

# Corporate Social Responsibility Report

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# Corporate Outline

Company name	NGK INSULATORS, LTD.		
Address	2-56, Suda-cho, Mizuho, Nagoya 467-8530, Japan		
Telephone	+ (81) 52-872-7171		
Establishment	May 5, 1919		
Paid-in Capital	69.8 billion yen (As of March 31, 2010)		
Employees	Unconsolidated 3,272 Consolidated 11,176 (As of March 31, 2010)		
Business	Manufacture and sale of insulators, electric power equipment, industrial ceramic prod- ucts, electronic components, special metals products, and plant engineering		

# **Editorial Policy**

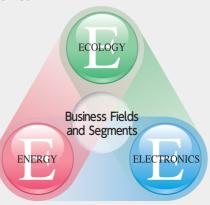
In drafting this "Corporate Social Responsibility Report 2010," reference was made to the Ministry of the Environment's Environmental Reporting Guidelines (2007) and the Global Reporting Initiative's 2006 Sustainability Reporting Guidelines.

The report covers the period from April 1, 2009 to March 31, 2010. Reporting on environmental initiatives and data for Group companies located overseas covers the period from January 1, 2009 to December 31, 2009. The range of companies involved differs with each initiative cited, but is clearly stated with the data.

- Next year's version of this report is scheduled to be published in September 2011.
- This report can be viewed online.
  - Web http://www.ngk.co.jp/english/csr/

# **Business Fields and Segments**

The NGK Group leverages its core ceramics technology in the fields of Ecology, Energy, and Electronics (the "Triple-E" Fields) to develop its Power, Ceramic Products and Electronics businesses. Our aim is to protect the environment and benefit society.



# **Business Overview**

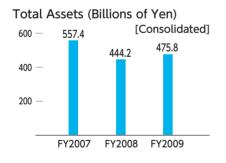
Business is growing on a global scale and changes are taking place with increasing speed. With proprietary ceramics technologies as its core technologies, the NGK Group is globally and dynamically developing its own business operations.

### Business Development by Region

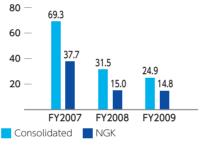




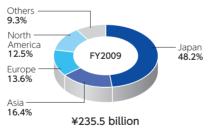




Ordinary Income (Billions of Yen)



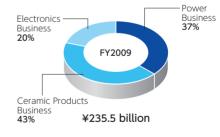
# Sales by Region



Net Income (Billions of Yen)



# Sales by Business Segment



#### **Business Groups and Main Products**

#### **Power Business**

- Insulators for power lines and
- transformers
- NAS<sup>®</sup> batteries for power storage
- Devices for power transmission





NAS® batteries for power Insulators for power lines storage

# **Ceramic Products Business**

- Ceramic products to purify automotive exhaust
- Industrial-use ceramics
- Combustion apparatuses and refractories
- Plant engineering

Ceramic products to

purify automotive exhaust purifier





Beryllium copper products

Ceramic components for inkjet printers





# By practicing CSR, NGK helps create a sustainable society.

# Achieving Structural Innovation

In fiscal 2009, NGK faced an operating environment impacted by sharply reduced demand, resulting in a second consecutive term of lower year-on-year business performance. Fortunately, demand has now begun to gradually recover, reflecting measures to stimulate demand taken by governments worldwide. Consequently, this trend is expected to put NGK back on track for growth in fiscal 2010.

The course that the current economic recovery has taken clearly shows that future growth in the global economy rests with China and other emerging markets. Failing to consistently deliver products that satisfy customers in these countries, both in terms of price and quality, is tantamount to falling short of fulfilling our social responsibility as a supplier.

At NGK, from the start of fiscal 2009 we declared a new Company-wide theme, "Meeting the Challenge of Structural Innovation." Under this concept, we reviewed all business operations from the ground up, with an eye to developing a more resilient cost structure.

In our technology and manufacturing divisions, we promoted an action program to innovate our manufacturing structure, taking a top-down approach. Among the challenging initiatives we are tackling are sweeping design changes, as well as the development of innovative manufacturing processes. We have also set mandatory goals for every year from fiscal 2009 through fiscal 2011 as part of a bold improvement drive, with the aim of creating business sites that are more dynamic than ever before. It will be some time before we see benefits in every division, but we fully expect this effort to put NGK on a more solid growth track.

# Meeting Demand for Consistent Quality

With NGK products, we meet the demand for greater reliability by building them to exact customer specifications. This dedication sets NGK apart from other companies, and we have earned customers' trust with the sound manufacturing skills that make this possible. However, with NOx sensors, NAS® batteries and other products derived from functional ceramics assuming much greater weight in operations in recent years, it is now apparent that quality assurance must be meticulously considered from the initial design stages of these products, given how they are actually used and the risks entailed.

In February 2010, a NAS<sup>®</sup> battery system operating at a customer plant was involved in a fire; an incident that undoubtedly caused much concern for the customer, those living near the plant, and investors. In investigating the cause of the accident, it is evident that the possibility of a similar incident in the future is limited. Nevertheless, we saw this moment as an opportunity to completely dismantle our quality assurance organization, which we have since restructured as the Company-wide Quality Committee.

Positioning fiscal 2010 as "Quality Year One," we will move swiftly to develop mechanisms that effectively eliminate risks from quality defects. Our overarching intent is to earn the trust and meet the expectations of NGK customers and other stakeholders.

# Utilizing Valuable Resources and Environmental Preservation

For more than 30 years now, NGK has produced HONEYCERAM<sup>®</sup>, a ceramic substrate for automotive catalytic converters. To vary this lineup, we introduced a substrate containing very finely arranged hexagonal cells. Compared to conventional products with four-sided cells, this innovation has resulted in both improved exhaust purification and a reduction in the volume of expensive catalysts used, namely platinum and other precious metals.

With demand for automobiles set to rise dramatically in emerging markets, widespread adoption of this product will assist in controlling the consumption of precious metals for use as catalysts. This reduction, in turn, should help mitigate the risk that natural ecosystems will be lost, especially due to new mine development.



At NGK, we have sought to lessen our environmental load by reinforcing the Group's own consolidated environmental management, and by leveraging benefits from efforts to innovate our manufacturing structure. The latter thus far has included significant reductions in time required for sintering processes, as well as a drive to curb by-product emissions. Moreover, by offering products and services that meet customers' energy and resource conservation needs, we will continue to play a useful role in lowering the environmental load across society as a whole, and do our part to bring about a recycling-based society.

# Communication With Stakeholders

Last year, NGK made the transition from its earlier Environmental & Social Responsibility Report to begin publication of a CSR Report. In this new format, we offer a broader review and evaluation of our CSR activities over the entire year.

Accompanying this switch, we distributed a condensed version of the report to each employee—our closest stakeholders who are ultimately responsible for putting CSR at NGK into practice. In conjunction, we began holding "CSR Talk Live" sessions, where employees have the chance to speak directly with management. These changes have deepened employee understanding of CSR, and allowed for more frank and candid exchanges of viewpoints on the topic.

We plan to continue these initiatives, and going forward hope to incorporate a more expansive and diverse range of opinions as part of NGK's CSR activities.

Along these lines, another area we hope to explore further is developing more channels for communication with customers and suppliers.

Fiscal 2009 marks the second year of publication of our CSR Report. As the report shows, management has stepped things up a notch in fiscal 2009. In fact, this year's report is an excellent test case for judging whether the content within these pages is what readers expect from management firmly rooted in CSR. I cordially invite our readers to offer their honest feedback regarding this report.

President and Chief Executive Officer
Shun Matsushita

Through CSR Initiatives, NGK is Contributing to Sustainable Social Development and Helping to Preserve the Natural Environment.

# **Corporate Philosophy**

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



Creation of new value

Environment

Compliance

A company's first corporate social responsibility is to reliably supply society with the products and services it needs, and to generate an appropriate degree of profit through sustainable corporate activities. The centerpiece of NGK's corporate philosophy—the creation of new value—is a prerequisite for sustaining sound corporate activities of this kind. Similarly, ensuring full compliance and taking adequate steps to preserve the natural environment are prerequisites to conducting all business activities.

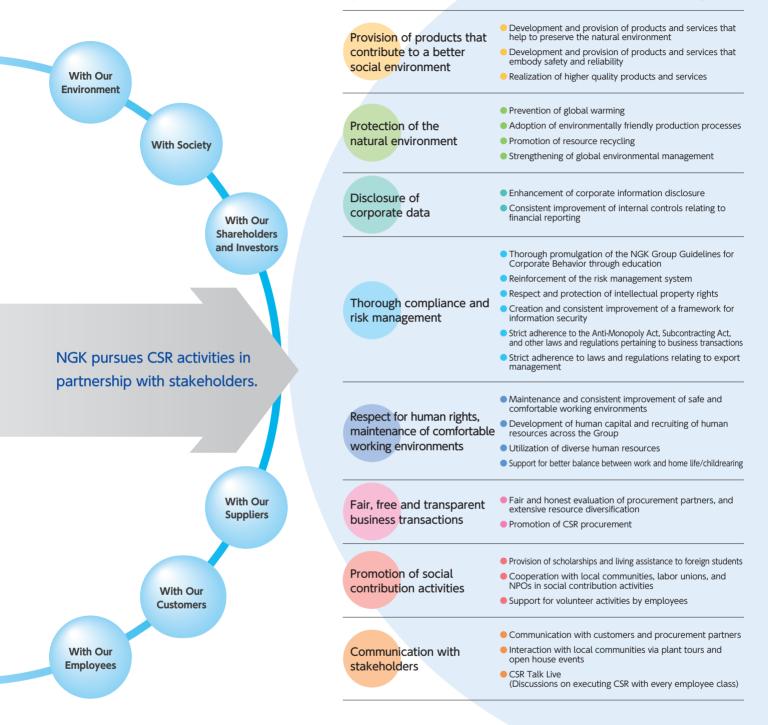
Accordingly, the above three points make up the "CSR Basics" promoted extensively throughout the NGK Group.

# Our Approach to CSR

NGK leverages proprietary technology to deliver products worldwide that are essential to social infrastructure and that contribute to the environment. To contribute to society in a manner that embodies our corporate philosophy, we are committed to offering products and services that help create a better social environment and bring new value to society. We believe that fulfilling our social responsibility as a company in every respect is essential to meeting the public's expectations and earning its trust, as we work together with our customers, employees and business partners to preserve the natural environment.

To ensure that this approach is shared throughout the Group, NGK formulated the NGK Group Guidelines for Corporate Behavior in April 2003. The Group also strives to create a company capable of garnering greater levels of trust from stakeholders through its daily corporate activities. With publication of our CSR Report in 2009, we drafted eight priorities in promoting CSR that will serve as the basis for reviewing our CSR activities each year. Through these actions, the NGK Group seeks to contribute to society's sustainable development.

# Specific Items and Details of Priorities in Promoting CSR



# **CSR** Promotion Framework

NGK has established the CSR Committee, NGK Environmental Protection Committee, the Company-wide Quality Committee, Company-wide Safety and Sanitation Committee, and the Internal Controls Committee to promote Group CSR activities.



# In CSR activities, NGK sets priority targets that it works diligently to meet.

Priorities in Promoting CSR	CSR Objectives	Major Initiatives in 2009
		· · · · · · · · · · · · · · · · · · ·
	Develop and provide products and services that help to preserve the natural environment	<ul> <li>Commenced delivery of large-scale NAS<sup>®</sup> battery systems to Abu Dhabi, UAE</li> </ul>
Provision of products that contribute to a better social	Develop and provide products and services that embody safety and reliability	<ul> <li>Completed installation of equipment to boost production capacity at NGK's Chita Plant and NGK Insulators Tangshan Co., Ltd. to accommodate planned ultra-high- voltage transmission network infrastructure in China; construction of new suspension insulator plant at NGK Insulators Suzhou Co., Ltd. also progressing on schedule</li> </ul>
environment	Realize higher quality products and services	<ul> <li>Although improvement was seen in all quality control-related indicators, enhanced control is needed in terms of mechanisms and in production work areas; quality control must be strengthened going forward with a greater awareness of how NGK products are actually used in the field</li> <li>Status of quality improvement activities of this kind is periodically reported to management, with progress follow-up</li> </ul>
	Help prevent global warming	<ul> <li>Reduction of CO<sub>2</sub> emissions (see page 36) NGK Japan: Emission volume of 129,000 tons Domestic Consolidated: Basic unit per sales value of production 13% reduction from 2005</li> </ul>
	Adopt environmentally friendly researched measures to reduce CO <sub>2</sub> levels at the biggest con instances were identified in which implementable measures v	• NGK ranked its principal production facilities by level of energy consumption, and researched measures to reduce CO <sub>2</sub> levels at the biggest consumers. As a result, 47 instances were identified in which implementable measures were available, accounting for 2,700 tons of CO <sub>2</sub> . Of this amount, measures to address 1,300 tons were taken during fiscal 2009.
Preservation of the natural environment	Promote resource recycling	<ul> <li>Reduction of by-products generated (see page 37) NGK Japan: Reduction of 42% from 2005 Domestic Group: Reduction of 30% from 2005</li> <li>NGK measured the extent to which raw materials and energy are being wasted in production processes, and sought ways to boost yields and gain other improve- ments by enacting material flow cost accounting (MFCA) on a trial basis. This step was taken for three products, including suspension insulators, and led to recogniz- able reduction benefits.</li> </ul>
	Strengthen global environmental management	<ul> <li>Expanded the number of Group companies outside Japan that set targets for reducing environmental load by four (to twelve companies) in January 2010, covering 98% of the Group's environmental load outside Japan.</li> <li>Initiated operation of an integrated environmental management database system (ECODAS), enabling rapid collection of environmental data, including among Group companies (see page 32).</li> </ul>
Disclosure of	Enhance disclosure of corporate information	<ul> <li>Among other actions, posted IR information and product accident information (accidental fire involving NAS<sup>®</sup> batteries) on the corporate website, and held finan- cial result presentations for institutional investors.</li> <li>In addition to publication of a business report and annual report, we replaced the Environment and Social Responsibility Report with the CSR Report and updated related websites.</li> </ul>
corporate data	Consistently improve internal controls over financial reporting	• Evaluated roughly 4,200 processes, including at applicable Group companies, and verified the effectiveness of internal controls with respect to fiscal 2009 financial reporting; issues that were not discovered at the self-evaluation stage, but were identified by internal audits and other checks fell 86% from fiscal 2008 to 50 items. All 50 items had been rectified by the close of fiscal 2009.
	Thoroughly promulgate the NGK Group Guide- lines for Corporate Behavior through education	<ul> <li>Distributed leaflets to all employees in April to thoroughly promulgate the NGK Group Guidelines for Corporate Behavior and conducted related training for new hires. NGK divisions and Group companies were instructed by the CSR Committee chair to comprehensively promote awareness of the guidelines.</li> </ul>
	Reinforce the risk management system	• Each division proposed and enacted measures to counter risks in day-to-day busi- ness operations identified by the CSA questionnaire. The second questionnaire conducted in December 2009 revealed an overall decline in the perceived likelihood of risk versus levels in the previous questionnaire, which we properly recognized as benefits stemming from enactment of earlier measures (see page 14).
Thorough compliance and risk management	Respect and protect intellectual property rights	<ul> <li>Held a variety of training seminars taken by 277 people that included Patents I and II, Intellectual Property (IP) Seminar I and II, and a crash course on inventions.</li> <li>Held for the first time a lecture series (3 lectures) on the themes of intellectual property and management attended by 441 people.</li> </ul>
	Create and consistently improve a framework for information security	<ul> <li>Conducted an e-learning program among all PC users to confirm the status of compliance with the "Information Security Handbook."</li> <li>Upgraded the system firewall at Group companies outside Japan; we also raised the level of security through mechanisms for concentrated system surveillance and by encrypting communication channels between Group companies.</li> </ul>
	Strictly adhere to the Anti-Monopoly Act, the Anti-Trust Act and other laws and regulations pertaining to business transactions	<ul> <li>Held seminars in North America led by an attorney regarding the Anti-Monopoly Law (anti-trust legislation), and which were attended by management and sales person- nel from seven Group companies.</li> </ul>
	Strictly adhere to laws and regulations relating to export management	• Established new export control regulations for seven Group companies in the EU.

# Note: Evaluation standards for achievement level: $\bigcirc$ Target achieved $\triangle$ 80% or more of target achieved $~\times$ Less than 80% of target achieved

	△ 80% or more of target achieved × Less than 80% of target achieved			
Achievement Level*		2010 Targets		
	0	<ul> <li>Continue to deliver large-scale NAS<sup>®</sup> battery systems to Abu Dhabi</li> <li>Expand sales of NAS<sup>®</sup> batteries for installation in conjunction with wind and solar power generation equipment, particularly outside of Japan</li> </ul>		
	0	<ul> <li>Expand delivery of transmission and transformer insulators to accommodate full-scale implementation of planned ultra- high-voltage transmission network infrastructure in China</li> <li>Expand delivery of water purifying systems to the pharmaceutical sector, which demands consistently higher levels of safety and quality</li> </ul>		
		<ul> <li>Promote enhancement of quality activities and functions Company-wide, and develop mechanisms for minimizing quality risks in the market</li> </ul>		
	0	<ul> <li>Reduction of CO<sub>2</sub> emissions NGK Japan: Emission volume of 131,000 tons or less (down 7% versus fiscal 1990) Domestic Consolidated: Basic unit per sales value of production 7% or more reduction from 2005</li> </ul>		
	0	<ul> <li>Establish guidelines and checklists to promote energy efficiency of general-purpose equipment</li> <li>Examine feasibility of a production system capable of substantial CO<sub>2</sub> reductions</li> </ul>		
	0	<ul> <li>Reduction of by-products generated NGK Japan: Reduction of 25% from 2005 Domestic Group: Reduction of 15% from 2005</li> <li>Ongoing introduction of MFCA</li> </ul>		
	0	<ul> <li>Set targets for reducing environmental load at Group companies outside Japan</li> <li>Verify achievement status of set targets at 12 companies outside Japan by January 2010, and provide necessary support</li> </ul>		
	0	Continue to provide fair and honest information disclosure in a timely and appropriate manner		
	0	• Enhance management level in each division from the self-evaluation stage to reduce number of issues identified by audits as requiring improvement		
	0	<ul> <li>Enact position-based training, repeatedly encourage extensive promotion of CSR Talk Live; form liaison committees with Group companies and other areas, and continue to periodically verify awareness levels</li> </ul>		
	0	<ul> <li>Continue to have the CSR Committee periodically confirm and follow-up on the status of Company-wide risk countermeasures based on the second questionnaire conducted in fiscal 2009</li> <li>Conduct second CSA questionnaire at Group companies in Japan in December</li> </ul>		
	0	<ul> <li>Transition to a training system that emphasizes effective intellectual property training and dialogue, and ensure full range of content</li> <li>Ensure robust intellectual property training for managers</li> </ul>		
	0	• Establish new NGK Group IT Security Standards and apply to all Group companies, including those outside Japan		
	0	• Provide individualized support to Group companies in Japan for strict adherence with the country's Subcontracting Act		
	0	• Explore options for linking the export control and shipping systems to enhance assurance regarding export control audits		
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Priorities in Promoting CSR	CSR Objectives	Major Initiatives in 2009
	Maintain and consistently improve safe and comfortable working environments	<ul> <li>Conducted an experiential safety education program attended by 500 people (largely new hires in fiscal 2008 and 2009) to promote recognition of the importance of occupational safety through firsthand experience.</li> <li>Took steps to embed "Identify and Rectify" activities to ensure worksite safety. While several activities are already ingrained aspects of morning meetings and other gatherings, the penetration of "Identify and Rectify" activities as an everyday element at worksites failed to reach anticipated levels.</li> <li>Conducted a survey of the status of safety activities among Group companies in Japan to develop ways to assess and further enhance the level of Group-wide safety initiatives; information collected was shared among companies to provide a point of reference for future activities.</li> </ul>
Respect for human rights, maintenance of comfortable working environments	Develop human capital and recruit human resources across the Group	<ul> <li>[Manufacturing training] In addition to existing courses teaching awareness regarding safety, equipment, workflow improvement, and cost (including courses for employees at Group companies), we established a newly abridged course for veteran managers, with training completed by nearly all managers (163) of applicable organizations at NGK.</li> <li>[Global training] Language-learning courses were provided to roughly 40% of employees scheduled for postings abroad between fiscal 2010 and 2012. Particularly for language training in English, a program consisting of concentrated seminars (about 10 days or 100 hours) and individualized lessons (20 hours) was held at the Toba General Training Center to boost language skill levels.</li> <li>[Practical overseas internships] Selection and training was completed in Japan for four people as part of a drive to develop huma resources capable of being active outside Japan in the future. With this step, NGK has finished preparations for sending interns to local subsidiaries outside Japan in the first half of fiscal 2010.</li> </ul>
	Utilize diverse human resources	<ul> <li>The percentage of employees with disabilities was 1.86%, meeting the legally mandated ratio for the first time in six years.</li> <li>Introduced a part-time employment system for seniors, expanding options for continued employment following retirement; this step has extended opportunities to work through age 65 at clerical and administrative worksites as well.</li> </ul>
	Support a better balance between work and home life/childrearing	<ul> <li>[Shortening overall working hours] As the second year of a three-year plan, achieved a 5% reduction in work outside of business hours among those enrolled, with results also seen in reducing the number of employees working extended overtime (60% reduction in those working 600 hours or more overtime annually, 80% reduction in those working 80 hours or more of overtime a month).</li> <li>[Enhancing support for better work/home life balance] Introduced shorter working hours, half-day paid vacation, and expanded options for dealing with accumulated vacation time; in terms of economic support, we developed systems agreed upon by NGK management and labor that included establishing a fund for those taking nursing care leave, providing cash assistance for babysitter expenses, and expansion of the cash gifts given to mark childbirths and school entry.</li> </ul>
Fair, free and transparent business	Evaluate procurement partners fairly and honestly, and extensively pursue resource diversification	<ul> <li>Formulated green supplier certification standards, compiled a list of suppliers that already meet these standards, and examined certification methods ahead of certification enactment in fiscal 2010.</li> <li>Confirmed current status of green procurement and Green Procurement Guidelines among Group companies worldwide (see page 29).</li> </ul>
transactions	Promote CSR procurement	<ul> <li>As a prerequisite to CSR procurement, conducted visits and surveys to determine current status of supplier management among Group manufacturing companies worldwide.</li> </ul>
Promotion of social contribution activities	Provide scholarships and living assistance to foreign students	<ul> <li>As in previous years, provided assistance to foreign students that included scholarships to 20 students and housing to 40 students.</li> <li>Extended the area of local residents eligible to take part in the foreign language and cross-cultural exchange classes offered by students receiving NGK assistance—area now includes the whole of Nagoya City's Tenpaku and Mizuho wards, with 1,000 participants taking part in 50 classes held. Cross-cultural exchange classes for employees were expanded from Nagoya to include the Chita and Komaki areas, with 210 people taking part in six classes; other efforts to expand opportunities for interaction between foreign students and local residents included cooperation with local Halloween events.</li> <li>Explored feasibility of standards to diversify the students receiving assistance (e.g., consideration of the industrial features of region where students study, their major fields of study, citizenship in countries where NGK is active), and conducted a survey regarding utilization of study abroad partnership networks between universities (see pages 10 and 11).</li> </ul>
	Cooperate with local communities, labor unions, and NPOs in social contribution activities	<ul> <li>Periodically surveyed activity status at each company to assess and share informa- tion on activities Group-wide, disclosing a portion of this information (40 events at 15 companies) on the NGK corporate website.</li> </ul>
	Support volunteer activities by employees	<ul> <li>Although a portion of information from assessment of Group-wide activity status was posted to the NGK website, support was effectively limited to providing information on the track record of activities within the Group.</li> </ul>
	Undertake communication activities with customers and procurement partners	<ul> <li>Held business performance presentations for major suppliers in May, with 200 companies attending.</li> <li>Although we began operating a helpline for suppliers, the only inquiries received were from companies seeking to become new suppliers, with no consultations received related to legal violations or other concerns.</li> </ul>
Communication with stakeholders	Interact with local communities through plant tours and open house events	<ul> <li>Targets were set for increasing opportunities to interact with regional communities, the results of which are presented by area below.</li> <li>Nagoya area: Accepted four plant tours (45 people) mainly from elementary and junior high schools, for the same number of visits as the prior fiscal year.</li> <li>Chita area: Accepted plant tours, including one visit each from community representatives (53 people) and elementary/junior high students (5 people), as well as a tour by a medical institution (54 people), for the same number of visits as the preceding fiscal year.</li> <li>Komaki area: Held a summer festival attended by 2,000 community members; plant tours included one by community representatives (11 people) and twelve from elementary and junior high students (265 people), down two visits from the preceding fiscal year.</li> <li>Instituted a plant tour during school summer vacation composed of 10 employee families and their children, with their impressions and other observations posted to internal bulletins.</li> </ul>
	CSR Talk Live (Discussions on executing CSR with employees in every job position)	<ul> <li>CSR Talk Live was held 10 times, and extended to include 3 Group companies. In addition to explaining content found in the CSR Report, CSR Talk Live is positioned as an opportunity to entrench CSR through direct discussions between senior management and employees (see pages 22 and 23).</li> <li>Prior to this, all NGK and domestic Group employees (including manufacturing contract employees and temporary employees) were given a condensed version of the Company's first-ever CSR Report.</li> </ul>

	ightarrow 80% or more of target achieved $$ × Less than 80% of target achieved
Achievement Level*	2010 Targets
	<ul> <li>We will continue to institute experiential safety education for new hires. Employees hired in fiscal 2007 will also be targeted for training as we work to share awareness of the importance of occupational safety.</li> <li>"Identify and Rectify" activities, which fell short of anticipated levels in fiscal 2009, will be extensively reemphasized via voluntary activities at each worksite.</li> <li>We will conduct worksite patrols at manufacturing- and technology-related sites in a drive to raise awareness of organizational safety and the work environment in order to prevent fires. Enactment status will be compiled each quarter, with follow-ups conducted by the Safety and Sanitation Committees of each business site and Company-wide in order to enhance awareness of occupational safety.</li> </ul>
0	<ul> <li>The program to strengthen on-site capabilities, the core element of manufacturing training at NGK, was completed in fiscal 2009. Accordingly, we will establish a course to cultivate in-house instructors that will enable those new to any organization within the Group to take action under their own initiative to receive the same training as on-site managers in this area.</li> <li>The number of people eligible for practical overseas internships will be extended from four in fiscal 2009 to around ten, creating a pool of human resources capable of adapting smoothly to assignments outside Japan.</li> <li>Ahead of base establishment in Mexico, we plan to reoffer Spanish language courses and raise the number of employees eligible to take part in training prior to assignment to Mexico.</li> <li>To foster candidates for general manager and division director in the near future, we will implement a new seminar to train the Group's next generation of leaders. The seminar will focus on cultivating the ability to think and judge, and business skills, with 11 people to take part in the first session.</li> </ul>
0	<ul> <li>To maintain and increase the percentage of employees with disabilities, we will expand the number of clerical and technology-related jobs open to these employees and diversify our recruitment methods.</li> <li>We will review our system for transferring from jobs in the general employment pool to career-track positions to allow motivated employees to expand their employment options.</li> </ul>
0	<ul> <li>As the final year of our plan for shortening overall working hours, we will enact the following measures: <ol> <li>Increase the number of vacation days by averaging out working time to 8 hours a day</li> <li>Prohibit more than 80 hours of work beyond working hours per month</li> <li>Itimit to six months of the year or less work beyond working hours of more than 45 hours a month.</li> </ol> </li> <li>To help knowledge of our system of work-life balance support gain traction, details of the system will be published in an accessible format on a special site developed on the Company intranet. We will also create a consultation helpdesk to respond to individual inquiries in an effort to entrench this system (see page 25).</li> </ul>
0	<ul> <li>Begin certifying companies as NGK green suppliers.</li> <li>Cooperate with suppliers failing to meet certification standards on the following improvement efforts for eventual certification: 1) Visit suppliers to explain where improvements are required and other information. 2) Hold information sessions. 3) Reevaluate suppliers via questionnaire.</li> <li>Steps will be taken to formulate Green Procurement Guidelines and commence their operation at Group companies in Japan.</li> <li>For Group companies outside Japan, we will explore the formulation of guidelines in collaboration with business divisions.</li> </ul>
0	<ul> <li>Formulate Group supplier management standards as a prerequisite to CSR procurement.</li> <li>Conduct a survey on CSR procurement among the major suppliers of Group companies.</li> </ul>
О О Д	<ul> <li>Enact trial measures to diversify foreign students receiving assistance (expand the number of eligible universities, etc.)</li> <li>Institute interactive cross-cultural exchange projects (history, skills, lifestyle, culture, etc.) between foreign students and employees.</li> <li>Promote exchange between International House (living accommodation for foreign students) residents and residents of NGK's dorm for single employees (including mutual invitation to events, participation in regional community exchange projects, etc.).</li> <li>Verify present status of former students assisted by NGK in Seoul, Beijing, Shanghai and other locations where Group bases exist to assess the activity of these students after returning to their home countries.</li> </ul>
0	<ul> <li>Continuously assess and share examples of activities within the Group, and promote efforts to revitalize activities tailored to the situation specific to each company.</li> <li>Introduce "Table for Two," a menu of social contribution activities for employees.</li> </ul>
	• Provide information on activities of OISCA-International and examine opportunities to offer support for participants on a trial basis.
0	<ul> <li>Continue to hold business performance presentations for major NGK suppliers.</li> <li>Operate the supplier helpline and strive to maintain fair and honest business relationships.</li> <li>Conduct visits and other activities to promote green procurement certification.</li> </ul>
0	<ul> <li>Continue responding to the requirements of each area. Increase acceptance of plant tours particularly from elementary and junior high students in the Nagoya area to encourage greater interest in manufacturing.</li> </ul>
0	<ul> <li>Continue to hold CSR Talk Live sessions and distribute a condensed version of the CSR Report to employees of NGK and Group companies in Japan.</li> <li>Move forward with development of a one-stop information service by opening a gateway site for CSR information (CSR-Web) on the NGK intranet, serving as a platform for accessing various CSR information within the Group.</li> </ul>



# A Company Advancing and Growing with Society

The NGK Group is engaged in a wide variety of activities that contribute to society, centered on people and education, environmental preservation, and community involvement.



# [People and Education]

In 1998, NGK established the NGK Foundation for International Students, in the hope that foreign students studying in Japan would deepen their understanding of the country, and one day become bridges between their own countries and Japan. The Foundation supports men and women who will contribute to the development of their home countries and the international community.

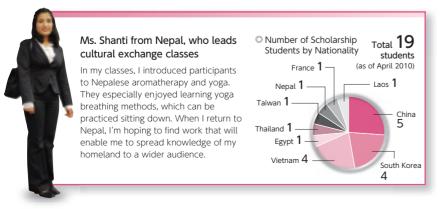
# Foreign Students Learning with the Local Community

Located in a quiet residential district in Nagoya is the NGK International House, which provides lodging exclusively for students from overseas. Today, forty foreign students are engaged in studies at universities and graduate schools in Aichi Prefecture, and their International House is operated by the NGK Foundation for International Students.

While the NGK International House is primarily a residence for foreign students being supported by the Foundation, it is also a place for them to interact with members of the local community. Programs offered to the community include classes on language and foreign culture held fifty times a year. Classes are based on a curriculum that the students create themselves, expanding opportunities for exchange between the students and their community.

Language classes have been set up to provide twenty lessons a year in both Chinese and Korean. Designed to provide a fun introduction to foreign language, they focus on basics such as pronunciation and daily conversation. Classes in foreign culture, held ten times a year, are varied, introducing the culture of each country through familiar themes, including musical performances by students dressed in their native costumes, sampling of ethnic foods, and other programs. They attract a wide range of participants of all ages and occupations, from high school students to seniors.

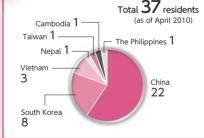
To help boost our employees' understanding of our CSR activities, from fiscal 2008 we have also begun offering foreign cultural exchange programs at our offices throughout Aichi Prefecture.



#### Mr. Kim from South Korea, who serves as a Korean language instructor

It's fun to help members of the local community better understand my country by studying the language, so I don't consider it a hardship. My graduate research is a lot of work, but I am grateful for the support of the NGK Foundation for International Students

#### © NGK International House Residents by Nationality



#### Local resident Ms. Sato, and her granddaughter, who participated in Chinese language classes

The atmosphere grew more relaxed with each lesson, and we enjoyed our six months of study. The instructors were all very kind, and I was impressed by how well they spoke Japanese.



Foreign student-led language lessons

NGK International House

Please visit our website for more information about the NGK Foundation for International Students
Web http://www.ngk.co.jp/english/csr/philanthropy/

# Supporting Over 400 Foreign Students

The NGK Foundation for International Students provides the NGK International House as a residence for students from overseas studying at universities and graduate schools in Aichi Prefecture. Since its completion in 1999, forty students each year have made it their home.

Aside from the students being provided with housing, the Foundation supports another twenty students each year with monthly scholarships of ¥120,000, enabling them to focus on their studies and research. The number of students the Foundation has supported with housing and scholarships combined between 1997 and 2009 now totals 476.

# Ms. Zhang from China, a resident of the NGK International House

In terms of day-to-day life, it's been a big help to be able to live in the NGK International House. The facilities are great, and it's very convenient. The thing I'm happiest about is that my room has its own bath.

 Private room amenities: Desk, bed, closet, air conditioner, bathroom, refrigerator, etc., along with Internet connectivity

 Public area amenities: Kitchen, dining room, study room, lounge, meeting hall (85m<sup>2</sup>)





Private room (40 rooms, 18m<sup>2</sup>)

Study room

# Mariko Horio, one employee who participated in a cultural exchange class

The classes enabled me to venture into unknown territory, and really broadened the impression I had of Mongolia. We got to try Mongolian food, and overall it was just a really fun experience.



during a class on Inner Mongolia

 Image: Cultural exc-base classes held in the Company in 2009

 July 15
 Inner Mongolia (Head office, Nagoya Plant)

 September 2
 The Philippines (Head office, Nagoya Plant)

 September 9
 Inner Mongolia (Chita Plant)

 September 30
 India
 (Komaki Plant)

 October 14
 China
 (Head office, Nagoya Plant)

 December 2
 Nepal
 (Head office, Nagoya Plant)

#### Mr. Ishida, professor at Nagoya O Breakdown of Foreign Students' Courses of Study University and Director of its Education Center for Total 56 students International Students (as of April, 2010) In order for foreign students to Doctoral Department program conduct meaningful study and 11 . 15 research, it's necessary to provide them with the best possible study and living environment, and a detailed support system. We are very Master's grateful for NGK's support over program the vears. Yutaka Deguchi, General Affairs Division staff member in charge of the foreign student support program Operation of the NGK Foundation for International Students is an important part of NGK's own CSR activities. I am certain that the

important part of NGK's own CSR activities. I am certain that the students, who have deepened their understanding of Japan through interaction with the local community, will go on to contribute to greater friendship between their native countries and Japan.

# [Environmental Preservation]

NGK continues to pursue what it can and should do to protect the global environment.

# Contributing to Aquatic Preservation Through On-site Lectures

As part of its involvement with the Environmental Partnership Organizing Club (EPOC), NGK provides on-site lectures to elementary school students, led by employee volunteers. These lectures make use of an original text created by NGK called "Francois' Water Survey" to teach students the importance of water. Experiments in filtering cloudy water, or using activated charcoal to make clear, colorless water, help the children to experience the fun of science.

The impetus for these lectures was an ecology discussion and exchange session Shun Matsushita, NGK's president and CEO, had with 150 elementary school students on the relationship of people and water at the 2005 Aichi Expo, and the initiative has continued since.

By fiscal 2009, NGK had conducted a total of 22 lectures, reaching approximately 800 elementary school students. After each session, we hear from the children how much they learned about the importance of water, and how much they enjoyed the experiments.



Lecture at Midorigaoka Elementary School, Okazaki, Aichi Prefecture (January 2010)



comments from the children

# Leading the Industry in Purchase of Green Power Certificates

Reducing emissions of  $CO_2$  in the production of ceramic products is an important issue for NGK, and in January of 2002, we moved ahead of other companies in introducing the use of green energy.

Green energy refers to electricity generated through renewable energy sources such as wind and solar power and biomass fuels. NGK utilizes green energy generated by wind power. The Green Power Certification System contract we have signed with Japan Natural Energy Company Limited calls for them to generate two million kilowatt hours



Green Power Certificate

of wind power for us each year. This is equivalent to approximately 800 tons of  $CO_2$  emissions per year, or the annual amount of  $CO_2$  absorbed by approximately 60,000 cedar trees.\*



Tohoku Natural Energy Development Co., Ltd.'s Noshiro Wind Power Station

\*CO<sub>2</sub> conversion factors: Purchased electric power (kWh) converted at 0.42 (kg-CO<sub>2</sub>/kWh). Calculation also based on one cedar tree absorbing an average of approximately 14kg of CO<sub>2</sub> per year. Source: Green Carbon Sink Measures for the Prevention of Global Warming, Environmental Agency/Forestry Agency

# [Community Involvement]

The NGK Group pursues its CSR activities with a sense of gratitude to the communities in which it does business.

# Contributing to the Local Community Through Food Drives

In June 2009, NGK Metals Corporation, located in the U.S. state of Tennessee, donated food collected by its employees to a volunteer organization that provides food to the economically disadvantaged.

The project started with an idea from an employee to divide the staff into four groups, who would compete to see which could collect the most food, with the winning group being rewarded with a pizza lunch.

In two weeks, the employees collected four large boxes, filled with soup, tuna, tomato sauce, corned beef, fruit, and other canned goods, as well as pasta and other items.



Food drive announcement

This kind of food donation is known in the U.S. as a food drive, and going forward NGK will continue to contribute to local communities through such food drives and other activities.



Lynne Woodside (r.) and Mark Satterfield, in charge of the food drive

# 12 Years of Conducting Lectures at Nagano Prefectural Institute of Technology

Since 1998, engineers from NGK subsidiary Soshin Electric Co., Ltd. in Tokyo's Minato Ward have traveled to Nagano Prefectural Institute of Technology, located in Ueda, Nagano Prefecture, to conduct annual lectures on electromagnetic noise.

Since the school's curriculum includes courses in electromagnetic engineering, and Soshin Electric designs and manufactures noise filters that cut electromagnetic waves, at the school's request the company began dispatching engineers from its noise filter division (located in Sakuma, Nagano Prefecture) to serve as lecturers.

Each lecture is three days long, and covers the types and mechanisms of electromagnetic noise and methods for measuring it, as well as noise-cutting technology and filter manufacturing, providing both classroom and practical training.

To date, a total of 240 students have taken the course, and the company has heard from many of them that they understood noise filters better after actually making one, and that the lectures got them interested in the field of electromagnetic noise. The NGK Group will continue to engage in CSR activities that make use of its proprietary technologies.



Lecture at Nagano Prefectural Institute of Technology

# Management

# Inspiring Even Greater Confidence as a Corporation

Aiming to gain even greater trust from its stakeholders, the NGK Group is working diligently to strengthen corporate governance, promote compliance, and enhance risk management.

# **Risk Management** Identifying and Correcting Easily Overlooked Day-to-day Risks Through the CSA Questionnaire

# Heeding and Addressing Unexpected Risks

Highlight

Corporate risk management consists of two sets of issues-those related to business strategy, including entry into new fields and expansion of a company's geographic reach, and the need to address unexpected events, including natural disasters, accidents, and misconduct.

The former are, to some extent, predictable, and steps can be taken to control such risks. The latter, however, are more difficult to address, with widely varied causes. Assessing and then responding to such situations is no simple matter.

To prevent the variety of risks that may occur in the routine conduct of business, and to work proactively to improve workplace practices which may lay at the root of such risks, in fiscal 2007 the NGK Group introduced the control self-assessment (CSA) questionnaire, and its accompanying risk management framework, in its domestic operations. The system covers virtually all aspects of day-to-day business, including compliance, information processing, hiring and labor, disasters, environmental preservation,

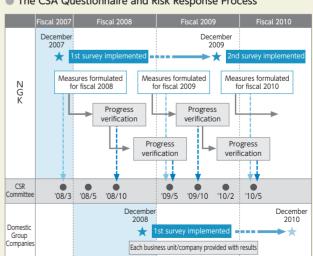
# Forming and Implementing Countermeasures

NGK and Group companies take turns implementing the CSA questionnaire each year, and business unit and divisional heads and Group company presidents are provided with feedback on the results in the month following implementation. Armed with the ability to compare their own results with Company-wide averages, management staff can then identify areas in which countermeasures are needed, and can begin considering what steps they will take in the subsequent year.

For issues requiring a cross-organizational response in the form of systemic changes or additional education, those responsible for specific risk categories in human resources, administration, legal affairs, supplies and materials, information systems, the environment, product quality, and facilities, will each review the survey responses and formulate countermeasures. Plans for implementing such measures are then reported to the CSR Committee. The CSR Committee then follows up on progress with the execution of these plans on a biannual basis. At the same time, committee members, which include upper management, are provided with regular status reports.

product safety, research and development, design, sales, production and outsourcing management, and product quality and customer complaint response. At NGK, approximately 1,200 staff, from managers and section heads to division chiefs and executive officers (and approximately 300 Group company employees between section head and executive officer class), respond to the survey by assessing the likelihood and potential impact of risks that may occur around them.

The survey consists of 100 questions (some of which are optional depending on the respondent's areas of responsibility), each requiring the respondent to describe, in concrete terms, the process by which potential risks may turn into real problems, a process which is designed to help them have a more intimate understanding of the risks they deal with. We also hope that reading through the survey questions will provide the respondents with an opportunity to identify risks around them of which they may not have been aware.



#### The CSA Questionnaire and Risk Response Process

Highlight: Risk Management Corporate Governance

# Verifying the Effects of Implementation

Figures from NGK's second annual CSA questionnaire, conducted in December of 2009, showed a significant overall reduction in potential risk compared to the first survey.

For example, 14 risk items which two years ago over forty percent of respondents identified as having the potential to arise in their own departments within five years, including lack of workplace training and operational dependence on specific individuals have, in the latest survey, fallen to just two items.

And, while in the previous survey, approximately thirty percent responded that potential risks existed for a drop in motivation and operational efficiency due to a lack of communication, as well as information leaks due to the loss of IT equipment or use of privately owned computers, in the current survey those rates have fallen below twenty percent.

We believe this is due to initiatives NGK has implemented over the past two years to reevaluate personnel assignments and provide training, which are reflected in the survey results. Conducting the surveys has also raised employee interest in risk-related issues, and overall, the survey seems to be contributing in some ways to containing risk.

We will continue to work on improvements in two areas assessed as potentially high-risk in the current survey (recurring overtime and

#### Change in potential risks

Results of 1st survey (December 2007) Results of 2nd survey (December 2009) Risk of occurring within five years Risk of occurring within five years Category Yes": Greater than 40% "Yes": Greater than 30% ter than 40% "Yes": Greater than 30% "Yes": Grea Compliance Informat Hiring/Labor Facilities managen accidents, and diss Environment Product safety Risk of occurring within five years Risk of occurring within five years Category "Yes": Greater than 40% "Yes": Greater than 30% Yes": Greater than 40% "Yes": Greater than 30% Common R&D, design Sales Production/Outsourcing manag Product quality/Custor ner complaint 0 14 17 2 16

loss of days off due to concentration of work among a few select staff, and delays in cost-cutting design due to overreliance on existing patterns of thought and behavior), by strengthening rules regarding overtime work, and initiatives in structural reform.

While the NGK Group will continue its efforts under this framework, for the time being its application is restricted to our domestic operations, and development and implementation of new measures to enhance risk management overseas will be an issue going forward.

# **Corporate Governance**

# Basic Policy on Corporate Governance

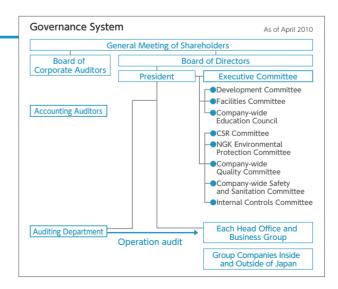
The NGK Group has developed and maintains an organizational structure capable of ensuring the legality of business activities and transparency of management, while quickly accommodating changes in the operating environment. The Group has also established and maintains shareholder-oriented management systems capable of the timely and appropriate disclosure of required information.

The corporate governance system consists of the General Meeting of Shareholders, the Board of Directors, and the Board of Corporate Auditors as well as the Executive Committee, which assists the president with decision-making, and various committees under the Executive Committee (see the chart on the right). The Company increases the effectiveness of governance through the discussion and consideration of important matters.

# Internal Control Systems

The NGK Group had developed and maintains an internal control system based on a resolution of the Company's Board of Directors in May 2006 (partially amended in May 2008 and April 2010).

Regarding the internal control reporting system established in



accordance with the Financial Instruments and Exchange Act (J-SOX), this system for enhancing the effectiveness, efficiency and reliability of operations, as well as proper operational evaluation, is being developed primarily by NGK's Internal Controls Committee.

# Compliance

## Initiatives to Entrench and Ensure Compliance

The NGK Group realizes that entrenching and ensuring compliance is critical to raising corporate reliability, and the CSR Committee's Compliance Subcommittee plays a central role in compliance education and awareness.

Based on an analysis of a compliance awareness survey conducted the previous year, in fiscal 2009, we worked to gain a shared awareness of the issues surrounding greater propagation of compliance within the Group through a series of dialogues with management-level staff in each division.

Among our education and awareness efforts were a series of four Legal Compliance Liaison meetings, where a wide range of workplace managers were provided legal explanations and case studies, as well as lectures on the Anti-Monopoly Law conducted at our head office and Tokyo location, and led by outside instructors.

A total of 600 employees have attended the Legal Compliance Liaison meetings, which cover real everyday issues such as how to avoid being accused of power harassment, and even top management participated in the seminars on the Anti-Monopoly Law. Through these efforts, we will continue to ensure widespread awareness of compliance and the framework that supports it.

We continued to strengthen these initiatives targeting domestic Group companies in fiscal 2009, and our seminars on the Subcontracting Law were successful in reaching almost all of the companies concerned. With regards to our overseas Group companies, in September 2009 we held an anti-trust law seminar in Washington, D.C., led by a local attorney, attended by managers and frontline sales people from seven U.S.-based Group firms. We also plan to strengthen and enhance training related to competition laws and security export control as part of our global training for those NGK employees scheduled for posting to Group companies overseas.

To strengthen legal risk management in Group companies outside Japan, NGK has established a periodic reporting system, under which all Group companies report to, and share information with, the head office Legal Affairs Department on the state of their legal risk management.



Anti-trust law seminar in the U.S. (September 2009)

# Operation of Helpline System

To ensure compliance with laws, internal regulations and corporate ethics, NGK has established a helpline system as a compliance aid for directly accepting consultations and reports from NGK Group and domestic Group company employees (excluding those at listed firms) and other concerned parties.

To ensure effective operation of the helpline, the Company has arranged to provide protection for those seeking consultation, extensively guarantee fairness of procedures, and facilitate access by preparing five points of contact, including an outside lawyer and a consultation channel exclusively for women.

# Security Export and Specified Export Control

To contribute to the maintenance of international peace and security and prevent the spread of weapons of mass destruction, the NGK Group has established the Security Export and Specified All employees eligible to use the helpline are issued a helpline card, and we consistently strive to deepen employee understanding of the system. At Group companies outside of Japan, we establish and operate individualized systems or provide alternative measures that comply with local laws and other requirements.



A helpline card

Export Control Committee and strives to reliably comply with laws and regulations related to export security.

Compliance Information Security

## **Information Security**

# Strengthening Information Security Systems

To ensure the proper management and use of information assets, the NGK Group CSR Committee's Security Subcommittee takes responsibility for supervising overall information security, and supports the General Affairs and Information Systems divisions in their efforts regarding personal information and IT network security control, document security control, and other issues.

In fiscal 2009, we updated firewalls for our Group companies

overseas and built a centralized monitoring system, began encoding intra-company communications channels, and enhanced IT security through the domestic Group company level. We also made preparations for building an IT security system based on common Group standards, and are targeting completion of that system within fiscal 2011.

# Ensuring Security Among PC Users

The NGK Group is working to eliminate information security risks arising from the people who actually use information. In fiscal 2009, we provided e-learning based training on information security to PC users utilizing NGK systems. The training covered the Company's basic information security policies, everyday precautions such as proper handling of e-mail, and also enabled users to conduct self-checks to ensure security tools installed on their PCs were working properly. The training program was in an exam format, designed to end only when the user had correctly answered all of the questions, and all users successfully completed the program.

#### NGK Group Guidelines for Corporate Behavior

Established in April 2003 and partially amended in April 2008, the NGK Group Guidelines for Corporate Behavior is a set of guidelines for putting the NGK Group's corporate and management philosophies into practice, and a policy for actions taken by the Group. Along with the pursuit of economic efficiency through fair and free competition, the guidelines specifically indicate the fundamental stance that Group business activities, officers and employees should adopt to ensure that the Company's existence also remains a beneficial one for society.

The NGK Group periodically reconfirms that employees at each company are familiarized with the details of the guidelines, while also taking steps to raise awareness of its corporate and management philosophies.

#### Seven Policies and Guidelines

Based on the NGK Group Guidelines for Corporate Behavior, the Group has seven policies and guidelines that form a system for asserting its stance and approach both within and outside of the Company. These policies and guidelines are the "Basic NGK Group Information Security Policy," "Core Policy on the Environment," "Company-wide Health and Safety Policy," "Basic Human Resource Development Guidelines," "Company-wide Quality Policy," "Basic Purchasing Policy," and the "Basic Green Procurement Policy."

#### NGK Group Guidelines for Corporate Behavior (Excerpt) Our Relationship with Society With the goal of achieving management openness, the NGK Group

With the goal of achieving management openness, the NGK Group will actively communicate with society and, as a good corporate citizen, contribute to its development and improvement of the society. We also recognize that our efforts concerning environmental issues are essential to the company's activities and survival, and we

#### undertake them in a proactive manner. Our Relationship with Business Activities

Through futurity, the NGK Group will continue to develop products that are safe and useful to society and to provide satisfaction to its customers worldwide. Our business activities will consist of fair, transparent, and free trade in accordance with the law as well as with the spirit of the law. Furthermore, as a member of international society, we will respect the cultures and customs of the world's nations and make efforts toward achieving togetherness with local communities. Finally, we will pass the fruits of valid business activities on to our stockholders in an appropriate manner.

#### Our Relationship with Our Employees

The NGK Group respects basic human rights, and will also work to actively support career formation and capacity building for our employees so they may attain comfort and affluence. Each employee must abide by labor laws and internal corporate

Each employee must abide by labor laws and internal corporate regulations as he or she performs his or her duties independently and with integrity, while at the same time improving his or her own skills.



# Creation of New Value

Utilizing its proprietary advanced ceramics technology, the NGK Group works to contribute to a better society, and provide products and services that deliver new value to society.

# Highlight

# First HONEYCERAM<sup>®</sup> Mass-produced Product Designated by the National Museum of Nature and Science as an Essential Historical Material for Science and Technology

The first mass-produced version of NGK's HONEYCERAM<sup>®</sup>, a catalytic substrate used in purifying automobile exhaust, was registered with the National Museum of Nature and Science as an Essential Historical Material for Science and Technology.

The National Museum of Nature and Science works for the preservation and utilization of materials important in looking back at the development and history of science and technology in Japan, and has established a system for registering Essential Historical Materials for Science and Technology with a goal of passing them on to the next generation. Items of historical importance in the development of science and technology, and those with significant implications for future generations, as well as items which have had a significant impact on the nation's lifestyles, economy, society, and culture, are selected for inclusion.

NGK will fulfill its obligation to leave the value represented by its HONEYCERAM<sup>®</sup> technology, now registered as an Essential Historical Material for Science and Technology, for future generations. This designation will encourage us to continue enhancing our core ceramics technology, and to take on the challenge of creating new value that can contribute to the further development of industry in Japan.



Certificate of registration as an Essential Historical Material for Science and Technology, and first mass-produced version

# NAS<sup>®</sup> Batteries Win Environmental Business Award in Recognition of Their Contribution to Building a Low-carbon Society

NGK's sodium-sulfur NAS® battery business received the Environmental Business Award at the eco japan cup 2009 event, organized by Environmental Business Women, Ministry of the Environment, Ministry of Internal Affairs and Communications, Development Bank of Japan, and Sumitomo Mitsui Banking Corporation.

This award recognizes the contribution of the NAS® battery business to enhancing the output stability of renewable energy sources and to building a low-carbon society. At the same time, the fact that we have built a competitive advantage utilizing ceramics technology, our core competence, was seen as a significant effort in terms of promoting strategic technology-based management in Japan. The eco japan cup Environmental Business Award is presented to companies for outstanding environmental efforts. Companies are selected by an expert panel, which uses publically available data to judge

major companies that have



Environmental Business Award

gained social recognition and a degree of success with currently commercialized environmental business models.

Creation of New Value

catalyst is less likely to accumulate in the corners of a hexagonal

reducing the volume of catalyst used. This variation provides

and because it loses little pressure, delivers better mileage.

cell than in a square cell. The catalyst coating can also be applied uniformly, enhancing the efficiency of exhaust gas purification, and

superior purification performance immediately after engine start-up,

tion performance, contributing to the more effective use of resourc-

es and responding to the needs of society and our customers.

NGK will continue to develop improved HONEYCERAM® purifica-

Highlight: HONEYCERAM® Designated as an Essential Historical Material for Science and Technology NAS Batteries Win Environmental Business Award

# Hexagonal Cell HONEYCERAM® Contributes to Resource Savings

In addition to its square cell versions of HONEYCERAM<sup>®</sup>, a ceramic substrate for automotive catalytic converters, NGK has developed and is expanding sales of a hexagonal cell



HONEYCERAM® product. The catalyst which coats the interior of the HONEYCERAM® cell walls consists of rare metals such as platinum, rhodium, and palladium, which face the danger of resource depletion and soaring prices. The

Hexagonal (left) and square cell HONEYCERAM®

## Joint Development of Fuel Cell Using Commercially Available Kerosene

NGK worked with Japan Energy Corporation and Sumitomo Precision Products Co., Ltd. to develop a 3-kW industrial-use solid oxide fuel cell (SOFC) system capable of running on commercially available kerosene.

NGK was responsible for development of the cell stack,\* which is the heart of the SOFC system. Using our advanced ceramics technology, we created spaces (flow channels) to supply fuel gas inside the cell, ensuring even distribution throughout the cell. Coating the entire cell in a zirconia electrolyte film, meanwhile, traps the fuel gas within the cell, realizing higher output efficiency. At the same time, we worked to reduce the number of parts and lower costs.

Going forward, NGK will continue to assess output efficiency, reliability, durability, and other factors, working to design an even

more efficient, compact product with the goal of introducing practical uses for this kerosenebased SOFC system.

\*A cell stack is an element used to increase voltage, formed by electrically connecting multiple cells in series (the "stack").



3-kW Kerosene SOFC system prototype

# Intellectual Property Strategy Underpins Product and Technology Development

The NGK Group encourages the creation of intellectual property, and works to ensure its proper preservation and use, based on a policy of respect for the rights of others. Our business, research and development, and intellectual property divisions collaborate closely



Intellectual property lecture series (November 2009)

with the goal of building competitive advantage for the Company. In addition to handling everything from patent applications and rights registration to basic procedures to protect those rights, they are also responsible for analyzing the huge volume of global intellectual property data, with a focus on the aggressive use of intellectual property in technical development and the formulation of business strategy.

In fiscal 2009, we deepened our ties with local patent agents and attorneys in emerging nations such as China, working to further strengthen intellectual property protections. In education, we called in outside instructors for a series of three lectures targeting middle management below the level of division head, further building awareness of how intellectual property can be utilized in business.

In fiscal 2010, we will reevaluate our existing training in intellectual property for rank-and-file employees, and plan to restructure our program to enhance small-group training and provide more practical education.

# With Our Customers

The NGK Group provides high quality, reliable products to its customers.

# Highlight

# **Supplier Awards Responding to the Trust and Expectations of Our Customers**

# Joy and Pride in Monozukuri

As a manufacturer, the NGK Group considers it both a pleasure and a great honor when customers praise the performance, quality and reliability of our products and services. We will

continue to respond to the trust and expectations of our customers, delivering ever better products around the world.

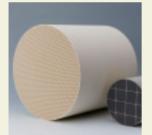
### Supplier Award (Company names/titles abbreviated)

#### Toyota Motor Corporation October 2009 Chubu Electric Power Co., Ltd. October 2009 Cummins Inc. (U.S.) March 2009 The Tokyo Electric Power Company, Incorporated

February 2009 November 2008 October 2008

February 2010

Changzhou Toshiba Transformer Co., Ltd. CLP Power Hong Kong Limited Cummins Inc. (U.S.)



DPF (diesel particulate filter)



Large size HONEYCERAM® and HONEYCERAW

Certificate of Appreciation for quality control initiatives Emergency provision of recovery-related materials following Typhoon 18 Best Performance in Quality 2009

Construction of fire extinguishing system for main transformer at Kawasaki Thermal Power Plant Unit 1 2008 Favored Supplier of the Year

Certificate of Appreciation for local installation work Best Performance in Quality (2007, 2008)



Bushing

HONEYCERAM®, DPF Distribution insulators and equipment

DPF, large size HONEYCERAM® Fire extinguishing system

#### Bushing Current Limiting Arcing Horn

DPF



Distribution insulator and Current Limiting Arcing Horn

# **Quality-related Initiatives**

In addition to the pursuit of quality that satisfies customers (in terms of product quality, cost and delivery), the NGK Group carries out activities aimed at improving a comprehensive

conception of corporate quality that includes the creation of products that appeal to customers, recognizing this as one of its social responsibilities as a corporation.

### **Company-wide Quality Policy**

With foremost emphasis on quality, the NGK Group is striving with customers to provide reliable and useful products and services to the public.

#### **Company-wide Quality Targets**

Dramatic improvement in quality levels through fundamental reforms.

Highlight: Supplier Awards Quality-related Initiatives

# Company-wide Quality Activities

Quality control-related indicators at the NGK Group in fiscal 2009 moved toward improvement, both for customer complaints and defects arising from the manufacturing process. With regards to addressing quality defects in the market, we consider prevention to be a critical issue. Accordingly, we are working to ensure tight risk prediction from the design stage, and to improve design review quality using FMEA\* and other methods. Internal measures to address defects include making deviations from normal states

# QuiC Activities

The NGK Group also addresses quality improvement through its QuiC (Quality up innovation Challenge) activities, in which all employees take part. These include proposal activities which harness the imagination and ingenuity of employees in the pursuit of quality, productivity, and health and safety improvements, and in reducing our environmental impact. Small group activities take a team-based approach to improving products, services, and work quality utilizing quality control concepts and methods.

In fiscal 2009, participation in NGK's proposal activities was 100% in the manufacturing division, and improved to 80% in non-manufacturing divisions due in part to the effects of a

# Strengthening the Quality Activities System

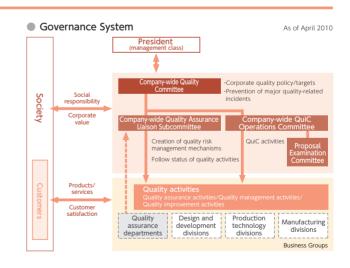
In April 2010, the NGK Group conducted a major review of its Company-wide quality activities system, with the goal of further strengthening and enhancing its quality activities.

The Company-wide Quality Improvement Activity Promotion Committee, normally led by the quality assurance and manufacturing divisions, was restructured as the Company-wide Quality Committee, comprising top management from each division. The Committee holds discussions on important quality issues, and pushes to promote even higher levels of quality activity through efforts such as building a quality control structure that adequately incorporates how products are actually used. more visible, and efforts to analyze and identify the mechanism behind defects from a different direction than before.

Going forward, in addition to traditional product quality control, we are also working to strengthen quality control based on a better understanding of how products are actually used.

\*FMEA: Failure Mode and Effects Analysis is a procedure for identifying design defects and potential weaknesses within a system that analyzes the failure modes of structural components and their effect on other items.

strengthened "eco proposal" initiative. Approximately 38,000 proposals were submitted, a 30% increase over the previous year. Going forward, we will work to reevaluate our graded assessment method, and promote initiatives to raise non-manufacturing division participation even further. Over 2,000 people participated in small group activities, focusing primarily on the theme of loss improvements. Even teams from our overseas plants participated in a Company-wide presentation featuring teams selected from each division, and interest among employees in participating in small group activities is rising.



#### NAS<sup>®</sup> Battery Fire

At approximately 7:40 a.m. on February 15, 2010, a fire broke out in an NAS® battery operating at Takaoka Electric Mfg. Co., Ltd.'s Oyama plant in Tochigi Prefecture; the fire was extinguished at 9:55 a.m. on February 17. As of the end of July, the cause of the fire was still under investigation by the Oyama Municipal Fire Department and other relevant agencies, but immediately following the accident NGK established an investigative committee led by Executive Vice President Taro Kato. We are cooperating in the investigation by the authorities, and are reviewing and implementing measures to prevent a recurrence.

The battery in which the fire occurred is a specialized high-output battery designed to address momentary drops in voltage. No other products of identical design are in operation elsewhere, and we believe the possibility of a similar fire occurring in the future is extremely small. The NGK Group is taking this opportunity to make fundamental changes in its quality control organization Company-wide, and to ensure we are able to respond to the trust and expectations of our customers.

# With Our Employees

The NGK Group believes that the Company's growth depends on the growth and well-being of our employees, and we work to adapt our human resource development to changes in society, ensure fair personnel practices, and provide a safe, comfortable workplace environment.

# Highlight

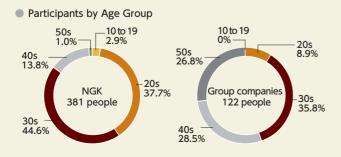
# CSR Talk Live Senior Management and Employees Share the NGK Group's Vision for CSR



# Working Toward Two-way Communications with Our Employees

In the fall of 2009, the NGK Group held its first live CSR discussion (CSR Talk Live) between employees and senior management, with the goal of ensuring that each and every employee understands and gains a deeper awareness of our CSR initiatives to date, and our vision for CSR going forward.

Starting with the first event, held at our Nagoya headquarters on September 17, ten sessions of about one hour each have been held, including those at domestic Group firms Akechi Insulators Co., Ltd., NGK Adrec Co., Ltd., and NGK Ceramic Device Co., Ltd., with each session kept at several dozen participants to ensure each person's voice could be heard. In total, over 500 employees have participated, representing about ten percent of Group employees nationwide.



At the live discussions, Executive Vice President Taro Kato and Senior Vice President and CSR Committee Chairman Hiroshi Wada started out by focusing on the theme of "Why CSR now?," explaining to the gathered employees the importance of NGK's CSR efforts. This was followed by an explanation, with specific case studies, of the Company's Special Edition 2009 CSR Report, led by the Environmental Management Department and the CSR Promotion Office.

In the limited time available, employees provided a lively series of questions and opinions on topics including the level of CSR activities at the NGK Group, our  $CO_2$  reduction targets, enhancement of measures supporting child and nursing care for family, and the future direction of the Company's CSR activities.

#### Rating the Management's Explanations (Total participants each time)

"Why CSR Now?"		Explanation of CSR Report		
Explanation was very clear140Explanation was sufficient233		Explanation was very clear	92	
		Explanation was sufficient	272	
Explanation was unclear	7	Explanation was unclear	14	

#### Rating of Time Spent (Total participants each time)

Too long	Just right	Too short
34	308	38

# Spreading Further Understanding of CSR

Today, one out of two full-time employees at NGK has been with the Company for ten years or less. Since it has not been long since we fully ramped up our CSR initiatives, we hope to see this younger generation take a central role in expanding our CSR Talk Live discussion program, and work to spread further understanding of our CSR efforts. We will also continue promoting the program among our domestic Group companies. Since we conduct a more frank exchange of opinions at the live discussions, we would like to ensure the best aspects of our initiatives to date are communicated properly, that the diverse range of employee opinion is put to use in our activities, and that this becomes a CSR program all employees will participate in and help support.

#### Feedback from Participants

- This was a good opportunity to learn more than what we could get from a summary of the CSR Report 2009, and to hear what other people are thinking. (Female, employee since 1998)
- It was good to be able to speak directly with senior management. I think the CSR Talk Live discussions are a good, new initiative. (Male, employee since 2007)
- I learned many things for the first time participating in the session, and I hope many other people will participate, too.
   (Female, employee since 1990)
- It might be good to also have the chance for even smaller-group discussions.
   (Female, employee since 2006)

- Without this opportunity, I probably wouldn't have read CSR Report 2009, so I learned a lot. I'd like to see this become a more comfortable place for women to work. (Female, employee since 1992)
- While I never really even thought about it until now, I understand now how, as an employee, I contribute to society in many different ways. (Male, employee since 2002)
- While we have a helpline system in place, I think many people feel uncomfortable using it. It might be good to communicate a little more how the helpline system works. (Male, employee since 2003)

#### Feedback from Senior Management

While we started out feeling our way through this first-time initiative, the discussions grew more productive as we repeated the process over time. I hope we will continue this effort in 2010 and beyond.



(Taro Kato, Executive Vice President)

We don't usually have much opportunity to speak directly with our younger employees, so I'm glad we were able to do that. I'd like to spread a more accurate understanding of, and trust in, our helpline system.



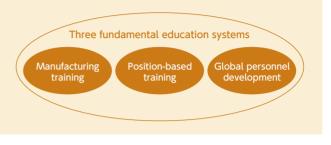
(Hiroshi Wada, Senior Vice President and Chairman of the CSR Committee) \*Titles shown are those current at the time.

#### <Aichi> Sept. 17 (72 people) Head Office/Nagoya Plant Sept. 25 (75 people) Oct. 1 (59 people) <Aichi> <Aichi> Komaki Plant Oct. 5 (43 people) Chita Plant Oct. 2 (63 people) NGK Ceramic Device Oct. 21 (56 people) <Osaka> <Gifu> Osaka Branch Oct. 15 (24 people) Akechi Insulators Nov. 9 (31 people) NGK Adrec Nov. 12 (35 people) <Tokyo> Tokyo Main Office Oct. 23 (45 people)

#### CSR Talk Live Event Schedule and Number of Participants



NGK considers people to be its most critical resource, and we devote our energies to developing the next generation of employees, while respecting their desire to improve and their motivation. Our initiative to promote these efforts consists of three education systems, including manufacturing training, global personnel development, and position-based training.



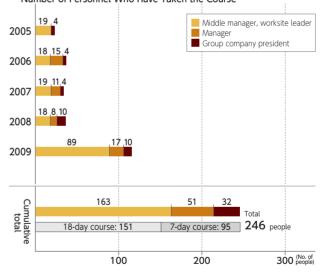
# Manufacturing Training to Nurture Strong Onsite Leaders

To survive in an increasingly competitive global market, the NGK Group is working to strengthen its onsite manufacturing capabilities, including the ability for self-directed, ongoing problem solving, and the ability to improve. In addition to existing courses targeting employees at Group companies, which covered safety, equipment, operational improvements, and cost awareness, in fiscal 2009 we added short-term courses for veteran managers, working to ensure the results of the training are widely shared, and solidly instilled in the front line of workers. This effort has enabled nearly all targeted employees—a total of 163 people—from plant general manager to worksite leader, to successfully complete the training.



Activities to strengthen manufacturing onsite capabilities

Going forward, we will work to instill this expertise in strengthening onsite capabilities throughout every corner of our factories, ensuring that the tradition and spirit of manufacturing at NGK is carried on and spread.



#### Structure of Program to Strengthen Onsite Capabilities and Number of Personnel Who Have Taken the Course

# Using Global Training to Quickly Nurture Young Engineers

The NGK Group is expanding its business overseas, and going forward, the number of employees posted to our overseas locations is expected to grow from the current 150 or so, along with the number of countries and regions in which we operate.

Global training is a system for ensuring the adequate, solid nurturing of personnel to meet these needs. In fiscal 2009, we made an initial selection of staff to be posted overseas through fiscal 2012, and implemented language training for about 40% of them. We focused particularly on improving English language skills, through a combination of intensive training (10 days, approximately 100 hours) at our Toba General Training Center, and individual lessons (20 hours).

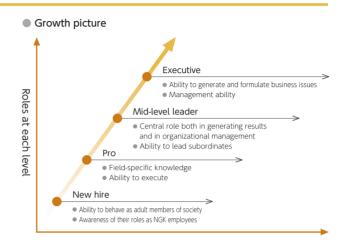
We have also established a new overseas internship (trainee) program targeting young engineering personnel, and selected four employees to undergo the program. Our goal is to send these young engineers overseas early in their careers, enabling them to contribute to the development of new business along with the sales and manufacturing personnel who, until now, have formed the core of our overseas staffing.

Developing the Human Resources that Support NGK Initiatives in Employment and Human Rights

# Educate Middle Management Through Position-based Training

At NGK, the key objective of position-based training is to encourage self-awareness of the individual's roles based on their career path, and to provide the required understanding of internal controls, compliance, and other issues, and in recent years, our efforts have focused particularly on training for middle management.

Over the past ten years, as many of its veteran employees have retired, and recruiting of contract manufacturing employees and new hires has increased, NGK has seen a significant change in the generational makeup of its staff. By providing new training to middle management, who may have had few opportunities in their careers to gain experience and expertise in workplace management and staff development, we are working to strengthen and maintain the Company's onsite capabilities.



### **Initiatives in Employment and Human Rights**

The NGK Group works to provide a comfortable, safe workplace environment for its employees, while respecting their fundamental human rights. Hiring is based on a policy of stable employment and equal opportunity, but also aims to encourage employee autonomy and independence, and to provide fair treatment based on their contribution to the Company, and we have implemented the human resource systems necessary to achieve those goals.

# Revising Human Resource Systems to Expand Support for Work-Life Balance

To further ensure that employees are able to make the most of their willingness and capabilities, in March 2003 NGK revised its human resource system, centering on expanding support for work-life balance and revisions to our system of benefits for acquiring professional qualifications.

Expansion of measures to support work-life balance, targeting all employees, was undertaken in response to rising interest both internally and outside the company, due in part to changes to the Law for Measures to Support Development of the Next Generation, with specific measures reflecting employee opinion as gathered by

# Creating a User-friendly Environment

With this expansion of support for work-life balance, in March 2010 we rolled out a new work-life balance support site on our intranet, creating an environment for sharing information from the employees' point of view, including our new "Featured Dad" program.

We also held briefings on our new human resource system, targeting management staff, and worked to ensure that the new systems are easily accessible to those who wish to use them. For child-rearing related programs, we institute meetings between employees using the programs and their supervisors, ensuring that the systems are properly understood and that work needs are given adequate consideration. the Company's labor union. The objective is to enable employees to continue working while caring for children or family members, by enhancing both financial support and time considerations.

Specifically, these include 1) a new system offering shortened working hours for those with children in the third grade of elementary school or younger; 2) a new system of half-day paid leave; 3) expansion of use of accumulated leave to care for family members, etc.; 4) addition of options to extend child care leave; and 5) expansion of payment of relief funds in support of family health care leave.



Work-life balance support site

NGK employs personnel without regard for race, nationality, belief, gender, or disability, and is striving to achieve an equal opportunity workplace.

As of March 31, 2010, women accounted for roughly 12% of NGK's workforce, and this figure includes seven women in management positions, out of the 725 people in such positions. Over the five-year period since 2005, of the 1,051 people hired as regular employees, 154 (15%) were women.

Where employees with disabilities are concerned, the percentage of employees with disabilities throughout fiscal 2009 was 1.86%,

# Optimal Job Allocation and Skill Improvement Support

To open the way for employees to take full advantage of their individuality and skills, NGK operates an internal job application system and the internal Free Agent (FA) system. The internal job application system is a mechanism whereby the Company discloses to employees the positions that it requires and appoints suitable applicants.

System for Rehiring Employees after Retirement

In an effort to present employment opportunities for senior workers, since April 2001, NGK has adopted a system for rehiring ordinary, regular employees after their retirement. As of March 31,

# Supporting Mental and Physical Health and Work-Life Balance

With respect to employees' mental health, NGK works to realize the early discovery and care of any issues among all of its employees. An industrial health specialist, meanwhile, visits our major business sites as part of follow-up.

# Respect for Human Rights and Preventing Harassment

The NGK Group prohibits harassing behavior (for example, sexual harassment or power harassment) by employees, which is injurious to individual dignity and interferes with workplace order and business execution, and takes disciplinary action in response to any violations. Furthermore, we have established a Grievance

# Labor-Management Relations

NGK is building labor-management relations founded on mutual trust where both labor and management fulfill their respective responsibilities. Through communication with various consultative bodies, such as the Labor-Management Advisory Board, the Office Advisory Board and the Regular Labor-Management Council, both sides actively and constructively exchange opinions based on a mutual relationship of trust. rising above the legally mandated ratio of 1.8% for the first time in six years. We are working to broaden the job types for which applicants with disabilities can be hired, and remain committed to expanding employment opportunities in the spirit of laws covering employment of people with disabilities.

NGK draws up its own personnel plans that focus upon issues such as business trends, including within Group companies, and effect on increasing productivity. Striving for employment stability, we carry out a policy of recruitment from a medium-term perspective.

In fiscal 2009, 4 positions were advertised and filled through the internal job application system. In addition to these two systems, NGK has set up a career tracking system (3 cases) and a follow-up system for younger employees (311 people) to support employee growth.

2010, we had 280 rehired employees, accounting for 7.0% of the total workforce.

In fiscal 2009, the Company enacted its mechanism for reviewing health-related issues for employees posted to Group companies overseas from Japan in China (Tangshan, Suzhou, Beijing and Changzhou).

Reconciliation Committee comprising representatives from both labor and management. We are also implementing various other measures in this area, such as incorporating lectures and positionbased training as part of efforts to prevent harassment.



The Labor-Management Advisory Board

Initiatives in Employment and Human Rights Occupational Safety and Health Initiatives

### **Occupational Safety and Health Initiatives**

Safety and health form the foundation of a company's existence, and ensuring safety and health is one of a company's fundamental responsibilities. NGK strives to minimize hazardous risks and prevent occupational accidents by obeying laws and regulations and by partnering with employees to conduct activities in line with our Occupational Safety and Health Management Systems (OSHMS<sup>\*1</sup>). In this way we are working to ensure truly safe and pleasant workplaces.

## **OSHMS** Entrenchment and Development

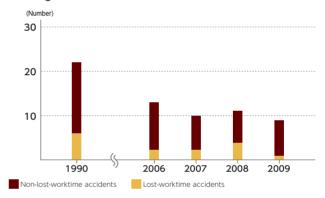
In fiscal 2007, NGK simultaneously implemented OSHMS at its Nagoya, Chita and Komaki Plants as a mechanism for systematic and ongoing safety and health initiatives to fully prevent workrelated accidents. Since then, NGK has worked extensively to embed and operate this system. In fiscal 2009, in parallel with steps to entrench activities in line with OSHMS, the Company gave priority to thorough risk assessment during the course of ordinary operations at each of its plants. As a result, NGK achieved its objectives in this area, with reductions in workrelated accidents and lost-worktime injuries. Furthermore, in a follow-up to the Nagoya Plant, in October 2009, outside certification<sup>\*2</sup> was obtained confirming the OSHMS qualifications of the Chita and Komaki plants, putting both sites on an equal footing with NGK in terms of OSHMS. In fiscal 2010, NGK forged ahead with reforming the employee mindset with respect to occupational health and safety. This program was guided by an action policy that encouraged plant managers and other site leaders to



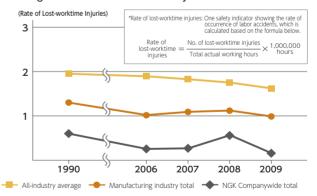
Lecture for managers responsible for in-house driving activities

lead the charge in creating a culture of safety, whereby all employees take part in efforts to prevent work-related accidents, injury and disease.

Changes in Work-related Accidents



Changes in Rate of Lost-worktime Injuries\*



\*1 OSHMS: These are safety and hygiene management systems that aim to contribute to a rise in the level of safety and health at factories and offices by endeavoring to reduce the potential risk of labor accidents, promote the health of workers, and encourage the formation of a comfortable workplace environment.

#### \*2 Outside certification: JISHA-qualified certification conducted by the Japan Industrial Safety & Health Association.

### Expanding Safety and Health Education

NGK is reinforcing efforts to raise awareness of occupational health and safety among employees in a push to enhance levels of health and safety. In fiscal 2009, NGK held an experiential safety education program attended by roughly 500 people, most of them young employees in their second year, in an attempt to safely expose employees firsthand to the risk of accidents in the work they perform. We intend to conduct an even more intensive health and safety education program in fiscal 2010, as we develop activities with the aim of preventing workplace accidents.

# With Our Shareholders and Investors

The NGK Group is meeting the expectations of shareholders and investors by leveraging proprietary technologies to develop global operations that contribute to society and the environment.

### **Investor Relations Activities**

The NGK Group promotes shareholder-oriented management that emphasizes capital efficiency across the entire Group, and strives to improve corporate value with the goal of realizing sustainable growth.

Along with the timely and accurate disclosure of management data via business reports, annual reports and

other types of media, NGK garners valuable input from shareholders and investors by encouraging open communication between both sides. To meet the needs of shareholders and investors, an array of investor relations (IR) information is posted to the Company's website.

# Aiming for a More Open General Meeting of Shareholders

NGK endeavors to hold open shareholder meetings that its shareholders will feel welcome in attending. In fiscal 2009, we used visual displays at the general meeting of shareholders to show an outline of NGK's business operations and TV commercials to introduce shareholders to current developments at the Company.



Product displays at the General Meeting of Shareholders (June 2009)

### Investor Briefings on Financial Results

Investor briefings on financial results are held twice a year in Japan, primarily for the benefit of institutional investors. NGK also makes individual visits to institutional investors in Japan and in other

# Measures for Returning Profits to Shareholders

NGK views the return of profits to shareholders as one of its most important management policies. As a basic policy, we strive for shareholder-oriented management that emphasizes return on equity (ROE), and distribute the benefits of successful management after consideration of a comprehensive range of factors, including business performance and financial position, and future business development. In fiscal 2009, we paid an annual dividend of ¥16 per share, with a consolidated payout ratio of 29.4%.

# Shareholders Information

Status of Shares (as of March 31, 2010)

Total number of shares authorized:	735,030 thousand
Total number of shares issued:	337,560 thousand
Number of shareholders:	29,854

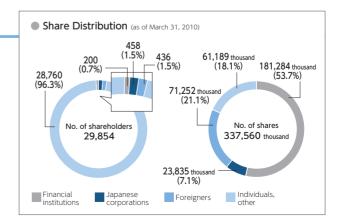
In recent years, we have upgraded and expanded the IR information available on our website in response to requests by shareholders and investors.

Web http://www.ngk.co.jp/english/ir/

countries in addition to issuing management information relating to corporate value.



Annual dividend ---- Consolidated payout ratio



# With Our Suppliers

The NGK Group is determined to work as one with suppliers to enhance mutual competiveness, while ensuring strict legal and regulatory compliance and pursuing procurement from a CSR perspective.

# **Initiatives Related to Suppliers**

NGK procures raw materials and components guided by a basic policy centered on three principles: "Open and Fair," "Partnership," and "Relationship with Society." In addition, together with the supplier companies that constitute our supply chain, we are actively working to ensure thorough legal compliance, and to disclose information, and promote green procurement.

# Fair, Free and Transparent Procurement Activities

In procurement activities the NGK Group endeavors to comply with laws and ordinances related to procurement (including laws and regulations relating to export management and those relating to environmental conservation) and to maintain the social environment and social order.

As part of this commitment, in fiscal 2009 NGK signed a Memorandum of Understanding with every supplier company that states that each company pledges not to do business with antisocial forces or organizations. Our efforts include steps to ensure fair business practices through compliance with the Act Against Delay in Payment of Subcontract Proceeds, etc.

Furthermore, we strive to raise the level of transparency and fairness in procurement, including through the establishment of a helpline specifically for suppliers that is strictly operated in coordination with NGK's Compliance Department.

# Establishment of a Green Supplier Certification System, and Initiatives at Group Companies

As interest in CSR procurement grows both within and outside the Company, there is a pressing need for initiatives to reduce environmental load across the entire supply chain.

Based on a survey taken in fiscal 2008 of environmental measures by its suppliers, in fiscal 2009 NGK established its green supplier certification criteria, and began listing those suppliers which already met the criteria, considering methods of certification, and making other preparations prior to the fiscal 2010 implementation of the certification program.

At the same time, we also conducted a survey of green

# Training in Procurement-related Compliance

In its Purchasing Department, NGK conducts regular training regarding the Subcontract Law and other laws pertinent to its

procurement practices within our own Group companies at home and abroad.

Going forward, to ensure that our domestic Group companies, which do not currently have their own guidelines, are able to comply with standards for handling specified chemical substances in accordance with European Union chemical regulations and similar directives, we will begin formulating and putting into operation Green Procurement Guidelines covering the entire NGK Group. Group companies overseas will work with our business divisions to also consider formulating guidelines.

relationships with suppliers. Training regarding procurement-related compliance is also provided to our Group companies in Japan.

# Communication with Suppliers

We hold regular explanatory meetings covering NGK's earnings forecasts, our procurement initiatives (environmental and compliance aspects) from a CSR viewpoint, and other pertinent matters for the benefit of our major suppliers.

At an earnings results presentation held in May 2010, alongside an explanation of our green supplier certification system, we met directly with suppliers, created opportunities to exchange viewpoints, and offered an explanation of NGK's policy of expanding procurement options.



Earnings results presentation for suppliers (held in May 2010)

# With Society

As it expands its business activities worldwide, the NGK Group also conducts a wide variety of activities as a corporate citizen in the communities in which it does business.

### Social Contributions and Initiatives With Communities

The NGK Group works to promote social contribution activities in partnership with local communities, depending on the needs and characteristics of the communities in which each of our companies is located. Our goal is to become a trusted corporate citizen in each of those communities.

# Social Contribution Activities

The NGK Group is involved in a wide variety of social contribution initiatives, centered around people and education, environmental preservation, and community involvement.

Activities involving people and education center primarily on providing support to foreign students studying in Japan, with the goal of developing human resources who will contribute to the development of international society.

At each of NGK's offices and Group companies, we are also working to communicate to children the wonder of science, offering plant tours to youngsters and internships to students.

Activities involving environmental preservation include visiting elementary schools to give classes on the environment, purchasing of green power, and participation in the Lights Down Campaign for reducing  $CO_2$  emissions. Other initiatives include encouraging employees and their families to start a household environmental accounting ledger program, and providing support for employees sitting for the Certification Test for Environmental Specialists<sup>®</sup>, also known as the Eco Test.

Activities involving communities include a summer festival held each year by our Komaki Plant in Komaki, Aichi Prefecture, to which local residents are invited, as well as sponsorship and support of regional sports festivals, participation in local clean-up campaigns, and other activities.

To better grasp the overall extent of social contribution activities throughout the Group, NGK gathers information from correspondents at its Group companies throughout Japan and overseas, and publicizes information about key activities through the NGK website.

# Even Further With Our Employees

In fiscal 2009, the Social Contributions Subcommittee of NGK's CSR Committee began looking at ways to provide opportunities for employees who wish to volunteer in social contribution activities, and to ensure they can feel at ease doing so. Based on this, in fiscal 2010, NGK will introduce a list of activities in which employees can easily take part, begin providing information about outside activities, and will work to create an environment in which employees can take a more proactive role in CSR activities.

# Activities Overseas

Cultural Exchange Event (NGK Ceramics Polska)



In May 2009, employees stationed at NGK Ceramics Polska (Poland) and their families participated in a cultural exchange event called "Sakura no Kai". Japanese participants introduced Japanese tea ceremony, woodblock printing, and other traditional culture, and two employees livened up the event by performing on Japanese drums.

Participation in Clean the Bay Day (NGK-Locke Polymer Insulators)



Employees of NGK-Locke Polymer Insulators (Virginia, U.S.A.) and their families totaling approximately 20 people participated in the Clean the Bay Day event held in June 2009, joined with almost 5.000 volunteers to help clean up the beaches that are the symbol of the town of Virginia Beach.

Community Sign Cleaning (NGK Metals)



In July 2009, nine volunteers from NGK Metals (Tennessee, U.S.A.) worked on cleaning the Welcome to Monroe County highway sign and surrounding area in Monroe County, where the company is located. They plan to call for volunteers to participate in cleaning on a regular basis.

#### Social Contributions and Initiatives With Communities

The NGK Group Social Contribution Activity Report is made available on our website.

Web http://www.ngk.co.jp/english/csr/

### Activities in Japan

Teaching Children the Wonder of Science (NGK)



In August 2009, employee volunteers from NGK set up a booth for science experiments at the Science World exhibit held at Gifu Prefecture's Advanced Science and Technology Experiment Center, where they showed visiting children the structure of a honeycomb, and the three primary colors of light.

#### Eco Proposal Project (NGK)



During Environmental Month in June 2009, NGK received 3,156 proposals as part of its Eco Proposal project, covering subjects ranging from energy and resource conservation to recycling and waste reduction. 52 of the most effective energy conservation proposals resulted in a 295 ton reduction in CO<sub>2</sub>.

#### Clean Campaign (NGK Komaki Plant)



In June and November 2009, NGK's Komaki Plant (Komaki, Aichi Prefecture) implemented a cleaning campaign, designed to enhance regional coexistence and employee morals, and over 100 people participated in cleaning the area around the office.

#### Sponsorship of Volleyball and Tennis Tournaments (Soshin Electric)



In August 2008, Soshin Electric (Winato Ward, Tokyo) held the 25th Soshin Electric Volleyball Tournament and 9th Annual Soshin Cup Tennis Tournament in Saku, Nagano Prefecture. The tournaments are now a regular event in the community, with 21 teams participating in the volleyball tournament, and 190 people turning out to play in the tennis tournament.

Hands-on Study for High School Students (NGK Adrec)



In August 2009, NGK Adrec (Mitake, Gifu Prefecture) brought in three high school students from Kani City to participate in hands-on training. After a safety lecture, the students participated in three days of training in light duties such as inspecting the exterior of products as they came out of the kiln.

# Participation in the Lights Down Campaign (NGK)



NGK participated in the CO<sub>2</sub> Reduction/Lights Down Campaign, sponsored by the Ministry of the Environment to encourage lights to be turned off at home and in illumination displays as a way of helping to prevent global warming, with all of our offices extinguishing their lighted advertising and outdoor lighting.

#### Participation in Regional Beautification (Heisei Ceramics)



Eight employees from Heisei Ceramics (Iga, Mie Prefecture) participated in the "Let's All Clean Up" beautification campaign sponsored by the local community residents' association, helping to clean and sort garbage on the town's roads and surrounding areas.

#### Participation in Prefectural Traffic Safety Campaign (NGK Ceramic Device)



17 employees of NGK Ceramic Device (Komaki, Aichi Prefecture) participated in the prefectural autumn traffic safety campaign held in September 2009, manning intersections surrounding the office and calling for safe driving, use of seat belts and child seats, and eradication of drunk driving.

Company Tours for High School Students (Akechi Insulators)



In December 2009, Akechi Insulators (Ena, Gifu Prefecture) hosted 39 high school students from Ena on a tour of the company. It was impressive to see how fascinated the students were with the factory, which gave them their first exposure to insulators.

#### Household Environmental Accounting Ledger Program (NGK)



Our household environmental accounting ledger program was held four times in fiscal 2009, in the spring, summer, fall, and winter, with a total of 330 families and 1,050 people participating. The program was designed to raise environmental awareness and instill energy and resource conservation practices by enabling families to understand their actual energy consumption and volume of CO<sub>2</sub> emissions.

#### Participation in Clean Volunteer Activity (NGK Fine Molds)



80 employees of NGK Fine Molds (Handa, Aichi Prefecture) participated in Handa's Clean Volunteer activity held in October 2009, spending two days weeding and collecting garbage in the town's Ninth Port district.

#### Replanting Community Flowerbeds (NGK Adrec)



In November 2009, ten employees of NGK Adrec (Mitake, Gifu Prefecture) volunteered to replant flowerbeds in the area around the company. NGK Adrec has signed an "Environmental Preservation and Creation" pact with the city of Mitake, and works with the community to preserve aquatic environments and scenery.

# With Our Environment

In order to contribute to the realization of a sustainable society, the NGK Group is working to reduce its environmental load around the world.

# Highlight Global Initiatives to Reduce Environmental Load

At the NGK Group, in order to provide products and technologies created using less energy and fewer resources, and with a lower environmental load, we are working to strengthen environmental management systems at Group companies at home and abroad.

As a global company, the NGK Group sees a growing percentage of its business activities taking place overseas, and reducing the environmental load at our overseas plants is an important issue for us.

# Group Report (Japan)

#### Effective Use of Resources Among Group Companies in Japan

At NGK Adrec (Mitake, Gifu Prefecture), ceramic by-products from the insulator manufacturing process at Akechi Insulators (Ena, Gifu Prefecture) are reused as the raw material for refractory products, helping curtail the volume of new material used. In fiscal 2009, the company used 100 tons of by-product from Akechi Insulators as the raw material



for its refractory products. Going forward, NGK will expand such coordination between Group companies, and work toward the effective use of resources through the reuse of similar by-products.



#### Handling of Regulations on Chemical Substances

Because Soshin Electric (Minato Ward, Tokyo) manufactures filters, condensers, and other electronic parts, they are required to comply with the European RoHS directive. Prior to the emergence of RoHS, internal systems were independently developed within Soshin Electric in fiscal 1999 to better regulate hazardous chemical substances. Consequently, today the company is now compliant with regard to the six substances covered by the RoHS directive, including going lead-free and eliminating parts containing hexavalent chromium. With regard to REACH regulations, NGK has received a growing number of requests from customers to investigate chemical substances contained in its products, and in fiscal 2009 introduced a new chemical substances management database, enabling it to quickly respond to such customer requests. Going forward, our technology and design departments will work together to further strengthen our

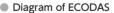


# management systems.

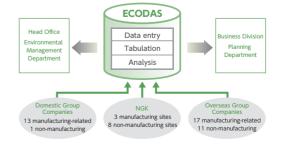
#### Unified Management of Global Environmental Data

In order to maintain solid, efficient environmental management throughout the NGK Group, we have built and operate a unified database system, ECODAS, which provides integrated management of data on  $CO_2$  emissions and other environmental measurements. With this system, we can monitor the latest status of initiatives to reduce environmental load at each of our sites and other environmental preservation efforts.

To comply with the revised Act on the Rational Use of Energy, in fiscal 2009 NGK expanded the reach of this program to its non-manufacturing sites. Going forward, we will continue to enhance this system, and use it effectively in our global environmental management.



(System for integrated management of environmental data)



#### With Our Environment

#### Highlight: Global Initiatives to Reduce Environmental Load

#### [Activities Covered]

NGK Insulators, Group Companies in Japan (13 manufacturing companies) Group Companies outside Japan (17 manufacturing companies) Visit our website for environmental activity reports from each business site and other detailed information.

Web http://www.ngk.co.jp/english/csr/

### **Overseas Group Company Report**

#### Visualizing Energy Use to Reduce CO<sub>2</sub>

At NGK-Locke Polymer Insulators (U.S.), local staff members have used their ingenuity in developing effective ways to reduce CO<sub>2</sub>. Using portable power meters, they measured the amount of electricity used by every piece of equipment, and learned that mercury vapor lamps and extruders consumed high volumes of power.

With this information, they have been able to effectively conserve energy by thinning out the number of mercury vapor lamps in use, to the extent that the work environment is not affected. Going forward, they will work on further energy conservation efforts by reinforcing thermal insulation used on the extruders.

#### Improving Furnaces to Reduce CO<sub>2</sub> and By-products

At NGK Ceramics Polska's (Poland) key production plant, firing furnaces are widely used in the manufacture of diesel particulate filter (DPF) products for the European market. These furnaces consume a majority of the energy used at the plant, and measures to address the use of these furnaces became a key issue in reducing  $CO_2$  emissions. In fiscal 2009, staff managed to reduce annual  $CO_2$  emissions by 3,100 tons by improving the productivity of the firing furnaces.

In addition, by making improvements to the firing jigs, they were able to extend the replacement period of the jigs, resulting in a 130 ton annual reduction in by-products.

# Curbing Generation of By-products by Improving Reuse as Raw Materials, and Reducing $CO_2$ Emissions Through Utility Improvements

NGK Ceramics Suzhou (China) manufactures HONEYCERAM® (ceramic honeycomb substrates for automotive catalytic converters) and diesel particulate filters (DPFs). From the beginning, effective use of raw materials has been a key issue, and in fiscal 2009, the company reduced by-products by 1,100 tons by improving the rate at which they were reused as raw materials.

By replacing plant lighting with energy-conserving lamps, converting furnace fans to inverters, and taking other steps to improve plant utility, they were able to reduce  $CO_2$  emissions by roughly 250 tons.

#### Environmental Management Initiatives at North American Group Companies

In March 2010, we visited our four North American Group companies to verify the status of their environmental management efforts, and exchange opinions.

Confirming firsthand that measures to reduce environmental load are being implemented at each company, we realized the extent to which awareness has been raised. And by communicating directly with local staff in charge, we were able to correct certain differences in understanding of environmental load issues, further deepening our mutual understanding. By continuing this kind of regular communication, we hope to unite the NGK Group in efforts to reduce our environmental load.









# **Environmental Management**

# NGK's Core Policy on the Environment

Recognizing that protecting the environment is a vital issue that all of humanity must face, the NGK Group formulated its Core Policy on the Environment in April 1996 in order to bring its corporate activities into harmony with the environment. On the basis of this policy, we work to reduce the environmental impact of business activities, and actively strive to help protect the environment by developing products and technologies to that end.

#### **Environmental Philosophy**

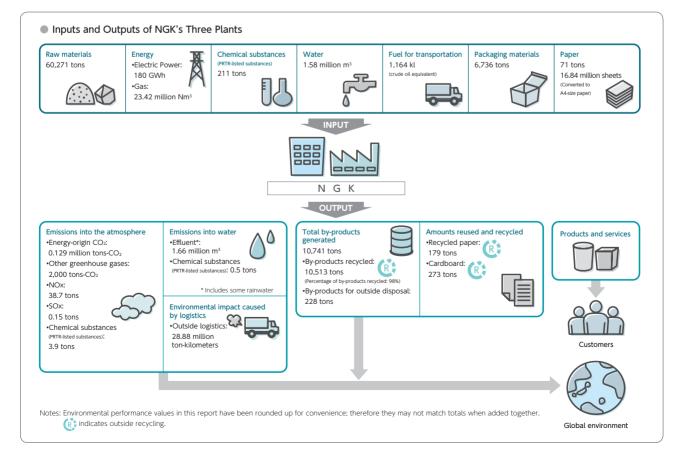
NGK's positive approach to the environment begins with its basic corporate philosophy: "NGK products and technologies must create new value and contribute to the quality of life." In particular, we focus on the "Triple-E" areas of Ecology, Electronics, and Energy. Through our work in these areas, we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

#### **Environmental Action Guidelines**

- Strive toward the development, design, and manufacture of products that are environmentally friendly, and that have a low impact on the environment.
   Work toward decreasing the environmental impact of our business
- activities.
  3 Enhance environmental management systems from a global viewpoint, and implement continuous reforms in order to reduce the impact on the environment.
- 4 Strictly adhere to laws, regulations, and other requirements pertaining to the environment. Furthermore, establish voluntary standards, and work toward increased environmental conservation.
- 5 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.

# Overall Perspective of Environmental Impact

The diagram below shows inputs and outputs in business activities conducted by NGK. It shows inputs of raw material and energy and outputs in the form of manufactured products and services, as well as substances that are discharged into the atmosphere and into water. In fiscal 2009, resource and energy input volume, as well as the output volume of substances impacting the environment, were lower relative to the previous fiscal year. This outcome primarily reflected a decrease in production volume due to changes in the economic climate.



# Environmental Action Plan

Based on its Second Five-year Environmental Action Plan, which got under way in 2006, NGK is taking steps to curb  $CO_2$  emissions, and reducing by-products to help in the prevention of global

warming and the development of a recycling-based society. In fiscal 2009, NGK successfully cleared all of the targets stipulated in the plan.

		Targets of Second Five-year	2009 Environmental Action Achievements			
Cate	gory		Target	Achievement	Self- Evaluation	Fiscal 2010 Targets
ment	nanagement	•Environmental CSR activities Introduce environmental management indicators (CO <sub>2</sub> , by-products, environmental efficiency, third-party audits, environmental ratings, etc.)	Use environmental efficiency indicators	<ul> <li>Implementation of third party reviews</li> <li>Use of environmental efficiency indicators in load reduction management</li> </ul>	○ ▶P.38	Establish Third Five-year Environmental Action Plan (2011 to 2015)
Management	Environmental management	Promote consolidated environmental management     Promote integration of environmental management data	<ul> <li>Embed consolidated environmental management system and expand establishment of load reduction targets to Group companies outside Japan (4 companies)</li> <li>Launch operation of integrated system for managing environmental data</li> </ul>	New load reduction targets established for four overseas Group companies •Commenced operation of integrated environmental data management system	○ ▶P.32	Establish load reduction targets for all Group overseas manufacturing companies •Expand integrated environmental data management system
		•Reduction of CO <sub>2</sub> emissions NGK: 7% afrom 1990 Consolidated in Japan: Basic unit per sales value of production 7% reduction from 2005	NGK: Emissions volume of less than 136,000 tons Consolidated in Japan: Basic unit per sales value of production 5% decrease or more from 2005	NGK: Emission volume of 129 thousand tons Domestic Consolidated: Basic unit per sales value of production 13% from 2005	○ ▶P.36	NGK: 7% reduction from 1990 Consolidated in Japan: Basic unit per sales value of production 7% reduction from 2005
Factories	Environmental load	Reduction of by-products generated     NGK: 25% reduction afrom 2005     Consolidated in Japan: 15% reduction from 2005	NGK: 20% reduction from 2005 Consolidated in Japan: 12% reduction from 2005 •Promote zero emissions enhancement at NGK •Continue and develop material flow analysis	NGK: Reduction of 42% from 2005 Domestic Consolidated: Reduction of 30% from 2005 •Outside disposal volume held to 228 tons, down 60% compared to fiscal 2008 •Material flow analysis tested against three product lines to confirm effectiveness	○ ▶P.37	NGK: 25% reduction from 2005 Consolidated in Japan: Reduction of 15% from 2005 •Continue introduction of material flow analysis
l		Reduction of atmospheric emissions     of PRTR solvents     NGK: 10% reduction from 2005     Consolidated in Japar: 10% reduction from 2005     Promote better chemical substance     management	NGK: 8% or more reduction from 2005 Consolidated in Japan: 8% or more reduction from 2005 •Prepare to comply with revised PRTR Law	NGK: Reduction of 18% from 2005 Domestic Consolidated: Reduction of 39% from 2005 •Implemented preparations to comply with revised PRTR Law	○ ▶P.37	NGK: 10% reduction from 2005 Consolidated in Japan: 10% reduction from 2005
lots	Eco-conscious design	<ul> <li>Step up level of environmentally conscious design</li> </ul>	•Promote provision of environmentally friendly products and products with low environmental load Continue and develop analysis of production processes Study ways to quantify environmental contribution of products	•Worked to provide products which contribute to environmental conservation and products with low environmental load implemented efforts to visualize energy use in manufacturing facilities •Implemented survey to quantify product environmental contribution	0	•Establish standards for computing product environmental contribution
Products	Green procurement and logistics	Reduce the environmental impact of procurement     Minimize emissions from logistics	<ul> <li>Launch green supplier certification</li> <li>1% or more reduction in basic unit of energy consumption</li> </ul>	•Defined list of green suppliers eligible for certification, and prepared certification process •4.5% reduction in basic unit of energy consumption compared to fiscal 2008	▶P.29 ○ ▶P.36	Request improvements from suppliers not meeting certification standards     Expand number of certified suppliers     Reduce basic unit of energy consumption by more than 1%
	Social contribution	<ul> <li>Promote activities that benefit local communities</li> </ul>	<ul> <li>Carry out cleanup activities in various areas</li> <li>Continue household environmental accounting ledger program</li> <li>Take part in various environmental activities</li> </ul>	Cleanup activities conducted at Jingu Higashi Park in Nagoya, in areas surrounding the Chita Plant, and at Oyama River in Komaki •Total of 330 families participated in keeping household environmental accounting ledgers •Participation in the Ministry of the Environment's Light Down Campaign •Guest lectures at elementary schools	○ ▶P.31 ▶P.12	<ul> <li>Carry out local cleanup activities</li> <li>Continue promoting the keeping of household environmental accounting ledgers</li> <li>Consider introducing the Eco Point system</li> </ul>
Stakeholders	Environmental communication	•Enhance disclosure and two-way communications	•Publish CSR Report and disclose environmental data on the Web •Promote EPOC activities	Disclosure of CSR and site reports on the Web Planned and implemented EPOC activities, including seminars and site visits Cooperated in plant visits by foreign students (JICA)	0	•Enhance Web-based disclosure of environmental data •Overall planning and operation of EPOC activities
	Education and awareness-raising	•Enhance environmental education	•Promote practical environmental education by job position and department •Enhance environment-specific education and education on legal compliance	Enhanced position-based training curriculum and conducted training Held MFCA study group and energy conservation lectures Implemented "Eco Proposal" activities	○ ▶P.31	Promote Eco Test initiatives     Continue environmental lectures and     study groups     Continue "Eco Proposal" activities

Note: Evaluation standards for self-evaluation: OTarget achieved  $\triangle$ 80% or more of target achieved ×Less than 80% of target achieved \* Environmental efficiency: An indicator of environmental and economic efficiency, calculated as net sales divided by environmental load.

# Initiatives to Reduce Environmental Load

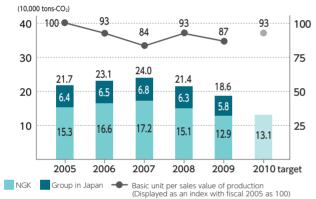
As a global company, the NGK Group's priority issues are to curb CO<sub>2</sub> emissions, curb generation of by-products, and curb emissions of chemical substances, and we continue our initiatives to reduce environmental loads in our business activities.

# **Curbing CO<sub>2</sub> Emissions**

# CO<sub>2</sub> Emissions

NGK's total CO<sub>2</sub> emissions in fiscal 2009 amounted to 129.000 tons, a 14.5% decrease from fiscal 2008 and 8.5% lower than in fiscal 1990. CO<sub>2</sub> emissions by Group companies in Japan totaled 58,000 tons, a decrease of 7.9% from fiscal 2008. Emissions by Group companies outside Japan amounted to 271,000 tons,





## Initiatives to Curb Emission Volumes

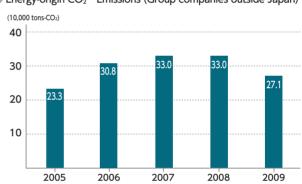
In addition to its existing initiatives, in fiscal 2009 the NGK Group worked to reduce CO<sub>2</sub> emissions by making energy use at production facilities more visible, and promoting energy conservation at those facilities with high energy consumption levels. Going forward, we will continue our structural reform efforts, through development of innovative energy-saving technologies, and preparation of a Group-wide energy conservation checklist, in an effort to further reduce CO<sub>2</sub> emissions.

Working jointly with our Group companies in Japan, we also held an energy conservation case study presentation, turning up new CO<sub>2</sub> reduction measures. In the coming years, we will promote the horizontal rollout of these case studies across the Group, and work to achieve our reduction targets.

At our overseas Group companies, we have established reduction targets particularly for eight companies with the highest CO2 emissions, and have implemented reduction measures. In fiscal

down 17.9% from the previous fiscal year. Lower production volume was the main reason for these emission reductions.

In terms of basic unit per sales value of production among Group companies in Japan, emissions in fiscal 2009 declined to 87, down 13 points from the reference year of fiscal 2005.



Energy-origin CO<sub>2</sub><sup>\*1</sup> Emissions (Group companies outside Japan)

2010, four companies will be added to this effort, with reduction targets established for a total of 12 companies. This will enable us to expand reduction efforts to cover 98% of CO<sub>2</sub> emissions volume from overseas Group companies.

To reduce CO<sub>2</sub> emissions in logistics, NGK is working with NGK Logistics, its distribution subsidiary, to promote a modal shift\*3 in transportation. In fiscal 2009, we promoted use of marine vessels for large suspension insulator projects, and the use of rail transport for smaller lots. As a result, annual transport volume\*4 was 28.88 million ton-kilometers, or approximately 10% lower than in fiscal 2008. Our fuel usage ratio was 0.0403 liters/ton-kilometer, a reduction of 4.5% from fiscal 2008.

In fiscal 2010, we intend to further promote this modal shift in transportation, particularly for large projects, as we work to reduce our fuel usage ratio by more than 1%.

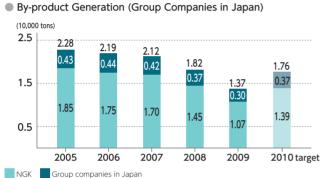
\*1 CO2 conversion factors (kg-CO2/unit) used in calculating CO2 emissions are as follows: Units are indicated in parentheses. Purchased electric power (kWh): 0.42 Fuel oil (L): 2.677 Diesel fuel (L): 2.64 Kerosene (L): 2.49 City gas (Nm3): 2.347 LPG (kg): 3.007 Gasoline (L): 2.322 Sources: Federation of Electric Power Companies of Japan (fiscal 1990 actual figures), Ministry of the Environment. Some factors have been calculated independently by NGK. However, fiscal 2009 energy-origin CO<sub>2</sub> emission volume for NGK on a non-consolidated basis is 133,000 tons when using the CO2 conversion factor provided by the Law Concerning the Promotion of Measures to Cope with Global Warming (revised in March 2010). \*2 A review going back to past years was implemented by improving the accuracy of tabulations.

\*3 Modal shift refers to using more efficient rail and ocean liners, rather than trucks for main transport routes in order to lower environmental impact and improve logistics efficiency. \*4 Annual transport volume (ton-kilometers) is equivalent to cargo weight (tons) multiplied by transport distance (kilometers).

## **Curbing Volume of By-products Generated**

## Changes in Volume of By-products Generated

In fiscal 2009, the total volume of by-products generated by NGK amounted to 10,700 tons, or 26% less than in fiscal 2008. The volume generated by Group companies in Japan was 3,000 tons; 19% less than the previous fiscal year. The volume of by-products

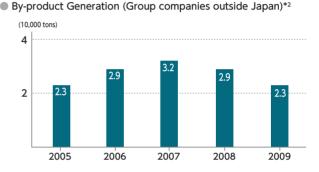


ments and better recycling, as well as to lower production.

generated by Group companies outside Japan in fiscal 2009 was

23,000 tons, down 21% from fiscal 2008. These declines owed

mainly to reduction efforts, namely production process improve-



### Curbing By-product Volume and Encouraging Recycling of Resources

In addition to its existing initiatives, in fiscal 2009 NGK worked to improve its production process yield rates, improve its production technology by expanding application of MFCA\*<sup>5</sup> and reviewing its production process.

With by-product generation expected to increase as business expands, we are also working to promote horizontal deployment between NGK and its Group companies of measures by product line, to further curb by-product generation. At NGK, we are also involved in initiatives to actively promote recycling of by-products for use as resources. Through better sorting and development of additional processing routes, we will work toward the more effective use of resources. In fiscal 2009, outside disposal volume was 228 tons, down 60% from the previous fiscal year. The recycling rate for by-products was 98%, an improvement of 2 percentage points from fiscal 2008. Going forward, we will work to further raise the recycling rate, and promote recycling of resources across our Group companies.

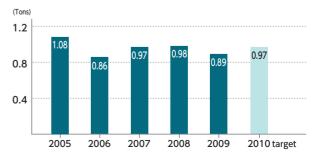
# **Curbing Emissions of Chemical Substances**

#### Change in Atmospheric Release of PRTR\*6-listed Solvents, and Initiatives to Curb Emissions

In fiscal 2009, atmospheric release of emissions at NGK was 0.89 tons, down 9.2% from fiscal 2008. This reduction was due primarily to reduced production.

Beginning in fiscal 2010, we will implement initiatives to reduce atmospheric release of new solvents added with recent changes to the list of PRTR-listed substances. We will also work to further improve awareness of chemical substance issues internally, through our Chemical Substance Safety Review Committee and other efforts.





\*5 MFCA: A method for measuring whether raw materials and energy used in the manufacturing process are being wasted, which is linked to improvements such as higher recovery rates. \*6 PRTR: A framework for understanding the volume of hazardous chemical substances released into the environment, and volume of waste transported.

# Third-party Opinion

There are many possible approaches and actions that companies may take with respect to Corporate Social Responsibility (CSR) depending on the country or prevailing social trends. Accordingly, when we look across the globe, we see a profusion of examples of what CSR means. In this diverse climate, a set of guidelines for social responsibility, based on a global accord, is widely expected to appear in December 2010. Known collectively as the ISO (International Organization for Standardization) 26000 standard (social responsibility certification), these guidelines are the culmination of roughly a decade of studies and research joined by organizations and agencies representing over 100 countries. Fundamental to ISO 26000 are powerful expectations and demands for corporate activities (and more broadly, all organizational activities) that enable a sustainable society, as well as the environmental sustainability that will support it.

Considering NGK's business fields through this lens, it is clear that the company's product groups consist mainly of items indispensable to the social infrastructure that underpins sustainable societies, as well as many products that contribute to a sustainable environment.

For instance, consider products like NGK's lineup of power transmission and transformer insulators for the stable supply of electricity, its HONEYCERAM® honeycomb ceramics for automotive catalytic converters to purify exhaust gases, and NAS® batteries for electrical power storage, which are expected to play a role in the development of a low-carbon society. It cannot be overstated that the conducting of these businesses is itself a form of CSR. I believe we can say that the unwavering dedication to manufacturing excellence in these fields, expressed in the Management's Commitment section of this report, is fundamental to putting concrete CSR into practice. As part of this manufacturing, NGK has strengthened consolidated environmental management across the entire corporate group, and is steadily enacting measures to reduce its environmental burden. These measures take advantage of NGK's success in promoting structural innovation in manufacturing,

Mr. Koichi Ikeda

Specially Appointed Professor Rikkyo University Graduate School of Business Administration Visiting Professor, Ritsumeikan University Manazement Schoo

including efforts to limit the generation of by-products. Furthermore, as NGK's recent development of hexagonal-walled honeycomb ceramic substrates clearly demonstrates, the company is actually delivering products and services that meet energy efficiency and resource conservation needs.

Of course, CSR activities rely ultimately on employees. To help put CSR into practice, the senior management and employees hold direct dialogue through CSR Talk Live, where they openly and honestly exchange viewpoints on this subject. I am optimistic that holding these sessions year after year will help NGK's CSR initiatives take firm root going forward. NGK also operates a residence for foreign students that accommodates 40 new students each year, as well as programs that encourage interaction between these students and local residents. These and related activities are social contributions unique to NGK, and are worthy of special mention. Moreover, turn to any page and it is immediately obvious that NGK is committed to making an easier to read, more accessible CSR Report, which one can see from the specific figures, simplified charts and intuitive graphs presented on initiatives.

The direction of NGK's CSR initiatives is unambiguous. By taking steps in the coming years to promote a shared commitment to CSR, as well as closer ties and cooperation among all NGK Group corporate officers, employees, divisions and worksites, NGK will continue to raise its level of CSR even higher. Part of this will include extending CSR to the company's supply chain through CSR procurement, as well as promotion of group-wide human resource development, a common consciousness with respect to safety, and other CSR concepts. I look forward to seeing how these efforts unfold going forward.

#### **Response from NGK**

NGK was originally established to domestically produce special high-voltage insulators. For over 90 years since then, we have provided society with products that are essential to industrial and social development, as well as healthy and comfortable urban living.

This year marks the second time that we have reported our CSR initiatives in a formal report. However, as mentioned in the third-party opinion, our current range of products is solidly in line with the pattern of contributing to society that has defined NGK since its earliest days. In renewed recognition of this, we will continue working to create new value that contributes to a sustainable society.

Addressing CSR is an ongoing commitment, and following through on achievement levels for fiscal-year targets and implementing PDCA cycles that accumulate solid results are important aspects of this work. During a CSR Talk Live session last year, one of the participants asked whether any of the achievements from our CSR activities could be objectively evaluated and confirmed. So this time around, we strove to present figures and specific details wherever possible. As a result, the "CSR Objectives and Achievements" section now covers four full pages of this year's report.

In fiscal 2010, we plan to build on our activities to date, by addressing an additional area: CSR procurement. Taking on this issue will be a top priority in our drive to firmly embed CSR throughout the entire NGK Group.



Mitsuo Ibuki Director and Senior Vice President Chairman, CSR Committee



# NGK INSULATORS, LTD.

2-56, Suda-cho, Mizuho, Nagoya 467-8530, Japan http://www.ngk.co.jp/english/

For inquiries about this report please contact Public Relations Office Tel: + (81) 52-872-7181 Fax: + (81) 52-872-7690 E-mail: pr-office@ngk.co.jp



#### Plate making:

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Because a waterless method was employed for printing, alkaline developers and acid fixing solutions were not necessary for the plate development, and isopropyl alcohol or other types of dampening water were not necessary for the ink transfer printing.

#### Paper:

The paper used has been made from trees grown in forests approved or managed by the Forest Stewardship Council (FSC).

Ink: NGK has changed from using petroleum solvents to 100% use of mainly soy-based vegetable solvents. Inks used contain 1% or less volatile organic compounds (VOC).

Design: We have taken care to select an easily readable font-size and attractive color layout, and to employ diagrams and tables to express information clearly.