

# CSR Report 2012

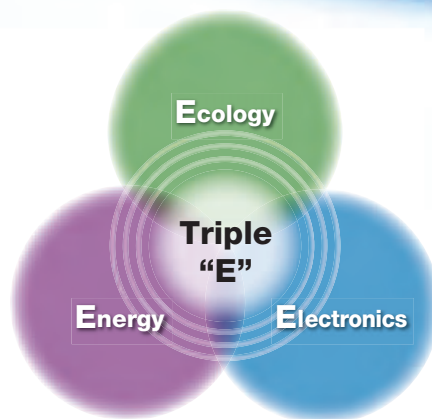
Corporate Social Responsibility Report



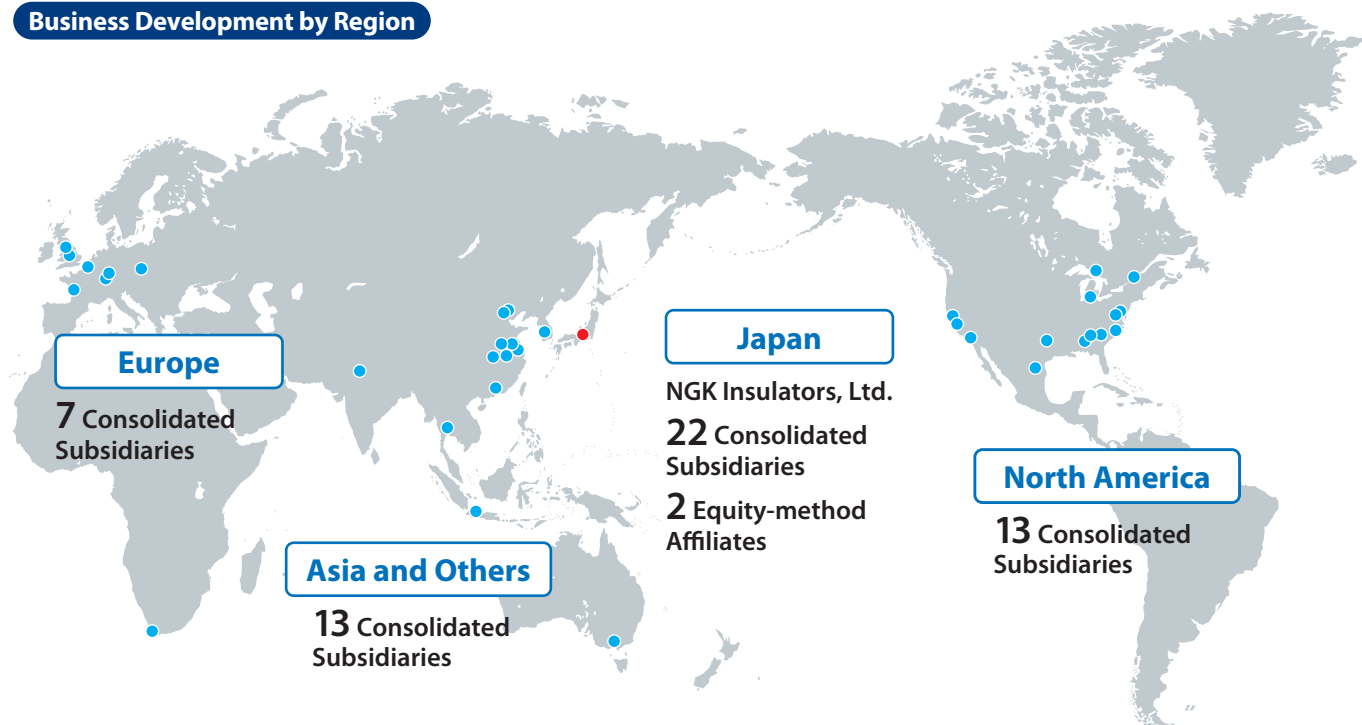
## Business Fields and Segments

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.

NGK aims to conserve the environment and contribute to society by continuing to push the boundaries of new ceramics technology anticipating future needs.



## Business Development by Region



## Business Groups and Main Products

### Power Business

- NAS<sup>®</sup> battery systems for electric energy storage
- Insulators and equipment for power transmission
- Insulators and equipment for substations
- Insulators and equipment for power distribution



### Ceramic Products Business

- Ceramic products to purify automotive exhaust
- Ceramic products for diesel automotive exhaust gas purifiers
- NOx Sensors
- Industrial processing products



### Electronics Business

- Ceramics for semiconductor manufacturing equipment
- Ceramics for electric and electronic machinery
- Beryllium copper Alloy



## Corporate Philosophy

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

## Editorial Policy

### In Line with NGK Group Guidelines for Corporate Behavior

- I** Realization of Corporate Philosophy  
Responding to the trust and expectations of society
- II** How to Engage in Business Activities  
Act with sincerity from a strong ethical stance
- III** As a Member of Society  
Sustainably develop in partnership with society


In drafting this "Corporate Social Responsibility Report 2012," reference was made to the Ministry of the Environment's Environmental Reporting Guidelines (2007) and the Global Reporting Initiative's Sustainability Reporting Guidelines (Version 3.1).

The report covers the period from April 1, 2011 to March 31, 2012. Reporting for overseas Group companies covers the period from January 1, 2011 to December 31, 2011. The range of companies involved differs with each initiative cited, but is clearly stated with the data.

CSR Report 2012 aims to thoroughly report actual NGK Group CSR activities in accordance with the eight actions for promoting CSR defined in the NGK Group Guidelines for Corporate Behavior.

### This Report and Other Reporting Media

The information contained in this CSR Report 2012 publication is also in digital format on the CSR pages of NGK's corporate website. Information not included here due to space limitations can be found in the online CSR report.

(Indicated by the  mark)



<http://www.ngk.co.jp/english/csr/>

## CONTENTS

<b>NGK Products Used in All These Ways</b>	3
<b>Management's Commitment</b>	5
<b>NAS Battery Fire</b>	7

<b>Feature</b> Responding to Expanded Global Demand for Ceramic Products to Purify Automotive Exhaust	9
---	---

## Expanding Global Manufacturing System to Realize the Stable Supply of Products.



<b>CSR Management</b>	13
<b>CSR Objectives and Achievements</b>	15

## **I** Realization of Corporate Philosophy

<b>Provision of Products That Contribute to Better Social Environment</b>	19
---	----

## **II** How to Engage in Business Activities

<b>Disclosure of Corporate Information</b>	22
<b>Thorough Enforcement of Compliance; Risk Management</b>	23
<b>Respect of Humanity and Assurance of Comfortable Working Environment</b>	27
<b>Implementation of Fair, Free and Transparent Transactions</b>	31

## **III** As a Member of Society

<b>Preservation of Global Environment</b>	33
<b>Coordination with Local Communities and Promotion of Contribution to the Society</b>	38
<b>Communications with Stakeholders</b>	40
<b>Third-Party Opinion</b>	45



# NGK Products Used in All These Ways

Products using proprietary ceramics technologies provide stable electric power, environmental solutions and sophisticated electronics and other products that contribute to the creation of a better society in all areas of the world.

## Power Business

### ● NAS<sup>®</sup> Battery Systems for Electric Energy Storage

NAS (sodium sulfur) batteries, the world's first megawatt-class electricity storage, facilitates energy load leveling at times of peak demand and stabilizes the unstable output of renewable energy.



NAS battery systems for electric energy storage

### ● Insulators and Electric Power Equipment

Insulators ensure that transmission lines and steel towers and equipment are completely isolated. Since our establishment as a manufacturer specializing in these products, NGK has developed strong and high-quality power transmission, substation and distribution insulators and related products that support the stable supply of energy in a variety of environments in over 100 countries around the world.



Insulators for power transmission



UHV gas bushing

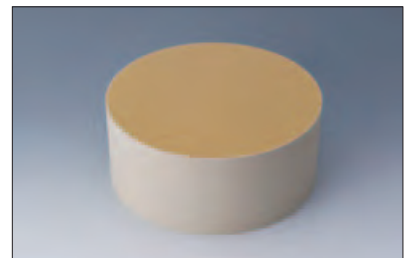
## Ceramic Products Business

### ● HONEYCERAM<sup>®</sup> Honeycomb Ceramics for Automotive Catalytic Converters to Purify Exhaust Gases

NGK supplies HONEYCERAM, a honeycomb ceramic substrate containing catalysts that render harmful substances found in gasoline vehicle exhaust harmless, to automakers throughout the world. NGK's pursuit of a lightweight product with thinner cell walls maximizes exhaust gas purification efficiency.



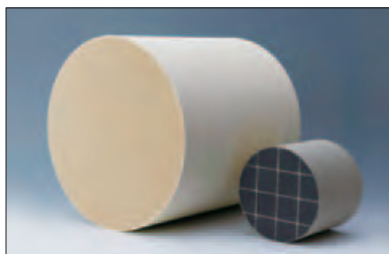
HONEYCERAM for gasoline-powered vehicles



Large size HONEYCERAM

### ● Diesel Particulate Filters (DPFs)/NOx Sensors

NGK's diesel particulate filters (DPFs) that capture particulate matter (PM) found in diesel exhaust and high-precision in-vehicle nitrogen oxide (NOx) sensors for the highly precise measurement of NOx concentrations in exhaust gas contribute to the adoption of clean diesel automobiles and reduce environmental impact.



Cordierite (left) and silicon carbide (right) DPFs



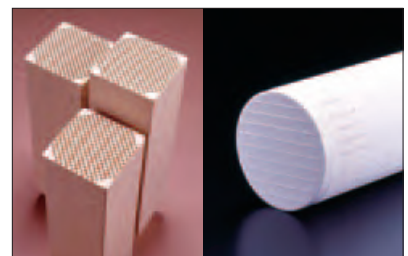
High-precision in-vehicle NOx sensor

### ● Industrial Processing Products

NGK's combustion apparatuses and refractories created by efficient heating technologies developed through ceramics production, such as an assortment of separation membranes using advanced membrane engineering used for separation and other systems, meet customer needs in many industries.



Industrial heating systems

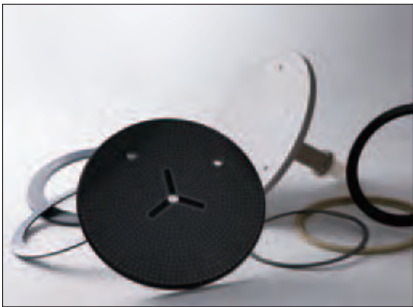


Various ceramic filters

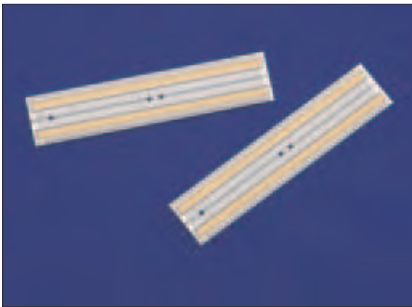
# Electronics Business

## ● Ceramics for Semiconductor Manufacturing Equipment

Exposed to high temperature corrosive gas and plasma in the semiconductor process, products making use of the special heat and corrosion resistance and durability of fine ceramics enable semiconductor miniaturization and improved productivity.



Ceramics for semiconductor manufacturing equipment



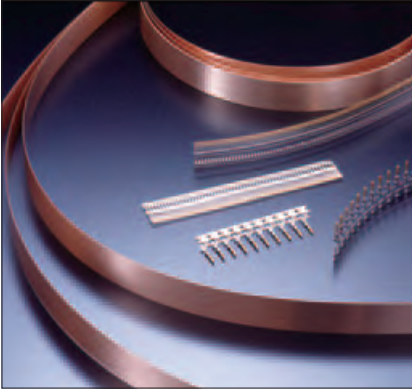
Piezoelectric micro-actuators

## ● Ceramics for Electric and Electronic Machinery

NGK supplies piezoelectric micro-actuators for inkjet printer print heads and HICERAM® translucent alumina ceramics used in high-intensity discharge lamp arc tubes.



HICERAM



Beryllium copper strip

## ● Beryllium Copper Alloy

With the superior electric and heat conductivity of copper and the high-strength and durability of special steel, beryllium copper alloy is used in a wide variety of products, such as conductive spring and contact point material for mobile phones, electrical appliances and automobiles, contributing to improved reliability, miniaturization and lightweight technologies.

### 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, 2012)

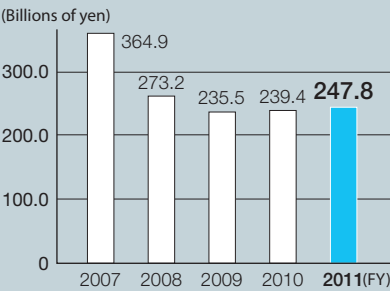
**Employees**  
NGK: 3,351  
Consolidated: 12,372  
(As of March 31, 2012)

**Business**  
Manufacture and sale of insulators, electric power equipment, industrial ceramic products, electronic components, special metals products, and plant engineering

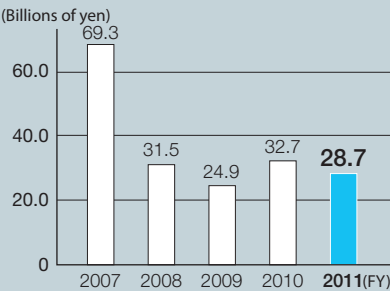
**Subsidiaries**  
Japan: 22 consolidated subsidiaries  
2 equity-method affiliates  
Europe: 7 consolidated subsidiaries  
North America: 13 consolidated subsidiaries  
Asia and Others: 13 consolidated subsidiaries

### Business Overview

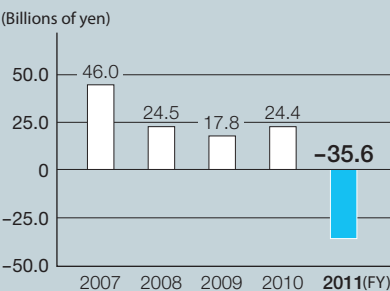
#### Net Sales (Consolidated)



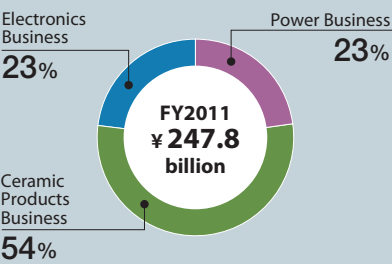
#### Ordinary Income (Consolidated)



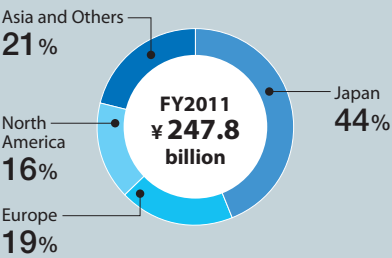
#### Net Income (Consolidated)



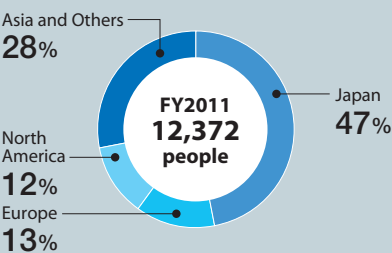
#### Sales by Business Segment



#### Sales by Region (Consolidated)



#### Workforce by Region (Consolidated)





# Making an Effort to Improve Stakeholder Confidence Through Meticulous Quality Assurance



In September 2011, NAS<sup>®</sup> (sodium sulfur) batteries for power storage manufactured by NGK were involved in a fire; NGK deeply regrets any worry or inconvenience the incident may have caused to customers, the regional municipality or local residents.

The incident caused NGK to record a special loss, resulting in fiscal 2011 becoming the first year since our founding to end in the red.

The NGK Group has positioned fiscal 2012 as a year to start fresh with traction for growth. All Group employees take pride and responsibility in their work, striving for technological capabilities and knowledge as they proactively create the future.

## NAS<sup>®</sup> Battery Fire

After the incident, NGK established the Accident Investigation Committee in an effort to ascertain the cause of the fire. Based on the results of this investigation, verified by an external third-party investigation committee, NGK decided to voluntarily implement safety enhancement measures, including a monitoring system, under the guidance of the Fire and Disaster Management Agency. These details were announced in June 2012.

The closed manufacturing facility was opened and operations restarted in June. However, having already delivered outstanding orders, priority was shifted to battery safety enhancement measures. For this reason, the production of new batteries is scheduled to commence in the second half of fiscal 2012.

So that customers can use NAS batteries with confidence, and so that we are able to meet needs for the expanded introduction of renewable energy and large-capacity storage batteries, NGK will conduct thorough safety enhancement measures and meticulous quality assurance in an effort to restore confidence in the NAS battery.

## Realizing Sustainable Growth and Enhancing Corporate Value

---

Since assuming the position of President in April 2011, I established as the NGK Group basic management policy five goals: to seek innovation in our technologies, emphasize speed, pay attention to on-site operations, encourage human resource development, and companywide participation in CSR. To ensure thorough internal adherence to this policy, I called on employees at all sites to:

- Improve profitability
- Create solid opportunities to expand business
- Launch new businesses promptly

The NGK Group will continue to face these issues to realize ongoing growth and further enhance corporate value.

## Creation of New Products and Businesses

---

To be globally competitive and achieve further growth, the NGK Group must accelerate the development of new products using advanced ceramics technologies.

To this end, we established New Business Planning Office directly controlled by NGK headquarters in April 2012 with the objectives of business domain selection, customer approach and strengthening our internal structure.

Fiscal 2012 is the first year of internal efforts focused on revitalization, new products and businesses and all employees are taking on new challenges without fear of failure.

## Expanding Overseas Business and BCP

---

To expand business as the Japanese market continues to shrink, we must make initiatives in overseas markets to ensure profitability. We will establish efficient manufacturing systems on a global scale, aim for further growth while developing new products in Japan and focus efforts on manufacturing technologies to maintain employment.

Last year's Great East Japan Earthquake has given us an opportunity to review our Business Continuity

Plan (BCP), make it more practical and ensure seismic strengthening of facilities, alternative production bases, backup systems for headquarters functions and the multiple procurement of raw material.

## Management Emphasis on CSR

---

Corporate Social Responsibility (CSR) is the lynchpin of corporate management. Recently, there have been many corporate scandals in the news, with management being hammered causing corporate values decreasing.

Aiming for companywide participation in CSR, the NGK Group will attempt to strengthen its compliance structure, instill a sense of ethics in its employees and continue fine-tuning the work environment to clearly reflect these activities daily.

## Together with Stakeholders

---

Since fiscal 2009, the NGK Group has held the CSR Talk Live event to facilitate direct communication between top management and employees. In addition, in November 2011, we held a CSR Factory Dialog at the Chita Site, inviting members of the local community living near the site to share opinions and ideas.

We aim to become a corporate Group able to meet expectations and instill trust. By listening earnestly to the voices of our various stakeholders, we will continue to engage in two-way dialogs and disclose information in a timely and appropriate manner.

The fiscal 2012 CSR report has been organized to present both the NGK Group Guidelines for Corporate Behavior and actions for promoting CSR as NGK Group's CSR initiatives. After reading this CSR Report, we invite you to offer your direct and honest opinion of NGK's initiatives.

  
**Taro Kato**  
President

# NGK Will Implement NAS® Battery Safety Enhancement Measures and Meticulous Quality Assurance in an Effort to Restore Confidence and Expand Business.

## Accidental Fire Overview and Chronology

On September 21, 2011, NGK-manufactured NAS® (sodium-sulfur) batteries for electricity storage (2,000 kW rated output, manufactured in 2009) owned by the Tokyo Electric Power Company and installed at the Tsukuba Plant (Joso City, Ibaraki Prefecture) of Mitsubishi Materials Corporation caught fire.

The fire occurred around 7:20 a.m. on September 21 and took eight hours to contain. It was confirmed extinguished by fire authorities on October 5. 10 of the 40 modular batteries (50 kW rated output) comprising the NAS® battery were completely destroyed, and some of the remaining modular batteries were damaged.

Since the NAS Battery was commercialized in 2002, 305,000 kW have been installed at a total of 174 locations in six countries around the world.

An NAS Battery system fire also occurred at a customer's plant in February 2010 involving a specialized high output battery (200 kW rated output, manufactured in 2001).

In recognition of the seriousness of this situation, particularly as the second accidental fire involved a standard NAS Battery, NGK is placing the highest priority on identifying the cause of the fire and how to prevent reoccurrence. Until then, NAS Battery production has been suspended.

Furthermore, to absolutely ensure safety, NGK has asked customers to stop using the NAS Battery. Those who need to maintain a minimal level of battery functionality, such as for use as an emergency power source, received operational consultation on an individual basis.

## Cause of Fire and Measures to Strengthen Safety

Since the accidental fire occurred, NGK's internal Accident Investigation Committee (Committee Chairman: Takeyuki Mizuno, Director and Senior Vice President) has been leading efforts to identify the cause of the fire and consider measures to prevent a reoccurrence.

NGK has analyzed battery operation records before and after the fire, surveyed the production history of the batteries, and conducted simulated fire experiments. In addition, NGK has surveyed a broad range of factors that could have caused the fire in various processes, ranging from components to design, manufacturing and installation.

A third-party investigation committee, with Japan's

Hazardous Materials Safety Techniques Association serving as secretariat, reviewed the cause of the fire and containment measures, and judged that the details regarding both were reasonable and appropriate.

Based on the results of this investigation, NGK decided to voluntarily implement safety enhancement measures, including a monitoring system, under the guidance of the Fire and Disaster Management Agency. (See details on right page)

Implementing these safety enhancement measures, customers can use NAS batteries with even greater peace of mind as the batteries now have more safety features than previous models.

Regarding NAS Batteries that customers were asked to suspend or restrict usage of up to now, NGK is following the guidance of the fire authorities having jurisdiction in locations where the batteries are installed in an effort to ensure the batteries can continue to be used soon after implementing safety enhancement measures corresponding to installation conditions.

## Initiatives for the Future

Since the fire incident, NGK has suspended operations at its NAS battery factory in Komaki City, Aichi Prefecture, Japan. However, operations were resumed at this facility in June 2012 now that the cause of the fire has been investigated and safety enhancement measures devised. For the time being, the plant will place priority on revamping NAS batteries that continue to be used by customers. NGK plans to commence production of new batteries in the second half of the current fiscal year, starting on October 1, 2012.

Global demand for large-capacity electricity storage batteries has continued to increase, driven mainly by the utilization of renewable energy, smart grids (next-generation power grid distribution) and government energy policy reviews.

Looking ahead, NGK will implement safety enhancement measures and raise quality further while making an effort to provide customer after service and expand the NAS batteries business, which has garnered high marks for its large capacity and highly efficient electrical storage capacity.

NGK deeply regrets any worry or inconvenience that may have caused to customers and other concerned parties by the fire incident.



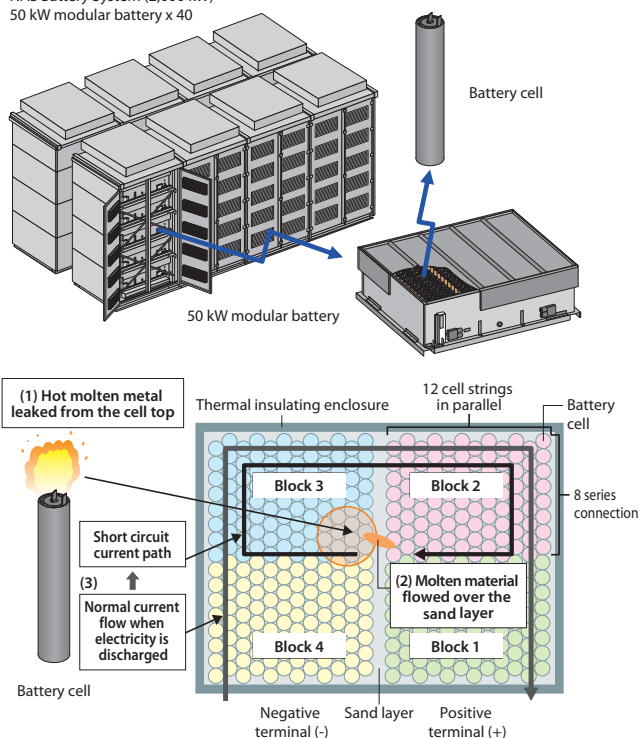
## Cause of Fire and Safety Enhancement Measures

### Cause of Fire

- 1 The NAS battery system consists of 40 battery modules. In one of these modular batteries, which are made up of 384 battery cells, one battery cell was faulty. That battery cell had a breach and leaked hot molten material.
- 2 This molten material flowed over the sand filler portion between blocks inside the battery module, causing a short between battery cells in an adjoining block.
- 3 Because there was no fuse installed between the battery cells that shorted, the short circuit current flowed continuously and emitted heat, which destroyed a number of other battery cells, which in turn caught on fire. This fire spread to the whole battery module in question.
- 4 The combustion of the particular battery module released flames and hot molten material that melted battery cell casings inside battery modules installed above and below, causing the fire to spread further.

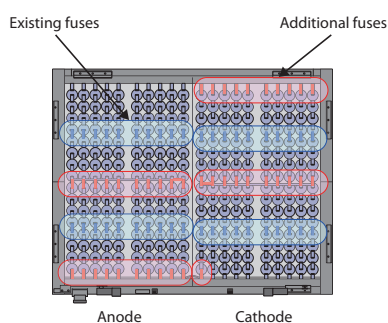
### NAS Battery System (Pattern Diagram)

NAS Battery System (2,000 kW)  
50 kW modular battery x 40



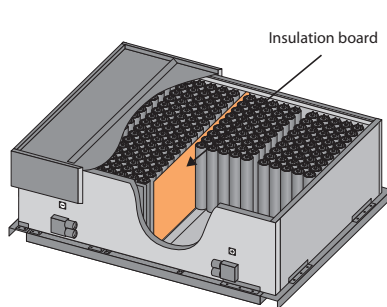
### Safety Enhancement Measures

#### 1) Measures to prevent spread of fire in modular batteries



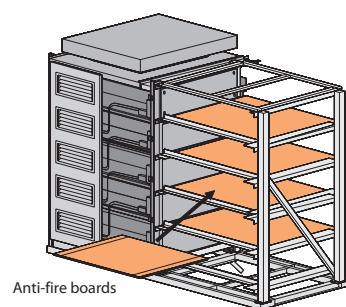
##### (1) Fuses added

Fuses will be added between battery cells in modular batteries to prevent a short circuit current from causing a fire.



##### (2) Insulation boards installed

Insulation boards will be placed between blocks in battery modules to prevent leaking molten materials from causing a short circuit.



##### (3) Anti-fire boards installed

Anti-fire boards will be placed between battery modules above and below to prevent fire from spreading to other battery modules.

#### 2) Other safety enhancement measures

- (1) Monitoring system will be strengthened to enable quick fire detection.
- (2) Fire extinguishers and fire-prevention equipment will be installed and a fire-fighting structure implemented for fire preparedness.
- (3) A fire evacuation route will be developed and a guidance system put in place in case of a fire.

# Expanding Global Manufacturing System to Realize the Stable Supply of Products.

Demand for NGK ceramic products to purify automotive exhaust is expanding globally amid the strengthening of automobile emission controls around the world and growing demand for cars in emerging countries.

NGK is expanding its manufacturing systems in Japan and overseas to fulfill its responsibility for providing a stable supply and contributing to environmental conservation.

NGK Ceramics Polska



NGK Ceramics Indonesia



NGK Ceramics Suzhou



NGK Ceramics South Africa

NGK Main Plant  
(Maintenance practitioner joint training)

NGK's Ishikawa Plant



## Global Manufacturing System for Ceramic Products to Purify Automotive Exhaust Expansion Plan

### NGK Ceramics Polska

#### Plans to invest in increased manufacturing

New large size HONEYCERAM manufacturing plant  
Expansion of silicon carbide DPF manufacturing facility  
New NOx sensor assembly facility  
Begins production January 2014

### NGK's Ishikawa Plant

#### Plans to invest in increased manufacturing

New large size HONEYCERAM and cordierite DPF manufacturing facilities  
Begins production July 2013

### NGK Ceramics USA

#### Plans to invest in increased manufacturing

Expansion of HONEYCERAM manufacturing facilities  
Begins production January 2014

### NGK Main Plant

### NGK Ceramics Europe

### NGK Ceramics Mexico

#### Plans to invest in increased manufacturing

Expansion of large size HONEYCERAM and cordierite DPF manufacturing facilities  
Begins production March 2013

### NGK Ceramics Indonesia

#### Plans to invest in increased manufacturing

Expansion of HONEYCERAM and large size HONEYCERAM manufacturing facilities  
Begins production April 2013

### NGK Ceramics Suzhou

#### Plans to invest in increased manufacturing

Expansion of HONEYCERAM, large size HONEYCERAM and cordierite DPF manufacturing facilities  
Begins production August 2012

### NGK Ceramics South Africa



# Why Is the Manufacture of Ceramic Products to Purify Automotive Exhaust Expanding All Over the World?

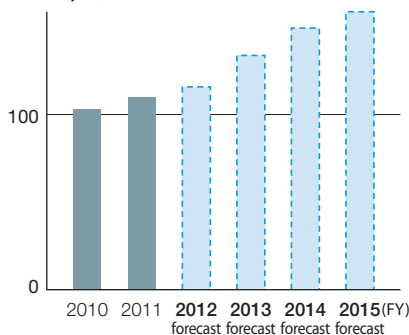
## Because internal combustion engine vehicles will continue to increase

Right now electric vehicles and eco-cars are the focus of attention, but the vast majority of vehicles manufactured and sold around the world are still internal combustion engine vehicles.

Demand for vehicles is rapidly growing, chiefly in emerging countries, including China and India, where gasoline and diesel vehicle sales are on the increase. In line with the rise in national incomes, sales of internal combustion engine vehicles are forecast to continue their upward trend.

## Ceramic Products to Purify Exhaust Gas

(Billions of yen)



## Because Emission Controls Are Getting Tougher All Over the World

Automobile emission controls are getting tougher all over the world. Following Japan, the United States, Europe and other developed countries, emerging countries are also introducing emission controls incrementally.

For diesel vehicles in particular, nitrogen oxide (NOx) and particulate matter exhaust regulations will become even tougher, but not just for passenger cars and trucks. Tougher emission controls are also forecast for off-road vehicles such as construction and agricultural machinery.

## Fulfilling our Responsibility to Provide Products Contributing to Environmental Conservation

As a leading provider of various products that purify vehicle exhaust gas, NGK will expand its manufacturing system on a global scale in response to expanding demand around the world.

Developing high-performance products that comply with stringent automobile emission controls and fulfilling our responsibility of ensuring a stable supply, NGK will contribute to environmental conservation.

## Global Automobile Emission Controls

		2008	2009	2010	2011	2012	2013	2014	2015
Passenger cars	Japan	New long-term		Post new long-term <sup>*1</sup>					
	United States	Tier 2/Bin #8		Tier 2/Bin #5 <sup>*2</sup>					
	Europe	Euro 4		Euro 5 <sup>*3</sup>				Euro 6	
Trucks	Japan	New long-term		Post new long-term					
	United States	US '07		US '10					
	Europe			Euro V				Euro VI	
Off-road vehicles Construction and agricultural machinery				Japan	Tier 4a level			Tier 4b level	
				United States	Tier 4a			Tier 4b	
				Europe	Step 3			Step 4	

\*1. Post new long-term: Vehicle exhaust gas regulations formulated by the Ministry of Land, Infrastructure, Transport and Tourism to further reduce nitrogen oxide (NOx) and particulate matter exhaust from new cars or trucks, buses and other vehicles.

\*2. Tier 2/Bin #5 etc.: Emission controls under the jurisdiction of the United States Environmental Protection Agency (EPA). There are incremental NOx emission standards for all 11 rankings.

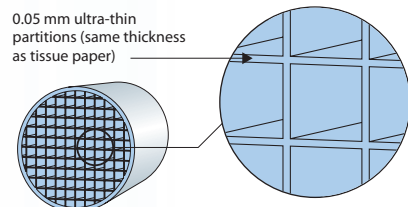
\*3. Euro 5, etc.: Emission controls introduced by the EU in September 2009. Expanded to include sport utility vehicles (SUV) and light commercial vehicles in January 2011.

## NGK Ceramics Contribute to Purifying Vehicle Exhaust Gas

### Ceramic Products to Purify Automotive Exhaust

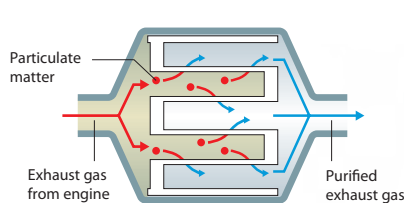
#### HONEYCERAM® Catalytic Substrate Functions and Features

The thinner the partitions in the honeycomb structure, the wider the surface area inside enables improved exhaust gas purification. NGK's HONEYCERAM is the realization of 0.05 mm ultra-thin partitions.



#### Diesel Particulate Filter (DPF) Functions and Features

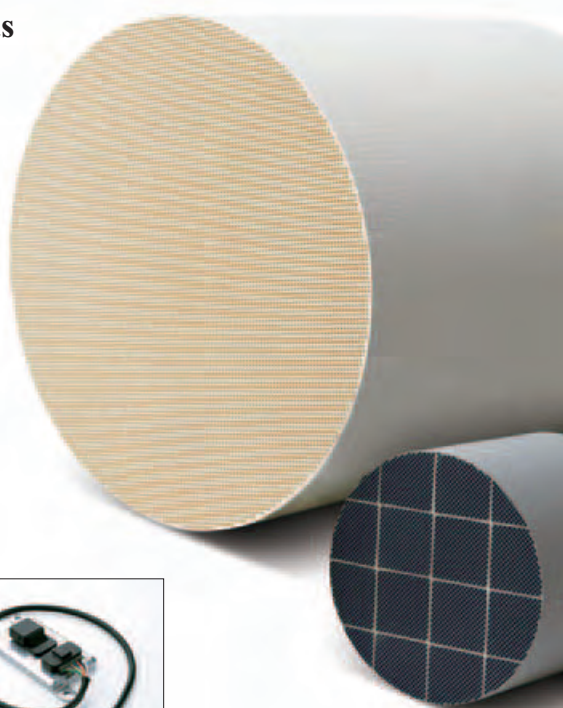
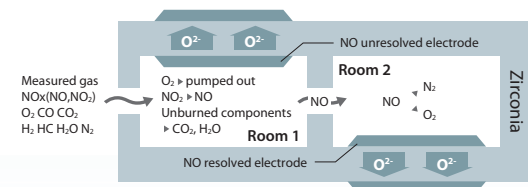
Alternating exhaust gas in and out, the thin ceramic walls become a filter, enabling the removal of 90% of particulate matter (PM) in diesel exhaust gas.



### High-Precision In-Vehicle NOx Sensor

Measure exhaust gas NOx concentrations at the ppm level in real time for optimal control of the exhaust gas purifier and for diagnosis of its failure.

#### High-Precision NOx Sensor Basic Principles





## Operations Begin at State of the Art Mexico-Japan Production Base in 2011

### NGK Ceramics Mexico

#### NGK's First Production Base in Latin America

NGK Ceramics Mexico, NGK's first production base in Latin America, began operations in June 2011. This main base provides large size HONEYCERAM and diesel particulate filters (DPF) for diesel vehicles in the North American market, where demand is expanding due to stricter automobile emission controls.

#### CO<sub>2</sub> Exhaust Reduction Initiatives Registered as a United Nations Clean Development Mechanism (CDM)

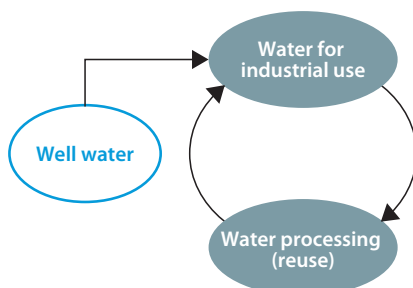
NGK Ceramics Mexico's CO<sub>2</sub> exhaust reduction initiatives were acknowledged and registered as a United Nations Clean Development Mechanism (CDM) in June 2011.

NGK realized year's biggest reduction in amount of CO<sub>2</sub> exhaust gas, approximately 5,600 tons, by introducing highly heat-

efficient regenerative thermal oxidizers into process of removing organic constituents included in exhaust gas from firing furnaces.

#### Reusing Precious Water Resources

In Mexico, water is a precious resource. The plant purifies well water for industrial use, with water being used once in the manufacturing process reused through reverse osmosis in an effort to conserve water resources.



#### NGK Ceramics Mexico Overview

Location: Outside Monterrey, State of Nuevo León, Mexico

Lot area: 240,000 m<sup>2</sup>

Employees: Approximately 450 (As of March 31, 2012)

Products: Large size HONEYCERAM and cordierite DPF



Employee Voice

Juan Manuel Chavez Tobias

NGK Ceramics Mexico

I joined NGK Ceramics in January 2011.

While carrying out the distinctive approach to manufacturing with Mexican staff that I learned while training in Japan, I hope to make our plant a model for other overseas plants.

#### Promoting Energy Conservation by Improving Productivity

NGK thoroughly analyzes and improves the operation of each machine with the aim of increasing product molding line capacity 1.5 times. Enhanced productivity is also linked to energy conservation.

Going forward, NGK will promote enhanced productivity and energy conservation by developing these initiatives for production bases worldwide.



## Second Domestic Mother Plant Focused on Global Production

Ishikawa Plant, which began operation in July 2011, is NGK's second domestic mother plant focused on global production of HONEYCERAM substrates for automobile catalytic converters.

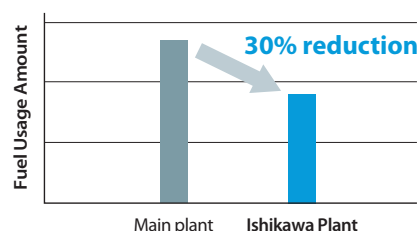
In the event of natural disasters or other unforeseen situations, this production base also plays a critical role in terms of business continuity planning (BCP) by ensuring a stable supply of products.

### Nearly 30% Reduction in Fuel Usage and CO<sub>2</sub> Emissions with Energy-Saving Firing Furnaces

The firing furnaces introduced at the Ishikawa Plant possess the same level of capacity as the firing furnaces at the main plant, but these energy-saving firing furnaces enable the reduction of fuel usage and CO<sub>2</sub> emissions by nearly 30% through the latest technology realizing improved heat storage and exhaust heat reduction.

The plant increased the amount of soil being pushed out during casting and reduced slicing and finishing times to increase production capacity to three times that of traditional factories.

#### Fuel Usage Amount Comparison



### Reducing CO<sub>2</sub> Emissions Using Clean Natural Gas

Liquefied natural gas (LNG) is used to fuel the HONEYCERAM firing furnaces.

Natural gas does not emit sulfur oxides (SOx) or particulates when combusted. It is a clean energy source that emits very little CO<sub>2</sub>, NOx and other greenhouse gases and air pollutants compared to coal or oil.



#### Ishikawa Plant

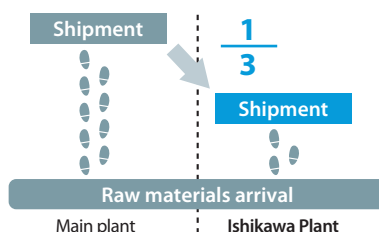
**Location:** Nomi City, Ishikawa Prefecture  
**Lot area:** 109,100 m<sup>2</sup>  
**Employees:** Approx. 130 (As of March 31, 2012)  
**Products:** HONEYCERAM



### Reducing Handling Distances in Plants by 1/3

NGK shortened distance between processes with layout that considers the movement of materials inside the plant. From the arrival of raw materials to the shipment of finished products, handling distances were shortened to 1/3 that of our main plant. This labor-saving effort realizes significantly reduced loss.

#### Comparison of Handling Distances from Arrival of Raw Materials to Product Shipment



#### Employee Voice

**Takeshi Taniguchi**

Maintenance Section,  
 Construction & Maintenance Dept.,  
 Corporate Manufacturing Engineering, NGK

Providing water and energy, utilities facilities can be said to be a plant's lifeline.

I am engaged in trying to improve maintenance technologies to prevent trouble from arising at these facilities. I feel we are maintaining this cutting-edge equipment offensively rather than defensively.

# Through CSR Initiatives, NGK Is Contributing to Sustainable Social Development.

## Corporate Philosophy

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

Guidelines for Corporate Behavior	Priorities in Promoting CSR
<b>I Realization of Corporate Philosophy</b> Responding to the trust and expectations of society	<b>Provision of products that contribute to better social environment</b> <ul style="list-style-type: none"> <li>Development and provision of products and services that help to preserve the natural environment</li> <li>Development and provision of products and services that embody safety and reliability</li> <li>Realization of higher quality products and services</li> </ul>
<b>II How to Engage in Business Activities</b> Act with sincerity from a strong ethical stance	<b>Disclosure of corporate information</b> <ul style="list-style-type: none"> <li>Enhancement of corporate information disclosure</li> <li>Consistent improvement of internal controls relating to financial reporting</li> </ul> <b>Thorough enforcement of compliance; risk management</b> <ul style="list-style-type: none"> <li>Thorough promulgation of the NGK Group Guidelines for Corporate Behavior through education</li> <li>Reinforcement of the risk management system</li> <li>Respect and protection of intellectual property rights</li> <li>Creation and consistent improvement of a framework for information security</li> <li>Strict adherence to the Anti-Monopoly Act, Subcontract Act, and other laws and regulations pertaining to business transactions</li> <li>Strict adherence to laws and regulations relating to export management</li> </ul> <b>Respect of humanity and assurance of comfortable working environment</b> <ul style="list-style-type: none"> <li>Maintenance and consistent improvement of safe and comfortable working environments</li> <li>Development of human capital and recruiting of human resources across the Group</li> <li>Utilization of diverse human resources</li> <li>Support for better balance between work and home life/childrearing</li> </ul> <b>Implementation of fair, free and transparent transactions</b> <ul style="list-style-type: none"> <li>Fair and honest evaluation of procurement partners, and extensive resource diversification</li> <li>Promotion of CSR procurement</li> </ul>
<b>III As a Member of Society</b> Sustainably develop in partnership with society	<b>Preservation of global environment</b> <ul style="list-style-type: none"> <li>Prevention of global warming</li> <li>Adoption of environmentally friendly production processes</li> <li>Promotion of resource recycling</li> <li>Strengthening of global environmental management</li> </ul> <b>Coordination with local communities and promotion of contribution to the society</b> <ul style="list-style-type: none"> <li>Provision of scholarships and living assistance to foreign students</li> <li>Cooperation with local communities, labor unions, and NPOs in social contribution activities</li> <li>Support for volunteer activities by employees</li> </ul> <b>Communications with stakeholders</b> <ul style="list-style-type: none"> <li>Communication with customers and procurement partners</li> <li>Interaction with local communities via plant tours and open house events</li> <li>CSR Talk Live (Discussions on implementing CSR with every employee class)</li> </ul>

## Behavioral Guidelines

Guidelines indicating how to conduct oneself in daily work activities based on the Code of Conduct.

Set CSR objectives and achievements, review annually.



## CSR from NGK's Perspective

### ■ Embodying NGK's Corporate Philosophy to Fulfill Our Social Responsibility

To contribute to society in a manner that embodies our corporate philosophy, the NGK Group is committed to offering products and services that help create a better social environment and bring new value to society.

By putting these activities into practice, we are working together with our customers, employees and business partners to fulfill our social responsibility as a company in every respect, an act essential to meeting the public's expectations and earning its trust.

## Priorities in Promoting CSR

### ■ Integration of Priorities in Promoting CSR and Guidelines for Corporate Behavior

With publication of our CSR Report in 2009, the NGK Group drafted eight actions for promoting CSR that serve as the basis for reviewing our CSR activities each year.

Revising the NGK Group Guidelines for Corporate Behavior in 2011, we integrated actions with Priorities in Promoting CSR, clarifying the link to NGK Group CSR activities.

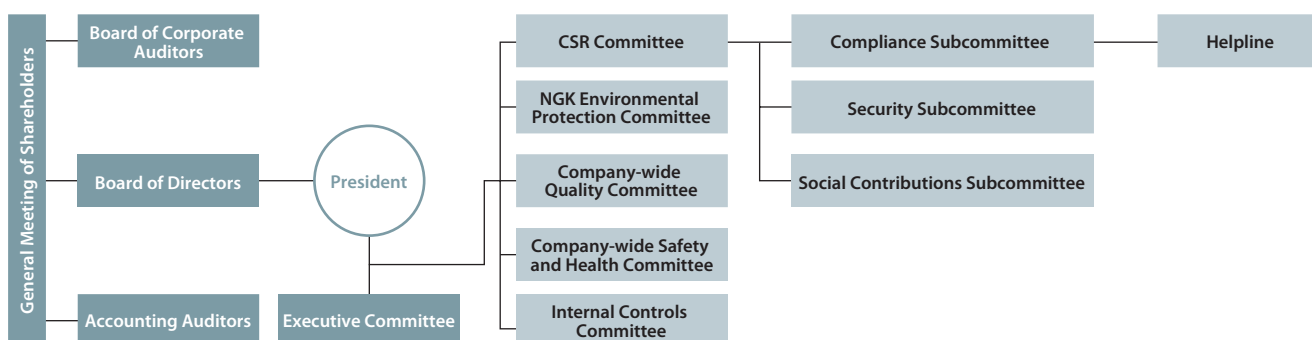
(→ See page 23)

## CSR Activities Promotion Structure

### ■ Promoting CSR Activities Through the Establishment of Various Committees

Aiming to contribute to the development of a sustainable society, the NGK Group has established the CSR Committee, the NGK Environmental Protection Committee, the Company-wide Quality

Committee, the Company-wide Safety and Health Committee, and the Internal Controls Committee to promote Group CSR activities.



## Acquisition of ISO Certification

The NGK Group has acquired ISO 9001/TS 16949 certification on 29 lines and ISO 14001 certification at 33 sites in Japan and around the world.

NGK will continue to acquire certification at newly operating plants.

### ISO 9001/TS 16949

Divisions/Group companies		Number
Power Business Group	Electrical Insulator Div.,	1
	NAS Battery Division	1
	Domestic Group	2
	Overseas Group	5
Ceramics Business Group	Nagoya HONEYCERAM plant	1
	Sensor Division	1
	Industrial Process Division	1
	Domestic Group	3
	Overseas Group	8

Divisions/Group companies		Number
Electronics Business Group	Electronic Components Division	1
	HPC Division	1
	New Metals Division	1
	Overseas Group	3

### ISO 14001

Division		Certified sites
NGK		3
Domestic Group	Power Business	2
	Ceramic Products Business	5
	Electronics Business	8
Overseas Group	Power Business	5
	Ceramic Products Business	7
	Electronics Business	3

# CSR Objectives and Achievements

I Realization of Corporate Philosophy

II How to Engage in Business Activities

III As a Member of Society

Actions for Promoting CSR	CSR Objectives	FY2011 Plans and Objectives <b>Plan</b>
Provision of products that contribute to better social environment	● Develop and provide products and services that help to preserve the natural environment	1 Bolster global production system, including the start of production at plants in Ishikawa (Japan) and in Mexico, in order to continue to stably supply products in response to tighter exhaust gas restrictions for automobiles and other sectors. 2 Expand sales of high-precision in-vehicle NOx sensors.
	● Develop and provide products and services that embody safety and reliability	3 Expand sales of NAS battery systems as part of electricity supply measures.
	● Realize higher quality products and services	4 Embed mechanisms to enhance Company-wide quality activities and functions, and extend these to Group companies. 5 As part of Company-wide quality targets, define and focus efforts to eliminate quality defects through a more extensive design review process. Strengthen design review particularly when altering designs or processes.
Disclosure of corporate information	● Enhance disclosure of corporate information	6 Continue to provide fair and honest information disclosure in a timely and appropriate manner.
	● Consistently improve internal controls over financial reporting	7 Work to enhance the management level in each division and to reduce the number of issues identified by audits. 8 Raise efficiency in assessment and audit of processes that were rated favorably in the previous fiscal year.
Thorough enforcement of compliance; risk management	● Thoroughly promulgate the NGK Group Guidelines for Corporate Behavior through education	9 Amend the Guidelines for Corporate Behavior to more intuitively clarify relationships to CSR (July 2011). 10 Define a set of new behavioral guidelines that specifically spell out the kind of behavior expected of every employee in order to better familiarize employees with the Guidelines for Corporate Behavior.
	● Reinforce the risk management system	11 Continue to have the CSR Committee periodically confirm and follow up on the status of Company-wide risk countermeasures enacted based on the second questionnaire conducted in fiscal 2010. 12 Conduct third Control Self Assessment (CSA) questionnaire targeting NGK in December.
	● Respect and protect intellectual property rights	13 Take steps to improve and embed e-learning introduced in 2010 at Intellectual Property Seminar, and enhance dialogue-style training. 14 Enhance awareness-raising programs for managers.
	● Create and consistently improve a framework for information security	15 Based on evaluation results by a subcommittee specializing in security under the CSR Committee, address the following priority countermeasures as a Group: 1) Stronger IT security education, and 2) Tougher measures to prevent leakage of confidential information.
	● Strictly adhere to the Anti-Monopoly Act, the Anti-Trust Act and other laws and regulations pertaining to business transactions	16 Continue to provide individualized support to business groups and domestic Group companies for strict adherence with the country's Subcontract Act. 17 Conduct educational training on anti-monopoly laws through seminars and other means for overseas Group companies.
	● Strictly adhere to laws and regulations relating to export management	18 The Industrial Process Division completed export control database and shipping system linkage, which is being considered for introduction in other divisions. The most cost-effective plan will be introduced and begin operation.
Respect of humanity and assurance of comfortable working environment	● Maintain and consistently improve safe and comfortable working environments	19 For worksite patrols, in addition to setting new targets, set targets by workplace, horizontally deploy best practices across the Group and work to raise the level of activities with an eye to improvement. 20 In risk assessment, strive to avoid omissions or shortfalls in our evaluation of latent risks in work performed. 21 Institute consultations with industrial physicians and health checks for management staff who routinely work long hours.
	● Develop human capital and recruit human resources across the Group	22 Revise our education systems to be more intuitive by further dividing and reconfiguring position-based training, one of our three fundamental education systems, into career education (education for new hires and promoted employees) and management education. 23 Fully implement programs for training in-house instructors and worksite leaders, expanding those eligible to 13 people and to between 110 to 120 people, respectively. 24 Greatly enhance English-language education to strengthen English proficiency among new employees. (Set target TOEIC score of 600 or higher within one year for new university graduate hires).
	● Utilize diverse human resources	25 Expand employment of people with disabilities by broadening applicable jobs beyond those in skilled manufacturing. 26 Conduct internal PR to encourage broad penetration of our system for transferring jobs from general employment to career-track positions during the second year following the system's revision.
	● Support a better balance between work and home life/childrearing	27 Continue measures to date designed to shorten overall working hours, strengthening partnership with the labor union to make it easier for employees to take paid holidays. 28 Begin system for preferentially allotting employee parking spaces within the vicinity of the headquarters to employees raising children.

Note: In this publication, NGK Insulators, Ltd. is referred to as "NGK" and domestic and global Group companies are referred to as "Group companies."

FY2011 Activities Summary <b>Do</b>	Evaluation <b>Check</b>	Reference	Improvement Plan <b>Action</b> → FY2012 Targets
<p>1 Ishikawa and Mexico plants began full operation in July manufacturing ceramic products to purify automotive exhaust; made decision to allocate capital expenditure for increased production.</p> <p>2 Allocated capital expenditure to enhance production capacity ahead of sales growth.</p>	<p>○</p> <p>○</p>	<p>P.19</p>	<p>● Strengthen global production system in response to increased demand for ceramic products to purify automotive exhaust and high-precision in-vehicle NOx sensors, allocating capital expenditure for increased production in line with plans.</p>
<p>3 Suspended manufacture and sales of NAS Batteries after a battery used by a customer caught fire. NGK took initiatives to identify the cause of the fire and formulate measures to prevent a reoccurrence.</p>	<p>×</p>	<p>P.19</p>	<p>● Restart NAS Battery operations, diligently conduct safety enhancement measures and making efforts towards thorough quality assurance and restore confidence.</p>
<p>4 Developed Company-wide quality activity rules in domestic and overseas Group companies and began implementing survey.</p> <p>5 Engaged in restructuring of Company-wide quality activities, strengthened design review, particularly when altering designs or processes to create a benchmark for unification.</p>	<p>○</p> <p>○</p>	<p>P.20,21</p>	<p>● Aim to eradicate serious quality defects and clarify impact of changes and transformations with regard to how products are used by customers, product design, production process and purchased products.</p>
<p>6 Continued to conduct timely and appropriate disclosure. NGK's response to the NAS Battery accidental fire included continuously disclosure of the latest information and the creation of a special informational webpage.</p>	<p>○</p>	<p>P.22</p>	<p>● Continue to provide fair and honest information disclosure in a timely and appropriate manner.</p>
<p>7 In an effort to improve the level of management through self-evaluations in each division and the monitoring of progress by the Internal Controls Committee, issues identified by audits have been reduced.</p> <p>8 Raised efficiency in assessment and audit of processes that were rated favorably.</p>	<p>○</p> <p>○</p>	<p>P.22</p>	<p>● Work to enhance the management level in each division and to reduce the number of issues identified by audits.</p> <p>● Raise efficiency in assessment and audit of processes that were rated favorably in the previous fiscal year.</p>
<p>9 Revised the NGK Group Guidelines for Corporate Behavior in July, clarifying CSR and related activities advanced by the Group.</p> <p>10 Along with revisions to the Guidelines for Corporate Behavior, we also formulated behavioral guidelines.</p>	<p>○</p> <p>○</p>	<p>P.23</p>	<p>● Reinforce education aiming to inculcate thorough awareness of revised NGK Group Guidelines for Corporate Behavior and newly formulated behavioral guidelines.</p>
<p>11 The CSR Committee met three times to confirm and follow-up on risk countermeasure conditions.</p> <p>12 Conducted third CSA questionnaire at NGK in December.</p>	<p>○</p> <p>○</p>	<p>P.23,24</p>	<p>● The CSR Committee will regularly verify and follow-up on condition of Company-wide risk measures based on CSA questionnaire.</p>
<p>13 Continued to implement e-learning. Conducted a total of 11 dialog-style small group training sessions.</p> <p>14 Focused efforts on selecting themes for awareness-raising programs for managers.</p>	<p>○</p> <p>△</p>	<p>P.24,25</p>	<p>● Continue to conduct dialog-style small group seminars for young engineers in R&amp;D and business divisions.</p> <p>● Conduct training program for managers on Chinese intellectual property issues and case studies on intellectual property strategies of other companies.</p>
<p>15 70% of Group companies completed; 30% continued to conduct initiatives.</p>	<p>△</p>	<p>P.25</p>	<p>● To complete priority countermeasures at all Group companies, NGK will continue to enhance IT security education and strengthen measures to prevent leakage of confidential information.</p>
<p>16 Individualized support was given to headquarters and two Group companies to ensure strict compliance with the Subcontract Act.</p> <p>17 Gave presentation on anti-monopoly laws to European Group companies.</p>	<p>○</p> <p>△</p>	<p>P.26</p>	<p>● Further strengthen education and compliance structure in line with the Subcontract Act and Anti-Monopoly Act (Anti-Trust Act).</p> <p>● Regularly conduct competition-related law seminars led by lawyers at Group companies in the U.S. and Europe.</p>
<p>18 Created new DB including review completion verification procedures from point of cost-effectiveness.</p>	<p>○</p>	<p>P.26</p>	<p>● Attempt to perform system improvements on new DB introduced in April 2012 depending on operating conditions.</p>
<p>19 Improved 80% of content identified on worksite patrols and horizontally deployed best practices.</p> <p>20 Promoted measures for the comprehensive withdrawal of hazardous sources with potential to come in direct contact with people.</p> <p>21 Had all key personnel undergo health checks and consultations with an industrial physician.</p>	<p>○</p> <p>○</p> <p>○</p>	<p>P.27</p>	<p>● Continue to conduct worksite patrols as a priority issue for the prevention of workplace accidents and promote 5S activities (sort, set in order, shine, standardize, sustain).</p> <p>● Continue exhaustive risk predictions and conduct measures focused on high-priority risk.</p> <p>● Continue health management (consultations with industrial physicians and health checks) for general employees and key personnel who routinely work long hours.</p>
<p>22 Upgraded position-based training as planned.</p> <p>23 Increased number of participants for in-house instructor and worksite leader training as planned.</p> <p>24 Conducted a 10-day English language intensive training, one week per month group training and e-learning. As of February 2012, 70% has a TOEIC score of 600 points or higher.</p>	<p>○</p> <p>○</p> <p>△</p>	<p>P.28</p>	<p>● Consider and conduct detailed training programs as needed.</p> <p>● Support activities of employees who completed in-house instructor training. NGK will expand and continue the worksite leader training.</p> <p>● Continue to conduct language training for new employees, cultivate practical English abilities and attempt to bring TOEIC scores up to 600 points or higher.</p>
<p>25 Expanded employment of people with disabilities beyond those skilled in manufacturing, engineer and general employment positions.</p> <p>26 Spread awareness of system details to all general employees regarding regulatory details. Eight of 22 passed the test.</p>	<p>○</p> <p>○</p>	<p>P.29</p>	<p>● Achieve the legally mandated ratio of employees with disabilities during fiscal 2013 in an attempt to halve the number of deficient staff.</p> <p>● Invite employees that have transferred to career-track positions to lecture at a roundtable career plan discussion for general employment.</p>
<p>27 In addition to continuing traditional response measures regarding shorter overall working hours and paid leave, exchanged opinions on effective labor-management measures.</p> <p>28 Eight employees took advantage of maternity leave.</p>	<p>○</p> <p>○</p>	<p>P.30</p>	<p>● Thorough observance of working hour rules in an attempt to prevent health issues and promote work-life balance.</p> <p>● Establish for handling inquiries on system utilization in an attempt to inculcate awareness of work-life balance support system.</p>



# CSR Objectives and Achievements

I Realization of Corporate Philosophy

II How to Engage in Business Activities

III As a Member of Society

Actions for Promoting CSR	CSR Objectives	FY2011 Plans and Objectives <b>Plan</b>
Implementation of fair, free and transparent transactions	<ul style="list-style-type: none"> <li>Evaluate procurement partners fairly and honestly, and extensively pursue resource diversification (Promotion of green procurement)</li> </ul>	<p><b>NGK</b></p> <p>29 As with suppliers in Japan who directly purchase materials leaving the company as NGK products, we are expanding the green supplier certification system to major manufacturers sourcing key materials through trading companies.</p> <p>30 Continue to request improvements from suppliers not meeting certification standards.</p> <p>31 Aim for 100% green supplier certification among suppliers targeted for certification (suppliers of materials that will be shipped outside NGK as products).</p> <p><b>Group companies</b></p> <p>32 Begin green procurement certification for major suppliers of Group companies.</p>
	<ul style="list-style-type: none"> <li>Promote CSR procurement</li> </ul>	<p>33 Conduct a survey concerning CSR procurement for major suppliers of NGK and Group companies.</p> <p>34 Assess the actual status of CSR initiatives across the NGK Group's entire supply chain.</p>
Preservation of global environment	<ul style="list-style-type: none"> <li>Help prevent global warming</li> </ul>	<p>35 Curb CO<sub>2</sub> emissions. Domestic: Emissions volume of less than 202,000 tons Basic unit per net sales 4% reduction from fiscal 2010 Overseas: Basic unit per net sales 1% reduction from fiscal 2010</p>
	<ul style="list-style-type: none"> <li>Adopt environmentally friendly production processes</li> </ul>	<p>36 In addition to energy-saving measures targeting compressors, develop energy-saving guidelines and check sheets for boilers and implement energy-efficiency diagnostic checks.</p> <p>37 Continue to reduce carbon emissions by promoting structural innovation in manufacturing, and promote the development of innovative energy-saving technologies.</p>
	<ul style="list-style-type: none"> <li>Promote resource recycling</li> </ul>	<p>38 Curb amount of discarded materials generated*. Domestic: Basic unit per net sales 2% reduction from fiscal 2010 Overseas: Basic unit per net sales 1% reduction from fiscal 2010</p> <p>39 Recycling rate improvement: Conduct surveys of overseas Group companies and set targets for each company. * Label items considered by-products until now as discarded materials from 2011.</p>
	<ul style="list-style-type: none"> <li>Strengthen global environmental management</li> </ul>	<p>40 Continue to horizontally promote reduction measures instituted in Japan among overseas Group companies.</p> <p>41 Coordinate issues among overseas Group companies relevant to compliance with amendments to environmental laws and regulations, and begin developing related mechanisms.</p>
Coordination with local communities and promotion of contribution to the society	<ul style="list-style-type: none"> <li>Provide scholarships and living assistance to foreign students</li> </ul>	<p>42 NGK will continue to provide assistance to foreign students, including scholarships to 20 students and housing to 40 students.</p> <p>43 NGK will continue and expand language courses and cross-cultural exchange projects conducted by students for local residents and employees to encourage two-way, grassroots international relations.</p> <p>44 Resurvey mechanisms at universities for follow-up with foreign graduates to build stronger and continuous ties with former students assisted by NGK.</p>
	<ul style="list-style-type: none"> <li>Cooperate with local communities, labor unions, and NPOs in social contribution activities</li> </ul>	<p>45 Work to assess the status of activities by Group companies and take steps to share information and extend activities.</p>
	<ul style="list-style-type: none"> <li>Support volunteer activities by employees</li> </ul>	<p>46 Focus on embedding and revitalizing existing activities, and develop an environment conducive to volunteer activities in which employees can readily participate.</p>
Communications with stakeholders	<ul style="list-style-type: none"> <li>Undertake communication activities with customers and procurement partners</li> </ul>	<p>47 Hold earnings results presentations for NGK's major suppliers (approximately 120 companies).</p> <p>48 Continue to operate the supplier helpline and strive to maintain fair and honest business relationships.</p> <p>49 Continuously conduct visits to suppliers covering quality, green certification and all other areas.</p>
	<ul style="list-style-type: none"> <li>Interact with local communities through plant tours and open house events</li> </ul>	<p>50 Give priority to responding to plant tours for elementary and junior high students to encourage greater understanding of and interest in NGK and manufacturing, and continue striving for more dynamic interaction with local communities.</p> <p>51 NGK will conduct a stakeholder dialogue (November).</p>
	<ul style="list-style-type: none"> <li>CSR Talk Live (Discussions on implementing CSR with employees in every job position)</li> </ul>	<p>52 NGK and domestic Group companies will continue to hold CSR Talk Live and distribute condensed versions of the CSR Report to employees of NGK and domestic Group companies.</p> <p>53 Build a more robust lineup of intranet CSR-Web content and move to turn it into a one-stop information source.</p>

Note: In this publication, NGK Insulators, Ltd. is referred to as "NGK" and domestic and global Group companies are referred to as "Group companies."

FY2011 Activities Summary	Do	Evaluation	Check	Reference	Improvement Plan	Action	FY2012 Targets
<p>29 Expanded and completed certification of overseas manufacturers sourcing key materials through trading companies.</p> <p>30 Asked suppliers targeted for certification that did not get certified to make improvements and finished all certification.</p> <p>31 Finished certification of suppliers targeted for certification.</p>	○	○	○	P.31,32	● Expand suppliers targeted for certification to all suppliers to purchase 95% of amount from certified suppliers.		
<p>32 50% of Group purchases were from certified suppliers.</p>	○	○	○		● Expand purchase amount to 60% from certified suppliers		
<p>33 Conducted examinations on targeted suppliers making up 80% of purchase amounts.</p> <p>34 Began examinations to understand conditions at suppliers with low awareness initiatives.</p>	○	○	○	P.31,32	● In light of the factual investigation results, revise content of next scheduled (fiscal 2013) CSR procurement questionnaire as well as supplier targets.		
<p>35 Curbed CO<sub>2</sub> emissions. Domestic CO<sub>2</sub> emissions 192,000 tons Basic unit per net sales 6% reduction from fiscal 2010 Overseas basic unit per net sales 6% increase from fiscal 2010</p>	△	△	△	P.35	● Curb CO <sub>2</sub> emissions. Domestic: Emissions volume of less than 201,000 tons Basic unit per net sales 8% reduction from fiscal 2010 Overseas: Basic unit per net sales 2% reduction from fiscal 2010		
<p>36 Conducted measures to eradicate air leaks in compressors, developed energy-saving guidelines and check sheets for boilers and implemented energy-efficiency diagnostic checks.</p> <p>37 Promoted introduction of eco processes based on structural innovation in manufacturing, verified CO<sub>2</sub> reductions at domestic factories.</p>	○	○	○	P.35,36	● Conduct measures to convert to energy-saving boilers. Create air conditioning energy-saving check sheets and conduct energy-saving diagnostic inspections at each division. ● Continue to reduce CO <sub>2</sub> through global horizontal deployment promoting structural innovation in manufacturing, and the introduction of eco processes.		
<p>38 Curbed discarded materials. Domestic basic unit per net sales 6% increase from fiscal 2010 Overseas basic unit per net sales 2% increase from fiscal 2010</p> <p>39 Improved recycling rate. Conducted inquiries at overseas Group companies to ascertain recycling situation.</p>	×	△	△	P.36,37	● Curb amount of discarded materials generated. Domestic: Basic unit per net sales 4% reduction from fiscal 2010 Overseas: Basic unit per net sales 2% reduction from fiscal 2010 ● Recycling rate improvement Conduct detailed analysis of overseas Group companies with low recycling rates.		
<p>40 Made examples from CO<sub>2</sub> reduction measures conducted in Japan, promoted horizontal deployment in overseas Group companies.</p> <p>41 Began creating mechanism for sharing information gathered on visit and through surveys to overseas Group companies to understand status of compliance with amendments to environmental laws and regulations.</p>	○	○	○	P.37	● Continue horizontal rollout at overseas Group companies, create collection of examples of discarded materials reductions and expand domestic CO <sub>2</sub> reduction examples. ● Create and test mechanism for sharing information on amendments to overseas laws.		
<p>42 Continued to support foreign students.</p> <p>43 Cross-cultural exchange meetings for employees were held five times. Classes on regional languages (Chinese and Korean) were held 20 times each, and cross-cultural exchange meetings were held 10 times.</p> <p>44 Exchanged opinions with university-related people.</p>	○	○	△	P.38	● Continue to provide assistance to foreign students. ● Continue to hold cross-cultural exchange meetings and language classes led by foreign students and contribute to international exchange between foreign students, regional communities and employees. ● Continue to investigate responses of other organizations. Consider incorporating findings in future measures.		
<p>45 Shared information by publishing status of Group company activities on corporate website and intranet.</p>	○	○	○	P.38,39	● Continue making efforts to understand Group company activities with initiatives for information transmission and sharing to link activities of each company.		
<p>46 Continued TABLE FOR TWO (TFT) activities provided volunteer information on the Internet.</p>	○	○	○	P.39	● Continue to focus efforts on embedding and revitalizing activities, engaging in the creation of an environment conducive to volunteer activities in which employees can readily participate.		
<p>47 Held an earnings results presentation for our major suppliers in May.</p> <p>48 Continued operation of supplier helpline.</p> <p>49 Continued visitation activities, but the Great East Japan Earthquake resulted in only half as many company visits compared to the previous fiscal year.</p>	○	○	△	P.40	● Hold earnings results presentations for major suppliers. ● Continue to operate the supplier helpline so as not to miss an important inquiry and strive to maintain fair and honest business relationships. ● Employ most appropriate suppliers through supplier visitation activities, including new suppliers, in an attempt to step-up supplier quality.		
<p>50 Conducted 13 plant visits for elementary school students in Nagoya, Chita and four areas in all.</p> <p>51 Conducted Factory Dialog with local residents at the Chita Site.</p>	○	○	○	P.40~42	● Give priority to responding to plant tours for elementary and junior high students to encourage greater understanding of and interest in NGK and manufacturing, and continue striving for more dynamic interaction with local communities. ● Consider conducting dialog with expert panel or NPO.		
<p>52 Conducted CSR Talk Live 10 times, distributed a condensed version of the CSR Report.</p> <p>53 Distributed information related to CSR activities and CSR Committee proceedings on the online CSR Web.</p>	○	○	○	P.43,44	● Continue to hold CSR Talk Live and distribute condensed versions of the CSR Report to employees of NGK and domestic Group companies. ● Further enhance CSR-Web content.		

## Provision of Products That Contribute to Better Social Environment

Guided by a Company-wide Quality Policy that puts customers first, the NGK Group considers the provision of products that contribute to a better quality of life to be one of its most important missions in an effort to create quality from the customer's perspective.

### Development and Provision of Products and Services That Help to Preserve the Natural Environment

The NGK Group produces and sells HONEYCERAM honeycomb ceramic substrates containing catalysts that render nitrogen oxides (NOx), carbon monoxide (CO), hydrocarbons (HC), and other potentially harmful substances found in gasoline vehicle exhaust

harmless, as well as large size HONEYCERAM and diesel particulate filters (DPF) that capture over 90% of the particulate matter (PM) found in diesel exhaust and nitrogen oxides (NOx) sensors.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>1</b> Bolster global production system.	Ishikawa Plant and NGK Ceramics Mexico began full operation in July.	○	Strengthen global production system in response to increased demand worldwide, allocating capital expenditure for increased production in line with plans.
<b>2</b> Expand sales of NOx sensors.	Allocated capital expenditure to enhance production capacity ahead of sales growth.	○	Implement planned capital expenditure for increased production and establish a supply system in response to increased demand.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

#### 1 Bolstering Global Production System for Automotive Exhaust Purification Products

In March 2012, NGK decided to invest ¥37 billion in six production sites worldwide, including the construction of a new large size HONEYCERAM diesel automotive exhaust gas purifier plant in Poland, to ramp up production capacity 40% by the end of fiscal 2013. NGK will expand production system and ensure stable supply in response to expanded demand from tightening automobile emission controls around the world and increased vehicle sales, mainly in emerging countries.

#### 2 Expanding Sales of High-Precision In-Vehicle NOx Sensors

In January 2012, NGK decided to strengthen production capacity for high-precision in-vehicle NOx sensors that measure nitrogen oxide (NOx) concentrations in automotive exhaust. Going forward, to respond to increased demand from tougher diesel emissions controls worldwide, NGK will invest ¥4.7 billion to raise the current annual production capacity of 2.4 million units to 700 million units by fiscal 2014 and expand sales.

This sensor was the first to be

commercialized in the world, developed by NGK and Continental AG (Germany) in 2008. It enables highly precise, real time measurement of NOx density in exhaust gas at the parts per million (ppm) level.



### Development and Provision of Products and Services That Embody Safety and Reliability

NGK was first in the world to commercialize the NAS Battery mega watt-class electricity storage system. The large-capacity, high-energy density and long-lasting NAS Battery is roughly 1/3 the size of a lead-acid battery, able to provide high output for long periods of

time. They help with load leveling at times of peak demand, stabilize intermittent renewable energy and contribute to power-saving measures and reduced energy costs.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>3</b> Expand sales as part of electricity supply measures.	Suspended manufacture and sales due to accidental fire, made efforts to identify cause and devise countermeasures.	×	Restart NAS Battery operations, diligently conduct safety enhancement measures and making efforts towards thorough quality assurance and restore confidence.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

#### 3 Expanding Sales of NAS Battery System as Part of Electricity Supply Measures

In September 2011, NAS Batteries manufactured by NGK and installed by a customer were involved in a fire.

NGK placed the highest priority on identifying the cause of the fire and how to

prevent reoccurrence, suspending NAS Battery production and sales.

A third-party investigation committee that reviewed the cause of the fire and containment measures judged that the details regarding both were reasonable and appropriate. Based on the results of this investigation, NGK decided to voluntarily implement safety enhancement measures

under the guidance of the Fire and Disaster Management Agency.

Having resumed operations at the NAS Battery Plant in June 2012, NGK will diligently implement NAS battery safety enhancement measures and thorough quality assurance in an effort to restore confidence and expand business.



**1 2 3** ... : Fiscal 2011 targets and activities and fiscal 2012 improvements and targets are summarized in tables and covered in detail in the text.

**Blue captions** : Report initiatives related to fiscal 2011 targets.

**WEB** : Activities not included here are reported on our website.

## Realization of Higher Quality Products and Services

In accordance with the corporate quality policy of striving with customers to provide reliable and useful products and services to the public, each year the NGK Group determines targets for the entire company and engages in the creation of quality from the customer's perspective.

To thoroughly eliminate the risk of quality defects for customers, since fiscal 2010 we have promoted the restructuring of quality

activities with the aim of developing these activities for the entire NGK Group in fiscal 2011.

These activities aim to eradicate serious quality defects by strengthening design review (DR), revealing the impact on product quality and an unflinching awareness of changes or differences in designs, production conditions and products purchased.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>G</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>4</b> Embed mechanisms to enhance Company-wide quality activities and functions, and extend these to Group companies.	Developed Company-wide quality activity rules, and verified status of activities.	○	Aim to eradicate serious quality defects and clarify impact of changes and transformations with regard to how products are used by customers, product design, production processes and purchased products.
<b>5</b> Focus efforts to eliminate quality defects through a more extensive design review process.	Strengthened DR by holding a DR for all Company-wide important matters and Company-wide reviewer participation.	○	

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

### 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 (Fiscal 2012)

Thoroughly eliminate quality risk by clarifying impact of changes and transformations

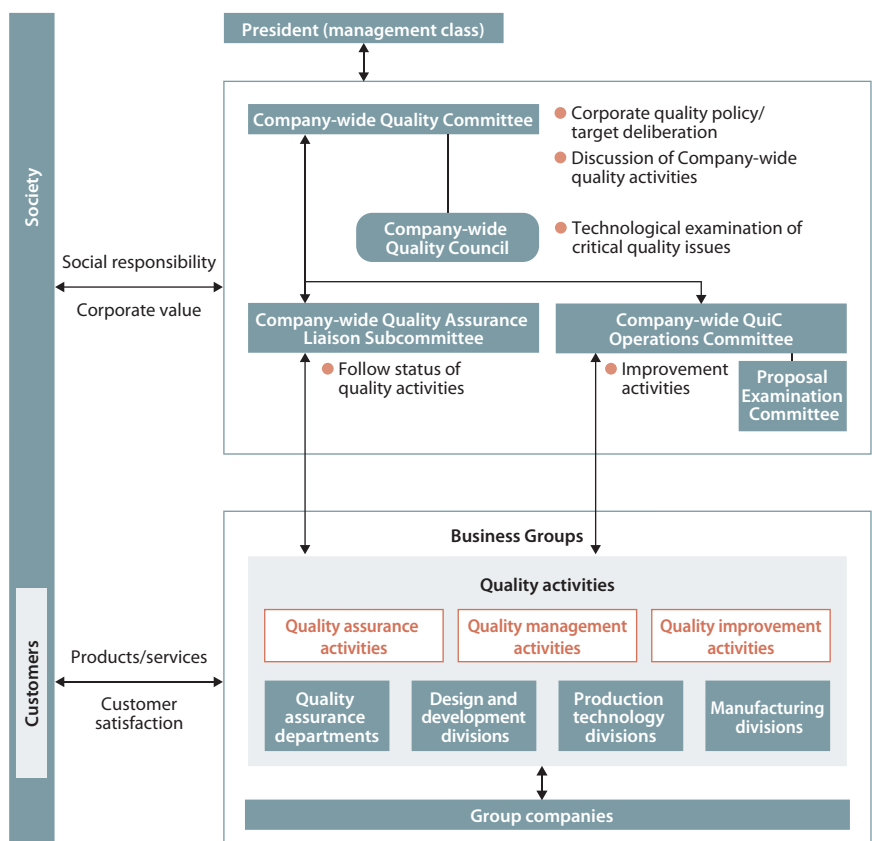
#### 4 Embed Mechanisms to Enhance Company-Wide Quality Activities and Functions, and Extend These to Group Companies

As customer quality demands become increasingly sophisticated and diverse, discrepancies in product demand and the target markets of each division are resulting in disparity in quality activities levels among divisions.

Reviewing the Company-wide quality activity system to resolve these issues in fiscal 2010, we decided to strengthen activities by restructuring NGK quality activities. To thoroughly eliminate quality risk, we set Company-wide quality activity rules.

The Company-wide quality activity rules consist of the quality confirmation rule, which confirms that quality is at the level defined by the rules and clarifies details when design or production conditions have been changed; the DR function strengthening rule, which sets Company-wide registration of important DR and Company-wide DR (deliberated by Company-wide Quality Council); the product quality monitoring rule, which shares information in-house and externally regarding quality defects and how to handle them; and the handling major market claims rule, which defines procedures for handling major

#### Company-Wide Quality Activities System



## Provision of Products That Contribute to Better Social Environment

defects in the market.

In fiscal 2011, activities began first in each division of NGK, and then developed sequentially for domestic and overseas Group companies.

The Quality Assurance and Quality Management Departments in each division regularly monitor and audit to confirm degree of engagement in Company-wide quality activities rules. Issues identified in this process are improved by each division.

In fiscal 2012, NGK will improve the efficacy of and further engagement in Company-wide quality activities rules.

### 5 Focus Efforts to Eliminate Quality Defects Through a More Extensive Design Review Process

In fiscal 2011, NGK established extensive DR after product alterations/changes to eliminate quality defects through stronger DR as Company-wide quality targets, in an aim to strengthen DR to thoroughly eliminate quality risks in each division.

DR is a design review conducted at the development stage when changeover or product alterations/changes occur, positioned by the NGK Group as the most important activity for preventing quality defects.

The Company-wide quality activities rule defines DR management guidance conducted by reviewer participation, holding of Company-wide DR and Company-wide registration of important DR.

In particular, Company-wide DR involves participation by professional engineers and management, with deliberations considered from not only an engineer's perspective, but also from an objective point of view and the customer's point of view to evaluate variety of perspectives including necessary functions, reliability, safety and maintenance.

Company-wide DR in fiscal 2011 focused predominantly on considerations pertaining to the NAS Battery accidental fire. In deliberations, based on reviewer guidance, efforts were focused on the impact on product quality to clarify alterations to traditional designs and processes and changes in usage conditions at customer location.

In fiscal 2012, the NGK Group is planning to create DR guidelines indicating position DR aims for. These guidelines will return DR management to its beginnings, with all employees deliberating to thoroughly eliminating quality risks with a customer's perspective.

### All Employees Participate in Development of QuiC Activities.

The NGK Group develops QuiC (Quality up innovation Challenge) improvement activities that all employees participate in. These activities aim to increase product and work quality, specifically quality improvement activities conducted by small groups, which as an outcome include the creation of individual improvement proposals.

Participation in NGK proposal activities was about 100% for the manufacturing divisions and around 80% for the non-manufacturing divisions in fiscal 2011. Approximately 48,000 proposals were submitted, an increase of almost 7,000 proposals compared to fiscal 2010. In July, NGK held a Company-wide contest at headquarters for examples of outstanding improvement activities with aim of deployment. 16 divisions from Group companies in Japan and overseas submitted improvement activities propositions. Productivity improvement proposals included tracing the cause of brownouts during operations and reduction of variations in quality. Also, in fiscal 2011, NGK updated the intranet activities bulletin board so employees can share examples of proposal activities.

### Strengthening Quality Education

Traditionally, quality education at the NGK Group focused on manufacturing site improvement approaches and how to promote them, as well as management approaches on the worksite.

Furthermore, from fiscal 2009, to strengthen practical education preventing quality defects, NGK added practical risk prevention training for young design engineers and their supervisors.

In fiscal 2011, practical risk prevention training was conducted in each business division and NGK R&D unit under 14 different themes.

We also began reviewer practical education to lead effective DR activity improvement from the reviewer's perspective.

To strengthen organizational developments in fiscal 2012, NGK plans to add prevention education for managers.



Practical risk prevention training



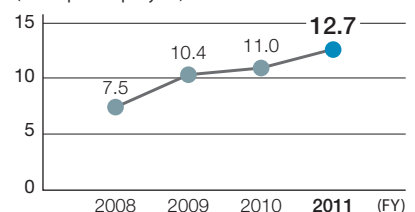
The Company-wide presentation for fiscal 2011 QuiC activities (July 2011)



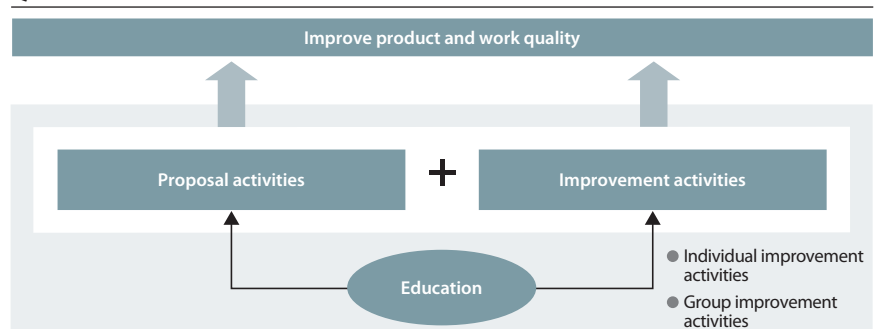
Special award winners Zack Klipowicz (left) and Jack Winecoff (right), of NGK Ceramics USA

### Number of Proposals Per Person

(Cases/person per year)



### QuiC Activities



## Disclosure of Corporate Information

To enhance management transparency, the NGK Group makes an effort to disclose information demanded by wider society in a timely and appropriate manner, including management, financial, product and service information, in order to earn society's trust.



### Enhancement of Corporate Information Disclosure

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. Furthermore, along with timely and accurate disclosure of

corporate data through a variety of mediums, including via the corporate website, business reports and annual reports, the NGK Group strives for two-way communication that allows it to gain invaluable input from its shareholders and investors.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>6</b> Continue to provide fair and honest information disclosure in a timely and appropriate manner.	Continued initiatives, making efforts to disclose information regarding the NAS Battery accidental fire.	○	Continue to provide fair and honest information disclosure in a timely and appropriate manner.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

#### **6** Continue to Provide Fair and Honest Information Disclosure in a Timely and Appropriate Manner

In fiscal 2011, in addition to the timely and appropriate disclosure of management and financial information on our website, NGK made efforts to disclose accurate management information through the publication of business and annual reports. In an effort to offer more robust IR information, in February 2012 NGK updated the layout of the IR section of its corporate website, adding a Financial Highlights (consolidated) and General Meeting of Shareholders sections (only in Japanese).

Regarding the NAS Battery accidental fire that occurred at a customer's location in September 2011 and NGK's response to it, we are focusing efforts to provide the

latest information as quickly as possible. We added a link to a special section on our website that includes a list of disclosed information and accident related details in a Q&A format to ensure that we answer every stakeholder concern and doubt in an easy to understand fashion.

#### **Aiming for More Open Shareholder Meetings**

NGK endeavors to hold open shareholder meetings that its shareholders will feel welcome in attending.

Since fiscal 2011, NGK has expanded the disclosure of information related to shareholder meetings, such as publishing shareholder meeting convocation notices, results of exercising voting rights and notices of resolution on the IR section of our corporate website (only in Japanese). Also, continuing on from last year, we introduced NGK corporate activities at the shareholder meeting with booths inside the venue displaying product

exhibits explained by NGK staff.



Product displays at the General Meeting of Shareholders (June 2012)

#### **Investor Presentations and Individual Visits**

NGK continues to directly disclose information to institutional investors and engage them in two-way communications. Investor briefings on financial results are held in Japan twice each year for institutional investors and analysts. In addition to receiving individual visits, NGK also supports the collecting of data during visits.

Also in 2011, NGK revised its earnings forecast, holding a small meeting for analysts and an emergency presentation for institutional investors.



### Consistent Improvement of Internal Controls Relating to Financial Reporting

The NGK Group builds an internal control system based on directors resolutions. With regard to internal controls related to financial reporting, the NGK Internal Controls Committee makes

an effort to accurately evaluate the effectiveness, efficiency and reliability of operations and improve the level of management.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>7</b> Work to enhance the management level in each division and to reduce the number of issues identified by audits.	Continued initiatives to improve the level of management, and reduced issues identified by audit.	○	Work to enhance the management level in each division and to reduce the number of issues identified by audits.
<b>8</b> Raise efficiency in assessment and audit of processes that were rated favorably in the previous fiscal year.	Raised efficiency in assessment and audit of processes that were rated favorably.	○	Raise efficiency in assessment and audit of processes that were rated favorably in the previous fiscal year.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

#### **7** Work to Reduce the Number of Issues Identified by Audits

Each division and business unit self-evaluates its operations and the Internal Controls Committee verifies progress in an attempt to improve the level of internal controls management. These ongoing initiatives have resulted in a yearly decline in items identified by audits.

In fiscal 2011, as in the previous year,

internal audits and internal controls monitoring to verify efficacy of internal controls were conducted 33 times at NGK Group companies. As a result, issues that were not discovered at the self-evaluation stage, but were identified by internal audits and other checks totaled 35 items across 33 categories, a major improvement compared to 77 items in 41 categories in the previous fiscal year.

#### **8** Raise Efficiency in Assessment and Audit of Processes

Regarding processes that were rated favorably in the previous fiscal year, NGK is engaged in the reduction of operational burdens from evaluation and audits.

In fiscal 2011, we attempted to make evaluations and audits more efficient by condensing control details and conducting rotating audits as necessary.



## Thorough Enforcement of Compliance; Risk Management

The NGK Group views compliance as the foundation of CSR and makes an effort to instill this view in employees. We make every effort to strengthen information security and minimize risks in business activities.

### Thorough Promulgation of the NGK Group Guidelines for Corporate Behavior Through Education

To realize and protect the NGK Group corporate philosophy of creating new value by providing products and technologies that contribute to a better social environment and existing for the

happiness of others, we established the NGK Group Guidelines for Corporate Behavior and thoroughly promote awareness.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>9</b> Amend the Guidelines for Corporate Behavior to more intuitively clarify relationships to CSR.	Integrated Guidelines for Corporate Behavior and Priorities in CSR Promotion into 8 actions.	○	Enhance education toward thorough awareness of revised NGK Group Guidelines for Corporate Behavior and newly formulated Behavioral Guidelines.
<b>10</b> Formulate Behavioral Guidelines indicating proper behavior for employees.	Formulated Behavioral Guidelines in line with revision of Guidelines for Corporate Behavior.	○	

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

#### 9 Revised Guidelines for Corporate Behavior, Integrated with Priorities in CSR Promotion

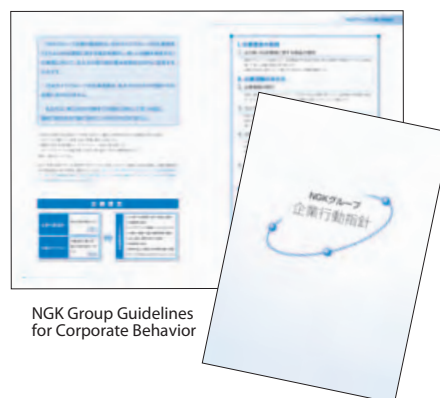
To realize the NGK Group corporate philosophy NGK products and technologies must create new value and contribute to the quality of life, the NGK Group Guidelines for Corporate Behavior are an internal and external declaration of the basic position of all employees.

This third revision since the guidelines were formulated in 1999 included additions that reflect recent changes to the social conditions surrounding the Group, including:

- Connection to regional/social developments as a global company
- Supply chain initiatives including social responsibilities of suppliers
- Increasing confidence in company initiatives through dialogs with stakeholders

Furthermore, we reviewed the layout and content to ensure content is more specific and easy to understand, summarizing Guidelines for Corporate

Behavior and Priorities in CSR Promotion into 8 actions.



#### 10 Formulation of Behavioral Guidelines

NGK established Behavioral Guidelines as a separate initiative to be carried out individually based on the NGK Group Guidelines for Corporate Behavior,

indicating how to conduct oneself in daily work activities.

#### Thorough Employee Awareness of Both Sets of Guidelines

To inculcate thorough awareness of revisions to the Guidelines for Corporate Behavior and the formulation of Behavioral Guidelines, in 2011 we created an awareness handbook that was distributed to all employees, including contract manufacturing employees and temporary employees, at NGK and all domestic Group companies.

In the spirit of the Guidelines for Corporate Behavior, overseas Group companies enact rules and regulations in response to corporate, regional and national characteristics.

#### Compliance Education and Awareness

Positioning compliance as the most important initiative for enhancing reliability, the NGK Group makes an effort to educate and spread awareness with the Compliance Subcommittee under the auspices of the CSR Committee.

In fiscal 2011, Legal Compliance Liaison Meetings were held six times to introduce case studies, explain legal statutes and provide career and overseas post education.

### Reinforcement of the Risk Management System

The NGK Group works to enhance the level of risk management in an effort to minimize the increasingly global and diversifying risks associated with business expansion.

Potential risks from overseas Group and other business operations are comprehensively examined and analyzed during the process of budget and plan discussion and enactment

finalization by the Strategy Committee, Executive Committee and other bodies, with an eye to avoiding or preventing risks. The Central Disaster Prevention and Control Headquarters and CSR Committee are charged with responding to emergency situations involving wind or water damage, earthquakes, or large-scale catastrophic events related to transportation.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>11</b> Continue to have the CSR Committee periodically confirm and follow up on the status of risk countermeasures.	The CSR Committee met to confirm and follow-up on risk countermeasure conditions.	○	The CSR Committee will regularly verify and follow-up on condition of Company-wide risk measures based on the fiscal 2011 CSA survey.
<b>12</b> Conduct third CSA questionnaire at NGK in December.	Conducted third CSA questionnaire at NGK in December.	○	

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

#### Results of 2nd Survey (December 2009)

Common Company-wide risks (54 items)		
Category	Risk of occurring within five years	
	Yes: greater than 40%	Yes: greater than 30%
Compliance	0	0
Information	0	1
Hiring/labor	1	2
Facilities management; incident, accident and disaster response	0	0
Environment	0	0
Product safety	0	0

Business process risk (46 items)		
Category	Risk of occurring within five years	
	Yes: greater than 40%	Yes: greater than 30%
Common	0	3
R&D, design	1	4
Sales	0	0
Production/Outsourcing management	0	6
Product quality/Customer complaints	0	0

2 items

16 items

#### Results of 3rd Survey (December 2011)

Common Company-wide risks		
	Risk of occurring within five years	
	Yes: greater than 40%	Yes: greater than 30%
	0	0
	0	2
	1	2
	0	0
	0	0
	0	0

Business process risk		
	Risk of occurring within five years	
	Yes: greater than 40%	Yes: greater than 30%
	0	2
	2	4
	0	4
	0	7
	0	0

3 items

21 items

### 11 Using CSA Survey for Risk Management

With the objective of preventing the development of risk before it occurs in daily business operations and improving risky workplace practices, the NGK Group has conducted the Control Self-Assessment (CSA) survey since fiscal 2007 to assist risk management.

The survey alternates each year between NGK and domestic Group companies. Each division formulates and implements risk countermeasures for any issues discovered.

Issues requiring Company-wide horizontal deployment, such as compliance, information security, environmental or product risks, divisions specializing in risk propose response measures that are reported to the CSR Committee and top management, who regularly confirm and follow-up on plan progress.

### 11 Following-Up on Risk Countermeasures

In fiscal 2011, the CSR Committee, which met three times, confirmed and

followed-up on the progress of risk countermeasure plans formulated from the results of the second CSA survey, conducted in December 2009.

### 12 Ongoing CSA Survey Implementation

Again in December 2011, the third CSA survey was implemented on 1,345 employees and directors at or above the section head and manager level.

As a result, in addition to the impact of the NAS Battery fire, we confirmed that employees consider quality risks to be high. Awareness of risks related to working long hours, research and development and design was high as ever, and we realized ongoing risk countermeasures were necessary.

The CSR Committee will meet in fiscal 2012 to confirm the implementation of risk countermeasure formulated from the results of the third CSA survey.

### Strengthening Understanding of Overseas Group Company Legal Risk Management Status

To strengthen understanding of overseas business development legal risk management status, NGK shares information in the form of a report on the status of legal risk measures once every six months from all overseas Group companies.

Going forward, NGK will continue efforts to understand risk management conditions using reports on export management and helpline usage conditions added in fiscal 2011.

## Respect and Protection of Intellectual Property Rights

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 with the goal of building a competitive patent network for the Company.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>13</b> Take steps to improve and embed e-learning and enhance dialogue-style training.	Continued e-learning and conducted dialogue-style small group training.	○	Continue to conduct dialog-style small group seminars for young engineers in R&D and business divisions.
<b>14</b> Enhance awareness-raising programs for managers.	Focused efforts on selecting themes for awareness-raising programs for managers.	△	Conduct training program for managers on Chinese intellectual property issues and case studies on intellectual property strategies of other companies.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

### 13 Young Engineer Training

To provide incentives for employee inventions, the NGK Group established an employee invention compensation system and enhances its training in intellectual property. NGK conducts ongoing presentations on patent map utilization and uses educational graphs

and charts for the visualization of intellectual property information targeting mainly young engineers in development divisions. Since fiscal 2010, e-learning has been used Company-wide for basic education.

In fiscal 2011 presentations on patent map utilization were held four times, with roughly 20 employees

taking part. e-learning content was updated, with approximately 40 employees participating. Furthermore, dialogue-style small group seminars were held 11 times primarily for young engineers in the research and development and business divisions. This seminar was attended by about 140 employees, who exchanged ideas

## Thorough Enforcement of Compliance; Risk Management

on themes including how to write invention idea memos and how to respond to reasons for refusal by the Japan Patent Office.

In fiscal 2012, NGK will continue to conduct education and training related to themes affecting the research and development and business divisions.

### 14 Training for Managers

In fiscal 2011, we expanded and upgraded our managerial-class awareness programs to enhance intellectual property strategy in the research and development and business divisions, focusing efforts on selecting optimal themes.

As a result, in accordance with intellectual property policies formulated

by the government to enhance the international competitiveness of Japanese industry, selected themes included intellectual property issues in the Chinese market, where patent applications and lawsuits are increasing, and intellectual property case studies from other companies. In fiscal 2012, NGK plans on holding lecture meetings on these themes conducted by external instructors.

## Creation and Consistent Improvement of a Framework for Information Security

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 document security control, IT network security control, and other issues. The

rapid evolution of information and communications technology and devices has made the quest for consistent IT security on a Group-wide level an urgent concern. In fiscal 2010, IT security was unified under a common standard within the Group. Since fiscal 2011, NGK has been advancing initiatives aimed at increasing the level of IT security.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>15 Enhance IT security education and measures to prevent leakage of confidential information as Group-wide priority countermeasures.</b>	70% of Group companies completed; 30% continued to conduct initiatives.	△	To complete priority countermeasures at all Group companies, NGK will continue to enhance IT security education and strengthen measures to prevent leakage of confidential information.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

### 15 Enhance Group-Wide Initiatives

NGK formulated the NGK Group IT Security Standards in August 2010 with the aim of creating common IT security system for the entire Group.

In fiscal 2011, we added an automatic encryption function for all email attachments sent outside the company and distributed revised digital information security handbook containing digital information security rules based on IT Security Standards to all employees. NGK will continue to provide IT security education targeting new employees and those promoted to managers and key personnel (management staff) and e-learning to all PC users.

Recognizing the need to expand these initiatives to the entire Group, in fiscal 2011 NGK established Group common priority countermeasures for employee education, the encryption of emailed important file

attachments and the encryption of important files managed and saved on computers and removable storage media, NGK provided support for the promotion of countermeasures in each Group company. The implementation of these

priority measures was targeted for completion at all group companies in fiscal 2011, but approximately 30% of Group companies have yet to be completed

In fiscal 2012, NGK will strengthen guidance and support to complete priority countermeasures at all Group companies. Also, the automatic encryption function for all email attachments sent outside the company introduced by NGK is scheduled for Group-wide deployment.

#### Priority Countermeasures

Employee education

Encryption of emailed important file attachments

Encryption of important files managed and saved on computers and removable storage media



Digital information security handbook (Japanese version)



## Strict Adherence to the Anti-Monopoly Act, Subcontract Act, and Other Laws and Regulations Pertaining to Business Transactions

NGK engages in initiatives aimed at the thorough observance of law and regulations pertaining to business transactions, as part of overall our compliance efforts. NGK strictly adheres to competition-related laws (Anti-Monopoly Act), refraining from improper conduct or transactions. To create and maintain fairness in

transactions with business partners, NGK strictly adheres to the Subcontract Act (Act Against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors). In fiscal 2011, NGK formulated Regulations for Observing Competition-Related Laws to strengthen system for observing competition-related laws.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>16</b> Continue to provide individualized support to business groups and domestic Group companies for strict adherence with the country's Subcontract Act.	Individualized support was given to headquarters and two Group companies to ensure strict compliance with the Subcontract Act.	○	Further strengthen education and compliance structure in line with the Subcontract Act and Anti-Monopoly Act (Anti-Trust Act).
<b>17</b> Conduct educational training on anti-monopoly laws for overseas Group companies.	Gave presentation on anti-monopoly laws to European Group companies.	△	Regularly conduct competition-related law seminars led by lawyers at Group companies in the U.S. and Europe.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

### 16 Individualized Support for Adherence to the Subcontract Act

To adhere to transaction-related laws including the Subcontract Act, the NGK Legal Affairs Department provides individual guidance to business divisions and domestic Group companies. Legal Affairs offers a variety of support in response to requests from business divisions and domestic Group companies, including consultations, preparation of necessary documentation and confirmation of compliance conditions.

In fiscal 2011, Legal Affairs provided individual support for headquarters and two other Group companies.

### 17 Overseas Group Company Anti-Monopoly Law Compliance Education Plans

NGK attempts to raise awareness regarding transaction-related laws through law and ordinance-themed Compliance Liaison meetings. Six liaison meetings were held in fiscal 2011, of which two focused on new trends in Japanese anti-monopoly laws and the execution of international competition-related laws. The liaison meeting requests the attendance of representatives from domestic Group companies. Anti-monopoly law lectures by lawyers were held at the Headquarters and Tokyo Main Office.

In fiscal 2011, NGK planned to conduct anti-monopoly law-related education at overseas Group companies, but ended up holding a presentation at European Group companies. From fiscal 2012, regular competition-related law seminars conducted by lawyers plan to be held at U.S. and European Group companies.

## Strict Adherence to Laws and Regulations Relating to Export Management

As a global provider of goods and services, the NGK Group develops business that complies with foreign exchange, foreign trade laws and other export control-related laws and regulations. In addition to the establishment of internal systems, each year,

education is conducted in each division to deepen understanding of export control-related laws and regulations in an attempt to realize thorough legal compliance.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>18</b> Consider system linkage in division other than the Industrial Process Division.	Based on investigation, built and introduced highly cost-effective new database.	○	Attempt to improve system in light of newly introduced database operating condition.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

### 18 Conduct Thorough Internal Review

In response to foreign exchange, foreign trade laws and other export control-related laws and regulations, NGK reviews permit necessity and collects the documentation

in an export control database. In fiscal 2010, NGK conducted a thorough review of linkage between this database and a shipping system in the Industrial Process Division.

In fiscal 2011, as a result of considering introduction in divisions other than the Industrial Process Division, NGK converted

to a policy of highly cost-effective database for procedures confirming completed investigations. The new database was built and introduced in April 2012. Going forward, improvements will be made based on operating conditions.

## Respect of Humanity and Assurance of Comfortable Working Environment

The NGK Group makes an effort to respect the humanity of its employees and provide a safe and comfortable working environment. In the interest of fair treatment, NGK employs a human resources system that enables employees to maximize their potential.

### Maintenance and Consistent Improvement of Safe and Comfortable Working Environments



Aiming for zero industrial accidents, NGK introduced Occupational Safety and Health Management System (OSHMS) in fiscal 2007 as a mechanism for the ongoing implementation of systematic and safety and health initiatives. Since then, we have made efforts to thoroughly

embed and operate this system and strengthen risk assessment. Also, we are proactively engaged in improving the health of our employees. In recent years, we have focused on reducing long work hours and health management for employees who work long hours.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>19</b> For worksite patrols, in addition to setting new targets, set targets by workplace, horizontally deploy best practices across the Group.	Established targets for each workplace, improved 80% of content identified on worksite patrols and horizontally deployed best practices.	○	Continue to conduct worksite patrols as a priority issue for the prevention of workplace accidents and promote 5S activities (sort, set in order, shine, standardize, sustain).
<b>20</b> In risk assessment, strive to avoid omissions or shortfalls in our evaluation of latent risks in work performed.	Promoted measures for the comprehensive withdrawal of hazardous sources with potential to come in direct contact with people.	○	Continue exhaustive risk predictions and conduct measures focused on high-priority risk.
<b>21</b> Institute consultations with industrial physicians and health checks for management staff who routinely work long hours.	106 management staff had health checks and consultations with an industrial physician.	○	Continue health management (consultations with industrial physicians and health checks) for general employees and management staff who routinely work long hours.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

#### 19 Focused on Improvements Through Worksite Patrols

In fiscal 2011, continuing from the previous year under the theme of patrols conducted at each worksite and the prevention of workplace accidents through risk assessment, NGK engaged in initiatives to improve the occupational health and safety environment in each workplace.

NGK established targets not only for frequency of patrols, but also to improve rate of items identified in each workplace. As a result of improvement initiatives identifying issues using checklists and memos, the rate of items identified improved by an average of 80% at all workplaces.

Furthermore, successful industrial accident prevention case studies were announced at the Company-wide Safety and Health Committee and horizontally deployed in other divisions.



Exhaustive worksite risk assessment

#### 21 Enhance Health Management for Employees Who Work Long Hours

NGK is making an effort to understand and reduce conditions necessitating long working hours. NGK and domestic Group company general employees working long hours undergo health checks and interview with an industrial doctor. Since April 2011, all NGK management staff also undergo

health checks and interview with an industrial doctor.

As of March 2012, 139 general employees and 146 management staff in 23 domestic Group companies were targeted for medical consultation. The consultations provided insight into employee workload and work procedure issues. If necessary, employees were instructed to reduce overtime work.

#### Promoting OSHMS Outside Certification Acquisition

NGK promotes the acquisition of outside certification from the Japan Industrial Safety and Health Association under the scope of the Ministry of Health, Labour and Welfare. In 2008, the Nagoya Site, and in 2009, the Chita and Komaki Sites acquired certification. In 2011, the Nagoya Site passed inspection for its first renewal.

In 2012, the Chita and Komaki Sites are scheduled to be inspected for their first renewal.

#### 20 Ongoing Extraction of Hazardous Sources

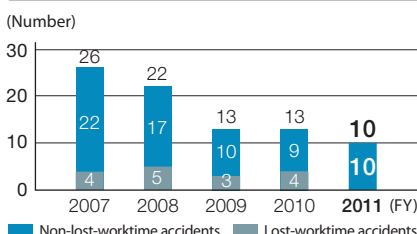
In terms of preventing workplace accidents through risk assessment, foreseeing a variety of possibilities for risk to occur in the conduct of any number of business operations, NGK makes an effort to ensure safety in the workplace through a point-based evaluation administered beforehand on various scenarios including likelihood of occurrence, degree of severity, and potential for injury.

In fiscal 2011, strengthened risk assessment as a result of exhaustive removal of hazardous sources with potential of coming into contact with workers. NGK will continue these initiatives going forward.

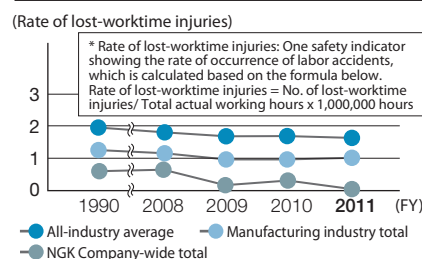
#### Changes in Work-Related Accidents (Non-consolidated)



#### Changes in Work-Related Accidents (Domestic Group...production-related 15 companies)



#### Changes in Rate of Lost-Worktime Injuries (Non-consolidated)



#### Changes in Work-Related Accidents (Overseas Group...production-related 17 companies)





## Development of Human Capital and Recruiting of Human Resources across the Group

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. In recent

years, NGK has concentrated efforts on the enhancement of language training in line with globalization of the business environment, as well as the education of talented employees for management positions.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>G</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>22</b> Revise position-based training into career education and management education.	Divided education system into career education and management education.	○	Consider and conduct detailed training programs as needed.
<b>23</b> Fully implement programs for training in-house instructors and worksite leaders.	Fully implemented programs for training in-house instructors and worksite leaders.	○	Support activities of employees who completed in-house instructor training. NGK will expand and continue the worksite leader training.
<b>24</b> Strengthen English proficiency among new employees, set target TOEIC score of 600 or higher.	Conducted intensive and group training with 70% of employees meeting TOEIC targets.	△	Continue to conduct language training for new employees, cultivate practical English abilities and attempt to bring TOEIC scores up to 600 points or higher.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

### **22** Separate and Specialize Management Education

NGK enhanced the function of its education system, which consists of manufacturing training, global education and position-based training. NGK separated position-based training into career education focused on milestones such as new hires and advancement, and management education, focused on leadership education and enhanced staff development for managers. In fiscal 2011, NGK provided a total of 34 days of management education, including group manager training, improving staff cultivation training and next-generation leader training for 145 employees.

Also in fiscal 2011, NGK provided a total of 320 days of manufacturing training in the three categories of managing technology, basic technologies and strengthening on-site capabilities for 1,150 employees. In terms of global education, NGK provided 45 days of training for staff members scheduled for assignment overseas, consisting of global seminars focused on language training and business skills for 45 employees. We also provide language training to general employees throughout the year.

### **23** Began Two Types of Training to Strengthen On-Site Capabilities

As large numbers of older, experienced employees reach retirement age, the percentage of on-site employees with less career experience increases. Accordingly, NGK conducts systematic training in an attempt to strengthen on-site capabilities.

From fiscal 2011, NGK began training for developing in-house instructors with the aim of educating human resources able to lead the manufacturing divisions. From March to November, three courses between seven and 18 days long were held on low-cost management and set-up improvement guidance for a total of 13 employees.

In fiscal 2012, NGK will regularly follow-up and support the activities of trained instructors so they can be effective on-site.

Similarly, in fiscal 2011, NGK began training for all manufacturing site worksite leaders aimed to improve the leadership qualities and communication skills of on-site leaders that guide and educate younger employees. A total of 117 worksite leaders participated in the training, which touched on labor and safety management and cognizance of the role of the worksite leader. In fiscal 2012, we plan on conducting this training for newly appointed leaders.



Training for developing in-house instructors

### **24** Strengthen English Proficiency among New Employees

As part of NGK's global education efforts, since fiscal 2011 we have conducted English training for new employees with the goal of scoring 600 or higher on the TOEIC within the first year of employment after graduating university or graduate school.

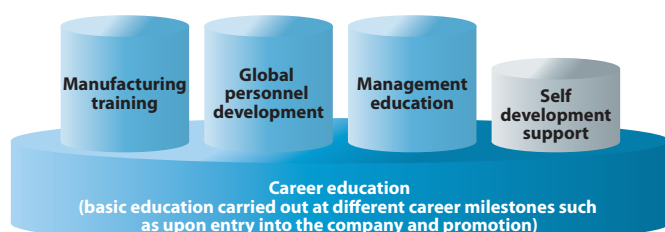
Training, including a 10-day intensive course, one week per month group training and e-learning was conducted for 53 employees. As of February 2012, 70% of targeted new hires had met TOEIC targets.

In fiscal 2012, NGK will continue to provide English training for new hires in an effort to raise the level of employee practical English abilities.



English training for new hires

### Education System





## Respect of Humanity and Assurance of Comfortable Working Environment



### Utilization of Diverse Human Resources

It is NGK Group basic policy to recruit human resources and offer stable employment and equal opportunities regardless of race, nationality, belief, gender, or disability. Also, in an aim to promote

autonomy and independence, NGK maintains the human resource systems necessary to provide employees with fair compensation commensurate with their degree of contribution to the company.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>25</b> Expand employment of people with disabilities by broadening applicable jobs beyond those in skilled manufacturing.	Expanded employment beyond those skilled in manufacturing to include engineer and general employment positions.	○	Achieve the legally mandated ratio of employees with disabilities during fiscal 2013 in an attempt to halve the number of deficient staff.
<b>26</b> Conduct internal PR to encourage broad penetration of our system for transferring jobs.	Spread awareness of system details via email to employees falling under that system.	○	Invite employees that have transferred to career-track positions to lecture at a roundtable career plan discussion for general employment.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

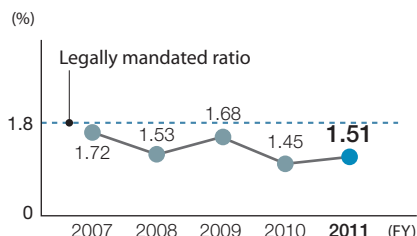
#### 25 Expand Employment Areas for People with Disabilities.

The NGK Group is engaged in initiatives to expand employment of people with disabilities.

In April 2011, NGK expanded the employment domain from its traditional focus on employment in skilled manufacturing to hire one disabled person in engineering and one in general employment. At the end of fiscal 2011, the percentage of employees with disabilities at NGK was 1.51%, improved from 1.45% at the end of the previous fiscal year, but still falling short of the legally mandated 1.8% employment target.

In fiscal 2012, with the objective of achieving the legally mandated employment rate in fiscal 2013, we will increase the number of employment seminars held for people with disabilities, enhance PR activities at university career centers and expand introductions through staffing agencies to promote hiring and reduce deficiencies by half in terms of hiring people with disabilities.

#### Change in Percentage of Employees with Disabilities



#### 26 Promote Use of System for Transferring from General Employment Jobs

In 1992, NGK established a system for transferring from general employment jobs, enabling women in general employment positions to transfer into career-track

positions. In fiscal 2010, this system was revised to enable applications without approval from supervisors. By clarifying transfer conditions, NGK increased opportunities for female employees with ambition and skills to hone their skills in career-track positions.

In fiscal 2011, we made efforts to assist the adoption of new systems through internal PR efforts including the use of email to communicate system details to all general employees.

In fiscal 2012, we will follow-up with employees that transferred jobs.

#### Career Track Transfer System Candidates and Successful Applicants

Fiscal year	2007	2008	2009	2010	2011
Candidate applicants	6	6	1	33	22
Successful applicants	6	6	1	15	8

#### Expanding Employment and Positions for Women

In January 2012, NGK was recognized as a company that promotes women's activities by the city of Nagoya.

At the end of fiscal 2011, female employees account for 13.1% of NGK's workforce, a slight

uptick compared to 13.0% in the previous fiscal year. Eight of 748 management staff are women, and of the 1,275 employees hired in the five years from fiscal 2006, 195 (15%) were women.

Going forward, NGK will promote the assignment of women to divisions where women have yet to be assigned and create a comfortable workplace with the aim of continuing to employ women with a wider array of employment opportunities.

#### Initiatives to Make Use of Individuality and Skills

To open the way for employees to take full advantage of their individuality and skills, NGK operates an internal job application system, as well as a system for registering for career tracking enabling applicants to register their work history, qualifications and desired position to provide an opportunity for individuals to carry out their work duties with a sense of satisfaction.

In fiscal 2011, 16 applicants made use of the internal job application system, three were approved. Two employees used the system for registering for career tracking to transfer to their desired position.

#### Double Promotions for Talented Employees

In fiscal 2011, as in the previous year, NGK sought to strengthen those human resources central to its manufacturing site from the perspective of employee evaluation and treatment.

In 2007 and 2008, a number of manufacturing contract employees were subsequently hired as regular employees. Of these regular employees, the most promising 11 were offered a double promotion (two runner-ups).

#### Detailed Follow-Up with Young Employees

To prevent career mismatches, NGK employs a follow-up system for younger employees.

In fiscal 2011, individual interviews were conducted with 360 employees hired in the past 2-4 years. NGK provides detailed support based on workplace feedback gathered from hearings on the working environment.

#### System for Rehiring Employees Targeting Management Staff

Since April 2001, NGK has introduced a system for rehiring ordinary, regular employees, and from April 2007, we introduced a system for rehiring management staff after retirement.

As of March 31, 2012, we had 225 rehired employees, accounting for 6.0% of the total workforce.



Recognized as company promoting women's activities by city of Nagoya (January 2012)



City of Nagoya Women's Activities Promotion certification logo

## Support for Better Balance between Work and Home Life/Childrearing

NGK is engaged in the creation of an environment that supports employee work as well as child and nursing care. In March 2010, formulating a new human resource system, we also expanded core measures supporting childcare from the perspective of contribution to

working hours and expanded financial support. Also, in terms of employee health maintenance and promotion of work-life balance, we made an effort to inculcate thorough awareness with the establishment of eight priority rules that must be followed in fiscal 2011.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>27</b> Continue measures to date designed to shorten overall working hours, strengthening partnership with the labor union to make it easier for employees to take paid leaves.	Disclosed working hours and paid leave information to union; effective policies considered by labor and management.	○	Thorough observance of eight working hour rules in an attempt to prevent health issues and promote work-life balance.
<b>28</b> Enhancing work-life balance support system.	Began system for preferentially allotting employee parking spaces within the vicinity of the headquarters to employees raising children.	○	Establish for handling inquiries on system utilization in an attempt to inculcate awareness of work-life balance support system.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

### 27 Eight Priority Rules for a Comfortable Work Environment

In fiscal 2011, NGK made company rules out of the healthcare maintenance and work-life balance policies promoted by labor and management for three years up to last fiscal year. We promoted awareness of eight priority rules including, limiting overtime working hours to 80 hours or less per month; limiting the number of months in which 45 or more hours outside business hours can be worked to six months each year; providing at least six days of paid leave each year to employees excluding new hires in current fiscal year; observing Refresh Wednesdays, a day when no overtime is required; and no working more than seven days in a row without a day off.

In fiscal 2011, NGK continued to disclose conditions pertaining to working hours and paid leaves to the union, considering effective policies with labor and management. Employees identified as working long hours consulted with the labor union individually to exchange ideas on future countermeasures.

#### New Support Measures for a New Human Resource System

##### Time perspective

Extend childcare leave

Expand use of accumulated days off (childcare leave/family nursing, etc.)

Established a half-day paid leave system

Established shorter working hours

##### Economic perspective

Increased amount of maternity gift payment

Established gift payment for starting elementary school

Established babysitter expense subsidy system

### 28 Further Expansion of Childcare Support Measures

In 2010, formulating a new human resource system, we also expanded core measures supporting childcare from the perspective of contribution to working hours and expanded financial support. In terms of time, we established a half-day paid leave system and shortened working hours. From an economic perspective, we increased amount of maternity gift payments, established a gift payment for starting elementary school and established a babysitter expense subsidy system. Furthermore, from fiscal 2011, NGK began system for preferentially allotting employee parking spaces within the vicinity of the headquarters to employees raising children.

In fiscal 2011, employees that took advantage of these systems included 24 people who chose shorter working hours to take care of children, five male employees who utilized maternity leave, 5,783 employees who took a half-day leave, 33 employees who received babysitter expense subsidies and eight employees who utilized priority parking spaces.

#### Certification as a Company Supporting Childrearing Efforts

In recognition of NGK's efforts to introduce this new human resources system, in February 2011, we were certified by the City of Nagoya as a company that supports childrearing efforts.



City of Nagoya childrearing support certification logo

### Creation of Work-life Balance Support Site

From March 2010, the work-life balance support site established on the company intranet has explained systems, provided comments from other employees and case studies as reference materials.

The same information is distributed through internal bulletins and informational meetings about systems for taking maternity or childcare leave with participation from supervisors.



Work-life balance support site

### Maternity Leave Father Speaks Out Strengthening Family Bonds Through Maternity Leave



#### Hiroki Fukuhara

Komaki Plant, Manufacturing Dept., Electrical Insulator Div., Power Business Group, NGK

After our first child was born, I saw how hard my wife worked to take care of the baby, and I decided that I would take a maternity leave and help out when we had our next baby.

After our second child was born, I took a month off on maternity leave to help my wife with the new baby, which enabled me to spend quality time with my children.

Now I feel like I want to take childrearing leave so I can help out even more at home.

## Implementation of Fair, Free and Transparent Transactions

With the basic policy centered on the three principles open and fair, partnership and relationship with society, the NGK Group engages in fair, free and transparent business transactions with the procurement partners in our supply chain.

### Fair and Honest Evaluation of Procurement Partners, and Extensive Resource Diversification

The NGK Group aims to engage in fair, free and transparent business transactions based on compliance with laws, regulations and social norms. We are open to a wide range of companies regardless of

whether in Japan and overseas, that wish to become our business partner, and we make thorough efforts to evaluate these companies equally and fairly and maintain multiple resources. From among multiple

companies, NGK evaluates quality, cost and time to delivery, judging whether or not they meet green procurement and CSR procurement standards, choosing the companies that will make the most suitable partners.

### Promotion of Green Procurement

NGK's Core Policy on the Environment gives priority to purchases of materials, parts, products and equipment that contribute to the environment in an aim to proactively contribute to the reduction

of environmental burdens throughout the entire supply chain in conjunction with suppliers.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>29</b> Expand the Green Supplier Certification System to overseas suppliers.	Expanded and completed certification of overseas manufacturers sourcing key materials through trading companies.	○	Expand certification to all suppliers to certification on 95% of purchases from suppliers.
<b>30</b> Continue to request improvements from suppliers not meeting certification standards.	Asked suppliers targeted for certification that did not get certified to make improvements and finished all certification.	○	
<b>31</b> Aim for 100% green supplier certification among suppliers targeted for certification.	Finished certification of suppliers targeted for certification.	○	
<b>32</b> Group companies Begin green procurement certification for major suppliers of Group companies.	50% of Group purchases were from certified suppliers.	○	Expand certification to 60% of amount of purchases from suppliers.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

### Promotion of CSR Procurement

Amid internally and externally increasing interest in CSR procurement, the NGK Group established the NGK Group's Supply Chain CSR

Procurement Guidelines, which give priority to trading partner goods and services that generally contribute to CSR initiatives.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>33</b> Conduct a survey concerning CSR procurement for major suppliers of NGK and Group companies.	Conducted examinations on targeted suppliers making up 80% of purchase amounts.	○	In light of the factual investigation results, revised content of next scheduled (fiscal 2013) CSR procurement survey as well as supplier targets.
<b>34</b> Assess the actual status of CSR initiatives across the NGK Group's entire supply chain.	Began examinations to understand conditions at suppliers with low awareness initiatives.	○	

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

### 29 30 31 32 Advancing Green Procurement

In April 2000, NGK established the Basic Green Procurement Policy to advance green procurement giving priority to business partners focused on environmental conservation with products and services that have light environmental impacts.

Also, NGK worked with business

partners on reducing environmental burdens and established Green Procurement Guidelines to clearly state our position on green procurement. NGK is engaged in reducing environmental burdens by raising the efficiency of the entire supply chain.

To develop green procurement throughout the entire group, in February 2011 we revised the NGK Group Green Procurement Guidelines and published

them on our corporate website. In addition to Japanese and English versions, a Chinese language version of this information was published in March 2012.

Also, from May 2010, we launched a system for the certification of business partners meeting set standards as green suppliers and continue efforts to expand certification to all business partners. Business partners are certified via Group



investigation based on acquisition of ISO 14001 certification and other environmental management systems, as well as the environmental initiatives they engage in.

### 29 30 31 Extension of the Green Supplier Certification System Overseas

NGK launched green supplier certification in fiscal 2010, targeting business partners in Japan that purchase materials directly from NGK as products and certified them as green suppliers.

In fiscal 2011, we expanded the Green Supplier Certification System to overseas business partners and major manufacturers sourcing key materials through trading companies, making improvements through requests to conduct individual visits and informational meetings. As a result, in fiscal 2011, we completed certification of 100% of targeted business partners.

In fiscal 2012, we plan to widen certification to include all purchases so that 95% of our purchases will come from certified suppliers.



NGK Group's Green Procurement Guideline (Japanese/English/Chinese)

### 32 Expanding Green Procurement to Group Companies

NGK has begun expanding the green supplier certification system to Group companies in Japan and overseas. In fiscal 2010, a series of visits were made to Group companies to explain the system and prepare for its introduction.

In fiscal 2011, studies were begun targeting suppliers representing the top 80% of purchases with respect to domestic and overseas Group manufacturing subsidiaries (12 domestic, 16 overseas). 50% of purchases came from certified suppliers.

In fiscal 2012, NGK plans to expand ratio of purchases from certified suppliers to 60%.

### 33 Preparations Underway to Introduce CSR Procurement

In an attempt to expand and deepen green procurement, the NGK Group is moving forward with the introduction of CSR procurement with a priority on products and services that generally contribute to CSR initiatives.

In February 2011, we formulated the NGK Group CSR Procurement Guidelines (Japanese and English language versions) and began implementing them at NGK and Group companies in Japan and overseas. The guidelines were published on our website, with a Chinese language version added in March 2012.

These guidelines explain the NGK Group's position regarding CSR to suppliers, as well as specify the seven items demanded of suppliers regarding human rights and labor, safety and health, environmental conservation, fair and ethical business dealings, product quality and safety, information security and

social contribution.

In fiscal 2011, between June and August, the NGK Group conducted a survey on these seven items to ascertain the level of awareness targeting suppliers representing the top 80% of NGK purchases.

### 34 Insight into Actual State of CSR Initiatives for Introduction of Initiatives Corresponding to Actual Conditions

As a result of conducting the survey, we discovered the level of awareness regarding CSR initiatives was fairly high, but there was a clear difference when looking at domestic versus international degrees of awareness, possibly attributable to differences in national characteristics.

To introduce CSR procurement tailored to the actual conditions in each country and company, from February 2012 we began a survey on suppliers thought to have low awareness of CSR initiatives to ascertain their actual level of awareness regarding CSR initiatives.

In fiscal 2012, based on this survey of actual conditions, we decided to review the CSR procurement survey planned for fiscal 2013 and plan to conduct a review of suppliers targeted for CSR procurement.



NGK Group's Supply-Chain CSR Guidelines (Japanese/English/Chinese)

### Thorough Resource (Funding Procurement) Diversification

In terms of employing suppliers, the NGK Group makes an effort to employ the optimal suppliers by evaluating multiple companies based on quality, cost, time to delivery, environmental conservation initiatives and financial situation.

At the same time, so that there is no delay in procurement in the event of a natural disaster or other unforeseen development, NGK makes an effort to find multiple suppliers for items purchased. While the achievements and past

experience of these initiatives were put to good use in the Great East Japan Earthquake, we determined that this is an area in need of further strengthening, and NGK will attempt to realize improvements in this area going forward.

## Preservation of Global Environment

The NGK Group engaged in ongoing environmental conservation efforts by improving manufacturing processes through the development and introduction of innovative manufacturing technology that reduces environmental impact.

### 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.

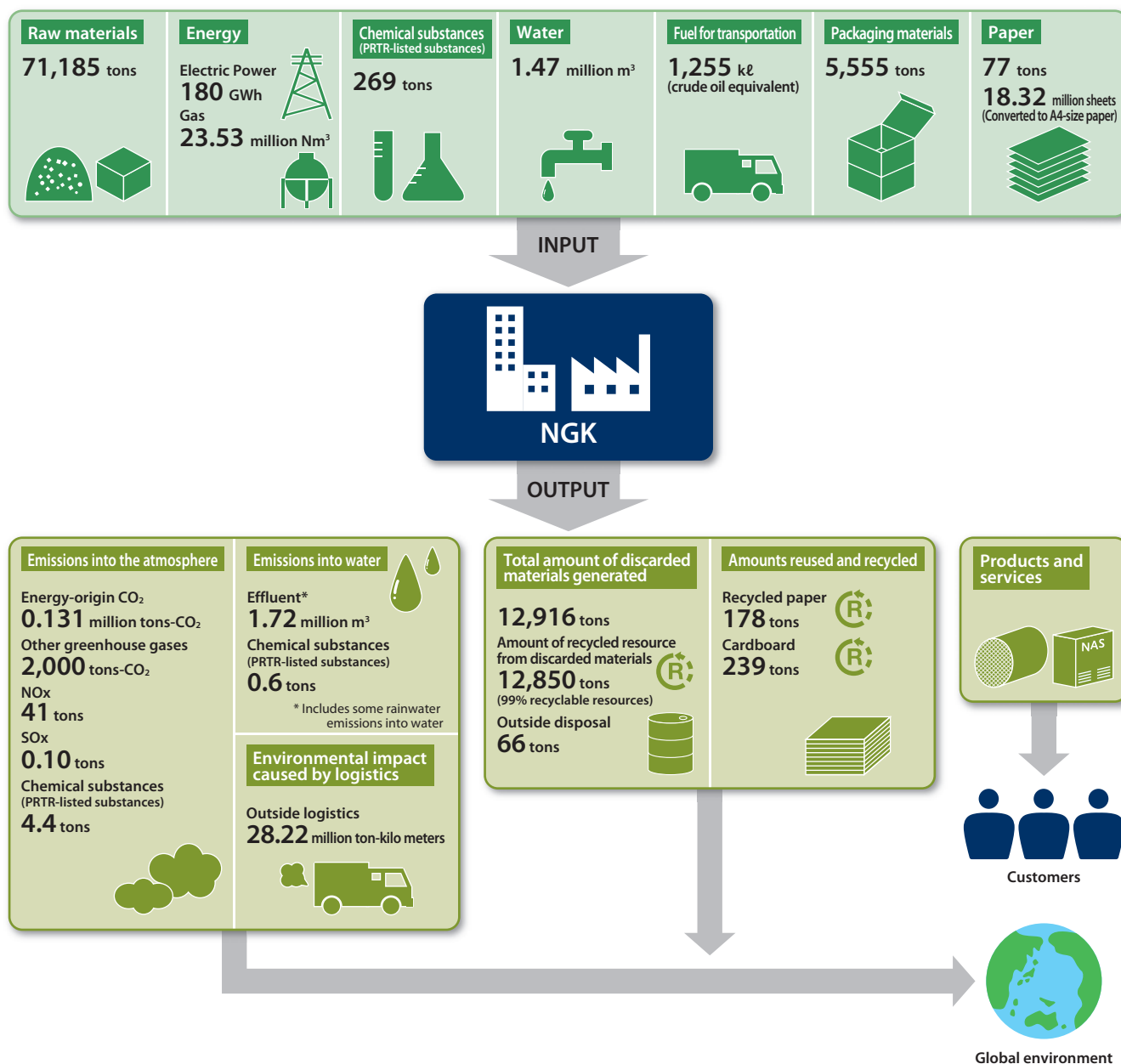
### Overall Perspective of Environmental Impact

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 2011, although the amount of raw materials used and discarded materials were higher compared to fiscal 2010 because of increased production of ceramics products mainly for automobiles, energy-saving initiatives resulted in less energy required, lowering the level of CO<sub>2</sub> emissions.

### NGK Input/Output



Notes:

1. Environmental performance values in this report have been rounded up for convenience; therefore they may not match totals when added together.  
2. ♻ indicates outside recycling.

**[Activities Covered]**

NGK

Headquarters/Nagoya Site/Chita Site/Komaki Site/Ishikawa Plant  
(Does not include Tokyo Main Office, Osaka Branch and six other sales offices)

Domestic Group company  
Overseas Group company

manufacturing-related consolidated subsidiaries: 12 companies  
manufacturing-related consolidated subsidiaries: 17 companies

## Third Five-Year Environmental Action Plan (2011-2015) Progress Report

The NGK Group promotes environmental initiatives based on the formulation of Five-Year Environmental Action Plans. The Third Five-Year Environmental Action Plan, which started in fiscal 2011, establishes

reduction targets for CO<sub>2</sub> and discarded materials that also include new production activities enacted by overseas Group companies in a drive to reduce our environmental impact on a global scale.

The entire NGK Group is engaged in initiatives to lower environmental impact. Fiscal 2011 initiatives and results, as well as fiscal 2012 targets, are as follows.

Category	Item	Management item	FY2011 environmental performance			FY2012 targets
			Targets	Achievements	Self-evaluation <sup>1)</sup>	
Global warming prevention	Reduction of CO <sub>2</sub> from production activities	Domestic CO <sub>2</sub> emissions	202,000 tons or less	192,000 tons	○	Less than 201,000 tons
		Domestic basic unit per net sales	4% reduction from fiscal 2010	6% reduction from fiscal 2010	○	8% reduction from fiscal 2010
		Overseas basic unit per net sales	1% reduction from fiscal 2010	6% increase from fiscal 2010	×	2% reduction from fiscal 2010
	Reduction of CO <sub>2</sub> from logistics	NGK basic unit per transport volume <sup>2)</sup>	1% reduction from fiscal 2010	0% reduction from fiscal 2010	×	1% reduction from fiscal 2011
Effective use of resources	Reduction of discarded materials	Domestic basic unit per net sales	2% reduction from fiscal 2010	6% increase from fiscal 2010	×	4% reduction from fiscal 2010
		Overseas basic unit per net sales	1% reduction from fiscal 2010	2% increase from fiscal 2010	×	2% reduction from fiscal 2010
	Promotion of resource recycling	Domestic recycling rate	Domestic Group company recyclable resource rate improvement support	Shared method for resource recycling between NGK and domestic Group companies	○	Continue supporting improved resource recycling rates at domestic Group companies
		Overseas recycling rate	Overseas Group Company surveys and targets set for each company	Conducted survey on present conditions, ascertained rate of resource recycling at each company	△	Conduct detailed analysis of Group companies with low resource recycling rates
	Effective use of water resources	Progress rate of plan	Survey on actual conditions of water usage	Conducted survey on NGK water usage, improved some of facility operations	○	Conduct survey on actual conditions of water usage at Group companies
Ensuring chemical substances management	Improvement in management level for chemical substances	Progress rate of plan	Survey ahead of chemical substance control system upgrades	Surveyed specifications and systems at each company	○	Upgrade a chemical substance management system
Provision of Eco products	Promotion of environmental contribution through products	Progress rate of plan	Quantitative evaluation of environmental contributions of main products	Implemented HONEYCERAM and DPF	○	Continue quantitative evaluation of main products
	Promotion of green procurement		NGK: 85% of purchases from NGK certified green suppliers Domestic/overseas Group companies: 50% of purchases from NGK certified green suppliers	NGK: 85% of purchases from NGK certified green suppliers Domestic/overseas Group companies: 52% of purchases from NGK certified green suppliers	○	NGK: 95% of purchases from NGK certified green suppliers Domestic/overseas Group companies: 60% of purchases from NGK certified green suppliers
Promotion of environmental communication	Robust environmental contribution activities	Progress rate of plan	Promote Environmental Partnership Organizing Club (EPOC) event	Planned and held EPOC seminars and site visits	○	Promote EPOC events
	Promote environmental volunteer activities		Conduct cleanup activities around plant		Promote environmental volunteer activities	
	Improvement in environmental awareness		Conduct employee environmental education Promote participation in environmental events	Conducted position-based training, professional training and environmental lectures Conducted eco-proposals, participate in Candlelight Light and Down campaigns	○	Conduct employee environmental education Promote participation in environmental events

Note: Figures noted in the Third Five-Year Environmental Action Plan are targets established each fiscal year.

\*1. Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

\*2. NGK basic unit per transport volume expresses in ton-kilometers the amount of crude oil equivalent fuel used.



## Preservation of Global Environment

### Prevention of Global Warming

From fiscal 2011, we established reduction targets for CO<sub>2</sub> emissions, one cause of global warming, in new overseas manufacturing

activities. Overseas Group companies and all NGK Group companies promote initiatives to control and reduce CO<sub>2</sub> emissions.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>35</b> Curb CO <sub>2</sub> emissions Domestic: Emissions volume of less than 202,000 tons Basic unit per net sales 4% reduction from fiscal 2010 Overseas: Basic unit per net sales 1% reduction from fiscal 2010	Domestic: Emissions volume of 192,000 tons Basic unit per net sales 6% reduction from fiscal 2010 Overseas: Basic unit per net sales 6% increase from fiscal 2010	△	Domestic: Emissions volume of less than 201,000 tons Basic unit per net sales 8% reduction from fiscal 2010 Overseas: Basic unit per net sales 2% reduction from fiscal 2010

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

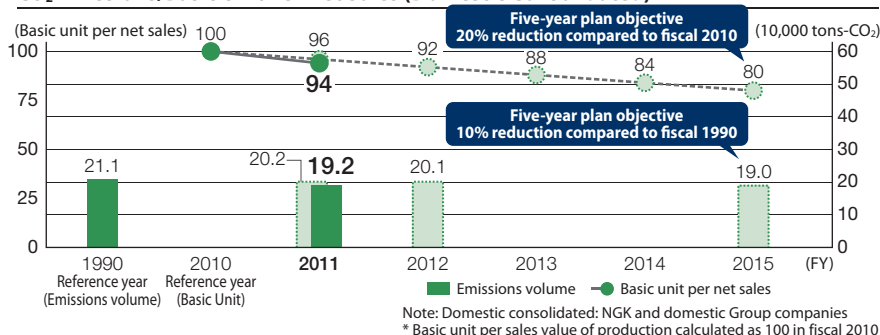
#### 35 6% Decrease in Domestic Basic Unit Per Net Sales Compared to Previous Fiscal Year

Domestic energy-origin CO<sub>2</sub> emissions\* were 192,000 tons, lower than target of 202,000 tons. Basic unit per net sales decreased 6% compared to the previous fiscal year, achieving the target reduction of 4%.

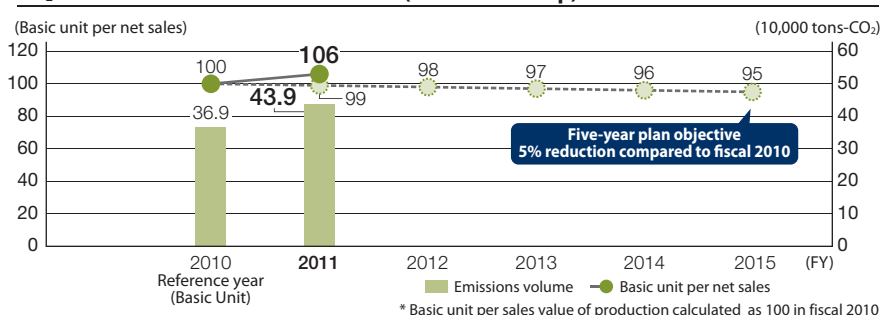
At the same time, the overseas basic unit per net sales, impacted by lower sales due to the strong yen, increased 6% compared to fiscal 2010, falling short of the targeted 1% reduction. Also, increased manufacturing resulted in increased CO<sub>2</sub> emissions compared to the previous fiscal year.

Moreover, with regard to CO<sub>2</sub> emissions reductions, in addition to production process initiatives discussed later, logistics targets an annual 1% decrease in the basic unit per transport in an effort to focus on the creation of modal shift countermeasures.

#### CO<sub>2</sub> Emissions/Basic Unit Per Net Sales (Domestic Consolidated)\*



#### CO<sub>2</sub> Emissions/Basic Unit Per Net Sales (Overseas Group)\*



\* CO<sub>2</sub> conversion factors (kg-CO<sub>2</sub>/unit) used in calculating CO<sub>2</sub> 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 (Nm<sup>3</sup>): 2.347 LPG (kg): 3.007 LNG (kg): 2.70 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 2010 energy-origin CO<sub>2</sub> emission volume for NGK on a non-consolidated basis is 139,000 tons when using the CO<sub>2</sub> conversion factor provided by the Cabinet Orders of the Law Concerning the Promotion of Measures to Cope with Global Warming (revised in March 2011).

### Adoption of Environmentally Friendly Production Processes

Through the introduction of highly-efficient equipment and the promotion of the collection and use of exhaust heat and improved production efficiency, NGK makes efforts to reduce environmental

impact resulting from production. Also, our structural innovation in manufacturing aimed at enhancing competitiveness significantly contributes to the realization of eco-processes.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>36</b> In addition to energy-saving measures targeting compressors, implement energy-efficiency diagnostic checks for boilers.	Engaged in energy-saving measures targeting compressors, developed energy-saving measures for boilers.	○	Conduct measures to convert to energy-saving boilers. Start air conditioning energy-saving measures.
<b>37</b> Reduce carbon emissions by promoting structural innovation in manufacturing, and Develop innovative energy-saving technologies.	Confirmed reduction of carbon emissions through structural innovation in manufacturing.	○	Continue to reduce CO <sub>2</sub> through global horizontal deployment promoting structural innovation in manufacturing.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

### 36 Promoting Energy-Saving Countermeasures for Manufacturing Facilities

In fiscal 2010, NGK collected thinking and insight on energy-saving and developed energy-saving guidelines and check sheets for compressors. These materials were used in fiscal 2011 to self-evaluate the actual condition of energy-saving countermeasures, enabling emphasis to be placed on countermeasures needing more effort and reflected in planned cutbacks. In addition to reducing CO<sub>2</sub> emissions by approximately 400 tons through the eradication of air leaks and improvement of compressor operation efficiency, each division conducted worksite self-evaluations that improved awareness of energy-saving.

Recognizing the need for these initiatives to be horizontally deployed across all domestic Group companies, NGK distributed the aforementioned checklists, invited outside instructors to lecture on energy-saving ideas for compressors and provided experiential

training with demo equipment.

Focusing efforts on energy-saving boilers, NGK created energy-saving guidelines and check sheets and conducted an energy-efficiency diagnostic check deriving 31 reduction countermeasure items. We will implement these countermeasures in order of efficiency.

### 37 Ongoing Manufacturing Structure Innovation

The NGK Group promoted a three-year, Company-wide structural innovation in manufacturing project launched in fiscal 2009. The express purpose of this project is to develop resilient and efficient manufacturing sites, but it is also linked to the realization of Eco Processes.

For example, switching to the integrated production of product widths double compared to conventional approaches in processes for manufacturing beryllium-copper-wrought products has been verified to enhance efficiency and reduce CO<sub>2</sub>

emissions. Also, the realization of highly accurate shaping of the raw materials for the ceramic products used in high-intensity discharge lamp arc tubes not only simplifies processing, it makes more efficient use of raw materials, effective for the conservation of raw materials.

The result of this three year project in terms of verified CO<sub>2</sub> reduction was confirmed at approximately 1,000 tons of emissions reduced.

NGK will promote and attempt global horizontal deployment to introduce of eco-friendly production processes.



HICERAM ceramic products used in high-intensity discharge lamp arc tubes

## Promotion of Resource Recycling

To boost yield from manufacturing process improvements, NGK reuses in-process materials in an effort to curb discarded materials

while focusing energy on reuse to promote resource recycling.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>38</b> Curb amount of discarded materials generated. Domestic: Basic unit per net sales 2% reduction from fiscal 2010 Overseas: Basic unit per net sales 1% reduction from fiscal 2010	Domestic: Basic unit per net sales 6% increase from fiscal 2010 Overseas: Basic unit per net sales 2% increase from fiscal 2010	×	Domestic: Basic unit per net sales 4% reduction from fiscal 2010 Overseas: Basic unit per net sales 2% reduction from fiscal 2010
<b>39</b> Recycling rate improvement: Conduct surveys of overseas Group companies and set targets.	Conducted inquiries at overseas Group companies to ascertain recycling situation.	△	Conduct detailed analysis of overseas Group companies with low recycling rates.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

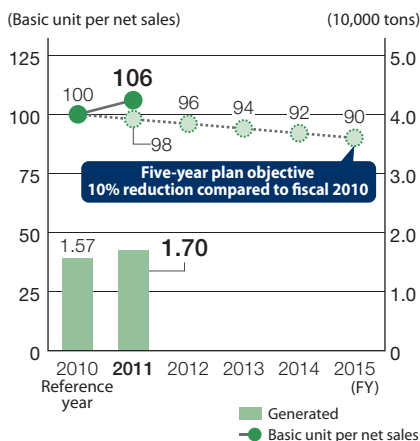
### 38 Falling Short of the Target in Japan and Overseas

Despite ongoing efforts to curb amount of discarded materials generated, both in Japan and overseas, NGK was unable to meet its fiscal 2011 targets.

In Japan, we were significantly impacted by the suspended production of a portion of products with favorable basic unit per net sales, which increased by 6%. Hence, the 2% reduction target was not achieved. Furthermore, production volume increases resulted in amount of discarded materials 8% higher than fiscal 2010.

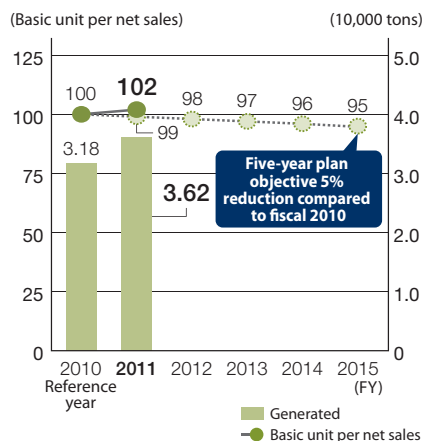
Overseas, the strong yen adversely affected sales. Rather than achieving a 1% reduction in basic unit per net sales, it rose by 2%. Also, in line with higher production volumes, discarded materials increased 14% compared to fiscal 2010.

#### Amount of Discarded Materials Generated\* /Basic Unit Per Net Sales (Domestic Consolidated)



Note: Domestic consolidated: NGK and domestic Group companies

#### Amount of Discarded Materials Generated /Basic Unit Per Net Sales (Overseas Group)\*



\* From third year of plan, lumber and metal have been added to the tally.

## Preservation of Global Environment

Looking ahead, NGK expects basic unit per net sales to improve as production of the aforementioned products is resumed. We will continue initiatives to curb amount of discarded materials generated and further promote reuse in processes, boost yields and improve processes.

### 39 Conducted Survey Aimed at Improving Recycling Rates at Each Overseas Group Company

To improve the recycling rate from a global perspective, NGK conducted a survey regarding recycling at overseas group companies to better understand the situation. While conditions vary by region, it was determined that Asia (excluding China) and North America had the lowest recycling rates. NGK will continue a detailed analysis of Group companies with low recycling rates.

### Domestic Recycling Rates Further Improved

Through systematic sorting and separating and the quest for new recycling methods, NGK focuses efforts on curbing discarded materials and promoting resource recycling. As a result, in fiscal 2011 the recycling rate increased to 99.5% from 99.3% in the previous fiscal year.\*

NGK continues to focus efforts on improving domestic Group company recycling rates. Through systematic sorting and separating and recycler introductions, the domestic Group company overall recycling rate improved from 97.5% in fiscal 2010 to 98.5%.

Note: Due to internal standards, non-recyclable discarded materials are excluded from these calculations.

## Strengthening of Global Environmental Management

The NGK Group horizontally deploys domestic environmental impact reduction initiatives in overseas Group companies while creating mechanisms to strictly comply with amendments to environmental

laws and regulations to propel our global environmental management to the next level.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>40</b> Horizontally promote reduction measures instituted in Japan among overseas Group companies.	Began horizontal deployment of CO <sub>2</sub> reduction examples from Japan among overseas Group companies.	○	Continue horizontal deployment at overseas Group companies, create collection of examples of discarded materials reductions and expand domestic CO <sub>2</sub> reduction examples.
<b>41</b> Coordinate issues among overseas Group companies relevant to compliance with amendments to environmental laws and regulations, and develop related mechanisms.	Began creating a mechanism for sharing information and understanding status of overseas Group company compliance with amendments to laws and regulations.	○	Create and test mechanism for sharing information on amendments to overseas laws.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

### 40 Horizontal Deployment of CO<sub>2</sub> Reduction Examples to Overseas Group Companies

NGK collected as examples 37 CO<sub>2</sub> reduction measures for general-purpose equipment, such as compressors, boilers and air conditioning and lighting equipment. These examples and energy-saving guidelines and check sheets for compressors were distributed to all manufacturing Group companies worldwide. Each Group company is using the distributed examples to promote CO<sub>2</sub> reduction measures.



Steam leak diagnostic check (conducted at NGK)



Air leak diagnostic check (conducted at NGK)

### 41 Building a Mechanism Enabling the Sharing of Information on Amendments to Environmental Laws and Regulations in Each Overseas Group Company

Using surveys and on-site visits, NGK forged a better understanding of the present state of compliance with legal amendments at Group companies to build a mechanism for awareness and sharing of information on amendments to environmental laws, regulations and enactment trends as manufacturing rapidly expands overseas.

NGK also regularly distributes information regarding domestic legal amendments to domestic Group companies, created and operates a mechanism for ascertaining compliance status.

## Announcement Regarding Completion of Voluntary Soil and Groundwater Remediation Work at Chita Site Welfare Facilities

The voluntary soil and groundwater remediation work conducted since August 2006 within the Welfare Facility (meeting hall, parking lot and greenbelt) of Chita Site (Handa, Aichi Prefecture) was completed in October 2011.

The activities were conducted because part of the area included plans for road construction and soil inspections on a portion for sale revealed soil and groundwater contained higher levels of hazardous substances (fluorine, boron, lead) than standards allow.

The contaminated soil was removed and replaced with clean soil and contaminated groundwater was pumped from soil as fresh water was pumped back in. These cleanup efforts were completed in 2009. After that, the groundwater was monitored for two years to ensure no contaminants remained. In October 2011, local authorities were notified that cleanup efforts were completed.

(→ Related article P. 42)



## Coordination with Local Communities and Promotion of Contribution to the Society

We will actively commit ourselves to contributing to society, satisfying the needs of local communities with our interest in social tasks required by the countries and local communities, centered on people and education, environmental preservation, and community involvement with the objective of becoming a corporate citizen that can be trusted by local communities.

### Provision of Scholarships and Living Assistance to Foreign Students

With the aim of contributing to human resource development that contributes to the development of an international society, NGK continues support activities focusing on housing and scholarships

for foreign students. We are also engaged in various events that create an opportunity for grassroots international relations among supported students, the regional community and employees.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>42</b> Continue to provide support (housing and scholarships) to foreign students.	Continued to support foreign students.	○	Continue to provide assistance to foreign students.
<b>43</b> Continue, expand international relations among the regional community, employees and supported students.	Hold cross-cultural exchange meetings and language classes.	○	Continue to hold cross-cultural exchange meetings and language classes led by foreign students and contribute to international exchange between foreign students, regional communities and employees.
<b>44</b> Resurvey mechanisms at universities for follow-up with foreign graduates.	Exchanged opinions with university-related people.	△	Continue to investigate responses of other organizations. Consider incorporating findings in future measures.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

#### **42** Continuing to Support Foreign Students

In fiscal 2011, NGK continued to support foreign students, providing housing to 40 students and scholarships to 20 students.

#### **43** Regional Exchange Activities Receive Minister of State for Special Missions Award

Aiming for grassroots international relations among supported students, the regional community and employees, NGK engages in cross-cultural exchange meetings where foreign students introduce their culture, as well as language classes taught by foreign students. In fiscal 2011, five cross-cultural exchange meetings were held for employees featuring Turkish, Laotian and Vietnamese culture with 160 participants. For regional communities, we held Chinese and

Korean language classes 20 times each and 10 cross-cultural exchange meetings with approximately 1,000 people participating.

In light of these cross-cultural exchange and language course initiatives as contributing to the development of young people in regional areas, in fiscal 2011 NGK received the Minister of State for Special Missions Award for activities supporting children and young people.

#### **44** Seeking to Create Relationships After Graduation

To create a memorable connection with NGK, we send New Year's greeting cards with the latest news to supported foreign students past and present. To further reevaluate our intended objectives, we exchanged opinions with university staff regarding our follow-up with formerly supported foreign students.



Language class taught by foreign students



Plant tour for foreign students

## Cooperation with Local Communities, Labor Unions, and NPOs in Social Contribution Activities

As a member of the regional communities where we operate, NGK engages in various social contribution activities in accordance with regional needs. Also, in an attempt to share Group company

activity information, we promote the creation of opportunities for mutual understanding and new activities.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>45</b> Work to assess the status of activities by Group companies and take steps to share information and extend activities.	Shared information by publishing status of Group company activities on corporate website and intranet.	○	Continue making efforts to understand Group company activities with initiatives for information transmission and sharing to link activities of each company.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

#### **45** Introduction of Group Company Activities

In fiscal 2011, in an effort to understand the status of activities at each Group

company, these activities were introduced on the corporate website and intranet. Introducing all results provided to staff in charge of providing information from each company was also effective in terms of

enhancing awareness among these staff. NGK will continue to focus efforts on distributing information connected to future company activities.

## Coordination with Local Communities and Promotion of Contribution to the Society



### Coastline Cleanup

—NGK-Locke Polymer Insulators, Inc. (Virginia, U.S.A.)

In June 2011, 23 NGK staff and their family participated in the 23rd Clean the Bay Day. They and 7,400 local residents cleaned the coastline, picking up 50 kg of garbage.



### Contributed to Establishment of Japanese Supplementary School

—NGK BERYLCO FRANCE (Couëron, France)

In September 2011, an NPO from the Japanese community established a Japanese supplementary school for Japanese elementary school students in Nantes, France. Through this NPO, local employees also contributed to the establishment of the school.



### Sponsored Japan Festival

—NGK STANGER PTY. LTD. (Victoria, Australia)

In February 2012, cooperated as sponsor of the Japan Summer Festival held in Melbourne. The venue, lined with food stalls, echoed with sounds of Japanese taiko drummers and the Bon dance.



### Participation in Great East Japan Earthquake Charity Event

—NGK Kilntech Corporation (Nagoya, Aichi Prefecture)

One NGK employee participated in the Great East Japan Earthquake Charity Match Handball Mixer held during Golden Week 2011 in Kariya, Aichi Prefecture, contributing a donation.



### Creating a City Flower Garden

—NGK Okhotsk, Ltd. (Abashiri, Hokkaido Prefecture)

NGK employees participated in the Abashiri flower garden Hana Tendo landscaping activities. From July to August in 2011, total of 28 employees joined approximately 800 local residents in 48 groups planting seedlings and pulling weeds.



### Internships for High School Students

—NGK Adrec Co., Ltd., (Mitake, Gifu Prefecture)

In August 2011, four students from Kani Technical High School and Tajimi Technical High School experienced work such as inspections as interns. The students commented that the experience was helpful for making future choices.

## Support for Volunteer Activities by Employees

NGK makes an effort to provide information and opportunities enabling employees to easily experience volunteer activities.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>46</b> Focus on embedding existing activities, developing an environment conducive to volunteer activities in which employees can readily participate.	Continued TFT activities and provide volunteering information on intranet.	○	Continue to focus efforts on embedding and revitalizing activities, engaging in the creation of an environment conducive to volunteer activities in which employees can readily participate.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

### 46 Embedding and Revitalizing TFT Activities

NGK employees have been taking part in the "Table for Two" (TFT) program since September 2010. Under this program, employees can choose from a menu of items at staff cafeterias that will help to improve their health, with ¥20 from each



©TABLE FOR TWO

meal donated to provide a meal for a child in Africa. We spread awareness of these efforts in-house using internal bulletins and TFT activity photo panel displays

to promote participation.

In fiscal 2011, NGK held a food tasting event at which employees can try the meals they help provide for African



African lunch tasting event

children. Effective as a routine PR activity, approximately 32,000 meals were served in staff cafeterias at the Atsuta, Mizuho, Chita and Komaki sites. In fiscal 2012, we plan to introduce this program to the Ishikawa Plant cafeteria.

Also, as a means of providing employees with an opportunity to begin volunteer activities, NGK provides information on the intranet regarding tree planting and environmental protection charity, OISCA-International events and volunteer opportunities.

In fiscal 2011, we listed 56 such opportunities, with employees participating in two of them.

## Communications with Stakeholders

Through various opportunities, the NGK Group makes an attempt to communicate with customers, suppliers, regional citizens and a variety of stakeholders in an effort to build and maintain a trusting relationship.

### Communication with Customers and Procurement Partners

The NGK Group is engaged in expanding two-way communication with suppliers indispensable to our provision of products and

services, and of course, customers we provide with products and services, to enhance fairness and transparency in procurement.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>47</b> Hold earnings results presentations for major suppliers.	Held an earnings results presentation for our major suppliers in May.	○	As in past, hold earnings results presentations for main suppliers.
<b>48</b> Continue to operate the supplier helpline.	Continued operation of supplier helpline.	○	Continue to operate the supplier helpline so as not to miss an important inquiry and strive to maintain fair and honest business relationships.
<b>49</b> Continuously conduct visits to suppliers.	The impact of the Great East Japan Earthquake resulted in only half as many company visits compared to the previous fiscal year.	△	Employ most appropriate suppliers through supplier visitation activities, including new suppliers, in an attempt to step up supplier quality.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

#### **47** Continuing to Hold Earnings Results Presentations

To deepen understanding of business and CSR activities, each year NGK holds earnings results presentations for major suppliers, in May of fiscal 2011.

117 companies attended the meeting



Earnings results presentation for suppliers (held in May 2011)

which, in addition to reporting earnings, also explained green and CSR procurement and purchasing policies and standards and introduced new businesses and products. A friendship meeting was also held, where guests could freely exchange opinions with NGK directors and other staff.

#### **48** Supplier Helpline

In 2008, NGK established a supplier helpline. Receiving consultation via email, fax and telephone, we make an effort to respond with solutions quickly.

In fiscal 2012, we will continue to operate the supplier helpline and provide unerring support for important inquiries and make an effort to build and maintain fair supplier relationships.

#### **49** Individual Visits to Suppliers in Japan and Overseas

With the aim of employing suppliers that excel in green supplier certification and quality, cost, delivery (QCD), NGK conducts individual visits in Japan and overseas.

In fiscal 2011, NGK visited 40 suppliers to provide guidance to those not meeting green supplier certification standards as well as conduct QCD audits. The impact of the Great East Japan Earthquake resulted in only half as many company visits compared to the previous fiscal year.

In fiscal 2012, including new suppliers, NGK will employ optimal suppliers through supplier visit activities in an attempt to raise supplier level.

### Interaction with Local Communities via Plant Tours and Open House Events

The NGK Group engages in dynamic interactions with local residents through opportunities such as plant tours and regional events, as well as through opportunities for direct dialogue,

making an effort to incorporate the ideas and opinions received in Group business activities and CSR activities

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>50</b> Give priority to plant tours for elementary and junior high students, engage in dynamic interaction with local communities.	Conducted 13 plant visits for elementary school students in four areas.	○	Give priority to responding to plant tours for elementary and junior high students, and continue striving for more dynamic interaction with local communities.
<b>51</b> NGK will conduct a stakeholder dialogue.	Conducted Factory dialog with local residents at the Chita Site.	○	Consider conducting dialogue with expert panel or NPO.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved

#### **50** Conducted Plant Tours in Four Areas

To deepen understanding and interest in NGK and manufacturing, in fiscal 2011 we conducted 13 plant tours in four areas including Nagoya and Chita for a total of 298 elementary and middle school

students. Plant tours not only explain what goes on at the plant, but also introduce what life at the company is like for employees.

We also began plant tours at the Ishikawa Plant, and approximately 2,000 local residents participated in the summer festival held by the Komaki Site.



Plant tour (November 2011)



## 51 First Factory Dialogue (Chita Site)

### NGK Invited Members of Local Government and Manufacturing to Share Ideas on Saving Power, Disaster Prevention and Environmental Conservation



On November 24, 2011, NGK invited a total of seven people from local government and manufacturing to the Chita Site to hold the first CSR Factory Dialogue. Five employees, including the Site General Manager (executive director) and CSR Promotion Chief, represented NGK. The objective of this dialogue was to deepen the understanding of regional stakeholders, solicit opinions on CSR activities and incorporate those opinions going forward.

We also provided the guests with a plant tour, receiving many valuable opinions on a range of topics, from saving power and disaster prevention, to environmental conservation and regional contributions.



On the next day, November 25, local citizens were also taken on a plant tour.

#### Participating Stakeholders

Note: Positions are as of time of event



**Yasuyuki Kondo**

Head of Citizen Economic Affairs Department, Handa City



**Hiroshi Saito**

Police Chief, Handa Police Station



**Sadao Wakako**

Chita-Chubu Wide Area Organization Vice-Fire Chief, Fire Defense Headquarters



**Masakatsu Mase**

Managing Director, Handa Chamber of Commerce and Industry



**Haruhiko Mori**

Ward Chief, Narawa Ward 3



**Yasuho Miyazaki**

Ward Chief, Narawa Ward 4



**Tateo Sakakibara**

Ward Chief, Kyowa Ward

#### (NGK Participants)

##### **Shuhei Ishikawa**

... Vice President, Chita Site General Manager

##### **Osamu Yamazaki**

... General Affairs, Chita General Affairs Group Manager

##### **Osamu Shibata**

... CSR Promotion Office General Manager

##### **Yukihiro Koshino**

... Environmental Management Department Group Manager

##### **Hitoshi Nishiwaki**

... Environmental Management Department Manager

## Power-Saving and Fire Prevention

To questions regarding power-saving and tsunami countermeasures, we explained our daily power-saving initiatives, activities to heighten employee eco-awareness, our first-ever disaster training incorporating tsunami scenario and distribution of emergency supplies to employees.

Regarding the NAS Battery fire, we were told that we need to quickly resolve the problem and contribute to power supply stability, and we promised to do our utmost to solve problems and contribute to stable, renewable energy and peak demand power.

### ● Mr. Kondo's opinion

Amid the severe demand for power, effective use of the NGK NAS Battery should become prominent, and I expect the company to quickly resolve these issues and contribute to power stability.

### ● Mr. Wakako's opinion

I want NGK to thoroughly look into the cause of the NAS Battery fires. Also, at present, six fire departments on the Chita Peninsula are creating a 119 reporting system, and I would like to see NGK be part of those efforts.

### ● Mr. Saito's opinion

The department's problem is regional network creation. With the participation of companies like NGK in terms of municipal residential evacuation training, I hope we are able to rely on them to distribute area information in the event of a disaster.



## Regional Environmental Conservation

There was a question regarding the soil contamination at the Chita Site public welfare facilities (public hall, parking lot and greenbelt) as well as the connection with products being manufactured at the site.

In response, we explained that, until 1985, the site was operated by a company that manufactured glaze hollow materials, and that the hazardous substances in the glass materials used at that time are assumed to be the cause. We also explained that the contaminated soil has been removed and the groundwater has been cleaned up, with the understanding that products currently manufactured at the site are not responsible for the contamination.

### ● Mr. Sakakibara's opinion

NGK discloses environmental management data from its factories, which is reassuring to local residents. I now know there is no connection between the contaminated soil in the Asahicho parking lot and the products produced at the factory. I hope they continue to disclose information in the future.



Factory Tour  
(with all participating stakeholders)



## Regional Contribution Through Employment

We were also told that there were apprehensions regarding leaking of technology as a result of overseas expansion and employment instability, as well as a desire for expanded employment in the region.

In response, NGK explained that domestic factories are highly-advanced mother factories supplying the world, and that we will continue to maintain them. In terms of employment, we make an effort to turn part-time workers into full-time employees and re-hire retired employees. NGK gives sufficient consideration to technology leak risks when expanding overseas.

### ● Mr. Mori's opinion

I appreciate that NGK employees participate in traffic inspection tours during traffic week. I also think the system by which retired employees are hired back is fabulous, and I hope they continue to hire local citizens.

### ● Mr. Miyazaki's opinion

NGK maintains a close connection to the local community and I appreciate how they contribute to the region in a variety of ways. I am terribly thankful for the opportunity to hear directly from the company about management perspective and risks involved in overseas advancement.

### ● Mr. Mase's opinion

I am grateful for your daily concern for this region. I hope for your support and cooperation during the Handa Festival and fireworks festival, commemorating its 75th year in 2012.



## After the Factory Dialogue

### Reflecting These Opinions and Ideas into Business Activities

NGK aims to be a company that develops with regional communities, and we deeply appreciate the opinions and demands expressed by the participants in our first-ever event of this kind.

At NGK, CSR is the linchpin of management. In April 2011, we announced CSR in which all employees can take part and make

an effort to inculcate awareness regarding CSR through dialogue with employees. To coexist with society, dialogue with regional citizens is indispensable. Going forward, we will continue to promote these dialogues and reflect the opinions received, aiming to become an even better company.



Shuhei Ishikawa  
Vice President, Chita Site  
General Manager



## Communications with Stakeholders

### CSR Talk Live (Discussions on Implementing CSR with Every Employee Class)

To deepen every employee's understanding of CSR initiatives, in 2009 the NGK Group began holding CSR Talk Live, an event where employees and top management talk directly to each other held

at all sites in Japan. NGK will continue to use direct dialogue to inculcate CSR.

FY2011 Targets <b>P</b>	FY2011 Activities Summary <b>D</b>	Evaluation* <b>C</b>	Improvement Plan <b>A</b> → FY2012 Targets
<b>52</b> Continue to hold CSR Talk Live sessions and distribute a condensed version of the CSR Report.	Conducted CSR Talk Live 10 times, distributed a condensed version of the CSR Report.	○	Continue to hold CSR Talk Live sessions and distribute a condensed version of the CSR Report to employees of NGK and domestic Group companies.
<b>53</b> Build a more robust lineup of CSR-Web content.	Distributed information related to CSR activities and CSR Committee proceedings.	○	Further enhance CSR-Web content.

\* Self-evaluation standards for achievement level: ○ Target achieved △ 80% or more of target achieved × Less than 80% of target achieved



#### 52 Exchanging Opinions in an Aim for CSR in Which All Employees Can Take Part

Starting with the first event, held at our Nagoya headquarters on September 26, 2011, we held a total of ten one-hour sessions at domestic Group companies including NGK Kilntech, Heisei Ceramics, NGK Metex and NGK Okhotsk. Each session was limited to several dozen participants to ensure each person's voice

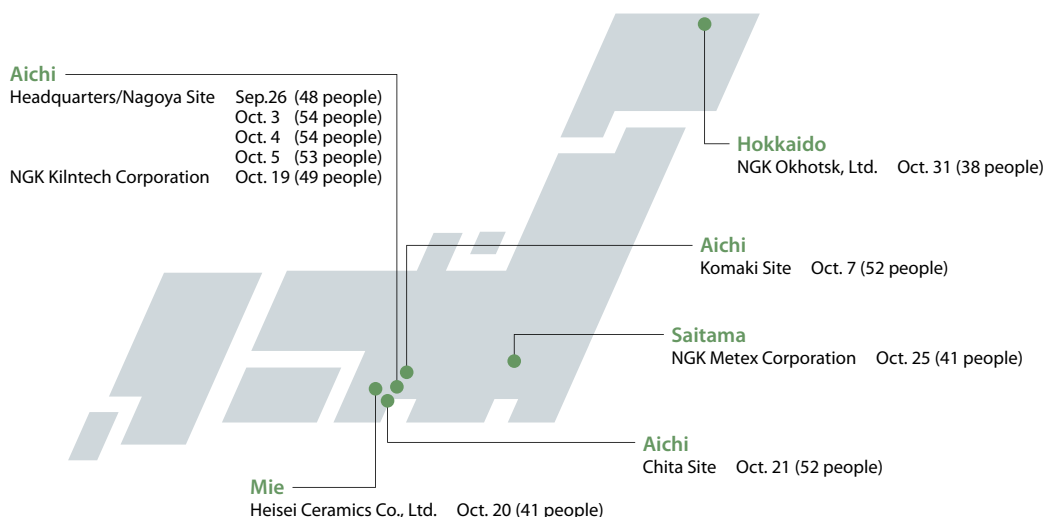
could be heard and expression could be seen. In total, 482 employees have participated, representing about ten percent of Group employees nationwide.

Each Talk Live session began with Executive Vice President Fujito and Senior Vice President and CSR Committee Chairman Ibuki emphasizing the importance of CSR initiatives to those in attendance through a discussion about NGK Group CSR initiatives. There were also explanations and specific examples from

the CSR Report 2011 (Special Edition) given by the Environmental Management Department and CSR Promotion Office.

Participants engaged in a lively discussion, asking questions about and exchanging opinions on a wide variety of topics, including women's activities, support for childrearing, environmental management ranking, disaster prevention and volunteer activities.

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



Hiroshi Fujito  
Executive Vice President



Mitsuo Ibuki  
Director and Senior Vice President  
Chairman, CSR Committee



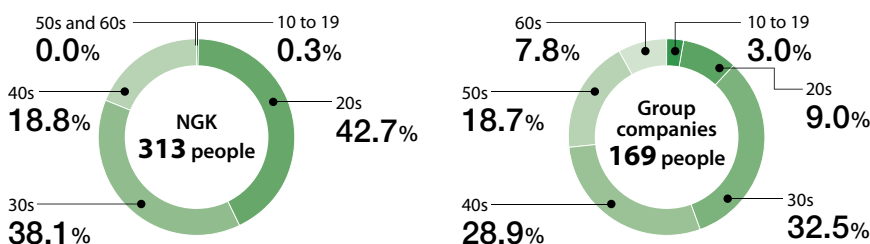
### From Nagoya, Chita and Komaki Site Employees

- What NGK initiatives need to be taken a step further?
- What are the evaluation standards of the environmental management ranking?
- Consider a place for disaster emergency supplies.
- What will you do for employees who can't make it home in the event of a disaster?
- When deciding on childrearing support measures, have you ever conducted a survey among users?
- Names on employee ID cards are displayed in Japanese only; as the number of trainees from overseas Group companies is increasing, is it possible to put English on them as well?
- I want to know the company's thoughts regarding earthquake disaster volunteers.
- I want as many people as possible to know that the CO<sub>2</sub> emissions reduced by our products is greater than the CO<sub>2</sub> emitted during production of those products.

### From Domestic Group Employees

- Why don't we establish long-term major CO<sub>2</sub> reduction targets?
- IT security needs strengthening—what countermeasures are you considering?
- I think there aren't enough women in management positions.
- I want to know about the operation of the help line.
- Can Group company employees also participate in TABLE FOR TWO (TFT)?
- Wouldn't a poster indicating what you should and shouldn't do, and what needs to be done, be effective for raising CSR awareness?

### Participants by Age Group



### Rating the Management's Explanations (Total Participants Each Time)

NGK Group CSR initiatives		Explanation of CSR report	
Explanation was very clear	113	Explanation was very clear	86
Explanation was sufficient	256	Explanation was sufficient	278
Explanation was unclear	10	Explanation was unclear	16

### Rating of Time Spent (Total Participants Each Time)

Too long	Just right	Too short
7	347	26



## 53 Promoting Enhancements to Distribution of CSR Initiative-Related Information

NGK makes an effort to improve the information posted on the CSR-Web, a website established on the company intranet to introduce NGK Group CSR initiatives.

In fiscal 2011, we introduced CSR Committee proceedings as well as social contribution activities achieved and planned. Linking intranet CSR promotion items to a database, CSR-Web information can be viewed simply, all in one place.



CSR-Web, using the company intranet to raise awareness about CSR activities



## Third-Party Opinion



**Mr. Koichi Ikeda**

Visiting Professor,  
Ritsumeikan University  
Management School

Right now, CSR is gaining wide recognition globally, as well as in Japan, as many companies engage in various initiatives. Companies earnestly engaged in environmental and social contribution initiatives are on the rise, but unfortunately, CSR is often positioned as an additional activity separate from everyday business. However, the ISO 26000 (standards on social responsibility), which define CSR global guidelines, require that CSR activities be integrated and practiced throughout the entire organization. Originally, CSR was linked directly to management activities and integrated into business practices. For this reason, CSR initiatives to enhance environmental and social sustainability are also linked to enhancing the sustainability of the company.

From the CSR Report 2012, an image of NGK Group CSR initiatives linked directly to management activities based on its corporate philosophy comes clearly into focus. Embodying their corporate philosophy, as the fulfillment of their social responsibility, in 2011 they revised the NGK Group Guidelines for Corporate Behavior and the eight environmental conservation and other actions for promoting CSR to be consistent with each other. It is no exaggeration to say that, from corporate philosophy to Guidelines for Corporate Behavior and CSR promotion actions, NGK has established a system for promoting consistent initiatives.

One of the special aspects of this report is the layout, done in line with this framework, with various initiatives originating from corporate philosophy organized in terms of the PDCA management cycle to provide detailed reporting. As a result, the content, including the status of initiatives, is generally easy to understand and, as a compass for future initiatives that are even more effective and efficient, I feel this is helpful for the realization of corporate philosophy.

In CSR Objectives and Achievements at the beginning, details regarding the eight activities for CSR promotion, as well as results and evaluations, are covered briefly, providing an overview of the status of various initiatives. At the same time, I felt a sincere attempt to improve ease of understanding and access to related information with references to pages with details on separate initiatives related to each promotion action. NGK displayed its proactive effort to disclose information regarding the cause of last year's NAS Battery fire and subsequent safety measures to stakeholders through explanations using a variety of graphical illustrations.

Furthermore, I feel that within this superb mechanism, the extent of self-evaluation of individual initiatives, detailed explanations of the cause behind plans and targets not achieved and measures taken to rectify these issues is made very clear. It goes without saying that the cornerstone of the PDCA management cycle is the C (check). By attempting to improve through frank peer reviews, I expect NGK to raise the level of its Company-wide CSR initiatives.

### Response from NGK

With the aim of providing all our stakeholders with a deeper understanding of NGK Group CSR activities, the fiscal 2012 report introduces our activities according to the NGK Group Guidelines for Corporate Behavior and each item under the eight actions for promoting CSR, with the CSR Objectives and Achievements reprinted at the beginning.

With regard to the review of the CSR Objectives and Achievements, we will attempt to further enhance content by identifying issues and initiatives with high materiality looking across the entire Group value chain and through consideration for objective and easy to understand evaluation and listing methods.

Listening to our stakeholders, we will continue these initiatives to realize sustainable growth and enhance corporate value, responding proactively to new demands and societal changes, always acting honestly and responsibly as a member of society, delivering new value to society through the provision of products and services.



**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](mailto:pr-office@ngk.co.jp)



### Plate making:

For this report, plates were made by Computer To Plate (CTP) technology enabling the complete discontinuation of the use of sheets of intermediate materials during the page makeup process.

### Printing:

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.