceramic raw materials, glass, and ceramics for outsourced processing met the target of a reduction to 1,065 tons (reduced by 2,373 tons from 2003) 2. Recycling promoted: Recycling rate greater than 92% 3. RetBP-M30 company-wide medium-term plan for reduction of total emissions implemented	◎	1. Achieve zero emissions by the promotion of recycling, and by the control of generated by-products Outsourced processing amount 1,000 tons or less 2. Implement management of overall product generation 5% reduction in 2005 (from 2004)	24
1. The Chemical Substances Committee strengthened management of PRTR-listed substances, and reduced by 18% from 2003 the quantities of PRTR-listed substances handled Targets for emissions of solvents into the atmosphere were reached 2 years ahead of schedule, and are 20% below 2003 levels 2. Improved task efficiency of the Chemical Substances Safety Committee through implementing workflows, and an implementation plan for the computerization of survey data created 3. Green Procurement standards in accordance with EU regulations created	○	1. Implement definition of individual problems, and strengthened reductions for departments using PRTR 2. Improve efficiency of chemical substance management through implementing workflows 3. Definition of, and responding to problems relating to chemical substances used in Green Procurement Standards	28
1. Green Procurement guidelines have been revised in order to support particular chemical substances specified in European chemical regulations Main revisions are: 1) Specifications and disclosure of regulated substances to prevent their input 2) Disclosure of details of requests for suppliers, and promotion of improvements 2. Verification through follow-up surveys of packaging of raw materials that guidelines have been substantially implemented 3. Expanded registration of 95 factory supplies, continue introduction of green energy. (2 million kWh/year)	○	1. Issuance of Green Procurement guidelines 2. Expansion of green suppliers 3. Expansion of green office supplies, etc.	32
1. Improve Environmental and Social Responsibility Report - Special Expo edition - Expand disclosure of detailed information regarding NGK's effort, and regarding domestic and overseas Group companies 2. Dialogs held between plants and surrounding communities - Local exchange meeting held (introduction of environmental activities, plant tour, etc.) - Participation in Re-STEP (2 companies)	○	1. Issue Environmental and Social Responsibility Report, and improve its contents 2. Continue dialogs between plants and surrounding communities - Hold local exchange meetings - Offer plant tours - Continued participation in Re-STEP	2, 39
(1) Participated in Expo planning Participated in planning of eco-talk sessions, backyard tours (2) Participated in Clean Campaign Nagoya, participated in Eco-Campus Festival Speech Contest, carried out instructional activities for promoting recycling, and exchanges with overseas trainees	○	Promote the activities of the Exchange Promotion Committee (1) Carry out eco-talk sessions, backyard tours at Expo. (2) Exchange with local communities (Nagoya City, universities, etc.), exchange with overseas trainees.	2, 39

Self-evaluation results: ◎ Significantly exceeded target ○ Achieved target △ Little year-to-year change × Worse than previous year

Activities Related to ISO 14001

As part of the Company's efforts to develop long-term and company-wide environmental conservation activities that are in line with NGK's Core Policy on the Environment, continuing efforts are being made to acquire ISO 14001 or equivalent certifications. In March 1998, NGK's three main domestic production bases simultaneously received ISO 14001 certification, and by March 2005, 13 business sites at domestic, and eight at overseas Group companies also received certification. As of 2004, there were 13 domestic and 17 overseas consolidated Group manufacturing companies, and the aim in 2005 is to acquire certification at all sites. Furthermore, in March 2005, headquarters divisions at the Nagoya Plant passed a screening for expanding the scope of certification.

NGK Group ISO 14001 and Corresponding Certifications (Overseas Included)

●: Acquired (FY)

		Business sites		2001	2002	2003	2004	2005
	NGK Insulators, Ltd.	Nagoya Plant (including Engineering Business Group, R&D section, and headquarters divisions)		●	●	●	●	●
		Chita Plant		●	●	●	●	●
		Komaki Plant		●	●	●	●	●
Domestic Group companies	Power Business	Energy Support Corporation, Main Plant		●	●	●	●	●
		Akechi Insulators Co., Ltd., Akechi and Matoba plants		●	●	●	●	●
	Ceramic Products Business	Ikebukuro Horo Kogyo Co., Ltd.					●	●
		NGK Filtech, Ltd.					●	●
		NGK Adrec Co., Ltd.		●	●	●	●	●
		NGK Kilntech Corporation						●
		Heisei Ceramics Co., Ltd.					●	●
	Electronics Business	NGK Optoceramics Co., Ltd.		●	●	●	●	●
		NGK Printer Ceramics Co., Ltd.	Komaki Plant/Yamanashi Plant	●	●	●	●	●
		NGK Okhotsk, Ltd.		●	●	●	●	●
		Soshin Electric Co., Ltd.	Asama Plant	●	●	●	●	●
			Chikuma Plant	●	●	●	●	●
			Miyazaki Plant	●	●	●	●	●
		NGK Mettex Corporation					●	●
		NGK Fine Molds, Ltd.						●
Overseas Group companies	Power Business	Locke Insulators, Inc.						●
		NGK-Locke Polymer Insulators, Inc.						●
		NGK Europe S.A.						●
		P.T. WIKA-NGK Insulators			●	●	●	●
		NGK Insulators Tangshan Co., Ltd.		●	●	●	●	●
		NGK Stanger Pty. Ltd.					●	●
	Ceramic Products Business	NGK Ceramics USA, Inc.		●	●	●	●	●
		NGK Ceramics Europe S.A.		●	●	●	●	●
		NGK Ceramics Polska Sp. z o. o.						
		P.T. NGK Ceramics Indonesia					●	●
		Siam NGK Technocera Co., Ltd.						●
		NGK Ceramics Suzhou Co., Ltd.						●
		NGK Technocera Suzhou Co., Ltd.						●
		NGK Ceramics South Africa (Pty) Ltd.		●	●	●	●	●
	Electronics Business	FM Industries, Inc.						●
		NGK Metals Corporation				●	●	●
		NGK Berylco France						●

(*) NGK headquarters divisions acquired this in 2004
NGK Ceramics Polska Sp. z o. o. was consolidated during 2004, and from 2004, has been listed in the acquisition plan.

Group Company Activities

In 2004, four domestic and two overseas Group companies acquired ISO 14001 and other certifications for their environmental management systems. These companies are achieving successes in all environmental management activities that support all aspects of their business activities, and here we introduce four domestic Group companies.

Ikebukuro Horo Kogyo Co., Ltd.

Ikebukuro Horo Kogyo acquired ISO 9001 quality management system certification in August 1997, and in April 2004, acquired ISO 14001 environmental management system certification.
Between these two certifications, environmental training and education was given to all employees. While increasing employee awareness as regards the environment, the company constructed an environmental management system appropriate to the company. In the future, Ikebukuro Horo Kogyo will maintain its environmental management system, and use improvements in this to bring about an even better social environment, and to carry out activities to contribute towards the regional society.

Staff of Ikebukuro Horo Kogyo participating in the acquisition of ISO 14001 certification

Environmental policies (extract)

Ikebukuro Horo Kogyo Co., Ltd. assesses the environmental impact of all manufacturing activities within its premises, and it carries out continuous implementation of the following activities in order to create a better social environment, with the aim of achieving harmony with regional society.

(1) Carry out ongoing improvements in environmental management systems.
(2) Strictly adhere to legal and other requirements as regards the prevention of environmental pollution.
(3) Work towards the prevention of environmental pollution by reducing the impact on the environment, and by maintaining resource savings.
(4) Work for improved environmental training and education, and raise employee awareness as regards the environment.

NGK Filtech, Ltd.

NGK Filtech manufactures products that have a low impact on the environment. Accordingly, the company had a low level of environmental awareness, and was not active in separating garbage or in adjusting the temperature settings for air conditioners. Therefore, to acquire certification in December 2004, the company focused on increasing awareness of environmental friendliness.
In the future, along with promoting energy- and resource-saving product designs, the company will make many efforts for conservation of the environment in procurement and usage of environmentally conscious parts and materials. Furthermore, NGK Filtech will strive for even more employee awareness as regards the environment, and will work toward higher ratios of recycling of by-products.

NGK Filtech

Environmental policies

NGK Filtech Ltd. reduces the impact on the environment from its development and manufacturing activities at its plant, and carries out the following specific activities in order to both contribute towards the construction of a recycling-oriented society and to provide products that better contribute toward the environment; furthermore, the company increases its environmental performance.

(1) Continuously improve the company's environmental management systems, improve the effectiveness and reliability of these systems, and strive to reduce pollution.
(2) Strictly adhere to relevant laws and other requirements that have been agreed upon by the company.
(3) Appropriately assess the impact on the environment of the company's activities, and where technically and economically feasible, establish environmental goals and targets, and review these in a timely manner; continuously develop the quality of environmental conservation activities.
(4) Aiming at forming a recycling-based society, strive for environmental conservation by reducing the environmental impact, and promoting resource-saving activities.
- Promotion of energy-saving activities
- Promotion of reduced-resource policies
- Reductions in waste and the promotion of its recycling
- Prevention of environmental "near misses"
- Appropriate management of chemical agents

(5) Aim for the development of environmentally conscious product processes, and the promotion of environmentally conscious product development and design.
(6) Carry out training and education starting with employees and suppliers, in order to raise awareness of the environment.

Heisei Ceramics Co., Ltd.

In February 2005, Heisei Ceramics acquired "Eco Stage 2" certification, equivalent to international standards as regards environmental management systems.
In the future, the company will further promote environmental conservation activities in line with NGK's environmental guidelines and the NGK Group Guidelines for Corporate Behavior.
Additionally, Heisei Ceramics will take this opportunity of acquiring Eco Stage 2 certification to engage in environmentally conscious business activities, and to carry out ongoing improvements.


Staff of Heisei Ceramics engaged in environmental activities

Environmental policies

1. Based on the fact that Heisei Ceramics manufactures ceramic products at its factories, the company assesses its impact upon the environment and strives to prevent environmental pollution by implementing the following measures.
   (1) Promoting reductions in resource and energy usage and controlling CO_2 emissions.
   (2) Accelerating the separation of wastes and working towards their reduction.
   (3) Striving to give priority to the purchasing of environmentally conscious materials.
   (4) Carrying out training and regional activities in order to raise employees' environmental awareness.
2. Strictly adhere to environment-related laws and other requirements that have been agreed upon by the company.
3. To implement and accomplish these environmental guidelines, establish environmental goals and targets, and carry out reviews aiming to achieve ongoing improvements to the environmental management system.
4. Ensure that these environmental guidelines are made known to all employees by displaying them on the internal company notice board.
5. Ensure that these guidelines are documented and disclosed in response to any external requests.

NGK Mettex Corporation

In March 2005, NGK Mettex acquired "Eco Stage 2" certification, equivalent to international standards as regards environmental management systems.
In the future, the company will further promote environmental conservation activities in line with NGK's environmental guidelines and the NGK Group Guidelines for Corporate Behavior, and will also raise the awareness of all individual employees. By making sure that these measures are in place, NGK Mettex Corporation is ensuring that these will lead to a cycle of yearly improvements and increases.


NGK Mettex staff

Environmental policies

1. Accurately assess the impact of all activities carried out by the company and all their products; where technically and economically feasible, establish environmental goals and targets and work towards the reduction of environmental pollution, and review these in a timely manner; continuously enhance the quality of environmental management systems.
2. Strictly adhere to environment-related laws, regulations, and other requirements that have been agreed upon by the company; push ahead with independent environmental activities; aim to further improve environmental conservation.
3. Work with the priority on the following environmental management themes as regards the environmental impact of NGK Mettex's activities and products.
   (1) Energy conservation through reductions in electricity-usage amounts.
   (2) Resource conservation through reductions in material-usage amounts.
   (3) Reductions in waste quantities.

Environmental Auditing

Even before ISO 14001 certification, NGK performed its own internal environmental inspections, working to improve its environmental conservation activities.
Today, 189 internal auditors are assigned to our various departments, performing audits once a year.
Additionally, in 2004, the Nagoya, Chita, and Komaki plants were subject to external inspections as regards ISO 14001 certification, and these found no major faults.
At the same time, at the Nagoya Plant, an expanded survey was carried out at its headquarters site.
Sections that were audited included divisions such as the Secretarial Office and Corporate Strategy, and the Planning and Sales Divisions of each Business Group, and these have acquired ISO 14001 certification.

Environmental Risk Management

In keeping with its Core Policy on the Environment, the Company is ensuring periodic reviews of its environmental management systems and is working to prevent accidents through efforts geared toward preventing water, air, and other types of pollution. In addition, we have taken all necessary measures, including providing emergency-response education and training, in preparation for the occurrence of an accident.

Strict Adherence to Legal Standards

In keeping with NGK's Core Policy on the Environment, each of our plants is working to achieve strict adherence to relevant legal restrictions as well as environmental categories that have been agreed upon with supervising government agencies. Furthermore, NGK forms pollution-prevention agreements with local government bodies where NGK's business sites are located, and implements independent measures to prevent pollution in accordance with autonomous standards that are even more stringent than legal restrictions.

On February 7, 2005, within the 2004 financial year, a fire broke out from one modular battery that was undergoing voltage testing at the NAS® battery factory at the Komaki Plant. A fast response meant that no atmospheric or water pollution, nor any other impact on the environment, was found. Reports were made to Aichi Prefecture and the cities of Komaki and Kasugai, and an accident investigation committee convened. When this had established the cause of the fire and implemented suitable countermeasures, a report was submitted to the Fire and Disaster Management Agency.

Additionally, harmful substances in excess of environmental standards were detected in the soil on the premises of NGK Printer Ceramics Co., Ltd., a Group company which produces electronic products, and a notification was sent on April 19, 2004 to Aichi Prefecture and the city of Komaki, and appropriate measures were taken.

Training for Emergencies

In preparation for an emergency, each of our business sites implements education and training based on an annual plan, with the aim of minimizing the spread of pollution in the event of an accident. In 2004, we carried out emergency-response education and training. This included emergency training in response to abnormalities in water quality, acid-washing effluent treatment facilities, and final effluent treatment plants.

Education and Training Performance **(2004)**

Month implemented	Objective	Participants	No. of people
7	Nagoya photochemical smog emergency response training	Firing kiln and safety personnel	18
8	Komaki photochemical smog emergency response training	Firing kiln, boiler, and safety personnel	10
9	Chita Metal Plant bag filter atmospheric emission emergency response training	Construction personnel	25
9	Komaki abnormal water quality emergency response training	Water quality, construction, and safety personnel	25
9	Nagoya abnormal water quality emergency response training	Water quality, construction, and safety personnel	8
9	Chita abnormal acid-washing effluent treatment emergency response training	Construction personnel	5
11	Nagoya exhaust processing facility emergency response training	Firing kiln, construction, and safety personnel	6
12	Chita final effluent treatment plant water quality emergency response training	Water quality personnel	4
12	Chita spray dryer atmospheric emission emergency response training	Construction personnel	3

Major content: Training in notification and communication in the event of an emergency
Acquisition of emergency response skills, and identification of problem areas through training

Employee Education and Development

To protect the Earth's environment, it is absolutely vital for each individual employee to deepen his or her understanding of environmental issues and make conscious efforts to protect the environment. One of NGK's action guidelines under its Core Policy on the Environment is to carry out educational and public-affairs activities in order to raise environmental awareness among employees. Thus, NGK continuously implements a wide array of environmental education and development activities.

Company-wide Education

At our plants, we offer education in environmental management systems to ensure that employees understand environmental policy and work to follow it. In addition, we distribute Environment Cards, on which environmental targets for each division are listed, and each person records environmental declarations and strives to raise his or her awareness regarding the environment.

Environmental Education Performance **(2004)**

Month implemented	Contents of training	Participants	No. of people
7 - 9	EMS education at each site (manual revision)	All departments	All
11	Advance education for internal auditors	Internal auditors	23
12	Education in environmental law and regulation	Environment managers at Group companies	17
12	Education in environmental law and regulation	Nagoya Plant	49
12	Internal auditor training program	Personnel scheduled to become environmental managers	28

Obtaining Various Qualifications

To continually improve the content and implementation of environmental protection activities based on the environmental policy, we are focusing on cultivating staff members who possess the necessary legal qualifications – including those for pollution control manager, energy manager, and certified environmental measurer – for the operation of each business site.

Number of Employees with Environment-related Qualifications **(as of March 31, 2005)**

Qualification		No. of people	Qualification	No. of people
Senior pollution control manager		3	Energy manager	13
Pollution control manager	Air	57	Certified environmental measurer	5
	Water	102	Heat manager	8
	Noise	41	Specially controlled industrial waste manager	3
	Vibration	19	Interim waste disposal controller	5
	Dust	3	Final waste disposal controller	3
	Dioxins	10		

Environmental Accounting

In 1999, NGK introduced environmental accounting as an important measure of environmental management, and as a tool for managing and ascertaining the state of its environmental conservation activities.

In 2004, this covered costs and economic effects (for NGK and domestic Group companies), and environmental conservation effects (non-consolidated).

Analysis and Use of Tabulated Results

Environmental Costs

In 2004, the environmental costs of NGK and its consolidated domestic Group companies increased approximately ¥60 million from 2003, to ¥3.36 billion. This figure included capital investment of ¥840 million (¥120 million less than in 2003) and ¥2.53 billion for expenses (¥180 million more than in 2003). Of these, NGK costs comprised ¥2.79 billion, approximately 83% of the total, with the total for domestic Group companies at ¥570 million.

Capital investment related to the conservation of the global environment within NGK and its consolidated domestic Group companies was approximately double that of 2003. This was as a result of both the introduction of energy-saving equipment such as fast dryers and firing kilns in NGK, and of investment in energy savings, which included fuel conversion for kilns, as well as increased efficiency in air conditioners in domestic Group companies.

Expenses rose due to increases in the expenses for energy-saving activities and the upkeep and administration of environmental-conservation facilities at NGK, coupled with a rise in expenses related to increased planned yield and such sustainable-resource activities as promotion of recycling in domestic Group companies.

Environmental Conservation Effects and Economic Effects

To determine these effects, we have calculated and published both the "environmental conservation effect" and the "economic effect." NGK has satisfied all relevant pollution prevention-related standards, and has not been cited for any incidents of violations. Total CO_2 emissions decreased by 0.1% over 2003, stopping their rise of recent years; the amounts of by-products sent for outsourced processing was reduced by 63%; and there was a dramatic increase in the recycling rate from 74% to 92%. The direct non-consolidated economic effect of environmental protection measures was ¥620 million.

The economic effect arose from energy savings and income from the sale of by-products comprised a significant ratio of this, and came to an increase of ¥80 million over 2003.

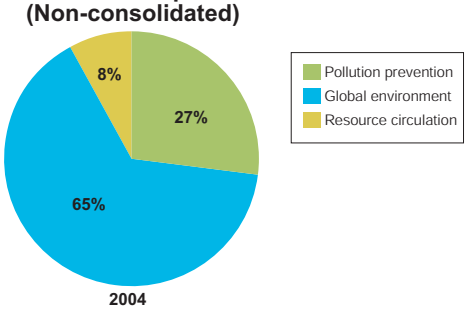
The economic effect for domestic Group companies was ¥330 million, a ¥70 million decrease over 2003, with the main causes for this being a decrease in income from the sale of by-products.

Environmental Accounting Results (Consolidated) (Figures in parentheses are for non-consolidated results) (million yen)

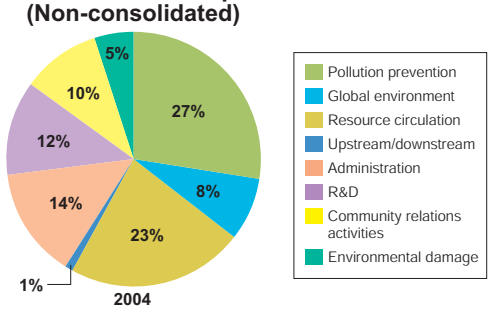
Cost		Capital investment				Expenses				Total			
		2003		2004		2003		2004		2003		2004	
Business area costs	Pollution prevention costs	476	(470)	206	(191)	576	(537)	617	(580)	1,052	(1,007)	824	(772)
	Global environment costs	280	(273)	567	(452)	128	(122)	184	(169)	408	(395)	751	(621)
	Resource circulation costs	171	(158)	55	(53)	599	(488)	682	(475)	770	(646)	737	(528)
	Total	927	(901)	828	(696)	1,303	(1,147)	1,484	(1,225)	2,230	(2,048)	2,313	(1,921)
Upstream and downstream costs		0	(0)	0	(0)	20	(20)	24	(18)	20	(20)	24	(18)
Administration costs		2	(0)	4	(0)	411	(311)	417	(287)	413	(311)	420	(287)
R&D costs		24	(24)	2	(0)	347	(346)	255	(251)	371	(370)	257	(251)
Community relations activity costs		4	(4)	0	(0)	244	(210)	240	(213)	248	(214)	240	(213)
Environmental damage costs		0	(0)	0	(0)	20	(6)	106	(105)	20	(6)	106	(105)
Total		957	(929)	835	(696)	2,345	(2,040)	2,525	(2,098)	3,302	(2,969)	3,359	(2,794)

Notes: Definition of Environmental Costs and Tabulation Methods: Environmental protection costs are categorized in accordance with guidelines set by the Japan Ministry of the Environment. For domestic Group companies, the figures for 13 manufacturers were calculated.
Expenses for the development of such environemtally conscious products as water and sewage treatment equipment would naturally be incurred in the Company's normal business activities; these expenses are not included in the calculations.

Environmental Cost Capital Investment (Non-consolidated)



Environmental Cost Expenses (Non-consolidated)



Environmental Conservation Effects (Non-consolidated)

Effect	Category	Environmental conservation effects 2003	Environmental conservation effects 2004	Effects
Business area effects	Pollution prevention	Superior to standards; Number of violations: 0	Superior to standards; Number of violations: 0	—
	Volume of CO_2 emissions (tons-CO_2)	165,578	165,463	Decrease of 0.1% over 2003
	Volume of by-products generated (tons) Volume of by-products recycled Volume of outsourced disposal	16,160 11,949 4,211	19,258 17,680 1,579	Amount generated: Increase of 19% Recycling rate: Increase of 18 percentage points Amount outsourced: Decrease of 2,632 tons (63%)
	Volume of water consumed (10,000 m^3)	179	162	Reduced consumption by implementing water leakage countermeasures and installing water conservation facilities
Other	ISO-related	Acquisition of ISO certification at headquarters divisions, and introduction of the "Positive Environmental Effect Evaluation System"* to headquarters divisions in order to promote		—

* Positive Environmental Effect Evaluation System: NGK system in which positive effects contributing to the reduction of the impact on the environment of R&D, design, or administrative themes are evaluated and those which are highly evaluated are followed up on by those responsible for environmental management

Economic Effects (Non-consolidated)

Category	2003 Economic effects (¥ million)	2003 Reduction volume	2004 Economic effects (¥ million)	2004 Reduction volume
Energy conservation*1	228.9	12,080 tons-CO_2*2 (8,238 t- CO_2 in a single year)	290.3	21,682 tons-CO_2*2 (9,602 tons-CO_2 in a single year)
Resource conservation (water)	0.25	800m^3 (City water)	0.40	4,700 m^3 (Industrial water)
Resource conservation (raw materials)	118.1	550 tons (Increased reuse rate for the material, etc.)	107.9	703 tons (Increased reuse rate for the material, etc.)
Resource conservation (packaging)	40.4	(Shipping containers, returnable pallets)	38.7	(Shipping containers, returnable pallets)
Reduction in outsourced processing of by-products	63.3	4,456 tons	18.9	4,815 tons
Income from sale of by-products	82.3	9,991 tons	159.6	11,759 tons
Total	533.3	—	615.8	—

*1 Reduction in CO_2 emissions (806 tons-CO_2) due to purchase of Green Power not reflected in above.
*2 For reduction in CO_2 amounts, the life of depreciable assets is used as the time for developing the investment effect.

Economic Effects (Domestic Group Companies)

Category	2003 Economic effects (¥ million)	2003 Reduction volume	2004 Economic effects (¥ million)	2004 Reduction volume
Energy conservation*1	45.9	1,545 tons-CO_2	42.2	1,784 tons-CO_2
Resource conservation (water)	0.01	30 m^3	0.5	2,100 m^3
Resource conservation (raw materials)	4.8	240 tons	13.0	178 tons
Resource conservation (packaging)	5.3	—	5.0	—
Reduction in outsourced processing of by-products	18.6	386 tons	19.5	304 tons
Income from sale of by-products	328.3	983 tons	248.9	1,879 tons
Total	402.9	—	329.0	—

Notes: a. Costs are calculated by the difference from 2003, achieved by progressing with activities regarding energy conservation, resource conservation, and by-product reduction
b. Economic effects have been calculated independently
c. The following values are used to calculate economic effects:
- Energy conservation: Unit price of electrical power at each business site (ex. Nagoya Plant: ¯14.6/kWh, Chita Plant: ¯13.8/kWh, Komaki Plant: ¯17.2/kWh)
- Resource conservation (water): Unit price at each business site (ex. Nagoya Plant: ¯605/m^3)
- Resource conservation (raw materials): Unit price for each raw material
- By-product processing costs: Processing cost for each by-product (ex. ceramic material at Nagoya Plant: ¯8,500/ton)

Initiatives for the Future

Environmental accounting is an important indicator allowing NGK to promote environmental management and fulfill the company's social responsibilities with respect to the environment. In 2004, as well as increasing the usability of environmental accounting by calculating and tracking costs and effects on an operating division basis, we expanded the coverage of calculation from domestic Group companies (13 manufacturers) to include overseas Group companies (17 manufacturers).
The year 2005 is seeing us push ahead with our environmental accounting on an operating division basis, and we are working to further improve the usability of environmental accounting through trials of internal environmental accounting methods. Additionally, we plan to continue to implement and publish our calculations of costs and effects at domestic and overseas Group companies.

Environmental Activities Related to Design and Development

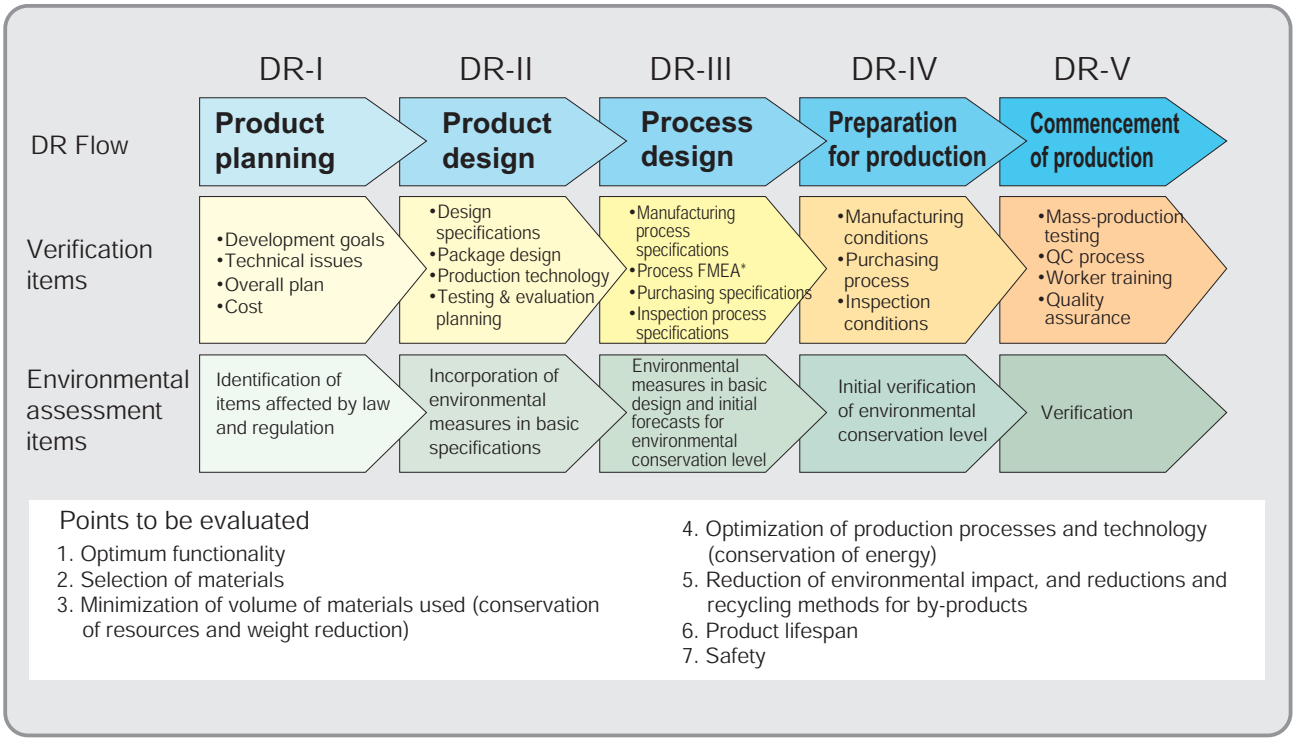
Current efforts

In 1998, NGK introduced the full-scale application of its Design Review (DR) process, which is aimed at minimizing the environmental impact in product design and manufacturing technologies.
We also began research into Life Cycle Assessment (LCA) to reduce the environmental impact of both manufacturing processes and products. We are continuing to reduce this environmental impact while developing business in ecology-related fields.

Design Review

To produce environmentally conscious products by forestalling potential problems at the design stage, all departments are involved in DR activities at each stage of development.
Under DR, assessment of such environmental aspects as reduction of CO_2 emissions and by-product processing are conducted at all stages, from product planning up through the launch of production. In addition to such conventional evaluation items as functionality, cost, and delivery date, DR activities also cover optimization of functioning along with production processes and technology, as well as selection and minimization of materials.
DR is intended to achieve environmentally aware product design and production, as well as addressing emissions of pollutants into the air and water, reduction and recycling of by-products in production processes.

DR Flow



Points to be evaluated

1. Optimum functionality
2. Selection of materials
3. Minimization of volume of materials used (conservation of resources and weight reduction)
4. Optimization of production processes and technology (conservation of energy)
5. Reduction of environmental impact, and reductions and recycling methods for by-products
6. Product lifespan
7. Safety

* FMEA: Failure Mode and Effects Analysis

Ceramic-membrane Water Purification Systems and Reductions in Environmental Impact

In the Lotus Pond at the venue of Expo 2005, NGK is carrying out verification testing of its water circulation systems that use a ceramic-membrane water purification system. NGK has been promoting the development and introduction of this type of water purification system as a new technology that can be used in place of the sand filtration that up to now has been the chief method for water purification.
The NGK ceramic membrane system has been widely adopted in the fields of medicine and food. In 1996, NGK applied this ceramic-membrane water purification system (having a diameter of 30 mm and length of 1,000 mm) to a municipal potable water purification system for the first time in Japan. Furthermore, in 2000, the Company developed a large ceramic membrane (diameter 180 mm, length 1,000 mm, total membrane area 15 m^2) that has an internal-pressure, monolithic (honeycomb) structure with a nominal pore size of 0.1 μm. Using this filtration system, suspended substances, bacteria, and protozoa such as *Cryptosporidium* in the raw water can be completely removed.
Additionally, NGK's water purification systems offer many advantages from an environmental perspective when compared with other membrane purification systems under typical conditions.

These include:
1. CO_2 emissions derived from energy use can be reduced by more than 30% because the frequency of backwashing*1 can be decreased to less than one-third and no power for circulation is required (dead-end filtration method).*2
2. The ceramic membrane has a longer life because of no deterioration due to chemical substances, heat, or pressure.
3. Used membranes can be recycled as a ceramic raw material.

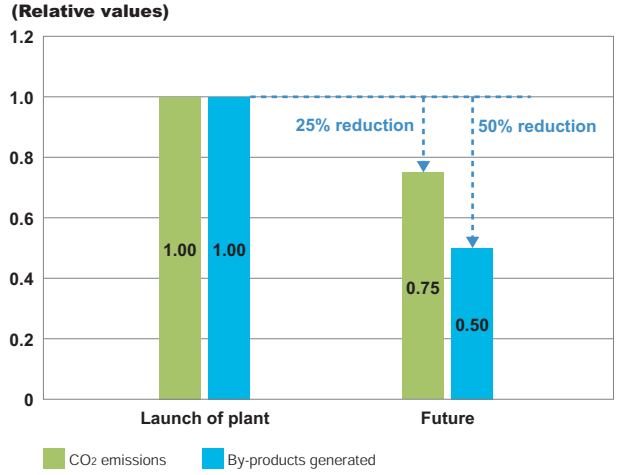
This new system has drawn attention because its long product life cycle results in low environmental impact. Recently, as a member of a joint venture, NGK has been commissioned by Fukui Prefecture for the largest membrane water purification facility in Japan (using 1,800 membrane elements). Construction is proceeding, with completion in 2006 planned.
NGK established a volume-production plant for ceramic-membrane elements in Gifu Prefecture in anticipation of an increase in demand, and production started in 2003. At the time of the switchover to volume production, we carried out an LCA analysis of the environmental impact of production processes (CO_2 emissions and by-products) in order to reduce the impact during full production. The following graph shows the results of LCA analysis. The graph shows that we are able to reduce CO_2 by 25% and by-products by 50%. Accordingly, while producing products, we are working at carrying out continuous improvements in our production technology and at reducing the environment impact caused by our production.

The first large-scale ceramic membrane water purification system ordered, by the Tokyo Bureau of Waterworks in July 2001

*1 Backwashing: Water is fed from the filtrate side to the raw-water side and the membrane is washed to prevent the membrane from fouling.
*2 Dead-end filtration method: There are two filtration methods, namely cross-flow filtration and dead-end filtration. The former circulates the raw water in parallel to the membrane surface, and filtrates some of the water. The latter method can filtrate all raw water, and so circulation power is unnecessary.

Large ceramic membrane

Environmental impact from the production of ceramic membranes



CO_2 Emissions Reductions

Current Activities and Targets

February 2005 saw the coming into effect of the Kyoto Protocol, an international framework designed to promote measures to counter global warming. Under this, Japan is officially required to reduce emissions quantities of greenhouse gases to 6% below 1990 levels, and this will require increased efforts from business, citizens, and government.

NGK produces a large range of ceramic products, which means that we must use firing processes that burn city gas, petroleum, and other high-carbon fossil fuels, and emissions of CO_2 are unavoidable. Additionally, we use a large amount of commercial power in the development and manufacture of new products, and this tends to contribute towards an increase in the amounts of CO_2 derived from electrical power. In order to fulfill our social responsibilities as regards preventing global warming, we need to take measures from a range of perspectives, including promoting measures to improve production processes and strengthen management, and to develop technologies having a low environmental impact. Given this, in 2004, we formulated medium- and long-term plans to reduce total CO_2 emissions, and have launched an energy-reduction system across all sections of the company in order to contribute towards the prevention of global warming. As a result, in spite of an increase in production levels for 2004, the gradual upwards trend in energy usage was halted, with an approximate 10,000 ton-CO_2 reduction in CO_2 produced (equivalent to that generated from the increased business). Total emissions quantities were kept to within 2003 levels. This bettered the targets in the plan, and we have made a solid first step forward towards the implementation of even more aggressive reduction measures in the future.

Reduction in total CO_2 emissions Medium- and long-term plans (2004 to 2010)		
	Medium-term targets	**Change in 2006 over 2003: 0%**
	Long-term targets	**Change in 2010 over 1990: 7% decrease**

Long-term Schedule for CO_2 Emissions Reductions

Item		2004	2005	2006	2007	2008	2009	2010
Overall company targets			Medium-term goals		0% change from 2003		Long-term goals	7% reduction from 1990
Improvements in technologies and facilities	Introduction of faster firing technology in tunnel kilns							
	Process improvements (reducing of firing time)							
	High-efficiency production system							
	Kiln energy conservation (regenerative burners)							
	High-temperature waste heat recovery (waste heat boilers)							
	Low-temperature waste heat recovery (waste heat boilers, absorption refrigerators)							
	Cogeneration							
	Energy conservation in clean rooms and office buildings							
Introduction of new technologies	Advanced use of waste heat, improvements in furnace heating methods							
Improvements in management	Improvements in operational methods, strengthening of energy management							
Introduction of environmental assessment methods (LCA)								
Purchase of new types of energy (Green Power)								

Changes in CO_2 Emissions

Non-consolidated

Total CO_2 emissions in 2004 reached approximately 166,000 tons-CO_2, remaining unchanged from 2003. While production of HONEYCERAM®, diesel particulate filters (DPFs), and NAS® batteries rose, resulting in increased CO_2 emissions, measures such as improvements in production technologies, increased efficiency in facilities, and strengthened energy management achieved an approximately 10,000 ton-CO_2 reduction in CO_2 emissions, offsetting this increase from production. This is the first year since 1990 (the base year) that we have been able to keep emissions the same as the previous year's levels while still increasing production.
To strengthen management of CO_2, in 2004 we established medium- and long-term targets based on emissions quantities instead of the basic units that were formerly used (total amounts/sales). In particular, we are implementing more thorough planning, measures, and follow-up for reductions, and are introducing a management method in which increases and decreases in emissions are managed separately.

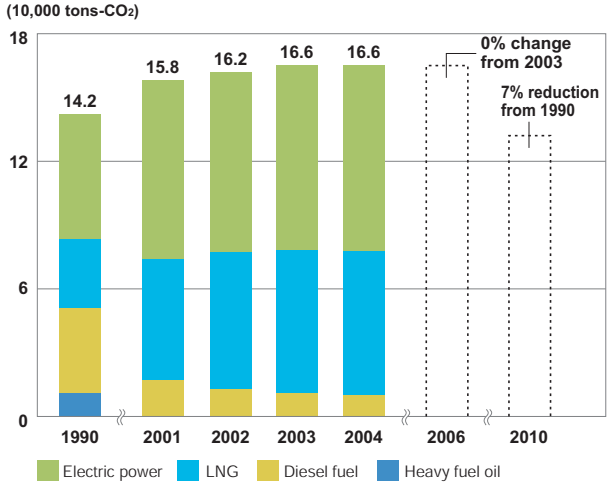
Domestic and Overseas Group Companies

CO_2 emissions by domestic Group companies were 64,000 tons-CO_2, a level similar to that in 2003. A breakdown of CO_2 emissions by fuel shows that the most significant sources were electricity and liquid petroleum gas (LPG), in the same way as in 2003.

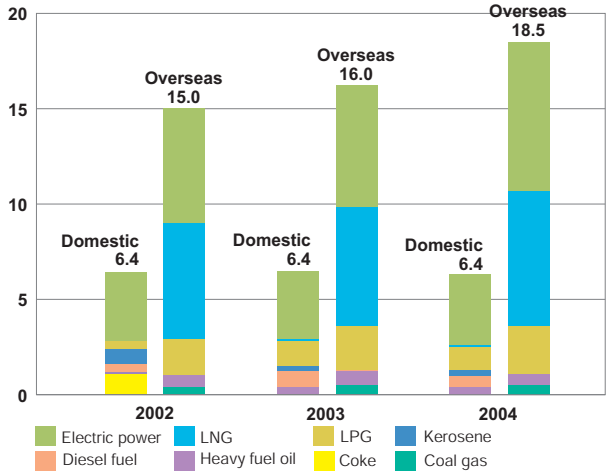
Emissions by overseas Group companies were 185,000 tons-CO_2, resulting in a 25,000 ton-CO_2 increase over 2003. This was as a result of increased production of HONEYCERAM® and diesel particulate filters (DPFs).

A breakdown by fuel type shows the majority of emissions were from electricity, LNG, and LPG, all of which offer relatively low CO_2 emissions.

Changes in CO_2 Emissions (Non-consolidated)



Changes in CO_2 Emissions (Domestic and overseas Group companies)



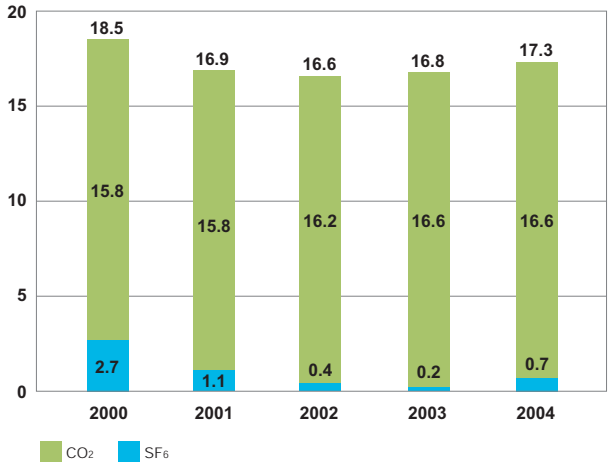
Note: The CO_2 conversion factor for years prior to 2003 has been changed.
Asahi Tec has been excluded from 2002 results for comparison with 2003.

Changes in Greenhouse Gas Emissions (Non-consolidated)

Of the greenhouse gases* emitted by NGK, CO_2 from the burning of fuel and from SF_6 insulating gas accounted for nearly 100% of total emissions. SF_6 is used in the production processes of power-related products (gas bushings); however, we have installed facilities for its recovery to curb emissions, aimed at preventing global warming. The year 2004 saw an increase in the production of gas bushings, with an attendant increase in emissions of SF_6.
We continue to work towards curbing emissions of SF_6 by implementing measures such as increases in the efficiency of recovery facilities.

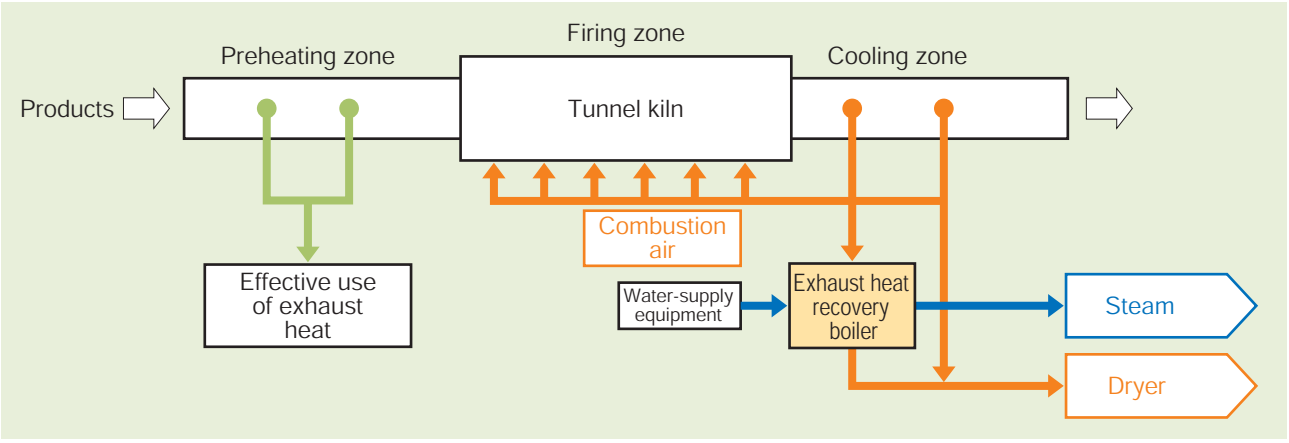
* Greenhouse gases: gases that trap thermal radiation reflected from the surface of the Earth, thus resulting in a "greenhouse effect" wherein the overall temperature of the Earth increases. Carbon dioxide (CO_2), methane (CH_4), dinitrogen monoxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) are designated as greenhouse gases. The greenhouse effect of SF_6 is approximately 24,000 times as strong as that of CO_2.

Amount of Greenhouse Gas Emissions



Effective Use of Firing Kiln Waste Heat

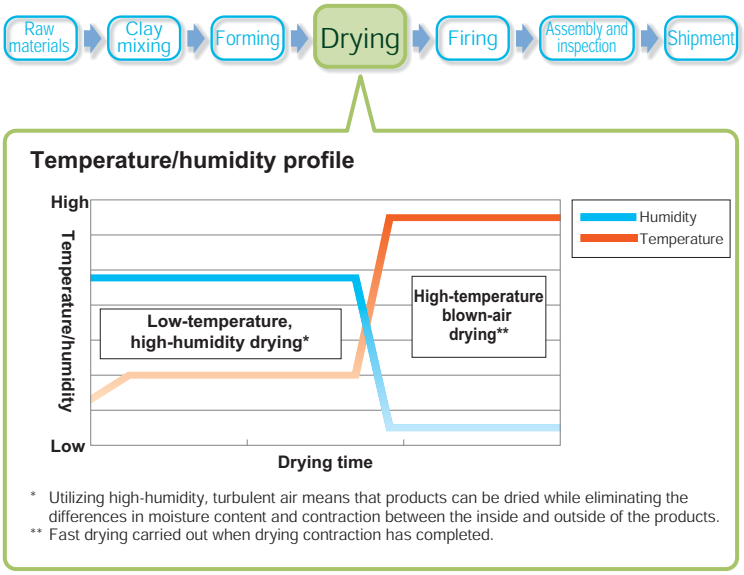
The Chita insulator plant uses tunnel kilns for firing products. For efficient energy usage during the production process as a whole, in 2004 the Company carried out energy-saving modifications to reuse the high-temperature waste heat recovered from the cooling zone in the production of steam for other production processes and as combusion air for the kilns themselves. Furthermore, they implemented improvements to enable this to be used as air for heating in dryers.
The year 2005 will see the commencement of full-scale operation, and we anticipate a 900-ton reduction in CO_2 emissions. Furthermore, in 2005, we plan to recover waste heat from the preheating zone for use in ventilation and in producing steam. In the future, we will continue making further efforts in effective energy usage.



CO_2 Reductions by Using Fast Drying Technology

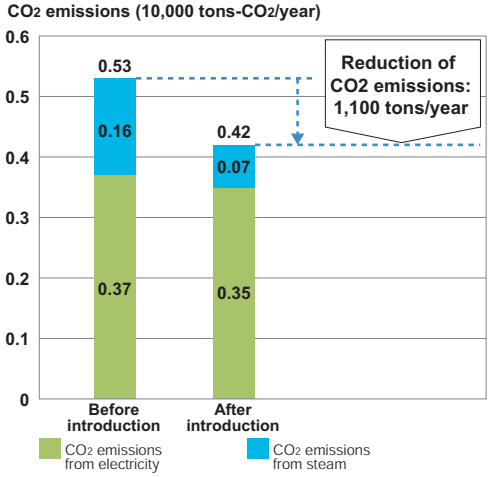
The Electrical Insulator Division has implemented what is called the Insulator Restructuring Project with the aim of strengthening competitiveness.
As one part of this project, in the drying process for formed insulators at the Chita Plant, we have abolished the electrical-current drying method, which dries fromed products from inside by applying current directly to the products, and have introduced humidity-control drying technology that uses high-humidity, turbulent air. This method drastically reduces the difference in moisture content between the inside and outside of the products, enabling high-temperature blown-air drying, and thus halves total drying time. We introduced this technology in 2004, and have thereby achieved a 1,100-ton reduction in CO_2 emissions.

Insulator production process



* Utilizing high-humidity, turbulent air means that products can be dried while eliminating the differences in moisture content and contraction between the inside and outside of the products.
** Fast drying carried out when drying contraction has completed.

CO_2 emissions in the insulator drying process



Energy Conservation Activities at the Chita Plant Win Award for Excellence

The energy conservation activities carried out by the Construction and Maintenance Department at the Chita Plant were awarded for excellence in their implementation of energy-saving measures by the Energy Conservation Center, Japan.
This was in recognition of the implementation of energy-saving activities that managed 2,000-MWh electricity savings over the period of a year at the Chita Plant. These savings were achieved by measures such as the consolidation of exhaust fans and the conversion of these to inverter control at three dust collection systems at the Metal Plant, and reductions in electricity usage and control of moisture in unattended clean rooms used for ceramic parts for semiconductor manufacturing equipment. These energy reductions were equivalent to 840 tons-CO_2 per year.

CO_2 reductions through improved management

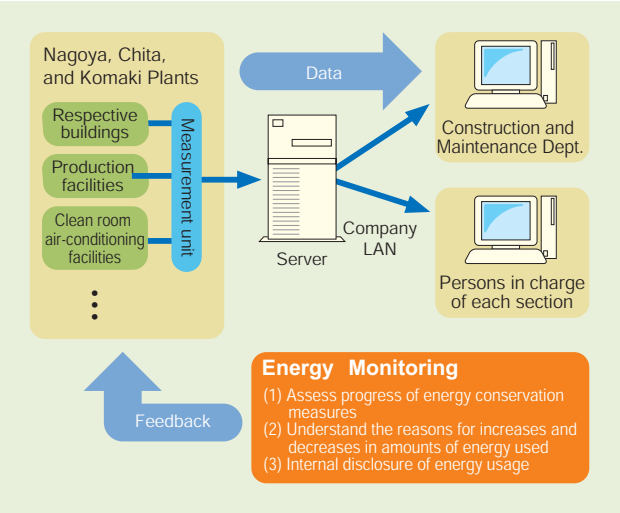
Expansion of the Monitoring System for Energy Amounts

In order to achieve more accurate energy management, in 2003 we started to monitor the energy amounts at a total of eight plants, including the Nagoya AC Plant. In 2004, coverage of monitoring was expanded to include the Nagoya Headquarters building and air compressors at plants.
An understanding of standard energy amounts in the headquarters building and production processes at plants enables energy conservation through appropriate energy management and energy reductions when these processes are not in use. In addition, overall system operation achieves efficient energy management.

Optimization of Clean Room and Building Air-conditioning Electricity Usage

Clean rooms in R&D buildings were previously scattered around the Nagoya Plant; therefore, consolidation of these achieved a reduction in the space that required air conditioning. Additionally, conversion of fans and pumps to inverter control has resulted in a reduction in the quantities of energy used. As measures regarding building air conditioning, information management division offices in the headquarters building have been integrated in order to consolidate and scale down air-conditioned computer rooms, and operational methods have been optimized, for example by stopping air-conditioner usage in spring and autumn. Furthermore, in technology buildings, operational methods have been optimized, including the introduction of demand controllers that halt external air conditioners in response to internal temperatures. These measures have in combination achieved electrical energy reductions equivalent to 740 tons-CO_2 per year.

Monitoring System for Energy Amounts



Initiatives for the Future

NGK is seeing an increase in energy consumption (CO_2 emissions) attributable to business expansion and development. Against this background, the Company has established new medium-term targets (0% increase in 2006 over 2003) and long-term targets (7% decrease in 2010 over 1990) aimed at simultaneous pursuit of cost reductions and prevention of global warming.
NGK is continuing with energy savings in production facilities and air-conditioning and lighting equipment, as well as improvements in production technologies and operations management.
Additionally, NGK is promoting more comprehensive energy management through compliance with the Energy Management Standards outlined by the Law Concerning Rational Use of Energy.
In addition to existing heat recovery and usage systems, we are studying more sophisticated technologies for efficient recovery and effective use of heat energy given off by ceramic firing kilns. Technologies and know-how that are then proven to be effective will be deployed at both domestic and overseas Group companies, thus contributing toward the control and reduction of greenhouse gas emissions from a global perspective.

Recycling and Reducing the Generation of By-products

Present activities and goals

Reducing quantities of by-products generated in business activities is an important issue in bringing about a recycling-oriented society. We are pushing ahead with recycling of by-products that can be reused as raw materials for other products, and we need to reduce the quantities of by-products that can not be reused, and that require disposal.
NGK has defined zero emissions as being a quantity of less than 1,000 tons per year that requires outsourced processing (solid materials: disposal into landfills, liquids: detoxification), and is making solid strides towards achieving this in 2005. As a result, although the total quantity of by-products increased in 2004, we managed a significant drop in the amount of outsourced processing, and we expect to achieve zero emissions for 2005.
In the future, we will further enhance our efforts to promote recycling, but we also need to continue working towards reductions in the amounts of by-products themselves. Consequently, starting from 2005, we established the RetBP-M30 Company-wide medium-term plan for the reduction of by-products. We have just taken our first steps in overall reductions of by-products generated.

Recycling targets	**2004 target: Reduce amount requiring outsourced processing by 80% compared to 2001 levels (1,400 tons)** **2005 target: Zero emissions (Outsourced processing: less than 1,000 tons)**
Company-wide medium-term plan for the reduction RetBP-M30	**2007 target: Reduce total amount generated by 15% compared to 2004** **2010 target: Reduce total amount generated by 30% compared to 2004** **•Continue with zero emissions** **•Cancellation of specification of plants for large quantities of industrial waste (2008 Chita and Komaki Plants)** **•Cancellation of specification of plants for large quantities of specially managed industrial waste (2008 Nagoya Plant)**

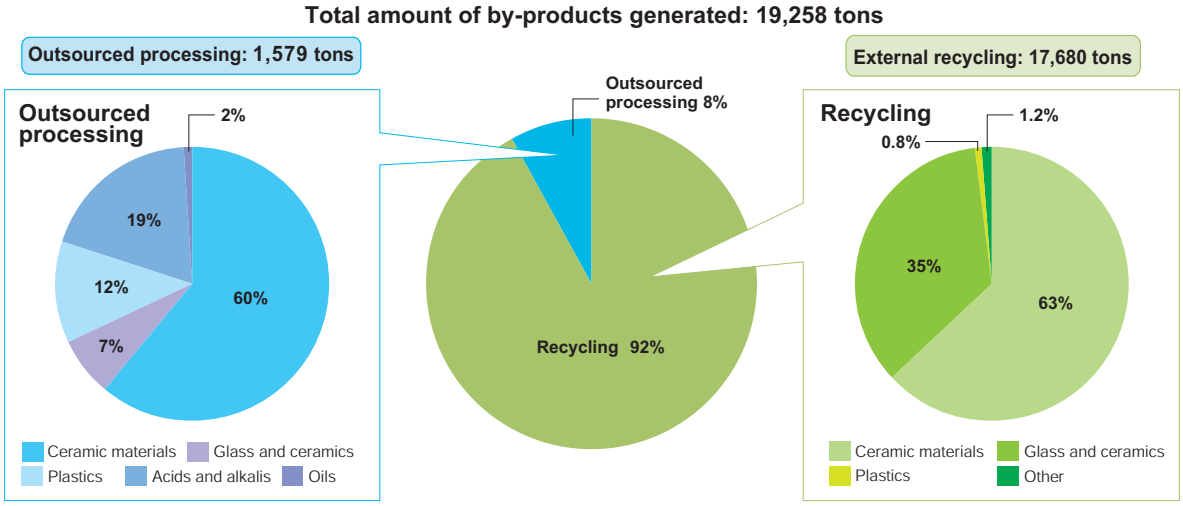
Long-term Schedule for Recycling

Item		2004	2005	2006	2007	2008
Effective by-product utilization	Outsourced processing reduction targets		Zero emissions		Continue with zero emissions	
	Total emissions reduction				15% reduction (from 2004)	
	Consideration and implementation of policies by division to reduce inherent inter-Group waste					
Production technology	Environmentally conscious production technology, environmental assessment					
	Development of elemental technologies					
Cancellation of specification of plants for large quantities of industrial waste and specially managed industrial waste						Cancel specification

Generation (Non-consolidated)

In 2004, the NGK production process generated a total of 19,258 tons of by-products, a 3,098-ton increase over 2003. However, the total amount of outsourced processing was 1,579 tons, and in spite of an increase in production of diesel particulate filters and NAS® batteries, and the like, we achieved a 2,631-ton reduction over 2003.
This significant reduction in outsourced processing was due to strengthened efforts in recycling ceramic materials and glass and ceramics generated in the production processes for insulators and HONEYCERAM®, and also due to establishment of a recycling system for metal acid-washing fluid.
Concurrent with this, the amount of by-products recycled was 17,680 tons for 2004, an increase of 5,731 tons over 2003's level, and the recycling rate rose from 74% in 2003 to 92% in 2004. As of 2005, we have nearly achieved zero emissions.

Recycling and Outsourced Processing (Non-consolidated)



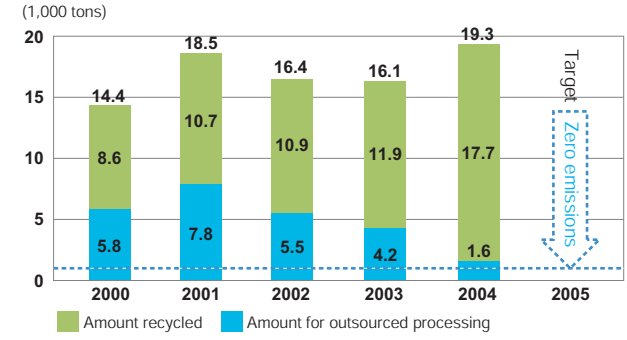
Recycling (Non-consolidated)

Many of the by-products from NGK production processes are ceramic materials, glass and ceramics, and acids and alkalis, and much of these can be recycled effectively. We are working to reuse ceramic materials, glass and ceramics in-house, and at the same time, these can be reused outside the Company as raw materials for porous ceramics, bricks, and refractories.

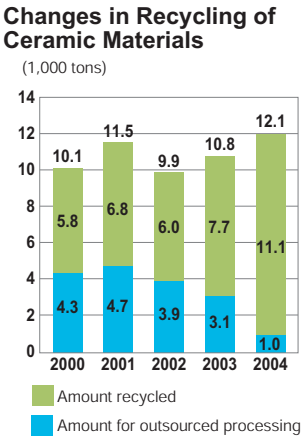
In 2004, as in 2003, we made great progress in furthering recycling of ceramic materials. Although the total amount of ceramic materials generated increased to 12,121 tons, a 1,389-ton increase over the 2003 level, quantities recycled also dramatically increased to 11,162 tons; the recycling rate also increased dramatically from 71% in 2003 to 92%, and the amount for outsourced processing decreased to 960 tons, a 2,122-ton decrease over 2003.

Additionally, we are still making great progress in recycling glass and ceramics, with our recycling rate reaching 98% in 2004. The amount of plastics generated has increased; however, the amount recycled has also increased, giving a slight increase in the recycling rate. Furthermore, we have implemented full-scale recycling of acids and alkalis.

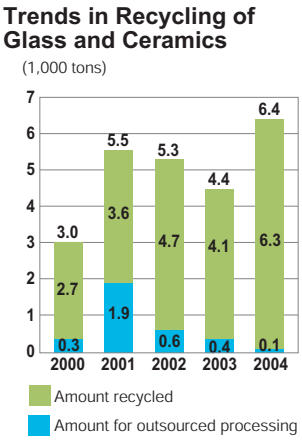
Trends and Targets in By-product Generation (Non-consolidated)



Changes in Recycling of Ceramic Materials



Trends in Recycling of Glass and Ceramics



Generation and Recycling of By-products (Non-consolidated)

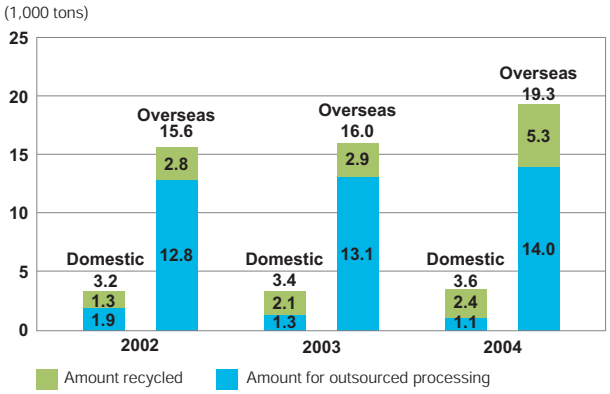
(tons)

By-product	2003			2004		
	Total generation	Recycled (Recycling rate)	Outsourced processing	Total generation	Recycled (Recycling rate)	Outsourced processing
Ceramic materials	10,732	7,650 (71%)	3,082	12,121	11,162 (92%)	960
Plastics	256	84 (33%)	173	320	136 (42%)	184
Glass and ceramics	4,446	4,090 (92%)	356	6,356	6,251 (98%)	105
Slag	45	45 (100%)	0	28	28 (100%)	0
Oils	101	82 (81%)	20	76	50 (66%)	26
Acids and alkalis	580	1 (0%)	580	358	54 (15%)	304
Total	16,160	11,949 (74%)	4,211	19,258	17,680 (92%)	1,579

Generation and Recycling (Domestic and Overseas Group Companies)

For 2004, total amounts of by-products generated were 3,551 tons for domestic Group companies and 193.18 million tons for overseas Group companies, and both of these figures have increased. However, recycling continued to expand in domestic Group companies from 2003, with recycling rates jumping from 62% to 69%. Recycling at overseas Group companies improved, increasing from 18% to 28%. A breakdown of by-product generation for domestic Group companies shows that glass and ceramics, and ceramic materials accounted for 80% of the total, followed by plastics at 12%. For overseas Group companies, glass and ceramics, followed by ceramic materials comprised most of the total.

By-product Generation (Domestic and overseas Group companies)



Note: Asahi Tec has been excluded from 2002 results for comparison with 2003.

Generation and Recycling of By-products (Domestic Group companies) (tons)

By-product	2003 (13 companies)				2004 (13 companies)			
	Total generation	Recycled	(Recycling rate)	Outsourced processing	Total generation	Recycled	(Recycling rate)	Outsourced processing
Ceramic materials	901	646	(72%)	255	1,099	800	(73%)	299
Plastics	408	111	(27%)	298	410	237	(58%)	174
Glass and ceramics	1,658	1,026	(62%)	632	1,743	1,132	(65%)	611
Slag	121	121	(100%)	0	41	41	(100%)	0
Oils	159	137	(86%)	22	135	125	(92%)	11
Acids and alkalis	104	31	(29%)	74	110	99	(90%)	11
Other	16	7	(47%)	8	13	5	(38%)	8
Total	**3,368**	2,079	(62%)	1,289	3,551	2,438	(69%)	1,114

Generation and Recycling of By-products (Overseas Group companies) (tons)

By-product	2003 (16 companies)				2004 (17 companies)			
	Total generation	Recycled	(Recycling rate)	Outsourced processing	Total generation	Recycled	(Recycling rate)	Outsourced processing
Ceramic materials	4,126	69	(2%)	4,057	5,863	914	(16%)	4,949
Plastics	389	36	(9%)	353	552	96	(17%)	456
Glass and ceramics	10,851	2,710	(25%)	8,141	12,235	4,120	(34%)	8,115
Slag	235	20	(9%)	215	259	135	(52%)	123
Oils	123	77	(63%)	46	79	65	(82%)	15
Acids and alkalis	233	0	(0%)	233	286	3	(1%)	283
Other	17	6	(35%)	11	44	5	(11%)	39
Total	15,974	2,918	(18%)	13,056	19,318	5,338	(28%)	13,980

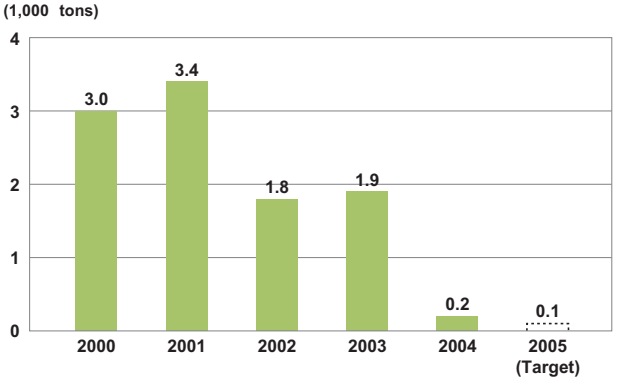
Note: NGK Ceramics Polska Sp. z o. o. has been included in the 2004 consolidated totals.

Activities to Reduce Outsourced Processing

Nagoya AC Plant

At the Nagoya AC Plant, ceramic materials that are generated in the production of HONEYCERAM® and diesel particulate filters comprise approximately 80% of the total quantity of outsourced processing. Instead of disposing of these materials, we have been finding new applications in which they can be reused, such as having external companies use these as roadbed and horticultural materials. In addition to these efforts, although ceramic materials generated in the forming process were previously disposed of in landfills, we are now working at reusing these in our own operations. As a result, the amount for outsourced processing has been reduced to 10% of 2003 levels.

Changes in Quantities for Outsourced Processing (Ceramic materials)



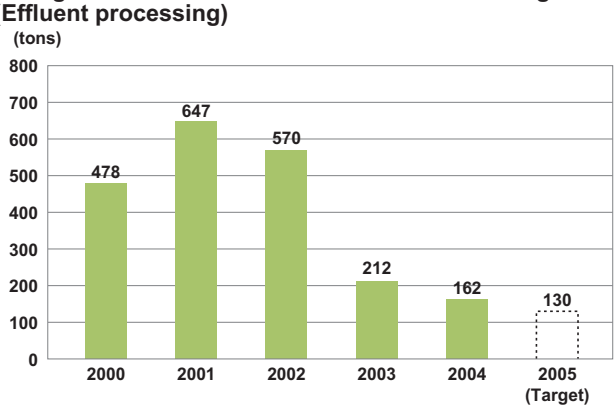
Chita Metal Plant

At the Chita Metal Plant, the washing fluid (nitric acid) used in the washing process for finishing beryllium-copper strips was considered effluent, and externally processed. By changing over to chemical polishing that can return the fluid to the washing process and reusing this fluid, as of autumn 2003 we have been able to dramatically decrease the amounts that are externally processed. There are no other examples of manufacturers making this switchover from acid washing to chemical polishing in finishing beryllium-copper strips.
Additionally, the use of chemical polishing fluid means that copper sulfate crystals form in the cleaning tank, and so in 2003 we established copper sulfate recovery facilities adjoining the washing line. This makes effective use of the recovered copper sulfate as a source of copper.


Copper sulfate recovery equipment


Washing equipment using chemical polishing fluid

Changes in Quantities for Outsourced Processing (Effluent processing)



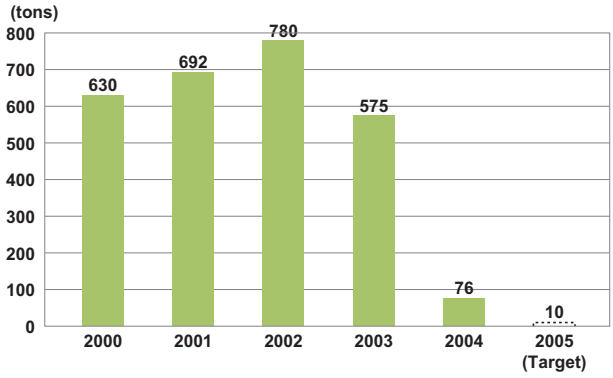
Komaki Insulator Plant

At the Komaki Plant, most of what is disposed of in landfills is cement ceramic materials produced in the insulator factory. In order to reduce this amount, usage of reusable cement is required. Consequently, the portland cement that is used in the insulator assembly process was replaced with alumina cement in the autumn of 2003, and full-scale operation using this commenced in spring 2004.
As a result, quantities that were externally processed in 2003 were reduced by approximately 200 tons from in 2002, and in 2004, we achieved a further 500-ton reduction. Cement ceramic materials are stored in the stockyard and dried naturally, and are then reused as a raw material for cement. This means that in 2005, we expect that nearly 100% of the materials will be recycled.


Surplus cement is generated in the insulator assembly process


Natural drying of cement ceramic materials in stockyard

Changes in Quantities for Outsourced Processing (Cement)



Initiatives for the Future

To achieve our goal of zero emissions by 2005, we are continuing our efforts focusing on increasing recycling rates of by-products. We will continue to follow up on our 2005 plans, and in addition to responding to any new issues in a timely manner, once we have achieved our 2005 goals of zero emissions, we will work toward limiting the overall amounts of by-products that are generated.

Consequently, we have put into effect the RetBP-M30 Company-wide medium-term plan for overall reductions. We are striving towards meeting the goal of a 30% reduction by 2010 over 2004 levels.
Additionally, in 2005, we are investigating common targets for both domestic and overseas Group companies with the aim of increasing cooperation.

Management of Chemical Substances

Present activities and goals

NGK observes applicable laws and regulations such as the PRTR law* enacted in January 2001, which governs the appropriate management of chemical substances. In addition, the Company is continuing its measures to minimize the environmental impact derived from chemical substances. These measures include development of management systems for enhanced handling of chemical substances, thorough control of emissions into the environment and the development and application of technologies for stabilization and detoxification of PRTR-listed substances under the direction of the newly established Chemical Substances Committees for each plant, and full-scale investigation and employment of alternatives to harmful chemical substances.
As a visible result of this, we achieved our targets for the release of PRTR-listed solvent emissions into the atmosphere in 2003, and in 2004 we kept emissions to below 10% of 2000 levels.
However, as operations overseas have expanded, we are increasingly called upon to respond appropriately to the restrictions on chemical substances in the EU and other overseas markets that are growing ever more strict. Accordingly, the NGK Group is working in concert to further augment efforts to this end both in Japan and overseas, including thoroughgoing control of chemical substances in the processes of procurement, development, and production.

Reduction Target for Chemical Substances	2005 target: Reduce atmospheric solvent emissions to below 20% compared to 2000 levels **Targets achieved in 2003, and in 2004, Kept to below 10% of 2000 levels**

*PRTR Law: Abbreviation of the Pollutant Release and Transfer Register Law

Long-term Schedule for Management of Chemical Substances

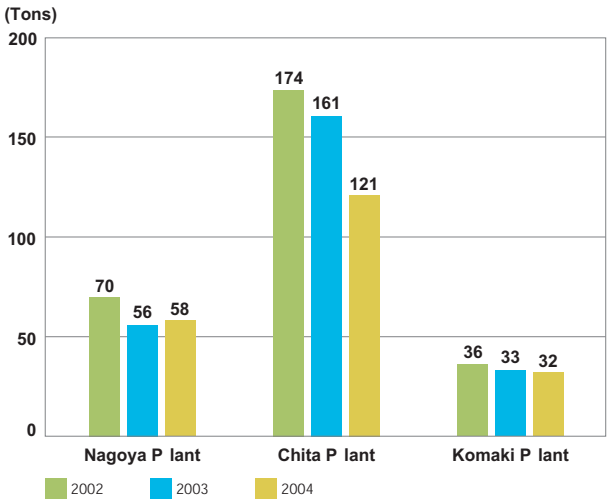
Item		2000	2001	2002	2003	2004	2005
Construction of a management framework	Building of a unified chemical substance management system						
	Chemical Substance Safety Committee						
Compliance with PRTR Law	Reduction target					Target achieved in 2003	
					Reduce atmospheric solvent emissions to below 20% of 2000 levels by 2005		
	Careful consideration of quantity used and promotion of recycling						
	Consideration of stabilization and detoxification methods						
Compliance with new regulations	Law Concerning Special Measures Against Dioxins and Polychlorinated-biphenyl (or PCB) Waste						
	EU regulations						
	Regulations in Aichi Prefecture and Nagoya City						
	Risk communication						

Handling of PRTR-listed Substances (Non-consolidated)

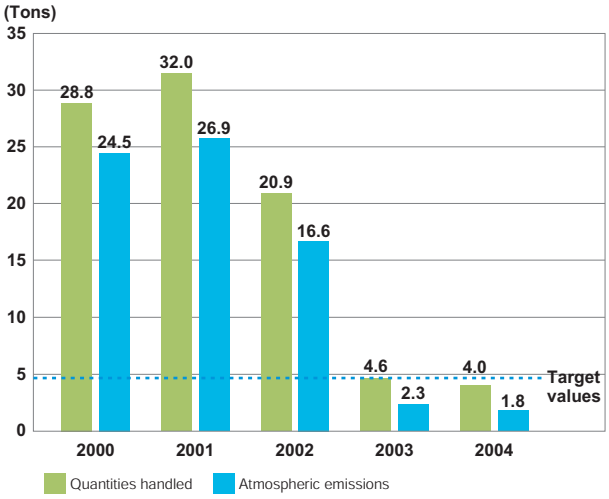
The PRTR Law specifies 354 Class 1 Designated chemical substances. Among them, NGK handled 61 substances in its Company-wide operations in 2004, for the total amount of 210 tons, a 40-ton, 16% reduction from 2003. This reduction in the total amount handled is as a result of appropriate purchasing and management of all chemical substances handled by NGK, including raw materials, fuel, coating materials, and chemicals, in line with both improved chemical management systems, and increased management consciousness.

Broken down by plant, the Nagoya Plant handled approximately 58 tons of 49 substances, a two-ton increase over 2003; the Chita Plant approximately 121 tons of 42 substances, a 40-ton decrease over 2003; and the Komaki Plant approximately 32 tons of 24 substances, a one-ton decrease over 2003.
We have achieved definite reductions Company-wide in the amounts of PRTR-listed substances handled in recent years, and we will continue in our stringent and effective handling of chemical substances.

Amounts of PRTR-listed Substances (Non-consolidated)



Changes in Quantities of Solvents* Handled and Atmospheric Emissions (Non-consolidated)



Solvents: Toluene, xylene, dichloromethane, etc.

Amounts of PRTR-listed Substances Handled, Released, and Transferred (Non-consolidated)

(tons)

Production site	Substance	2004						
		Amount handled	Amount released				Amount transferred	
			Atmosphere	Water	Soil	Landfill	Sewage	Outside
Nagoya Plant	Toluene	17.32	0.20	0.00	0.00	0.00	0.00	0.04
	Formaldehyde	10.17	0.69	0.00	0.00	0.00	0.00	0.00
	Xylene	9.39	0.17	0.00	0.00	0.00	0.00	0.75
	Acetaldehyde	5.65	0.16	0.00	0.00	0.00	0.00	0.00
	Ethylene glycol	5.01	0.00	0.00	0.00	0.00	0.05	4.94
	Hydrogen fluoride and its water-soluble salts	4.60	1.83	0.00	0.00	0.00	0.00	0.06
	Ethyl benzene	1.80	0.03	0.00	0.00	0.00	0.00	0.00
	Nickel compounds	1.71	0.00	0.00	0.00	0.00	0.05	1.32
	Benzene	0.68	0.02	0.00	0.00	0.00	0.00	0.00
	Total	57.85 (49 substances)	3.20	0.00	0.00	0.00	0.13	7.71
Chita Plant	Beryllium and its compounds	45.60	0.00	0.00	0.00	0.06	0.00	0.12
	Nickel	35.11	0.00	0.00	0.00	0.42	0.00	0.09
	Cobalt and its compounds	11.36	0.00	0.00	0.00	0.19	0.00	0.03
	Manganese and its compounds	10.70	0.00	0.09	0.00	0.00	0.00	0.00
	Chrome and trivalent chrome compounds	7.35	0.00	0.00	0.00	0.00	0.00	0.00
	Copper water-soluble salt	4.75	0.00	0.03	0.00	0.00	0.00	4.73
	Antimony and its compounds	1.49	0.00	0.00	0.00	0.00	0.00	0.02
	Hydrogen fluoride and its water-soluble salts	1.18	1.17	0.00	0.00	0.00	0.00	0.00
	Toluene	1.03	0.58	0.00	0.00	0.00	0.00	0.43
	Dioxins	-	0.0213 mg	0	0	0	0	0.0155 mg
	Total	120.69 (42 substances)	2.25	0.14	0.00	0.67	0.00	6.33
Komaki Plant	Bisphenol-A epoxy resin (polycondensation polymer of 4,4'-isopropylidenediphenol and 1-chloro-2,3-epoxypropane)	13.60	0.00	0.00	0.00	0.00	0.00	0.14
	Manganese and its compounds	7.07	0.00	0.02	0.00	0.00	0.00	0.03
	Chrome and trivalent chrome compounds	4.11	0.00	0.00	0.00	0.00	0.00	0.07
	Antimony and its compounds	3.00	0.00	0.02	0.00	0.00	0.00	0.36
	Cobalt and its compounds	1.49	0.00	0.01	0.00	0.00	0.00	0.12
	Nickel compounds	0.57	0.00	0.00	0.00	0.00	0.00	0.07
	Total	31.91 (24 substances)	0.94	0.05	0.00	0.00	0.00	1.04
	Grand total	210.45 (61 substances)	6.39	0.19	0.00	0.67	0.13	15.09

Note: Dioxins are subject to be notified as they are generated at special facilities.

Handling of PRTR-listed Substances (Domestic Group companies)

In 2004, the total amount of PRTR-listed substances handled was 126 tons, an 8-ton reduction from 2003.
Eight companies provided notification to the government for a total of nine PRTR-listed substances, down from ten substances in 2003.

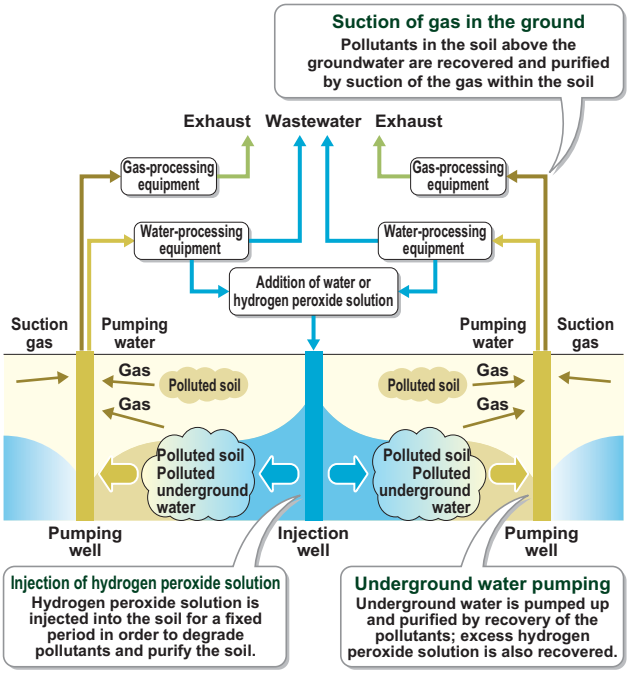
Amounts of PRTR-listed Substances Handled, Released, and Transferred (Domestic Group companies) (tons)

	Substance	2004						
		Amount handled	Amount released				Amount transferred	
			Atmosphere	Water	Soil	Landfill	Sewerage	Outside
Domestic Group Companies	Toluene	38.24	3.65	0.00	0.00	0.00	0.00	9.96
	Lead and its compounds	35.11	0.00	0.00	0.00	0.00	0.00	0.54
	Xylene	20.22	4.04	0.00	0.00	0.00	0.00	3.53
	Bisphenol-A type epoxy resin	11.17	0.00	0.00	0.00	0.00	0.00	1.10
	Vanadium pentoxide	5.00	0.00	0.00	0.00	0.00	0.00	0.00
	Styrene	2.75	0.00	0.00	0.00	0.00	0.00	0.00
	Antimony and its compounds	2.66	0.00	0.00	0.00	0.00	0.00	0.02
	Bis (2-ethylhexyl) phthalate	2.48	0.08	0.00	0.00	0.00	0.00	0.07
	Silver and its water-soluble compounds	2.35	0.00	0.00	0.00	0.00	0.00	0.00
	Chrome and trivalent chrome compounds	2.06	0.00	0.00	0.00	0.00	0.00	0.02
	Tetrahydromethylphthalic anhydride	1.52	0.00	0.00	0.00	0.00	0.00	0.02
	Total	**126.12**	**8.28**	**0.00**	**0.00**	**0.00**	**0.00**	**15.33**

Results of Investigations, and Measures to Prevent Soil and Underground-water Pollution at Group Manufacturing Companies

Based upon its Core Policy on the Environment, NGK voluntarily carried out investigations into soil and underground water pollution within its premises. Results showed that quantities of volatile chlorinated organic compounds such as trichloroethylene and tetrachloroethylene in excess of environmental standards were detected within the premises of NGK Printer Ceramics Co., Ltd. (Komaki, Aichi Prefecture), which produces electronic components, and so a notification was sent on April 19, 2004 to Aichi Prefecture and the city of Komaki, and an explanatory meeting was held for nearby residents and businesses. Furthermore, necessary measures were undertaken rapidly, including the prompt establishment of procedures.
The cause of this pollution was presumed to be a leakage into the soil of volatile chlorinated organic compounds that were used in the plant's ceramic-powder blending process. Consequently, as an emergency response, a barrier well was built on the downstream side and the contaminated underground water was pumped up. As permanent measures, the surface layer of the contaminated soil was purified using gas suctioning, and the deeper layer was cleaned by injecting an oxidizing agent (hydrogen peroxide solution) that promotes the degradation of volatile chlorinated organic compounds, and also by an aeration method. The emitted gas was detoxified in gas-processing equipment that used activated carbon. These cleanup activities meant that as of January 2005, levels of pollution in both soil and underground water were within environmental standards, and we have moved over from the cleanup stage to a monitoring stage, in which we regularly measure and observe underground water. Furthermore, because we fully abolished use of trichloroethylene and tetrachloroethylene in September 1998, we do not consider that there is a likelihood of a recurrence.

Cleanup of Polluted Soil and Underground Water



Appropriate Chemical-substance Management

Appropriate Management of PRTR-listed Substances

The 2003 revision of regulations carried out by Aichi Prefecture and the city of Nagoya required to set out voluntary targets and to specify and implement plans so as to reduce PRTR-listed substances and to prevent their leakage.
To comply with these revised regulations, NGK has established Chemical Substances Committees for each plant as a part of the environmental management system. Furthermore, the Company has developed regulations relating to the handling of chemical substances, and by

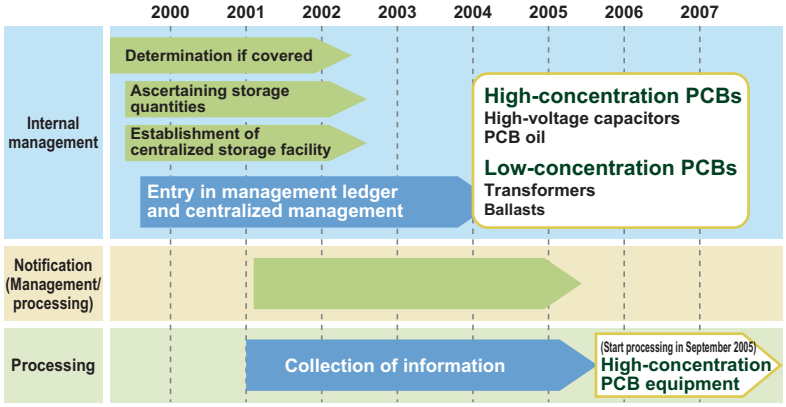
1. monitoring in emissions and transfers of chemical substances and implementing policies to prevent their leakage into the environment, and
2. implementing accident and emergency response measures and creating procedure manuals for emergencies,

we are working toward both appropriate management of PRTR-listed substances and risk management.

Appropriate Handling of PCBs

In 2000, the Law Concerning Special Measures against Polychlorinated-biphenyl (PCB) Waste was enacted, and this required appropriate PCB handling and management, as well as reporting of handling status to local governments.
In 2001, NGK completed an investigation into the possession of PCBs at three plants in Japan and at domestic and overseas Group companies. As well as establishing guidelines regarding both the loss of equipment and the prevention of leakage or dispersal, we carried out thorught storage management, including our establishment of a centralized storage facility.
In 2004, NGK was storing 192 high-voltage capacitors and 144 liters of PCB oil that have high concentrations of PCBs, and transformers and ballast that have low concentration PCBs. In the future, we will push ahead with appropriate management by investigating the detoxification of PCBs and focusing on the usage of processing plants that are planned to go into operation.

Long-term Schedule for PCB Handling



Storage facility for equipment using PCBs (Chita Plant)

Initiatives for the Future

In 2005, regulations concerning chemical substances are becoming more stringent, with the effectuation of regulations concerning volatile organic compounds (VOCs) and study of the Japanese version of the "Restrictions of Hazardous Substances" (RoHS). To enable us to respond to these laws and regulations, NGK will strictly adhere to laws by quickly procuring related information as well as developing organizational structures and environmental management systems.
Since 2001, we have been working towards curbing atmospheric emissions of PRTR-listed solvents, and in the last four years have succeeded in reducing them by more than 90%. We will continue to focus our efforts on reductions in quantities of PRTR-listed substances used and emitted.
From 2006, we will be obliged to abide by RoHS directive, which are European chemical-substance regulations. Accordingly, we will establish a system which effectively implements the green procurement guidelines that were revised in 2004, and will create a framework which can respond to global regulations regarding chemical substances.

Environmental Activities Related to Procurement and Logistics

Current Status and Targets for Green Procurement Activities

In order to reduce the impact on the environment, NGK is not only making positive efforts within our own business sites, but is also promoting green procurement in line with our Green Procurement Policy, which covers all products and services involved in our business, including purchasing of raw materials and parts, services, manufacturing facilities, and office supplies.

The G reen Procurement Policy

1. **NGK conducts Green Procurement of all materials, components, manufacturing equipment, office supplies, and services.**
2. **After considering quality, price, and delivery periods, NGK gives preference to companies that provide products and services in an environmentally friendly manner.**

Long-term Schedule for Green Procurement

			2003	2004	2005
Green procurement guidelines				Revision	
Greening office supplies	Introduction of green products and expansion of coverage				
Greening of materials for production	Purchase of Green Power (Signed Sep. 2001, started Jan. 2002, 15-year contract)				
	Establishing the content of chemical substances in purchased products (Through linkups between purchasing and PRTR systems)				
	Energy conser-vation measures	Office-automation equipment, air conditioners, lighting, structural insulation standards, etc.			
		High-efficiency motors, transformers, etc.			
		Conversion to fiber kiln, inverter control, etc.			
Reduction and greening of purchased packaging material	Continued expansion of coverage				
	Green packaging guidelines				
Green suppliers	Survey into state of environmental conservation activities				
	Explanation and instruction regarding revisions to guidelines				

Revision of Green Procurement Guidelines

NGK completed revisions on green procurement guidelines at the end of 2004, in order to support particular chemical substances specified in European chemical regulations. Suppliers will be notified as regards the standards in these.
Additionally, by clarifying these guidelines for suppliers, we aim to further enhance their environmental conservation activities.

In the future, we will be required to support even more stringent chemical substance management. Not confining our efforts to within the NGK Group, we are putting into place a framework that can positively respond to customer requirements by increasing awareness of the environment and management levels among our suppliers as well.

Energy Savings in Office Equipment

NGK is actively introducing energy-saving products for electronic office equipment. Since 1999, displays on employees' computers have been gradually replaced with low-power LCD monitors, with 3,000 installed so far throughout the Company. This has resulted in savings of 350 MWh per year. These energy reductions were equivalent to approximately 150 tons of CO_2 per year.

Green Power Purchasing

NGK is paying close attention to electricity generated with wind power, which has minimal CO_2 emissions. In September 2001 NGK signed a contract with the Japan Natural Energy Co., Ltd. for a Green Power Certification System, and began purchasing 2 GWh of wind power from January 2002. The basic unit of CO_2 emissions from wind power is less than 10% that of power from fossil fuels. The introduction of 2 GWh of wind power will prevent the release of 806 tons-CO_2 annually.

Current Status and Targets for Green Logistics

At NGK, a variety of measures are being used, with the aim of reducing CO_2 emissions in logistics activities, and by-product generation from packaging. We are also researching efficient transportation systems and a returnable logistics system based on the use of returnable containers, and are actively continuing our existing efforts to recover pallets and shipping boxes for reuse.

*1 Modal shift: Shifting away from the use of trucks to more efficient rail and sea transportation for main routes, in order to decrease the environmental impact of distribution.
*2 Returnable packaging: Packaging that can be returned and reused, in order to reduce resource and energy usage.

NGK's Green Logistics

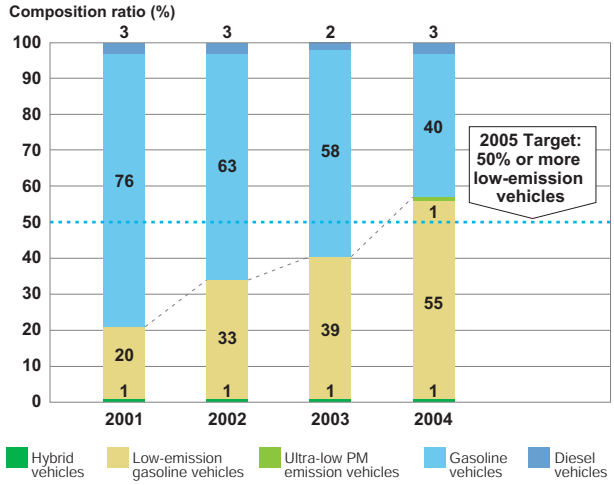
Aim of Research	Concrete Measures
Reduction of CO_2 emissions	Modal shift
	Use of Green Energy
	Increase in loading efficiency
Reduction of volume of packaging materials	Returnable packaging
	Improvement of packaging efficiency

Response to the Automobile NOx/PM Law

Based upon the Law Concerning Special Measures for Total Emission Reduction of Nitrogen Oxides and Particulate Matter from Automobiles in Specified Areas (the Automobile NOx/PM Law) that was enacted in June 2001, NGK prepared vehicle usage and management plans by September 2002, while introducing low-emission vehicles.*
Targets call for a reduction in NOx emissions in 2005 of 25% from 2001 levels, and particulate matter (PM) emissions by 80%, and NGK is implementing its plan to switch over 50% of its fleet to low-emission vehicles. In 2003, NGK achieved the 2005 NOx and PM emissions targets ahead of schedule, and in 2004, achieved its low-emission vehicle switchover targets one year ahead of schedule. Additionally, to ensure moderate driving by employees and appropriate vehicle maintenance, we have prepared driving and maintenance management manuals. Together with employee education, we are minimizing vehicle use and reducing vehicle-related environmental impact.

*Low-emission vehicle: Low-emission gasoline vehicles, hybrid vehicles, and ultra-low PM emission vehicles

Changeover to Low-emission Vehicles



While adhering closely to laws, regulations, and corporate ethics, and while expanding our business activities that contribute towards the environment, we are attaching increasing importance to activities that relate to corporate social responsibilities, such as preserving the interests of the wide range of people who have an interest in the company, including customers, suppliers, shareholders, and employees. NGK is active in efforts to make a serious contribution towards our social responsibilities.

Establishment of a Corporate Governance System

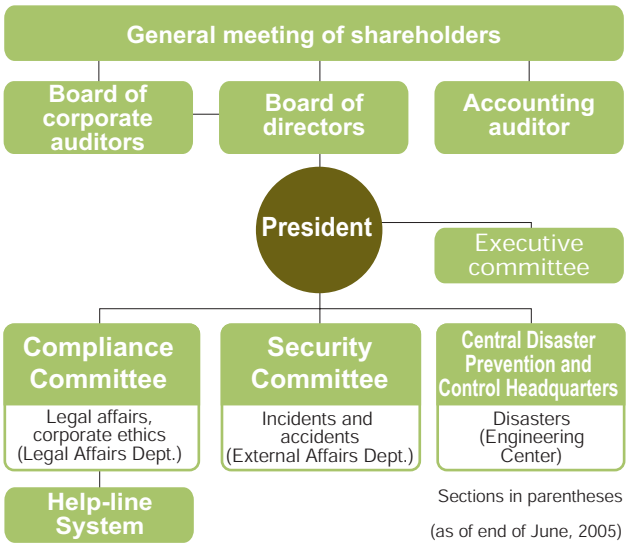
Current Activities

NGK always adheres to laws, regulations, and corporate ethics, and in order to attain a social value that is commensurate for a globally leading company, in April 1999, we established our "Guidelines for Corporate Behavior," and revised these in April 2003. As well as clarifying the intent of top management, these are being applied throughout all NGK Group companies. Furthermore, we are increasing their effectiveness by maintaining tangible internal systems to enable us to adhere closely to laws, regulations, and corporate ethics.

* Guidelines for Corporate Behavior: Refer to page 4, "NGK Group Guidelines for Corporate Behavior."

Improving Corporate Governance

Establishment and operation of a corporate-governance (internal-regulation) framework applies not only to the board of directors, but to the Company's operational divisions overseen by the president, such as the Auditing Department, Environmental Management Department, Quality Management Department, and a Compliance Committee that operates a help-line system for consultations and reporting problems. Additionally, in order to assure close adherence to laws, regulations, and corporate ethics, an outside counsel has been nominated to participate as a member of the committee. Furthermore, the Compliance Committee and the help-line system also cover Group companies reflecting the demands of this age of consolidated operation.



Sections in parentheses
(as of end of June, 2005)

Increasing Awareness of Compliance

The Compliance Committee is implementing a variety of measures in order to achieve full awareness of compliance among employees and to spread the use of the help-line system. They carried out a Compliance Awareness Survey targeting all employees and reported results of this internally. Additionally, they created help-line cards covering details of the system and giving details of contacts for consultations and reporting problems. This has been distributed to all employees.
In the future, based upon the opinions elucidated in the Compliance Awareness Survey, we will carry out training and PR activities aimed at achieving full awareness of compliance and of the help-line system.

Help-line card

Human Rights and Employment Activities

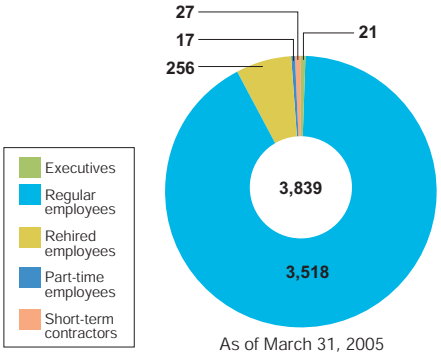
Current Activities

NGK endeavors to employ personnel who are cheerful and eager to take on challenges, based upon our policies of employment stability and equal opportunity employment. We also encourage independence and autonomy among our employees, and are drawing up an equitable results-based treatment system and a benefit program that lets employees work in comfort and security, and we are fully committed to bring these to reality.

Employment Stability

NGK operates a broad array of operations, and we are therefore striving to provide a stable employment situation by drawing up personnel plans that focus upon issues such as the restructuring of operations (also within Group companies) and increases in productivity.
When hiring new staff members, we carry out a policy of ongoing recruitment from a medium-term perspective, irrespective of whether the potential employees are fresh graduates or are changing employment mid-career. We have also made early moves towards the rehiring of employees who have reached retirement age, and as of the end of 2004, have rehired over 250 employees aged 60 and over. Furthermore, we are aiming for general employment stability and utilization of personnel, and are utilizing temporary staff and outsourcing services in order to support variations such as those that occur when providing personnel to make up for maternity or childcare leave, or for temporary business loads.

Regular and Irregular Employee Numbers

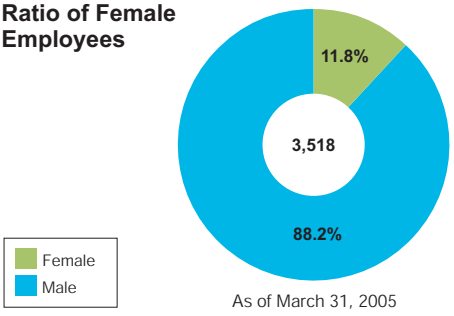


As of March 31, 2005

Equal-opportunity Employment

We employ personnel without regard for race, beliefs, gender, or disability, and are striving to achieve an equal-opportunity workplace. Women comprise approximately 11.8% of the workforce, and this figure includes four women in management positions. Additionally, we exceeded the legally mandated ratio (1.8%) of disabled employees throughout 2004, and are fully committed to obey the spirit of laws covering employment of people with disabilities in the future.

Ratio of Female Employees

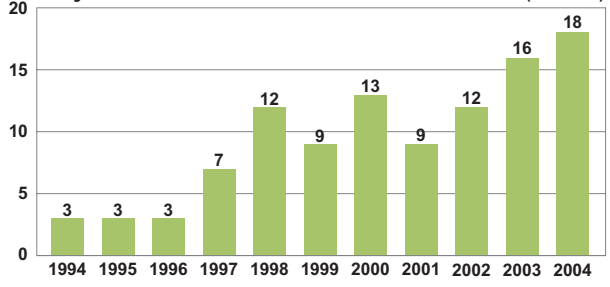


As of March 31, 2005

Benefit Programs

We are promoting benefit programs that expand and improve upon existing systems to suit present conditions. NGK is promoting the acquisition of childcare leave in order to support the raising of children. We are taking into account the creation of a harmonious working relationship within the Company, by concluding a labor-management agreement regarding prevention of sexual harassment and establishing a grievance-reconciliation committee comprising representatives from both labor and management.

Changes in Numbers of Employees Using the Childcare Leave System



Note: Calculated from the date childcare began

Occupational Safety and Health

Current Activities and Targets

Safety and health are the very foundation of a company's existence. NGK's goal is to ensure a safe, comfortable workplace environment, and to this end, we are working toward the safety and health of all employees within our facilities, and have put forth a policy espousing this principle.

Safety and Health Policy	**Safety and health are the very foundation of a company's existence, and ensuring them is a social responsibility. Therefore, we are working in line with our Guidelines for Corporate Behavior, for the development and maintenance of a safe and clean work environment, and our aim is to ensure a comfortable workplace.**
2004 Safety and Health Slogan	**"Developing fundamental safety and health activities"**

Safety and Health Activity Plan

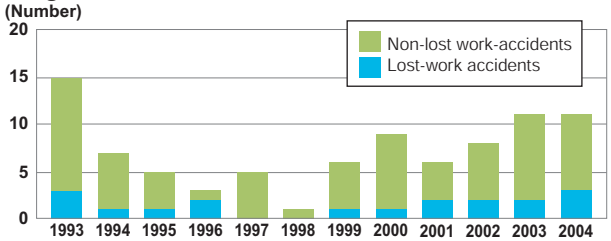
NGK decided upon specific details of the five items for our implementation of safety and health management. These items are safety and sanitation activities, external construction safety management, health management, education and training, and traffic safety. These were carried out in 2004 according to plan. In 2005, we also plan to concentrate our efforts on these five items.

Activity	2004	2005 Plan
Safety and sanitation activities, safety management, sanitation management	Complete implementation of "5S Activities" (organization, neatness, cleaning, standardization, discipline) Review of risk assessment down to operator level Review and consolidate safe operating manuals, and familiarize operators with these Dispatch a safety and sanitation manager at each site	Study safety and sanitation management committee. Complete implementation of "5S Activities" Eliminate unsafe activities Increased risk assessment Improved operational environmental management
External construction safety management	Develop thorough gestures and calls Improve capabilities of site safety management staff, and ensure thorough site safety management	Develop thorough gestures and calls Improve capabilities of site safety management staff, and ensure thorough site safety management
Health management	Set up separate smoking rooms	Increase separate smoking rooms
Education and training	Safety and sanitation education for each level	Education in eliminating unsafe activities
Traffic safety	Safe driving manager, traffic-safety training and guidance for commercial-vehicle operators	Education and training for safe driving managers and commercial-vehicle operators

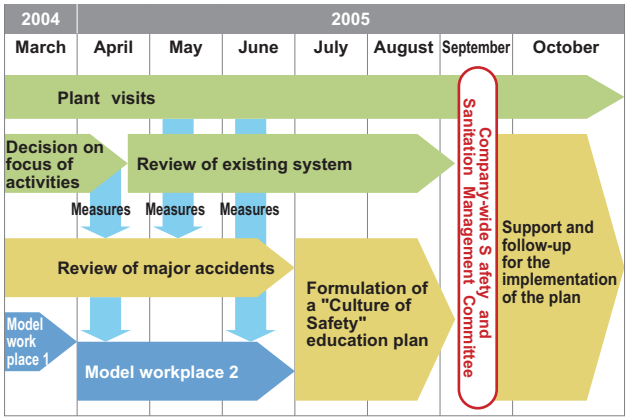
Work-related Accident Elimination Activities

We are striving to prevent the occurrence of disasters such as work-related accidents. However, these have risen slightly in the last few years, thus our need for joint Company-wide measures toward their elimination. At the Company-wide Safety and Sanitation Management Committee convened in August 2004, a safety working group was established. This carefully analyzes past accidents, and along with reassessing the appropriateness of measures that are taken, also verifies the implementation of measures that were in place. Furthermore, the committee is drawing up comprehensive remedial measures that include proposing methods of transferring technology and techniques that aim both to promote changes in awareness and to raise the technical standards at manufacturing plants, and are reviewing operational standards.

Changes in Numbers of Work-related Accidents



Safety Working Group Activity Plan



Environmental Communications

Current Activities

In order to further gain the trust of society through business expansion focusing on environmental conservation, it is important that we be active in information disclosure on environmental issues ourselves, and in keeping society informed of our activities. This leads to enhanced communication between society and NGK. Additionally, it is important for us as a good corporate citizen to achieve further communications with a wide range of generations, and we believe that this leads to protection of the environment.

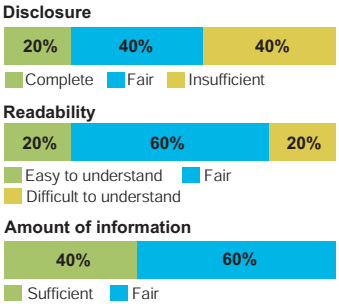
Participation via the Environmental and Social Responsibility Report Reader's Questionnaire

In response to the questionnaire provided with the 2004 Environmental & Social Responsibility Report, we received some comments from outside the Company. We received invaluable comments such as praise for the ease-of-understanding of our activities, and that the lack of numerical values for corporate responsibility made understanding levels of achievement difficult. We value such comments in our business activities, and look forward to additional comments and suggestions.

Top 5 Items

- Environmentally Conscious Technologies and Products
- Overall Perspective of Environmental Impact
- CO_2 Emission Reductions
- Recycling of By-products
- Activities in Each Business Group

Disclosure



Information Disclosure on the NGK Web Site

With NGK's corporate web site, we provide the most up-to-date information, as well as details from the Environmental Reports and Environmental & Social Responsibility Reports. We have also made a large amount of information regarding the environment and our environmental conservation activities available to the general public. We are working to further increase our level of disclosure and provide even more information beyond what is covered in the report.

The NGK Environmental Activities Web Site
http://www.ngk.co.jp/english/eco/index.html

Participation in Re-STEP

In July 2004, we started to participate in the Reciprocal Study System for Environmental Promotion (Re-STEP). Participating companies that are involved in environmental management activities can engage in mutual tours of facilities and exchanges of views on environmental activities. Through these interactions among companies, the system aims to upgrade overall level of environmental activities.
NGK has registered the Nagoya and Komaki plants. In 2004, there were two tours of our plants, and NGK participated in three tours of other companies' plants. In the future, we will continue to participate in this system as a means to revitalize our environmental activities.

Participation in the Environmental Partnership Organizing Club

The Environmental Partnership Organizing Club (EPOC) was established in February 2000 by a diverse group of corporations in the Chubu area of Japan with the objective of working toward a recycling-based society. The promotion of communication among differing industries, which is themed around environmental issues and aimed at reducing the impact on the environment, is very important for manufacturers in the Chubu area.
NGK is an active member of EPOC, and as its vice chairman from 2004, NGK President Matsushita has been promoting overseas exchanges, and educational activities.

Awards Received

(2004)

Date	Award	Granted for	Sponsor
April	The 36th Ichimura Prize in Industry - Contribution Prize	NAS® battery	New Technology Development Foundation
June	Technical Prize	Cordierite DPF	Catalyst Manufacturers Association
June	Horikawa Grand Prize	Horikawa Water Quality Survey	Nagoya Lions Club
February	Award for Excellence in the Implementation of Energy Saving Measures	Chita Business Group Energy Conservation Activities	The Energy Conservation Center

Community Activities

Current Activities

NGK is conscious of the need to be a good corporate citizen, and by putting into practice community activities from a global perspective, is working to build a better society.
We have chosen the fields where we carry out our activities from the viewpoints of internationalization, regional contributions, employee participation, and continuity. We are promoting community activities that will make us visible in society.

Operation of the NGK Foundation for International Students

Since April 1997, NGK has been providing assistance to international students, mainly in the forms of accommodation and scholarships. In 1998, we established the NGK Foundation for International Students, and we hope to further develop this.
In providing accommodation, NGK has established the NGK International House, which is exclusively for the use of international students, and which accommodates 40 people. Its priority is to provide a comfortable, safe environment in which students can concentrate on their studies. Individual rooms are relaxing, and all feature baths, toilets, air conditioning, and refrigerators. The shared facilities feature a study room with large desk space, a multi-function hall for parties and other gatherings, and a kitchen with electromagnetic cookers. As of the end of 2004, this has accommodated a total of 183 residents.
Additionally, with the aim of internationalization with the local area, classes in Chinese and Korean have been held for local residents at the House since April 2000, with residents there as the teachers. As of the end of 2004, a total of 245 local residents have taken classes.
Scholarships of 120,000 yen per month for undergraduates, and 160,000 yen per month for graduates are provided to 20 students every year. In April 2004, a certificate-presentation ceremony was held for the students who had been selected to receive the scholarships that year.


Classes held by foreign students

This was also attended by staff both from the universities at which they were enrolled and from the foundation. As of the end of 2004, a total of 102 students have received these scholarships.

In addition to these, other support activities include cultural exchanges between international students assisted by the foundation and interested volunteer employees.


International students who have received NGK Scholarship Certificates


NGK International House

Opening of the Canvas Morimura-Okura Museum

The Canvas Morimura-Okura Museum, speaks of the history and dreams for the future of the Morimura Group,* and of the Group's contributions to environmental protection. The museum also has the objective of communicating the fascination of creating to children. The name Canvas was selected to conjure an image of a giant canvas on which these companies and people can freely draw their own images of the future of ceramics. The museum opened on March 5 2005. As a member of the Morimura Group, NGK participated in its construction.

The Canvas Morimura-Okura Museum

*Morimura Group: A group of companies descended from Nippon Toki Gomei Kaisha (now Noritake Co., Limited). The four companies of Toto, Noritake Co., Limited, NGK Insulators, Ltd., and NGK Spark Plug Co., Ltd. have participated in Canvas.

Contributing to Local Communities

Receiving Factory Tours and Training

NGK has been accepting locals and students for factory tours and training in order to help them deepen understanding of the fascination and importance of creating and of environmental conservation activities.
In 2004, a total of 787 visitors in 30 groups visited NGK's three plants in Nagoya, Chita, and Komaki. Furthermore, NGK accepted one Nagoya municipal high-school teacher to undergo long-term educational on-the-job training.

Local residents touring the Chita Plant

Cooperation with Local Disaster Prevention Activities

In 1998, NGK concluded a regional assistance agreement with the city of Nagoya to actively cooperate with localities in firefighting and relief work in the event of disasters such as earthquakes. Furthermore, in 2004 the Company's fire brigade participated in disaster training that was held at elementary schools in Mizuho Ward in Nagoya, and conducted a water-discharge exercise. This training is held every year as a Nagoya Residents' General Disaster Training, and has as its objectives the establishment of a city disaster-prevention framework and raising residents' awareness of disaster prevention.

Disaster training

Ensuring Environmental Conservation

Each of NGK's plants is actively participating in cleanup activities in local communities, and is carrying out voluntary activities to protect the surrouding environment. In 2004, NGK employees conducted a cleanup of the Oyama River adjoining the Komaki Plant, and participated in environmental conservation activities such as "Cleaning Campaign Nagoya."

Oyama River cleanup

Residents' General Cleaning Campaign Nagoya

Support activities

As a good corporate citizen, NGK is carrying out support activities in order to contribute to society. In 2004, we gave support to the 2005 Special Olympics World Winter Games and contributed to the Keidanren Nature Conservation Fund. We also sent contributions and relief aid to areas affected by the Niigata Chuetsu earthquake, and the Sumatra disasters.

Environmental Activities by Plant

Environmental Activities at the Nagoya Plant

Nagoya Plant
●Address: 2-56, Suda-cho, Mizuho-ku, Nagoya
●Major products: HONEYCERAM®, NAS® batteries, etc.

■Representative:
Masanao Ono, Director and Senior Vice President, Chief of the Nagoya Plant

■Measures to Prevent Global Warming

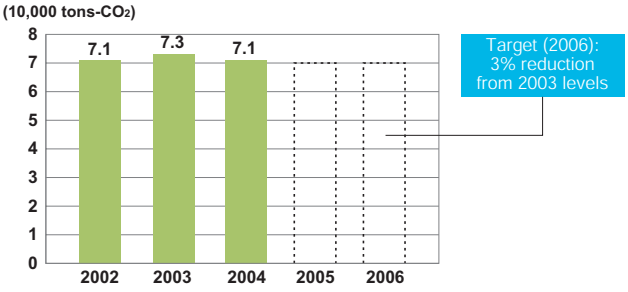
Medium-term Greenhouse Gas Control Targets
3% reduction from 2003 levels by 2006

In 2004, as a result of implementing increased efficiency in packing products into tunnel kilns and other improvements in production technology, appropriate operation of air conditioning in clean rooms and offices, strict adherence to energy management standards, and energy-savings activities such as turning off lights during the daytime, we have achieved our targets for reductions in greenhouse gases. We will also be implementing increased measures to this end in the future.

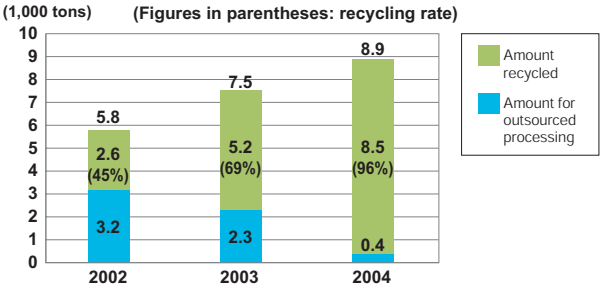
By-product Recycling Targets
Achieve zero emissions in 2005

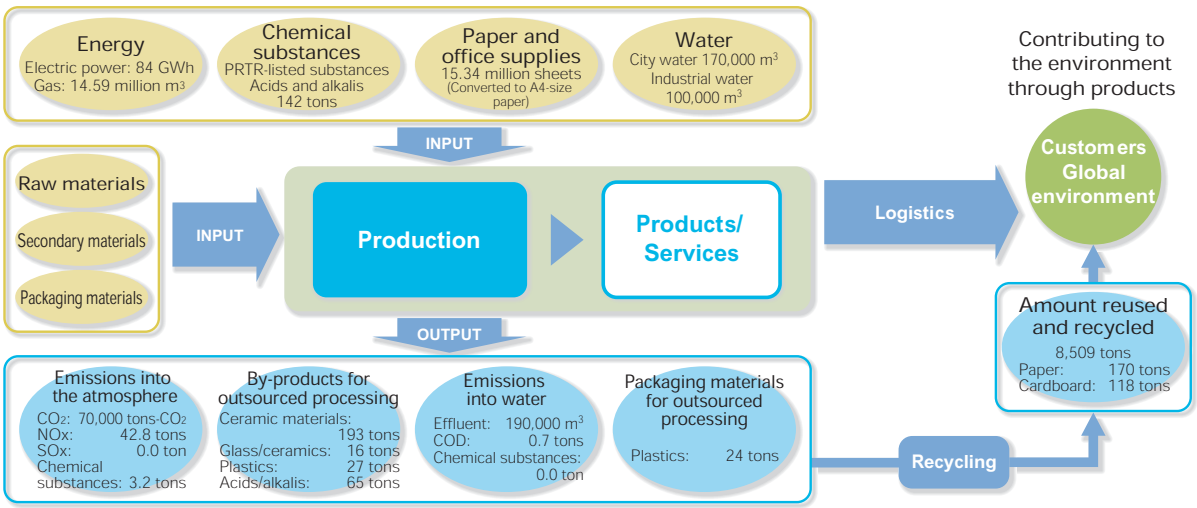
In 2004, we significantly expanded the range of recycling by moving over to full-scale operation of the external recyclers that we developed in 2003.
In 2005, we will continue to strive to control quantities generated by expanding recycling and improving productivity, and aim to achieve zero emissions.

Changes and Planning for Greenhouse Gas Emissions



Changes in By-product Emissions





Environmental Activities at the Chita Plant

Chita Plant

- Address: 1, Maegata-cho, Handa, Aichi
- Major products: Insulators, equipment for electrical transmission and distribution, ceramic products for the chemical industry, beryllium-copper strips, ceramic components for semiconductor manufacturing equipment, etc.

■Representative:
Tsurayuki Okamoto, Director and Senior Vice President, Chief of the Chita Plant

■Measures to Prevent Global Warming

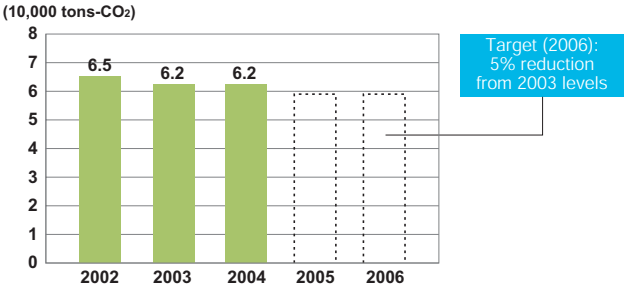
Medium-term Greenhouse Gas Control Targets
5% reduction from 2003 levels by 2006

In 2004, the increased quantities in greenhouse-gas emissions resulting from a rise in output were reduced through the introduction of fast drying and firing technologies and the efficient operation of bag filters, enabling us to keep the total emissions to 2003 levels.

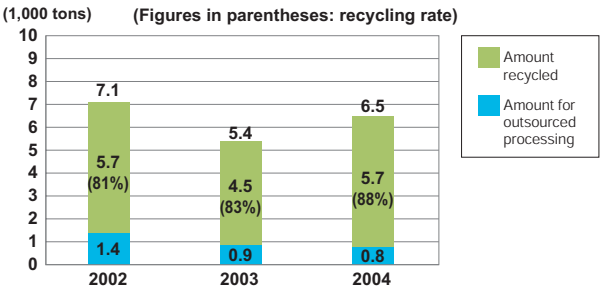
By-product Recycling Targets
Achieve zero emissions in 2005

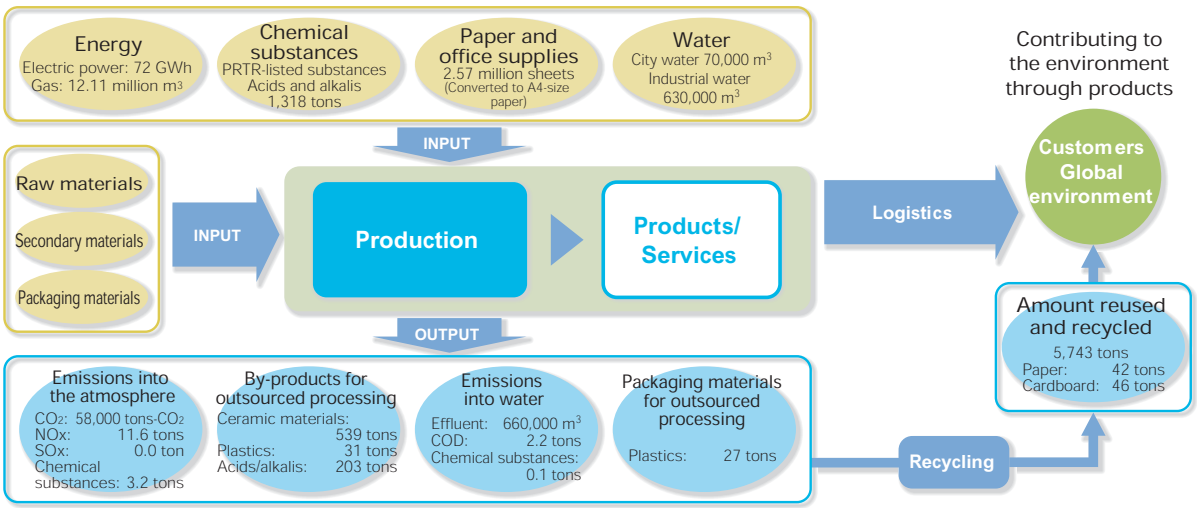
In 2004, we implemented recycling of insulator cement and of washing fluid in the Metal Plant, thereby reducing quantities for outsourced processing. However, our delay in recycling ceramic materials other than insulator cement, as well as the increases in quantities at the Metal Plant and the delay in investment in facilities for the recovery of washing fluid, all meant that we were unable to achieve our planned targets.
In 2005, we will strengthen separation, and aim to both continue our expansion of recycling and to achieve zero emissions.

Changes and Planning for Greenhouse Gas Emissions



Changes in By-product Emissions





Environmental Activities at the Komaki Plant

Komaki Plant

●Address: 1155, Tagami, Futaebori, Komaki, Aichi

●Major products: Suspension insulators for electrical transmission, equipment for electrical transformation and distribution, HYCERAM®, etc.
From 2003, plants in operation for the production of NAS® batteries and SiC-DPFs (diesel particulate filters)

■Representative:
Eiji Hamamoto, Director and Senior Vice President, Chief of the Komaki Plant

■Measures to Prevent Global Warming

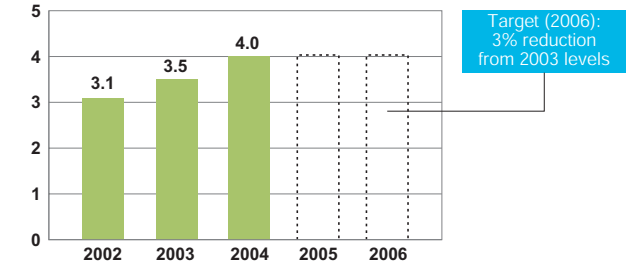
Medium-term Greenhouse Gas Control Targets
Keep 2006 levels to within a 15% increase over 2003 levels

In 2004, in spite of a rise in output, we have managed to keep 2004 emissions of greenhouse gases to approximately a 14% increase over 2003 levels as a result of our combined efforts in production technologies including cut-down firing times and energy conservation activities such as recovery of steam generated. In the future, we will continue to make efforts to reduce emissions of greenhouse gases through improvements in production processes and manufacturing facilities.

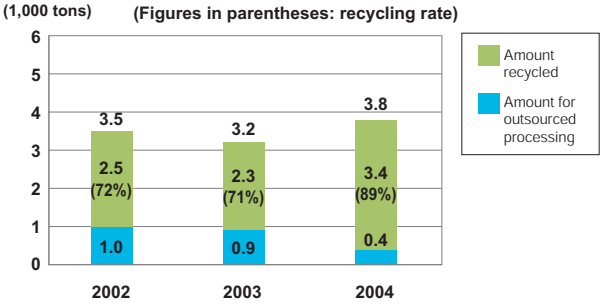
By-product Recycling Targets
Achieve zero emissions in 2005

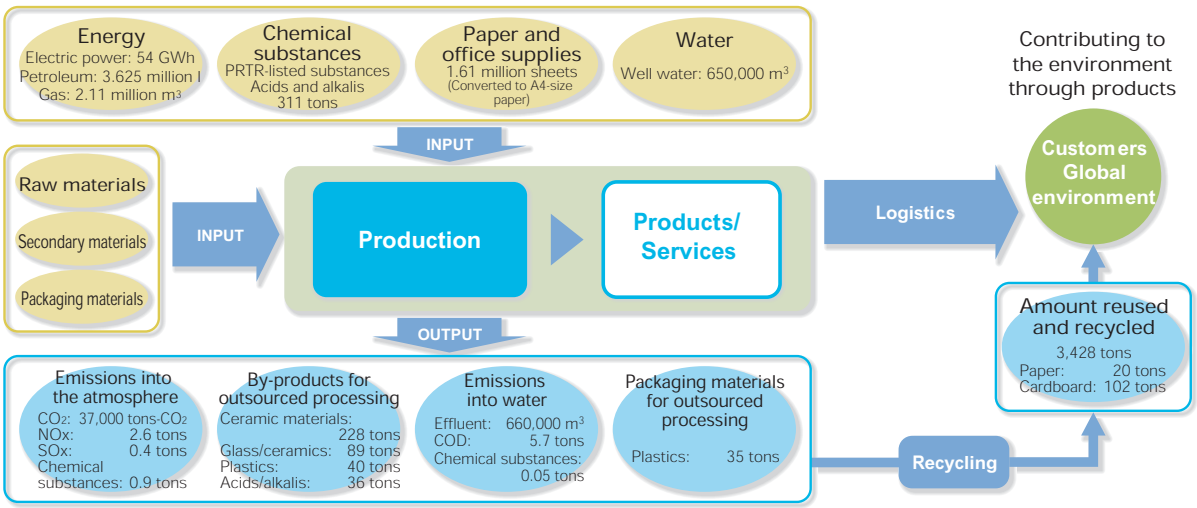
2004 saw an increase in the production of new products (NAS® batteries and SiC-DPFs), but measures such as the recycling of insulator cement, implementation of measures to curb its generation, and cooperation with external recyclers for by-products generated in the manufacture of new products have resulted in reduced quantities for outsourced processing.
In 2005, we will strengthen separation, expand recycling, and broaden our strategies in order to curb generation of by-products, all with the aim of achieving zero emissions.

Changes and Planning for Greenhouse Gas Emissions



Changes in By-product Emissions





Environmental Data by Plant

Actual values for exhaust gases, noise, vibration, pumped underground water, and effluent for all three plants met all relevant laws, regulations, and voluntary standards.

Standard Values (Under Laws and Agreements) and Actual Values

Category	Item	Units	Nagoya Plant		Chita Plant		Komaki Plant	
			Standard	Actual Value	Standard	Actual Value	Standard	Actual Value
Exhaust gas	Sulfur produced in combustion	%	0.1*9	(Shifted to LNG)	0.5*7	(Shifted to LNG)	0.6*8	0.0007 - 0.004
	SOx emissions	Nm^3/Hr	-	-	-	-	11.7*8	0.002 - 0.049
	NOx concentration	ppm	144*5	14 - 101	150*7	10 - 40	170*5	6.7 - 52
	NOx volume	g/Hr	24,500*2	23,302	-	-	-	-
	Soot and dust	g/Nm^3	0.15*1	N.D. - 0.064	0.2*7	N.D.	0.2*8	0.002 - 0.006
	Be total output	g/day	-	-	10*7	0.025 - 0.81	-	-
	Be atmospheric concentration in residential	$\mu g/m^3$	-	<0.0001*13	0.01*7	0.00004 - 0.00012	-	-
	Fluorine and its compounds	mg/Nm^3	10*10	N.D. - 9.4	-	-	-	-
Noise	Day	dB	70*2	52 - 69*6	65*7	51 - 63*6	65*5	50 - 65*11
	Night	dB	60*2	47 - 60*6	65*7 (60*7, *12)	39 - 63*6 (52*12)	55*5	48 - 55*11
Vibration	Day	dB	70*2	22 - 57	70*7	45 or less	65*5	18 - 19
	Night	dB	65*2	33 - 46	70*7	45 or less	60*5	47 - 51
Pumped underground water		m^3/day	-	-	-	-	4,023*5	1,776
Effluent	pH	-	5.0 - 9.0*4	6.9 - 7.6	5.8 - 8.6*7	6.7 - 7.1	5.8 - 8.0*8	6.6 - 7.5
	SS	mg/l	600*4	6 - 65	30*7	2 - 6	80*8	N.D. - 10
	BOD	mg/l	600*4	3 - 15	-	-	17*8	1.2 - 8.3
	COD	mg/l	-	-	20*7	2.4 - 5.7	-	-
	Total COD emissions	kg/day	-	-	53.1*5	6.1	83.3*5	15.6
	Oil	mg/l	5*4	N.D. - 4.6	2*7	N.D.	2*8	N.D. - 1.3
	Copper	mg/l	3*4	N.D.	1*7	0.02	3*3	0.01 - 0.02
	Zinc	mg/l	5*4	0.04	1*7	0.05	3*8	0.05 - 1.0
	Soluble iron	mg/l	10*4	N.D. - 0.1	0.5*7	N.D.	10*3	0.1 - 0.14
	Soluble manganese	mg/l	10*4	N.D.	10*3	0.1	10*3	0.01 - 0.04
	Cadmium	mg/l	0.1*4	N.D.	0.1*3	N.D.	0.1*3	0.001
	Cyanide	mg/l	1*4	N.D.	1*3	N.D.	1.0*3	N.D.
	Lead	mg/l	0.1*4	N.D.	0.1*3	N.D.	0.1*3	N.D.
	Hexavalent chromium	mg/l	0.5*4	N.D.	0.5*3	N.D.	0.5*3	N.D.
	Total mercury	mg/l	0.005*4	N.D.	0.005*3	N.D.	0.005*3	N.D.
	Total chromium	mg/l	2*4	N.D.	2*3	N.D.	2*3	N.D.
	Fluorine	mg/l	8*4	N.D. - 0.1	8*3	0.1	8*3	0 - 2.7
	Nitrogen content	mg/l	-	-	20*10	1.6 - 4.9	20*10	1.5 - 8.9
	Phosphorus content	mg/l	-	-	1*10	0.06 - 0.15	1*10	0.03 - 0.6
	Tri-chloroethylene	mg/l	0.3*4	N.D.	0.3*3	N.D.	0.3*3	N.D.
	Tetra-chloroethylene	mg/l	0.1*4	N.D.	0.1*3	N.D.	0.1*3	N.D.
	1, 1, 1-trichloroethane	mg/l	3*4	N.D. - 0.009	3*3	N.D.	3*3	N.D.

*1. Air Pollution Control Law *2. Nagoya Regulations *3. Water Pollution Control Law *4. Sewerage Law
*5. Aichi Prefecture Regulations or Guidelines *6. Including background noise** *7. Pollution control agreement with Handa
*8. Pollution control agreement with Komaki *9. Pollution control agreement with Nagoya *10. Self-imposed control
*11. Adjacent to the road (includes background noise) *12. West side of plant *13. Voluntary measurement
**Background noise: Total volume of noise from unverifiable sources. Because plant noise and human activity are generally lower at night, foreground noise decreases and background noise becomes more conspicuous. (Foreground noise is noise from verifiable sources.)
pH: Concentration of hydrogen ions
SS: Suspended Solids
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
N.D.: Not Detected
Be: Beryllium
Note: Items indicated by "-" fall outside the scope of pollution control laws, pollution control agreements, and self-imposed controls.

Environmental Data for Domestic (Production) Group Companies

Plant		CO_2 emissions (energy source) t-CO_2/year	By-products		Amount of input water resources m^3/year	Effluent						Exhaust gas		
			Total generation	Outsourced processing		Destination of emissions	PH	BOD	COD	SS	Oil	SOx	NOx	Soot and dust
			t/year	t/year			-	mg/l	mg/l	mg/l	mg/l	Nm^3/Hr	ppm	g/Nm^3
Energy Support Corporation Production and sale of power-distribution equipment		1,945	133	114	106,964	River	6.5 - 7.1	1 - 12	1 - 8	1 - 10	1 - 1.3	-	29 - 48	N.D.
Akechi Insulators Co., Ltd. Production of ceramics for insulators, etc.		12,952	1,510	187	64,762	River	6.6 - 7.9	1.1 - 17	5.5 - 9.9	1 - 15	2.7 - 3.5	0.17 - 0.18	2.5 - 6.3	0.02 - 0.05
Ikebukuro Horo Kogyo Co., Ltd. Production of anticorrosion equipment		2,279	12	12	17,388	Underground seepage	6.9 - 7.2	1.6 - 33.2	2.5 - 21.2	N.D. - 78	N.D.	N.D.	6 - 16	N.D.
NGK Filtech, Ltd. Design and production of membrane filtration system		100	10	10	3,828	Sewerage	-	-	-	-	-	-	-	-
NGK Adrec Co., Ltd. Production of refractories and ceramic filters		12,620	1,001	563	21,781	River	6.8 - 7.3	2 - 11	8 - 24	N.D.	N.D.	0.001 - 0.045	13 - 86	0.001 - 0.042
NGK Kilntech Corporation Production and sale of kilns Production of far-infrared equipment		55	0.3	0.3	415	Sewerage	-	-	-	-	-	-	-	-
Heisei Ceramics Co., Ltd. Production of refractories		2,591	63	15	1,789	River	7.3	N.D.	N.D.	N.D.	-	0.002 - 0.02	16 - 36	0.001 - 0.01
NGK Optoceramics Co., Ltd. Production of electronic parts		10,066	199	67	42,757	River	6.3 - 7.3	N.D. - 11	2.7 - 14	N.D. - 2	N.D. - 1	-	-	N.D.
NGK Printer Ceramics Co., Ltd. Production of electronic parts	Komaki Plant													
	Yamanashi Plant	6,339	135	4	23,645	River	6.8 - 7.6	2.3 - 13	3.4 - 18	1 - 10	-	-	-	N.D.
NGK Okhotsk, Ltd. Production of electronic parts		2,366	38	3	36,666	Sewerage	7.1 - 7.2	1.4 - 2.2	-	N.D.	N.D.	0.006	27	N.D.
Soshin Electric Co., Ltd. Production and sale of electronic parts	Asama Plant	9,555	199	72	3,933	River	6.3	51	-	31	0.7	0.11 - 0.22	53 - 58	0.0085 - 0.012
	Chikuma Plant				16,492	Sewerage	8.7	51 - 81	-	40 - 70	N.D.	0.14 - 0.28	41 - 89	0.029 - 0.058
	Miyazaki Plant				1,876	River	7.2	51	-	50	0.5	-	-	-
NGK Mettex Corporation Processing of beryllium-copper strips		442	3	0	758	River	6 - 6.8	18.7	-	-	-	-	-	-
NGK Fine Molds, Inc. Production and sale of metal molds		1,313	195	37	7,261	Sea	6.8 - 7.6	-	4.6 - 10	2 - 7	N.D.	-	-	-

pH: Concentration of hydrogen ions
SS: Suspended Solids
BOD: Biochemical Oxygen Demand
COD: Chemical Oxygen Demand
N.D.: Not Detected
Note: Items indicated by "-" fall outside the scope of pollution control laws, pollution control agreements, and self-imposed controls.
Note: The NGK Printer Ceramics Co., Ltd. Komaki factory and NGK Optoceramics Co., Ltd. are separate companies; however, these are calculated as the same site for environmental management purposes.

Issued by:

Environmental and Quality Management Dept.

Public Relations Dept.

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Environmental and Social Responsibility Report Web Site

http://www.ngk.co.jp/english/eco/index.html

Ceramic products for purification of emissions gas (cover photo)
Around the world, NGK is already manufacturing ceramic products for purifying emissions from gasoline-powered vehicles. Furthermore, NGK has developed a filter to collect fine particulates emitted from diesel engines, and we are establishing a supply system on a global scale in order to deal with the rapid increase in demand. In September 2004, NGK Ceramics Polska commenced volume production of silicon carbide diesel particulate filters for the European market.

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