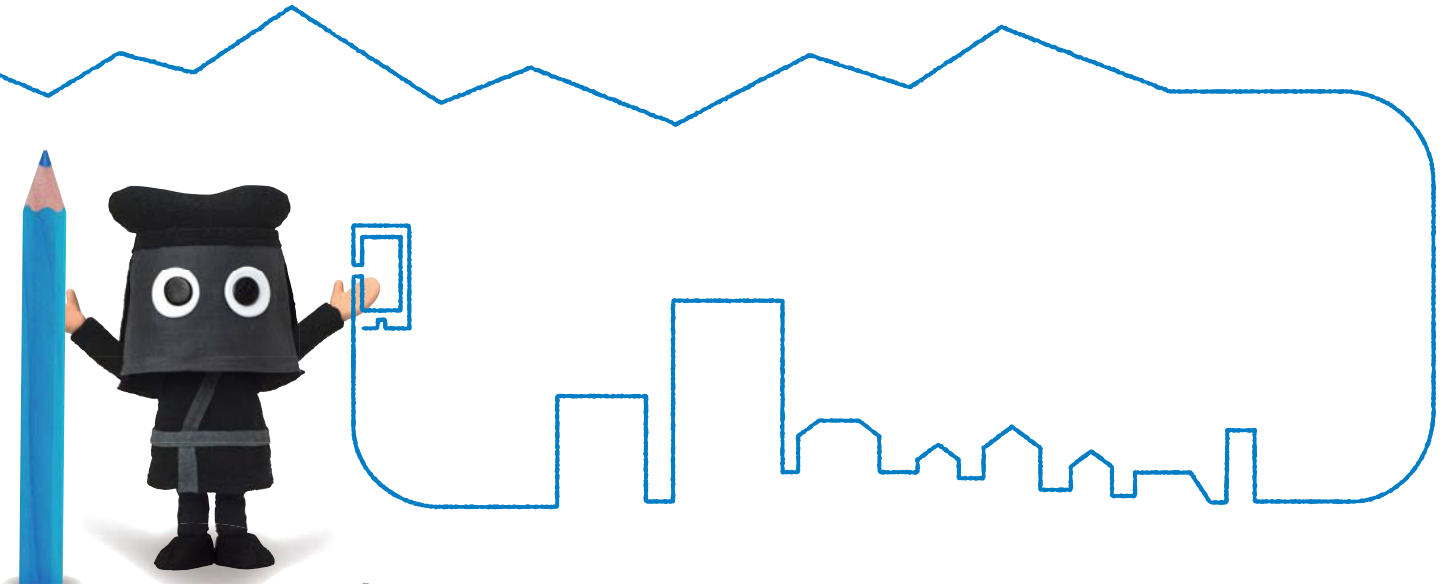
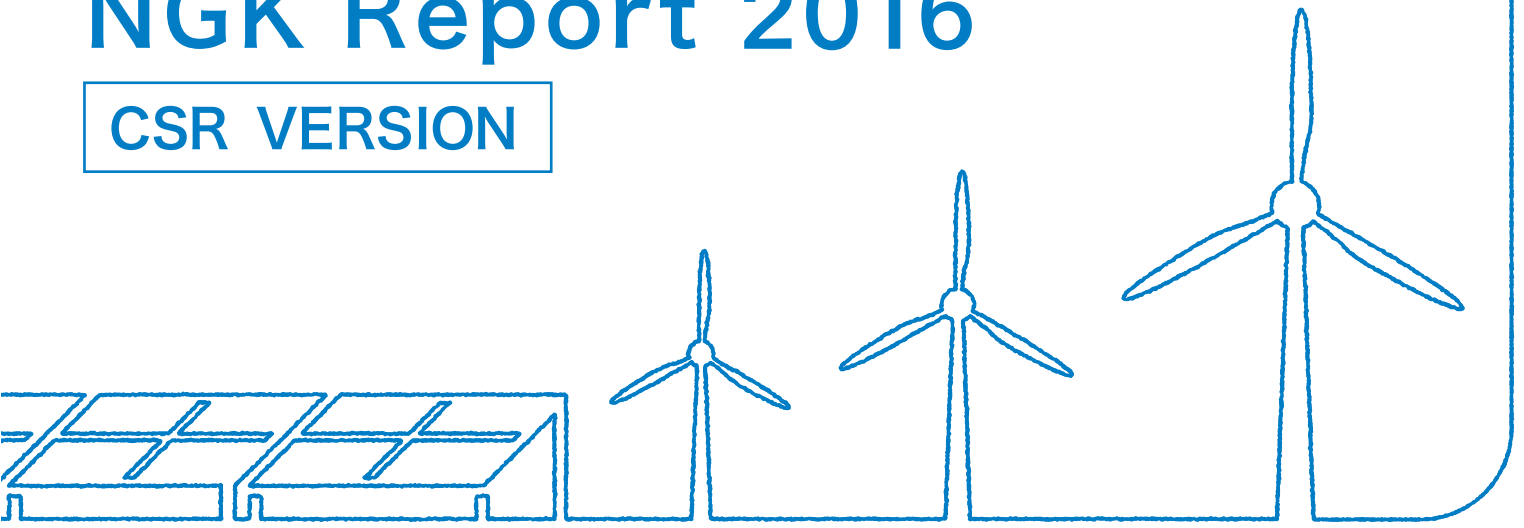


# NGK Report 2016

CSR VERSION



# Contents

Management's Commitment .....	1
Special Feature .....	3
Inspiration to Value Creation .....	13
Corporate Governance .....	20
CSR Management .....	38
CSR Objectives and Achievements .....	45
Realization of Higher Quality Products and Services .....	53
Communication with Shareholders and Investors .....	63
Thorough Compliance .....	66
Risk Management .....	81
Respect for People and Ensure Comfortable Workplace .....	88
Supply Chain .....	118
Preservation of Global Environment .....	123
Connection to Society .....	151
GRI Guidelines ISO26000 Comparison Table .....	173
Independent Practitioner's Assurance Report .....	189
Third Party Opinion .....	190
NGK Report 2016 Editorial Policy .....	191



## **Fiscal 2015 net sales marked a record high; Aiming for sustainable growth from a medium- to long-term perspective**

The NGK Group achieved record high net sales and profits in fiscal 2015. We believe this to be largely attributable to the steady increase in competitiveness of our conventional businesses and smooth growth of our new businesses, in addition to positive external factors such as the booming automobile and semiconductor markets and generally weaker yen.

Our goal is to achieve sustainable growth on top of making short-term profits. To this end, since fiscal 2014 we have been undertaking the new/reformed manufacturing structures initiatives designed to enhance our competitiveness as a manufacturer over the medium to long term. The initiatives have been progressing well, steadily improving productivity at each production site through such measures as introducing a cutting-edge production line for our mainstay product, ceramics for automotive exhaust purification. In addition, since 2013 we have been implementing the "2017 Challenge 30" project aimed at spawning new products and businesses to underpin the Group's further growth. The project's goal of boosting the proportion of sales of new products among total net sales to above 30% by fiscal 2017 is expected to be accomplished ahead of schedule.

Although we are projecting a decline in net sales and profits in fiscal 2016 due to the negative impact of the market environment, a stronger yen, and a temporary increase in costs including those for production capacity expansion, demands are expected to grow in the subsequent few years, mainly in our core businesses. It is crucial for us to be prepared to fully embrace these demands in our bid to achieve sustainable growth.

## **Developing products that address needs and social issues by leveraging our long-fostered ceramic technologies**

The NGK Group's corporate philosophy upholds, "NGK products and technologies must create new value and contribute to the quality of life." It always has been and will be our solemn social responsibility to leverage the technologies we have fostered as a manufacturer to develop and deliver products needed by society. One of our strengths lies in our diverse spectrum of proprietary technologies, including ceramic technologies. Our top priority agenda under the new Five-Year

Environmental Action Plan launched in fiscal 2016 being "to make environmental and social contributions through our products," we are proactively promoting the development and proliferation of products that benefit the environment.

For example, NGK's HONEYCERAM® ceramics for automobile exhaust purification is adopted in roughly one in every two vehicles sold around the world. Our mission as a manufacturer of such a widely proliferated product is to fulfill our supply responsibility by securing high quality and sufficient quantity. To this end, we are making aggressive investments in facilities and technological development to strengthen and stabilize our production systems.

Furthermore, we are also reinforcing our marketing activities in order to accurately pinpoint existing needs in society.

Marketing specialists are deployed in each business group to explore new development themes in coordination with the New Business Planning Division.

NGK signed the United Nations (UN) Global Compact in April 2015. Seeking to identify social issues of an even larger scale and help solve them, going forward we will investigate how our technologies can contribute to the world in consideration of the Sustainable Development Goals (SDGs) adopted by the UN in September 2015.

## **Creating a company where each individual can fully demonstrate their capabilities and spontaneity**

Social responsibilities that need to be fulfilled by the NGK Group are diverse, ranging from those associated with safety, the environment, and quality, to those concerning appropriate corporate governance, supply chain management, and contribution to local communities. In addition to earnestly tackling these responsibilities head on, we must also attach importance to encouraging each and every employee to fully demonstrate their spontaneity, and must value them as the driving force of our growth.

The NGK Group's roughly 20,000 employees come from diverse racial and ethnic backgrounds, and 60% of them work outside Japan. We are aiming to build systems and mechanisms that allow our diverse teams stationed at various business units around the world to flourish and develop on the basis of mutual respect and inspiration. We have already embarked on a revision of our personnel system for the purposes of increasing opportunities for young and mid-career employees to take on higher-level challenges, enabling older employees to continue working with peace of mind, and allowing female employees to demonstrate more of their capabilities. The NGK Group is determined to focus on human resources development and the accommodation of increasing diversity toward the goal of becoming a genuinely global corporate group that can compete on the world stage.

In September 2015, NGK admitted to violating U.S. antitrust laws and other regulations in some business transactions related to ceramic substrates for catalytic converters, and accepted a plea agreement with the U.S. Department of Justice. In recognition of the seriousness of this situation, we improved our compliance structure in an effort to prevent a recurrence through enhanced compliance system and thorough training with regard to antitrust and related regulations targeting our Board of Directors and all our employees. Furthermore, we have established a Business Ethics Committee to investigate any fraudulent practices that could have a material impact on management and introduced the Hotline, a whistle-blowing system for dealing with improper behavior, thereby accomplishing our reinforcement efforts for our compliance structure by the end of fiscal 2015. However, in addition to such mechanisms, it is also crucial for each and every employee to be vigilant and alert to any irregular behavior or legal violation, and to help create a corporate culture where such misconduct can be openly pointed out. We believe that creating a workplace environment where there is good communication and people feel free to report and share any minor matters is the key to preventing any recurrence.

Ever since NGK started out as an insulator manufacturer in 1919, the company has diversified its businesses in response to the needs of the times to pursue development. We will continue to unify our group-wide efforts to keep launching new technologies and products with a strong commitment to addressing social needs and issues. We ask for your continued patronage and support.

➤ New Five-Year Environmental Action Plan

➤ Environmental Products

### Special Feature

# Environmental Action Plan (2016–2020) and Environmental Products New Five-Year

The NGK Group organizes environmental activities by creating five-year action plans, starting with the first in fiscal 2001. Upon completing the Third Five-Year Environmental Action Plan in fiscal 2015, the Group has established the Fourth Plan to be initiated in fiscal 2016.

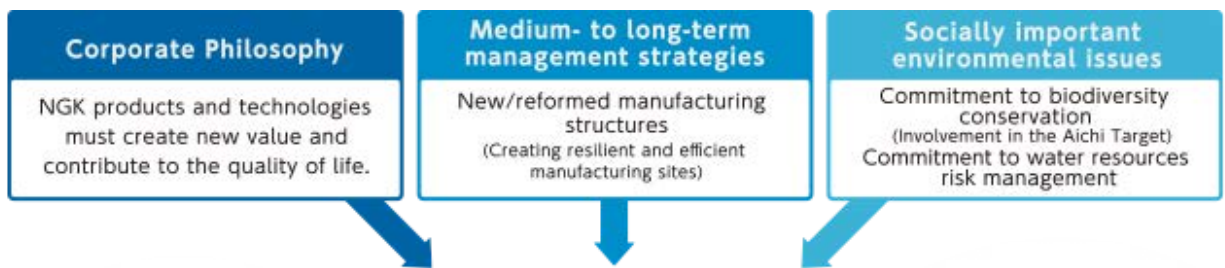
## Background of the new Five-Year Environmental Action Plan

The formulation of the Fourth Five-Year Environmental Action Plan (to be initiated in fiscal 2016) was started by creating a comprehensive list of major environmental actions that socially responsible businesses are expected to take. To do this, relevant standards, such as Nikkei Environmental Management Surveys, Global Reporting Initiative (GRI) Guidelines and Dow Jones Sustainability Index (DJSI), have been used for reference.

Based on the created list, priority and focus themes have been selected considering the corporate philosophy, medium- to long-term management strategies of the NGK Group and social needs. The selected themes are organized into three groups: environmental/social contribution through products, reducing CO<sub>2</sub> emissions and discarded materials, and biodiversity conservation and water resources risk management/response.

The first priority has been given to the theme of environmental/social contribution through products, which directly reflects the core concept of the corporate philosophy, the most essential guide to the Group's entire scope of activities. Reducing CO<sub>2</sub> emissions and discarded materials is another priority theme, as this closely relates to NGK's medium- to long-term initiative of new/reformed manufacturing structures for increasing competitiveness. Biodiversity conservation and water resources risk management/response, major issues for which socially responsible corporate action is required more urgently, have been set up as focus themes.





**Incorporated into the Fourth Five-Year Environmental Action Plan**



**Chiaki Niwa**  
 Director and Senior Vice President  
 Environmental Protection  
 Committee Chair

**▶ Message from NGK Environmental Protection Committee Chair**

**The NGK Group working as a team to promote manufacturing that contributes to the environment**

NGK attaches particular weight to promoting environmental contribution through products and environmentally aware manufacturing operations, based on the core concept of its corporate philosophy, summarized as products and technologies contributing to the quality of life. In the Fourth Environmental Action Plan starting fiscal 2016, the highest priority is given to the theme of developing and distributing products contributing to environmental protection, as this directly reflects the corporate philosophy, and we have set numerical targets for this theme, a new approach starting from the new Plan. We will instruct employees to increase their environmental understanding of new products under development, while working to expand sales for the existing lineup, in an effort to fulfill our commitment to helping build a sustainable society through business activities. Also, we have been engaged in reducing environmental impact over the years, focusing on slashing CO2 emissions and discarded materials, and gradually expanding the target control scope to include global group companies. In place of a separate management method previously employed for bases in and out of Japan to set different targets, starting from the new plan, we will set common goals for domestic and overseas sites to manage activities on a consolidated basis. The entire Group will work as a team aiming to achieve shared targets set at higher-than-standard levels, thereby helping decreasing environmental impact.

## ▶ Expert opinion

### Social contribution efforts for a better life are the key to sustainable business growth

Among other themes included in the new Environmental Action Plan, the highest priority has been given to the development and distribution of products contributing to environmental protection. I will take particular note of this part. NGK has chosen to promote projects involving its strong products achieved via advanced ceramics technologies, such as the NAS<sup>®</sup> battery and HONEYCERAM<sup>®</sup>, as a high-materiality strategic business, which I regard as appropriately nimble to broadly publicize its commitment to contribution to environmental conservation. In addition, I am strongly intrigued by a characteristic common to these products: essentially, many of these technologies demonstrate their potential function of environmental contribution only in combination with other technologies. For instance, the NAS battery can serve this purpose by supporting stable supply of renewable energy power, and diesel particulate filters (DPFs) by improving the environmental performance of diesel vehicles. The behind-the-scene capability of these technologies, playing a vital but low-profile role in building society, dates back to NGK's founding business that has helped social development over the years by supplying unrivaled high-quality insulators to support power supply infrastructure building. Throughout its long history, NGK has maintained this stance of supporting and improving pioneering technologies, contributing to the sound development of society and enhancement of people's life through business, thereby achieving sustainable growth. I see this aspect of the company as providing inspiring insights, and expect to see significant achievements from their efforts over the coming five years under the Action Plan.








**Noriyuki Kobayashi**  
Associate Professor,  
Nagoya University  
Department of Chemical Engineering

## New Five-Year Environmental Action Plan (2016-2020)

Under the new Five-Year Environmental Action Plan, NGK is committed to two priority themes: environmental/social contribution through products and global environmental impact reduction (reducing CO<sub>2</sub> emissions and discarded materials). For each theme, effective and specific, above-standard level targets have been set to correspond with relevant business initiatives. In addition, we have drawn up plans to promote two focus themes. For biodiversity conservation, activity content and opportunities will be enhanced, and in the water resources area, risk assessment activities will be continued and initiatives for efficient water usage will be expanded within the Group.

## Fourth Five-Year Environmental Action Plan

Category		Item	KPI	Fiscal 2020 Target
Environmental/social contribution	 Environmental/social contribution through products	<b>Develop and distribute products contributing to environmental protection</b>	Sales growth (%)	At least 60% from fiscal 2013 (consolidated)
		<b>Promote green procurement</b>	Plan progress (%)	Maintain in Japan, expand overseas
	 Promotion of environmental communication	<b>Contribute to local communities</b>	Plan progress (%)	Continually enhance actions partnering with communities
		<b>Raise environmental awareness</b>		Continually enhance environmental training and information disclosure
	 Conservation of biodiversity	<b>Promote actions based on biodiversity conservation guidelines</b>	Plan progress (%)	Expand and enhance the content of Aichi Target actions
Environmental impact reduction	 Prevention of global warming	<b>Reduce CO<sub>2</sub> emitted from manufacturing</b>	Basic unit per net sales	20% reduction from fiscal 2013 (consolidated)
			Reduction from BAU* (%)	15% from fiscal 2013 (consolidated)
	 Effective use of resources	<b>Reduce CO<sub>2</sub> emitted from supply chains</b>	Basic unit per transport volume	Average 1% reduction per year, medium to long term (unconsolidated)
		<b>Reduce discarded materials emitted from manufacturing</b>	Basic unit per net sales	30% reduction from fiscal 2013 (consolidated)
	Reduction from BAU* (%)		20% from fiscal 2013 (consolidated)	
	<b>Promote resource recycling</b>	Recycling rate	Maintain at over 99% in Japan	
		<b>Manage and respond to water resources risks</b>	Plan progress (%)	Strengthen actions by production base for evaluating risks and streamlining water use

\*Reduction from BAU (business as usual) indicates the percentage rate of emissions reduction resulting from implemented actions against a computed value for the hypothetical absence of the actions. By not including the influence of foreign exchange movements and other factors, this indicator allows a direct grasp of the efforts by each site.

### Base year, target year, control scope

#### Base year: fiscal 2013; target year: fiscal 2020

The new Five-Year Environmental Action Plan has been designed to correspond with the business initiative of new/reformed manufacturing structures. Accordingly, the base year and target year of the Plan have been set to coincide with the initiative. In principle, activities will be managed on a consolidated basis, embracing those based in and outside of Japan, in place of the previous method of managing domestic and overseas activities separately. The consolidation method has been adopted to improve management efficiency and effectiveness in response to the recent changes in our global production output structure, particularly increased amounts from overseas manufacturing sites as well as from production chains through multiple global locations.



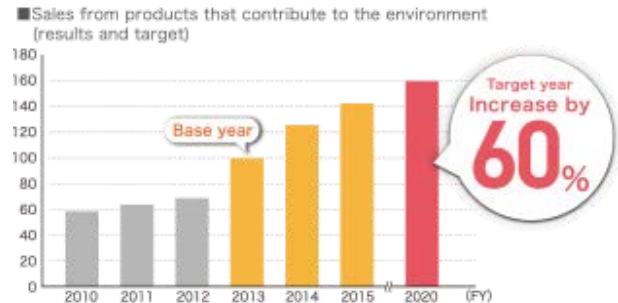
# New Five-Year Environmental Action Plan and Environmental Products

> New Five-Year Environmental Action Plan

> Environmental Products

## Promoting environmental contribution through products

NGK has set a target of increasing the sales of products that contribute to environmental protection, as internally defined, by at least 60% by fiscal 2020 from the base year of fiscal 2013 while maintaining the sales composition at 50% or above. This target aims at attaining business growth and expanding environmental contribution at the same time.



## 1 Contribution to widespread use of renewable energy

### NAS<sup>®</sup> battery

## NAS battery facilitates widespread use of renewable energy

One of the most frequent uses of the NAS battery is stabilizing renewable energy. While electricity from renewable sources, such as wind and solar power, is clean and, in principle, unlimited, its major limitation is that its output is affected by weather conditions, resulting in unstable output. The NAS battery solves this limitation by storing excess renewable energy when renewable generation exceeds demand, and supplying stored energy to the grid when renewable output is low or demand is high. With a NAS battery, intermittent renewable energy becomes stable and dispatchable, and available 24 hours a day. NAS systems enable global growth in stable renewable energy and thereby help electricity utilities worldwide reduce their environmental footprint.

### Increasing importance of renewable energy

Fossil fuels, such as petroleum, natural gas and coal, are exhaustible resources and, when burned, emit carbon dioxide and other greenhouse gases that cause global warming. Renewable energy sources, including wind and solar power, are proven, sustainable energy sources.

■ Percentage of Japan's electricity from renewable energy production

**14.3%** FY2015 **▶** **22-24%** FY2030

Sources: Composition of power generation by source (The Federation of Electric Power Companies of Japan); Long-term energy supply and demand outlook (Agency for Natural Resources and Energy)



NGK was the world's first manufacturer to commercialize the NAS battery megawatt-class electricity storage system. Featuring a large capacity, high energy density and long life. The battery can support reliable, long-term stable supply of electricity. Also, the NAS system allows a more compact housing compared with the conventional lead-acid battery

NAS systems are the world's most popular grid-scale battery storage

Proven reliability for over two decades,

With **530,000 kW** installed at over

**190** locations worldwide

(as of June 2016)

## Interview Future development for the NAS battery

### To create a sustainable society

I am focusing on the recent marketing trend to shift from selling individual products to offering packaged systems. For NAS batteries, I am striving to build system packages, rather than providing the individual product, by adding related functions to meet the specific needs of individual customers for solving issues. I expect that demand for large-capacity power storage systems will increase to meet needs related to stable electricity supply of renewable energy, which will be introduced broadly in coming years. I will work to sell more NAS batteries so that the products will demonstrate their intended functions to support the introduction and expansion of renewable energy use, as a way of contributing to society.

#### Daisuke Umino

Overseas Sales & Marketing Department, NAS Battery Division Power Business Group

Engaged in sales and marketing mainly in North America and Asia. Tasked with a range of responsibilities from proposing optimally customized systems to providing after-sale support services while developing new markets for NAS batteries.



## Automotive exhaust gas purification

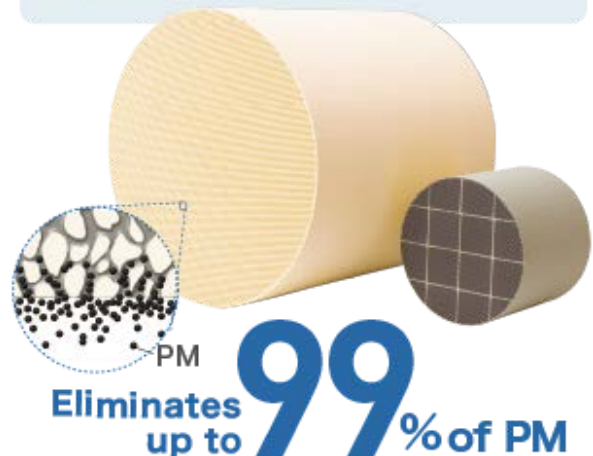
### Diesel particulate filter (DPF)

#### Remove PM from exhaust gas

DPF is a porous ceramics filter used in the exhaust system for the diesel vehicles in the world. With a fine pore structure, the filter ensures particle matters (PMs) are captured to purify exhaust gas emitted from diesel vehicles. NGK is the only company to produce two types of DPFs based both on cordierite and silicon carbide. Utilizing its ceramics technologies, NGK supports further developments of diesel vehicle.

#### Trend toward tighter automobile exhaust gas regulations

While automobile exhaust gas regulations are becoming tighter in global bases, appropriate actions are required to take place.



## Capture PM with fine pore structure

The honeycomb structure, where the inlet and outlet of the through-holes are alternately sealed, enables the thin ceramic walls to effectively capture PM while exhaust gas runs through them.

### Interview Future development for DPF

## To create a cleaner air environment

When visiting cities plagued by serious air pollution in Asia and other emerging regions, I strongly feel each time that urgent measures are necessary to improve the deteriorated conditions, and NGK's DPFs can address this need in these cities. Our products can help even more widely, creating a cleaner air environment around the world. Demand for DPFs remains strong and is expected to grow in response to the likely tightening of automobile exhaust gas regulations. As a responsible, leading DPF manufacturer, we will ensure a reliable supply of products as well as the timely launch of new products to cater to customer needs effectively.

### Ryutaro Shindo

Overseas Sales Department  
Worldwide Sales and Marketing Division  
Ceramic Products Business Group



Responsible for a range of tasks from analyzing market trends for DPFs and other products and developing sales strategies to production control planning. Leads the Group's cross-organizational sales activities, acting as a coordinator among global bases, in an effort to respond to customers' needs in a timely manner to win business.

## HONEYCERAM®

## Indispensable function for automotive exhaust gas purifier

HONEYCERAM is a ceramic substrate for catalytic converters to purify harmful contents in exhaust gases from automobiles. The products' honeycomb structure is effective for carrying catalyst to detoxify harmful substances by chemical reaction. Since the launch of its commercial production in 1976, the product has been supplied globally over years as essential part for meeting

the automobile exhaust gas regulations that become more stringent and cover wider in criteria. Production has grown to record a cumulative shipment exceeding 1.2 billion units, while expanding manufacturing bases to a current total of eight countries in North America, Asia and Africa. HONEYCERAM is an indispensable component of automobiles, an essential invention that supports enriched modern lifestyles.



A HONEYCERAM for passenger cars (left) and a large-size HONEYCERAM for large diesel cars (right). HONEYCERAM carries catalyst that work to eliminate PM and NOx.

## Honeycomb structure demonstrating a effective purifying performance

NGK's HONEYCERAM production eliminates a total of of NOx per annum\*1, equivalent to double the annual NOx emissions in Japan\*2.

■ NOx elimination

# 4 million tons annually

\*1. Assumption based on installation of exhaust gas system in new cars that are not equipped with such systems  
\*2. Source: OECD Environmental Statistics (2012)

## NOx sensors

### For long-term high-accuracy measurement

NGK has developed the world's first in-vehicle sensor to measure concentrations of nitrogen oxides (NOx) in exhaust gas in real time with high precision. Specifically, the sensor is capable of measuring NOx concentrations at the parts per million (ppm) level and can thus detect even very small amounts of the gases. The sensor supports precise control of the exhaust purification device of diesel vehicles, which leads to a reduction in NOx emissions and thus helps to promote the use of clean diesel vehicles.

■ Precision of NOx concentration measurement

# 1 1,000,000 level





## Contributing to the advancement of clean diesel vehicles

The NOx sensor business has achieved remarkable growth over recent years as exhaust gas regulations around the world have become more and more stringent. We are now developing and releasing a series of new-type sensors to help increase the environmental performance of clean diesel vehicles. We will continue to create environment-friendly products to meet the needs of customers and society at large and deliver them to people across the globe, thereby contributing to a better social environment.

### Dr. Daniel Siegberg

Deputy General Manager  
NOx Sensor Sales  
NGK EUROPE GMBH

In charge of sales engineering and serves as a bridge between local customers in Europe, where diesel vehicles are widely used, and NGK's development and manufacturing teams in Japan.



## Treatment of low-level radioactive waste

### Low-level radwaste treatment system

## To ensure safe treatment of radioactive waste

NGK has developed a wide range of systems to safely treat low-level radioactive waste generated from nuclear facilities, utilizing its proprietary incineration technology and dust collection technology by ceramic filter, and have supplied these systems to nuclear power stations and related institutes across Japan.

We undertake many of engineering projects including design, manufacturing, and site construction, and also provide a long-term maintenance service to deliver the stable and high-level radioactive decontamination.

Therefore, NGK provides essential support for safe and stable operation of nuclear facilities.

In addition, we focus on the development of new systems for treating various types of radwaste expected to be generated from the decommissioning and demolition of aging nuclear reactors.



▲ Low-level radwaste treatment systems

### Importance of treating radioactive waste

When treating and disposing of waste generated from radiation controlled areas, including nuclear power stations, it is critically important to prevent release and leakage of radioactivity, which requires special treatment and disposal methods, different from those for general waste.

■ The performance level of radioactivity removal;

$$\frac{1}{100,000}$$

# Inspiration to Value Creation

> History of value creation

> NGK creates value through its technologies and products

## 1919 Established to produce special high voltage insulators in Japan

Since its establishment, NGK has been a ceramics technology pioneer, striving to create value in response to various needs around the world

It dates back to the early 1890s when the first modern electricity infrastructure began to be developed in Japan. In those days Japan relied on imports for special high-voltage insulators. An engineering effort was launched to attain its domestic production, wishing to help the national infrastructure building project. The research started by studying a piece of US-made insulator shards, aiming at the creation of original high-voltage insulators.

This endeavor was incorporated later in 1919 when NGK was established to independently launch a business that grew over the years by continually developing and supplying ever-advancing ultra-high pressure and ultra-high strength insulators in response to expanding electricity demand from both the household and industrial sectors.



NGK has also pursued business diversification and global expansion vigorously. The company began in its earliest years to develop sulfuric acid corrosion-resistant apparatus for the chemical industry, commencing commercial manufacturing in 1931. And its overseas business was initiated in 1935 when exporting power transmission insulators to India.

Throughout its history, NGK has persistently endeavored to develop and supply products that support social foundations and serve environmental conservation, leveraging its accumulated ceramics technologies. This long-standing sense of commitment to social contribution has been incorporated into the company's corporate philosophy: "NGK products and technologies must create new value and contribute to the quality of life."

## 1950s-1960s From the postwar period to the period of high economic growth

During the period of high economic growth, NGK vigorously pursued the diversification and expansion of its business. In 1958, we began manufacturing and marketing beryllium-copper products; the Chita Plant (Handa, Aichi Prefecture) and the Komaki Plant (Komaki, Aichi Prefecture) were completed in



1942 and 1962, respectively; and in 1965, our first overseas sales subsidiary was set up in the U.S.

## 1970s-1980s From the Oil Shock to the Bubble Economy period

The 1973 Oil Shock threw the Japanese economy into confusion, which prompted NGK to expand its overseas business. We commenced local production of insulators in the U.S. in 1973 and Belgium in 1977. Around the same time, we began manufacturing and marketing HONEYCERAM®, a honeycomb ceramic catalyst converter substrate.



## 1990s-2000s Pursuit of sustainability and diversification

NGK promoted full scale development and production of environmental products. The production of diesel particulate filters (DPFs) commenced in 1989, and ceramics for semiconductor manufacturing equipment and NOx sensors for automobile exhausts in 1996. We began research to develop the NAS® battery for electricity storage in 1984, and launched the business in 2002 prior to commercial production starting in the following year, making NGK the world's first manufacturer in this area.



## 2010s – Aiming for a better future

NGK has grown business in its key areas, particularly rapidly expanding production of ceramics for purifying automobile exhaust gases and steadily increasing orders for NAS battery systems from companies in and outside of Japan. At the same time, we strenuously engage in new developments, including gasoline particulate filters (GPFs), wafers for electronic devices, subnano-ceramic membranes, and wavelength control drying systems, in response to needs emerging from various sectors.



**2017**  
Challenge **30**

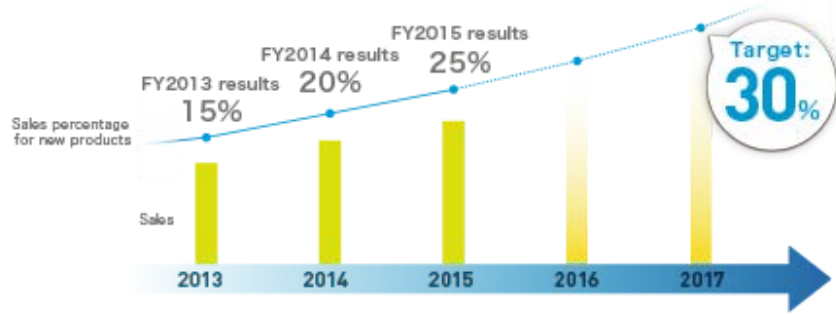
**Promoting company-wide efforts to create new products and businesses that deliver higher value and higher functions.**

The NGK Group pursues R&D as one of key management themes. Our R&D activities focus on developing high-value added and high-function products, leveraging materials and processing technologies centering on fine ceramics.

NGK has set a group-wide target of raising the percentage of sales for new products to 30% of the total by fiscal 2017 (2017 Challenge 30). We are currently striving to create new products and businesses, and these efforts are progressing steadily to achieve the target.



**Double**  
sales percentage  
for new products



### Broadening the new wafer lineup

We are working to broaden the range of high-performance wafer products, fully applying a number of original processing technologies cultivated over years of engaging in ceramics projects, such as those for bonding different materials, crystal formation, and lamination of single crystal substrates.



### Establishing a company-wide ceramic battery project

To accelerate the business development of new products, including solid oxide fuel cells (SOFCs), chip type ceramic secondary batteries, and zinc secondary batteries, we established a ceramic battery project in April 2016, bringing together capabilities from Corporate Manufacturing Engineering, Corporate R&D, business divisions and Head Offices. This company-wide, cross-divisional effort engages in the development of production technologies and facilities and the strengthening of customer development activities, seeking to expedite the market introduction of new products.

#### Solid oxide fuel cell (SOFC) module

Our original full-ceramic design has been employed to achieve both high efficiency and high durability in a compact body. Intended for use in next-generation fuel cell systems.



#### Zinc secondary battery

NGK's proprietary technology OH ion-conducting ceramic materials have been adopted to deliver a large-capacity long-life secondary battery. Also, the high safety property of the battery allows its wide-ranging application, particularly in home-use equipment and indoor facilities.



#### Chip type ceramic secondary battery

A solid-state battery that features high energy density attained in a super-thin (0.2 mm) chip and high temperature durability (up to 120°C). Major intended applications involve wearable devices and wireless modules for IoT.



# Inspiration to Value Creation

> History of value creation

> NGK creates value through its technologies and products

## NGK creates value through its technologies and products

Its activities for value creation are supported by each individual worker.

> NGK's insulators are used in more than 100 countries

> Next-Generation ceramics semiconductor manufacturing components

> Japan's first manufacturer of beryllium copper products

NGK's insulators are used in more than **100** countries.

Electricity is closely linked with people's lives. Insulators play a key role in order to supply this essential electric energy safely and stably, by supporting power transmission lines and insulating power lines from transmission line towers and related equipment. From its establishment in 1919, NGK has developed its insulator's core technologies, working to increase product quality and endurance against many types of severe external conditions, including earthquake, storm and snow. NGK is one of the world's largest production capacities, supplying insulators to more than 100 countries.



Insulator for 1,000-kV- power transmission systems. It can support up to 86 tons with a diameter of 40 cm which has the world's greatest strength.



The world's largest 11 meters hollow insulator for substation systems. Our advanced design and manufacturing technologies have been applied to achieve long-term performance which resist up to 1,000-kV-power transmission systems and massive earthquakes.

### Supporting people's lives through strong quality and technology

My task is to research on improving insulator materials and manufacturing process, chiefly for the porcelain body and glazing, aiming to further increase product quality and added value. The insulators are required to function adequately for decades to fully serve to supply safe and stable electricity although they are being used under harsh environments. Our mission is to offer the required functionality and quality without being failed, and to fulfill this challenging task, we use our strong technologies to eliminate the smallest risk of failure that might cause disrupted power supply.

Throughout the nearly century since its foundation, NGK

has undergone constant development, responding to emerging needs related to the changing times by constantly offering new value. We will continue working to advance technologies to strengthen support of stable power supply, thereby improving the quality of life of many people.



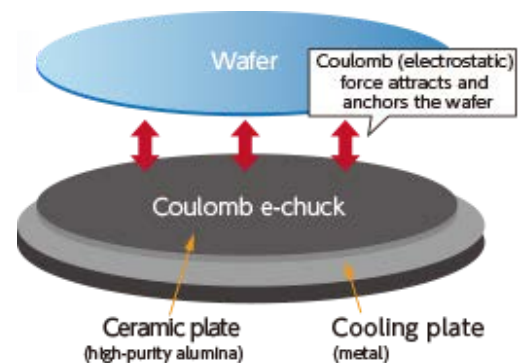
### Yuta Tanaka

Electrical Insulator Division  
Power Business Group

Engaged in materials research to increase the product quality of insulators, partially drawing on his knowledge from his university studies in crystal materials engineering. His activities include seeking to determine the optimal material selection, compounding ratio, manufacturing conditions, and performing prototype tests while gradually scaling up the quantity to commercial production levels, with the aim of creating even higher value added products.

## Next-Generation ceramics semiconductor manufacturing components

NGK creates high-function ceramic components of semiconductor manufacturing equipment by leveraging its proprietary fine ceramic technologies. These components play essential roles in manufacturing nanometer-level semiconductors. Recently, we have begun to meet rising demand from the semiconductor manufacturing industry, where integrated circuit microfabrication technology is advancing to reduce size and increase speed and functions, and manufacturers find in our products the quality suitable for the technology. We are committed to continuing to develop new products and technologies to constantly offer new products that can support next-generation semiconductor manufacturing technologies.



Coulomb e-chuck is a type of susceptor plate (a key component in semiconductor manufacturing) designed so that the Coulomb force acting on the platform attracts and anchors a wafer, a semiconductor material, to control its temperature. A built-in heater controls the temperature of the wafer flexibly, maintaining a specified level and delivering quick changes. Capable of supporting the semiconductor microfabrication process, including the most advanced processing for smartphone production.

### Foreseeing future needs to lead technological innovations

The progress of semiconductor technologies is remarkably fast. In order to effectively respond to the needs of this fast-evolving industry, one essential key is a forward-looking strategy-accurately understanding the

latest technology trends to foresee future needs, and launch development projects directed at expected trends. In the growing Internet of Things (IoT) area, for example, the latest high-demand technologies relate to microfabrication and capacity expansion of integrated circuits. This trend requires finer control of processing conditions, such as wafer temperature and plasma distribution. To satisfy these ever-advancing industry requirements, we need to continue enhancing product performance and functions. To this end, we are organizing cross-divisional efforts, bringing together capabilities in development, technology, manufacturing, sales, quality assurance and others, to expedite a range of processes for new product projects from development to commercial production, thereby being able to offer forward-looking products, maintaining a lead over our competitors. We will continue exploring the potential of ceramics in pursuit of further technological innovations, with a focus on the material's strong corrosion-resistance and durability.

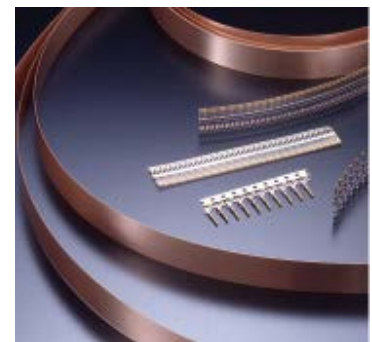


**Yuji Akatsuka**  
High Performance  
Ceramics Division  
Electronics Business Group

Engaged as sales engineer at a group company in the U.S. for six years. Returned to Japan last year and assigned to work on the development and design of e-chuck, targeting global markets to expand market share.

## Japan's first manufacturer of beryllium copper products

NGK had already started to develop and sell products contributing to environmental conservation before pollution and environmental devastation were first widely recognized as a social issue in Japan. The Company has continued pursuing this line of business, wishing to help solve environmental problems in many parts of the world. One of the key items involved in our environmental business is beryllium copper (copper beryllium) alloy. It is a copper alloy with a beryllium content below 10 percent and having a number of useful characteristics, including electrical and thermal conductivity, the major properties of copper, as well as the high-level of strength, elasticity, fatigue and heat resistance characteristic of special copper alloy. In 1958, NGK became the first Japanese company to manufacture beryllium copper products, and since then, employing a combination of materials and processing technologies, the Company has developed and offered a wide variety of products based on this material.



Beryllium copper is utilized as material for the strongest conductive metal springs. With high reliability, long-life, and electrical conductivity, beryllium copper springs are adopted widely for parts in various equipment, such as connectors and terminals for electronic devices and automobiles, relays and switches.

## Listening to customer needs to help environmental contribution efforts

NGK has built unparalleled, extensive sales networks in China across automobile, home electronics, industrial equipment and other markets, by visiting major trading houses and local parts manufacturers and metal stamping companies throughout the large country to forge relationships of trust. In China, facing serious environmental problems, most notably PM 2.5-related air pollution, the introduction of clean vehicles, such as



electric vehicles (EVs) and plug-in hybrid vehicles (PHVs), is urgently called for as a remedy. Strong and electrical conductive beryllium copper can serve this purpose as the ideal material for the large current capacity connectors used in EVs and PHVs. We utilize our technology capabilities to assist our customer manufacturers to facilitate product development for accelerated market introduction. We will continue developing business in the industrial market of China, which is often dubbed "the world's factory," by frequently visiting local customers to grasp their real needs, and help improvement of product quality and environmental efforts, thereby contributing to creating a cleaner environment in the country.



**Yumika Kondo**

NGK INSULATORS (CHINA)  
INVESTMENT CO., LTD.  
Electronics Business Group

Engaged in overseas marketing for beryllium copper products. Based in China, NGK's most important market, to work on increasing local market share, through effectively employing the Japanese style of customer-oriented service and marketing.

## Corporate Governance

NGK is conducting measures to expand and strengthen its corporate governance to increase corporate value with the intent of becoming a company trusted by all its stakeholders.

 [Corporate Governance Report \(PDF: 417KB\)](#)

## Basic Policies

---

To ensure appropriate operations and transparent management, NGK has set its sights on establishing and maintaining an organization capable of swiftly responding to changes in the business environment, and a fair and open management system emphasizing the interests of shareholders. These components make up NGK's basic approach to corporate governance. To put this approach into practice, NGK has chosen a corporate governance structure anchored by a Audit & Supervisory Board. In addition to the General Meeting of Shareholders, the Board of Directors and the Audit & Supervisory Board, NGK corporate governance includes the Executive Committee and several other committees established to assist the president in management decision-making. These bodies help to enhance governance efficacy by deliberating and reviewing important matters.

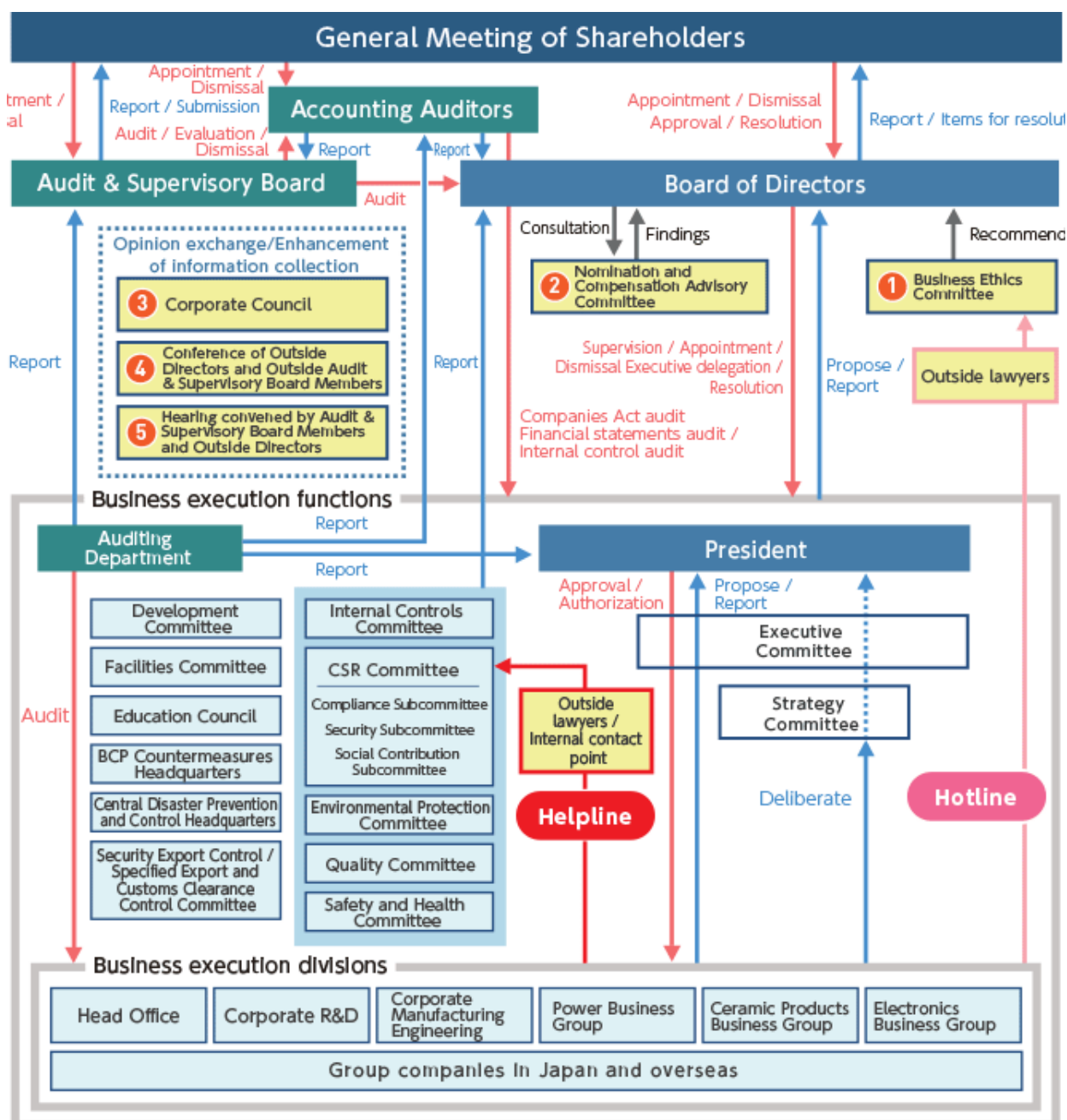
In recognition of needs to execute swift and optimal decision making and respond promptly to changes in the operating environment, NGK introduced executive officer system, thus separating the management decision-making and supervision functions from business execution functions, and clearly defining the responsibilities of both.

Furthermore, to strengthen the Board of Directors supervision and monitoring functions, major committees among those tasked with mitigating the various risks surrounding NGK are obligated to report to the Board of Directors, and NGK has established new committee scheme, [including a Nomination and Compensation Advisory Committee, a Corporate Council, a Conference of Outside Directors and Outside Auditors & Supervisory Board Members and a Business Ethics Committee, etc.](#) to ensure the effect of Corporate Governance Code. NGK will keep on developing to realize a more comprehensive [corporate governance scheme](#).

# Corporate Governance

## Corporate Governance Structure Scheme

To ensure lawful business activities and management transparency, respond quickly to changes in the management environment, and create and maintain a fair management system from the shareholders perspective, NGK has created the following systems:



### Comment from Outside Director

Outside Director  
 Business Ethics Committee chair  
**Hiroyuki Kamano**

## Promoting education and supervision proactively

In December 2015, NGK reformed its corporate governance system, and is now operating the system effectively. To ensure that each employee in and outside Japan can develop a high level of awareness concerning compliance, we are actively providing education and awareness-raising programs in tandem with monitoring and supervision. We aspire to educate our employees to fully understand compliance and practice it at their own initiative, while paying due consideration to differences in the legal/regulatory systems and cultures of their respective countries and regions. I believe that this should help NGK to become widely appreciated by all its stakeholders.



## Business Execution Status

Regarding business execution based on the Board of Directors resolutions, the president presides over company business as the chief executive of business execution. The Executive Committee holds discussions to assist the president's decision-making with respect to important matters regarding business execution.

In addition, the Board of Directors is asked for proactive recommendations for management by external directors pertaining to management-related issues at Corporate Council, which facilitates an exchange of opinions between external directors and representative directors.

## Monitoring Status

In line with audit policies and plans defined by the Audit & Supervisory Board, Audit & Supervisory Board members make an effort to collect information through Hearing convened by Audit & Supervisory Board Members and Outside Directors, etc., in an attempt to communicate with directors and employees while monitoring director business execution by attending Board of Directors and Executive Committee meetings. At Audit & Supervisory Board meetings attended by outside Audit & Supervisory Board members, the Members exchange information with accounting auditors and Internal Auditing Department in an attempt to facilitate mutual cooperation.

## Election of Board Members, Executive Officers and Audit & Supervisory Board Members

Director candidates are determined by Board of Directors resolution and appointed by resolution at the General Meeting of Shareholders. Audit & Supervisory Board member candidates are determined by Board of Directors resolution with approval from the Audit & Supervisory Board and appointed by resolution at the General Meeting of Shareholders.

Moreover, with respect to the nomination of candidates, the Nomination and Compensation Advisory Committee, consisting of a majority of external directors, deliberates matters related to the nomination, the results of which are reported to Board of Directors in an effort to ensure its fairness and improve transparency. Also, to further clarify the directors' mission and responsibilities, the term of office for directors is one year.

## Director Training

Newly appointed representative directors, directors and executive officers are provided with training conducted by attorneys practicing in the United States and Japan related to the Companies Act and the Competition Law, conducted at the time of their appointment. In addition, each year lectures are held, targeting all directors and executive officers, related to compliance with the Competition Law, focused on the expanding scope of Competition Law enforcement and practical business risks.

In July 2015, a hearing was conducted presenting the opinions of outside experts regarding societal demands related to corporate governance.

In addition, with regard to external directors, we provide regular opportunities for the provision of individual explanations by personnel from relevant business divisions concerning mainly proposals presented to Board of Directors meeting as well as information and exchange of opinions pertaining to business environment and related issues.

▶ Go to learn about [our policies on the training](#)



Board of Directors	The Board of Directors, comprising 12 members, deliberates matters prescribed in the Companies Act, as well as other important management issues, providing oversight for the execution of duties by directors. To clarify the division of roles between execution and supervision of management, Board of Directors meetings are led by a Chairman, who, in principle, does not execute business. The Board of Directors includes two external directors to create a system enabling management monitoring based on professional knowledge and decision-making from a wider perspective.
Audit & Supervisory Board	The Audit & Supervisory Board consists of four members, each of whom attends Board of Directors meetings and conducts other activities to audit the execution of duties by directors. The Audit & Supervisory Board includes two Outside Audit & Supervisory board members, each possessing significant business experience. One of our standing outside audit & supervisory board members has many years of operational experience in financial institutions possessing a considerable degree of financial and accounting knowledge enabling him to conduct monitoring effectively.
Executive Committee	Comprising the president, Directors, Audit & Supervisory Board members and Executive Officers and division heads designated by the president, this body deliberates the matters necessary to help the president with decision-making. The current Executive Committee comprises 15 members (14 men and one woman).
CSR Committee	This body assists the president and CSR Committee Chair with decision-making by deliberating matters necessary for the observance of laws, regulations and corporate ethics.  Observance of laws, Regulations and Corporate Ethics  <ol style="list-style-type: none"> <li>1. Determination and revision or abolition of basic policies related to the observance of laws, regulations and corporate ethics, including the NGK Group Guidelines for Corporate Behavior</li> <li>2. Determination of systems, structures and strict observance of important activities pertaining to laws, regulations and corporate ethics company-wide</li> <li>3. Determination, revision or abolition of risk management structures pertaining to laws, regulations and corporate ethics</li> </ol> Additionally, responses to items determined to pose a significant threat to the company among other matters, incidents or accidents related to laws, regulations or corporate ethics, as well as consideration and evaluation of the projects promoted by each subcommittee and other CSR-related items identified as important by the CSR Committee Chair, are also deliberated.
Environmental Protection Committee	This body formulates and deliberates the planning of matters necessary to help the president and the Environmental Protection Committee chairman with decision-making regarding the realization of our Core Policy on the Environment to promote business activities in harmony with the environment.
Quality Committee	Aiming to increase customer satisfaction and trust by realizing even higher-quality products and services, this body deliberates the matters necessary to help the president and the Quality Committee chairman with decision-making regarding the following items.  <ol style="list-style-type: none"> <li>1. Determination and revision or abolition of Quality Policy and Objectives</li> <li>2. Items pertaining to the prevention of serious quality defects in the market and technological responses after occurrence</li> <li>3. Other quality-related matters determined to be important</li> </ol>
Safety and Health Committee	This body attempts to promote, through lower committees, the deliberation and determination of company-wide basic policies regarding safety and health and the establishment of basic policies and priority targets.
Internal Controls Committee	This body deliberates matters necessary to help the president and Internal Controls Committee chairman with decision-making regarding internal controls system assessment and reporting related to financial reporting based on the Financial Instruments and Exchange

	<p>Act.</p> <ol style="list-style-type: none"> <li>1. Determines the scope of reporting for each fiscal year, assessment and reporting schedules, standards to assess internal controls and other basic matters</li> <li>2. Summarize internal controls assessment and draft internal controls report.</li> </ol>
Development Committee	This body deliberates items necessary to assist the decision making of the president and Development Committee chairman regarding policies, evaluations, budgets, major individual planning and commercialization projects related to development.
Facilities Committee	This body deliberates items necessary to assist the decision making of the president and Facilities Committee chairman regarding policies, evaluations, budgets and performance, and major individual planning related to capital expenditure and information systems.
Education Council	This body deliberates items necessary to assist the president's decision making regarding policies, systems, structures and major promotion program related to human resource development.
BCP Countermeasures Headquarters	Aimed at ensuring business continuity in times of emergency, this body executes the operation and maintenance of business continuity planning (BCP) in normal times as well as gives instructions of and support restoration systems, and prioritizes restoration orders when BCP is in effect.
Central Disaster Prevention and Control Headquarters	This body executes requisite duties under commands from the Head and deliberates items necessary to assist the decision making of the president and Head of this body regarding items related to earthquakes, storm and flood damage, fires and explosions that threaten or significantly impact the company.
Security Export Control/ Specified Export and Customs Clearance Control Committee	This body deliberates and determines items necessary for guidance for subsidiaries and affiliates, legal compliance and the establishment of other internal systems with respect to security export controls, specified export declaration systems and the management of customs clearance operations.

# Corporate Governance

## Committees on Corporate Governance

---

NGK INSULATORS, LTD., has further strengthened and enhanced its corporate governance structures by establishing committees to bolster the supervision and monitoring functions of the Board of Directors.

### Business Ethics Committee

Comprised of outside directors and one internal director responsible for compliance, this committee monitors for fraud or illegalities involving senior management, as well as for compliance with the Competition Law and the Foreign Corrupt Practices Act, and reports directly to the Board of Directors. As a mechanism to prevent fraud or legal violations, in addition to the Helpline, [an internal reporting system \(Hotline\)](#) linked directly to outside directors was established with the aim of strengthening NGK's compliance structure.

### Corporate Council

The meeting enables outside directors to exchange opinions with representative directors etc when proactive recommendations for senior management are sought from outside directors regarding various management-related issues.

### Nomination and Compensation Advisory Committee

Comprising a majority of outside directors, this committee attempts to ensure fairness and increase transparency related to determining the appointment and remuneration of board members and officers by deliberating matters related to the appointment and remuneration of board members and executive officers, Chief Executive Officer succession planning and other matters, the results of which are reported to the Board of Directors.

### Conference of Outside Directors and Outside Audit & Supervisory Board Members

Comprised exclusively of outside directors, these meetings facilitate an exchange of opinions regarding NGK management issues, with the intent of proactively contributing to discussions at Board of Director meetings.

### Hearing convened by Audit & Supervisory Board Members and Outside Directors

Comprised of Audit & Supervisory Board members and outside directors, these hearings gather information from internal sources regarding the business environment and issues surrounding NGK.

#### Seminar held on new corporate governance scheme

The Legal Department of NGK convened an Informative Meeting for Laws and Compliance on January 19, 2016 to apprise key personnel of NGK's new corporate governance system. Attended by some 400 key personnel, the seminar detailed NGK's new corporate governance scheme established in October 2015, along with basic policy on corporate governance, in an effort to comply with Japan's Corporate Governance Code that came into effect in June 2015.



# Corporate Governance

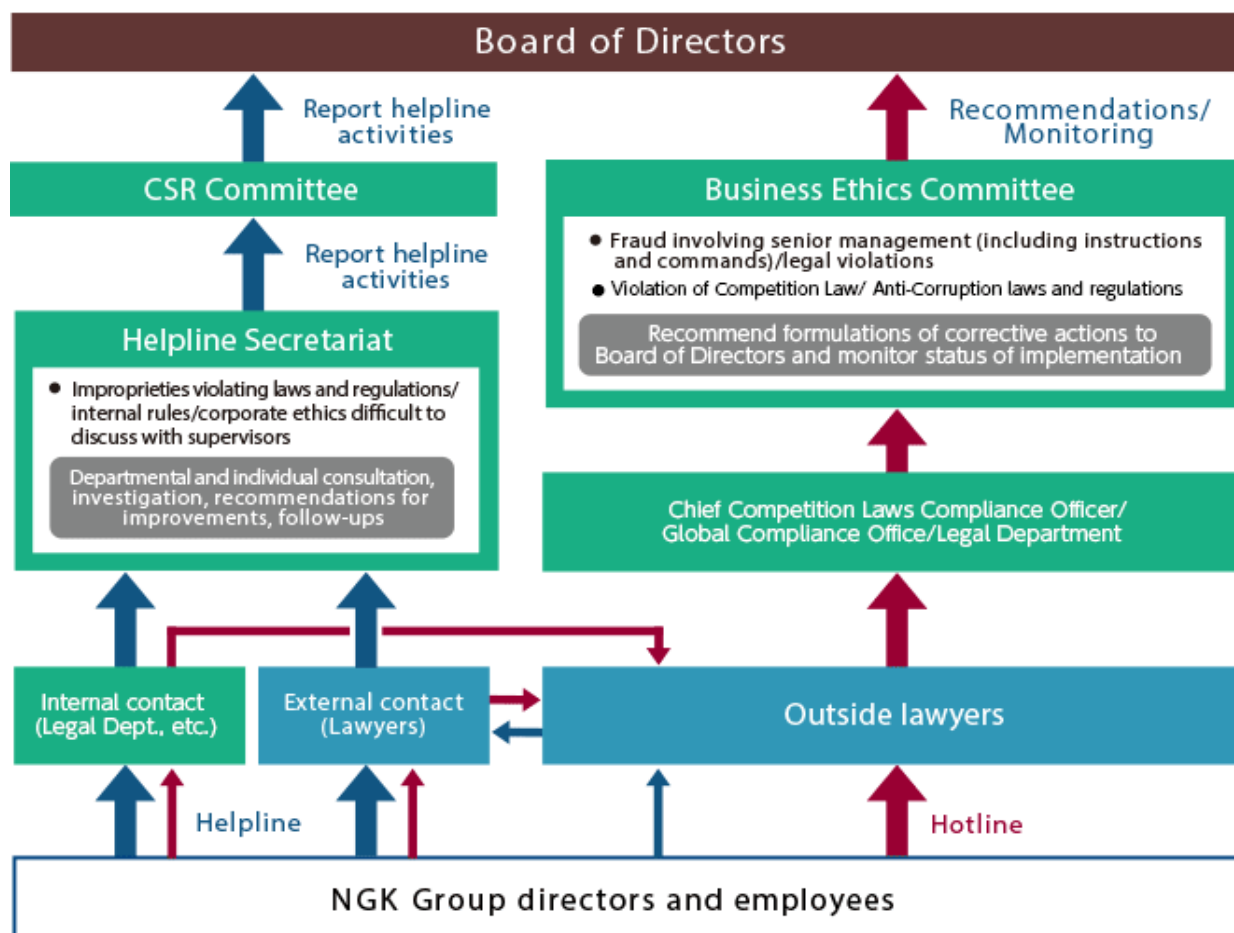
## Whistle-blowing System

### Helpline Establishment

We have established a helpline to receive inquiries and reports from employees aimed at curtailing and preventing activities contrary to the spirit of the NGK Group Guidelines for Corporate Behavior and to facilitate the quick resolution when issues occur. Each overseas Group company has its own helpline. Those seeking advice or reporting issues are promised protection under corporate regulations.

### Hotline Establishment

We have established a hotline as an internal control system for responding to fraud and legal infractions committed by senior management, including Competition Law and Anti-Corruption laws and regulations violations. The hotline is operated by outside lawyers, with issues handled by the Business Ethics Committee, composed mainly of external directors, who report directly to the Board of Directors.





## Corporate Governance

### External Directors and Outside Audit & Supervisory Board Members

NGK appoints individuals who possess outstanding achievements and a wealth of experience from a variety of industries to monitor director business execution in an attempt to realize stronger, more efficient management. Additionally, in terms of external director independence, overall determinations are made with consideration for the Tokyo Stock Exchange "Guidelines for Listing" to avoid conflicts of interest with general shareholders. Our two external directors are professionals able to make objective, rational decisions, while our two Outside Audit & Supervisory Board Members provide opinions mainly from social and financial perspectives.

#### Activities of Outside Directors and Outside Audit & Supervisory Board Members

Name		Attendance at Board of Director meetings	Main activities
External Directors	Hiroyuki Kamano	Attended all 14 Board of Directors meetings	Mr. Kamano offers advice regarding compliance structure enhancement and management approaches for management planning utilizing his substantial experience and specialization as an attorney.
	Toshio Nakamura	Attended all 14 Board of Directors meetings	Mr. Nakamura offers opinions that clarify the foundation of business decisions utilizing his wide-ranging experience and achievements in economic and industrial administration.

Name		Attendance at Board of Director meetings	Attendance at Audit & Supervisory Board meetings	Main activities
Outside Audit & Supervisory Board Members	Setsuo Tanaka	Attended all 14 Board of Directors meetings	Attended all 14 Board of Corporate Auditor meetings	Mr. Tanaka offers advice pertaining to enhancing risk management systems utilizing his experience and achievements in police administration.
	Ichiro Terato	Attended 13 of 14 Board of Directors meetings	Attended all 14 Board of Corporate Auditor meetings	Mr. Terato provides opinions on general management utilizing experience and wide-ranging knowledge gained in management positions with The Bank of Tokyo-Mitsubishi UFJ and the Nikon Corporation.

#### Current Independent Directors and Reasons for Appointment

Name	Reasons for Appointment
Toshio Nakamura, Outside Director	Mr. Nakamura is expected to provide recommendations on all NGK management issues utilizing substantial experience and wide-ranging knowledge accumulated throughout his career, during which he served as Ministry of International Trade and Industry (now Ministry of Economy, Trade and Industry) Trade Director and Small and Medium Enterprise Agency Secretary. At present, Mr. Nakamura is an Executive Director at the Tokyo Chamber of Commerce and Industry, and has for many years served in key positions that contributed to the promotion of commerce and industry.
Ichiro Terato, Outside Audit & Supervisory Board Members	Mr. Terato is expected to provide recommendations on all NGK management issues utilizing his wide-ranging knowledge and vast experience as a corporate management professional accumulated throughout his long career as corporate manager, during which he served as a Senior Managing Executive Officer at The Bank of Tokyo-Mitsubishi, Ltd. (now The Bank of Tokyo-Mitsubishi UFJ) and as a Director and Executive Vice President at the Nikon Corporation.

## Determination and Details of Policies Related to the Calculation Method for Aggregate Director Remuneration

In April 2005, the Board of Directors decided to revise the director remuneration system by introducing performance-based bonuses and stock-based compensation stock options to clarify directors' responsibility for achievement and enhance fairness and transparency with the intent of stimulating motivation aimed at realizing corporate philosophy and management policies. Based on this decision, and within the framework subsequently approved at the General Meeting of Shareholders, director remuneration is determined in accordance with the following policies.

Moreover, regarding director and executive officer remuneration, the Nomination and Compensation Advisory Committee, consisting of a majority of external directors, deliberate it, and the results of which are reported to Board of Directors in an effort to ensure fairness and improve transparency of their remuneration decisions.

▶ [Board policies and procedures in determining remuneration of the senior management and directors](#)

### Remuneration Determination Policies

Director Remuneration (Excluding external directors)	Director remuneration consists of basic remuneration as fixed annual remuneration commensurate with management positions, a performance-based bonus and stock-related remuneration. External director and audit & supervisory board member remuneration consists solely of basic remuneration.
Performance-based bonuses (An annual bonus)	Bonus system based on annual performance of each director (excluding external directors) aimed at increasing connection to earnings and clarifying directors' responsibility for achievement. Amount varies based on consolidated operating income, net sales and ROE performance.
Stock-related remuneration (Long-term incentive)	To further increase sensitivity toward NGK stock prices and consolidated earnings, and to share not only the benefits when stock prices rise, but also the risks facing shareholders when stock prices fall, as well as increase motivation and morale with respect to increasing the stock price and consolidated earnings through appropriate management, NGK grants stock-based compensation stock options at an exercise price of ¥1 per share to directors (excluding external directors) in an amount determined according to the relevant position. In principle, stock options may be executed within a period of five years beginning no earlier than one year after resignation.
Amount of audit & supervisory board member remuneration	Determined through discussions with audit & supervisory board members

### Remuneration of Directors and Audit & Supervisory Board members

Director category	Total remuneration (Millions of yen)	Total remuneration by type (Millions of yen)				Applicable directors (people)
		Basic remuneration	Stock options	Bonus	Retirement benefits	
Directors (excluding External Directors)	618	354	87	176	-	12
Audit & Supervisory Board Members (Excluding Outside Audit & Supervisory Board Members)	59	59	-	-	-	3
External Directors and Outside Audit & Supervisory Board Members	46	46	-	-	-	4

### Directors Receiving Total Remuneration of ¥100 Million or More

Name	Director category	Company category	Remuneration by type (Million yen)				Total remuneration (Million yen)
			Basic remuneration	Stock option	Bonus	Retirement benefits	
Taku Oshima	Director	Filing company	59	16	30	-	106

# Corporate Governance

## Approaches to Observe the Corporate Governance Code

---

In accordance with the basic principles of the Corporate Governance Code mandated by the Tokyo Stock Exchange, NGK's implementation status is as follows:

### Disclosure based on each principle of the Corporate Governance Code

▶ [Principle 1-4. Policy regarding cross-shareholdings and standards with respect to the exercising of voting rights as to cross-shareholdings](#)

NGK maintains ongoing policies to hold listed shares that contribute to long-term business development aiming mainly at maintaining and strengthening business relationships.

Shares of the Morimura Group, established by a common founder, are held with the intention of enhancing Group brand value. This will contribute both to initiatives aimed at mutual improvements in management quality and industrial developments focused on ceramics.

The significance of cross-shareholdings, as well as share prices, dividend yields, ratings and other details, are regularly confirmed at Board of Director meetings to determine whether to maintain these holdings. Concrete explanations are provided regarding the aim and rationale of holdings in the Securities Report.

Regarding the exercise of voting rights pertaining to cross-shareholdings, rights are exercised on the basis of whether management places importance on improving corporate value in the held company and increasing shareholder profits from both a mid- to long-term perspective as well as the point of view of whether the agenda item do not impair shareholder profits.

---

▶ [Principle 1-7. Procedural framework regarding related party transactions](#)

Regarding transactions with directors and executive officers, the NGK Board of Directors approves items in accordance with procedures related to conflict-of-interest transactions stipulated by the laws and regulations. At Board of Directors meetings, which include independent outside directors, discussions and determinations are conducted from the perspective of whether transaction details and terms are appropriate, and whether or not there will be any adverse impacts on the company. The main details of transactions are disclosed in business reports and the Securities Report. Transactions with audit & supervisory board members and major shareholders, which do not fall into conflict-of-interest transactions by law, are handled as matters requiring board approval and disclosed in the same manner as above.

---

▶ [Principle 3-1. Full Disclosure](#)

**1. Company objectives (e.g., business principles.), business strategies and business plans;**

NGK's corporate philosophy states "NGK products and technologies must create new value and contribute to the quality of life." Business strategies and plans are disclosed in our Consolidated Financial Results as well as on our website.

**2. Basic views and guidelines on corporate governance**

Please see here for details regarding NGK's basic views on corporate governance. Furthermore, NGK's basic guidelines on corporate governance are as follows:

**(1) Securing the Rights and Equal Treatment of Shareholders**



NGK observes suitable procedures related to the execution of rights by shareholders, and provides information sufficient in quality and amount to explain to shareholders through the timely and appropriate disclosure to fully secure shareholder rights, including voting rights at the general meeting of shareholders.

## **(2) Appropriate cooperation with stakeholders other than shareholders**

NGK attempts to create mid- to long-term corporate value and realize sustainable growth through the proactive promotion of appropriate cooperation with a variety of stakeholders, including employees, customers, business partners, creditors and local communities based on our corporate philosophy.

## **(3) Ensuring appropriate information disclosure and transparency**

Aware that the appropriate disclosure of information ensures corporate management transparency, as well as contributes to improved corporate governance, NGK proactively disseminates information pertaining not only to financial information, such as the company's financial standing, operating results, but also non-financial information, such as business strategies and business issues, risk, corporate governance.

## **(4) Responsibilities of the Board**

Based on an awareness that the main duties of the Board of Directors is to indicate basic management policies and supervise and monitor business execution by directors, NGK makes maximum use of various committees involved in business execution and advisory committee members comprised mainly of outside directors to ensure directors are sufficiently meeting their responsibilities.

## **(5) Dialogue with shareholders**

Based on the recognition that constructive dialogues with shareholders are important to realize sustainable growth and increase of corporate value over the mid- to long-term, NGK makes best effort to provide effective feedback to management related to the opinions and concerns of shareholders through sincere responses to shareholder inquiries in conjunction with the relevant departments as necessary.

### **3. Board Policies and procedures in determining of the remuneration of the senior management and directors**

#### **Remuneration policy**

With the aim of providing motivation to realize NGK's corporate philosophy and management policies, as well as heighten the transparency, fairness and clarity of director responsibilities, director (excluding outside directors) and executive officer remuneration is comprised of three components

1. a level-based, fixed annual salary as basic remuneration,
2. an annual performance-based bonus to heighten the connection to company performance and further clarify the fulfillment of responsibilities by each director, and
3. stock-related remuneration to boost motivation and morale aimed at enhancing corporate value over the mid- to long-term through proper company management,

by sharing the shareholders' risk of declines as well as the merits of stock price increases and increasing sensitivity to NGK share prices. In terms of the ratio of fixed annual remuneration to variable remuneration, from the perspective of emphasis on maintaining and improving performance over the mid to long-term, NGK sets the performance-based variable remuneration at an appropriate level.

Outside directors and audit & supervisory board members receive only basic remuneration based on their supervision of management from an independent perspective and role as monitors; no performance or share price-based remuneration is provided. In terms of amounts, resolutions at the regular general shareholders meeting held in June 2007, excluding stock-related remuneration, namely stock options, capped annual compensation for directors at 800 million yen and outside director compensation was capped at 30 million yen per year. Similarly, resolutions for director (excluding outside director) stock options were limited to 200 million yen or less per year, while audit & supervisory board members remuneration, etc., was capped at 100 million yen per year.

#### **Remuneration procedure**

Regarding directors' remuneration, the Nomination and Compensation Advisory Committee, which consists of majority of outside directors to ensure fairness and increase the transparency of the process, deliberates on remuneration policy, the overall limit of director and executive officer remuneration, as well as the amount of remuneration received by individual directors and executive officers. The outcomes of the deliberations are then reported to the Board of Directors. Based on the Committee's advice, the Board then decides on the remuneration for the directors and executive officers. Upon the

board resolution, annual remuneration, including bonuses, is determined in consultation with representative directors. In terms of specific procedures, the basic remuneration is determined by considering corporate performance and the level of remuneration within the similar industry, with the amount set according to position or rank. Performance-based bonuses, which are annual bonuses, are determined based on management indicators and increases/decreases in performance, including annual consolidated operating margins, consolidated sales and consolidated ROE. In terms of stock-related remuneration, as a long-term incentive, the allotment of stock remuneration-type stock options with a strike price of 1 yen per share are determined in accordance with position or rank. In principle, conditions determining the exercise of stock options stipulate that stock options can be exercised starting one year after a director's resignation for no longer than a period of five years. The amount of remuneration for each audit & supervisory board members is determined by discussion by audit & supervisory board members.

#### **4. Borad Policies and procedures in the appointment of the senior management and the nomination of directors and audit and supervisory board memeber candidates (Policies)**

##### **Nomination policy**

NGK is a manufacturer in the business of providing ceramics and other materials and related products to a variety of industries in a wide range of areas in and outside Japan. The senior management directors and executive officers responsible for business execution, are required to engage in business judgments and decision-making based on individual knowledge pertaining to each NGK business area, production technologies and research and development, as well as financial, legal and labor-related knowledge. Similarly, standing audit & supervisory board members are also required to conduct monitoring based on a specialized knowledge of finance, etc., and knowledge gained through individual business experience. Accordingly, candidate nominations place importance on practical experience with production technologies, research and development, sales and planning, etc., as well as leadership and financial, legal and labor-related knowledge. Outside director and outside audit & supervisory board member candidates are nominated for their high degree of specialization in law, corporate finance and other areas, as well as knowledge related to international affairs, and social and economic trends. In accordance with NGK's Articles of Incorporation, the total number of directors is limited to 15 or less.

The Nomination and Compensation Advisory Committee, consisting of a majority of outside director, deliberates on these policies and the results of deliberation are reported to the Board of Directors.

##### **Nomination procedure**

Regarding the nominations of directors and audit & supervisory board members, each candidate's suitability is assessed by all representative directors. With regard to audit & supervisory board member candidates, the approval of Audit & Supervisory Board is obtained to ensure independence. Moreover, the Nomination and Compensation Advisory Committee, established to ensure fairness and improve transparency in the nomination process, screens each candidate, and the outcome of the deliberations is then reported to the Board of Directors. Based on the Committee's advice, the Board of Directors approves the nomination of candidates and puts the matter to a resolution at a General Meeting of Shareholders.

#### **5. Explanations regarding the individual nomination and appointment when appointing director and audit & supervisory board member candidates and the senior management**

Concerning reasons for the appointment of the directors and executive officers elected at the 150th Annual Shareholders' Meeting, please refer to "Convocation Notice of the 150th Annual Shareholders' Meeting," posted on our website (<http://www.ngk.co.jp/english/ir/>). :

The reasons for the appointment of Audit & Supervisory Board Members (excluding Outside members) whose term of office had not expired are as follows:

**Takeyuki Mizuno** : With business management experience focused on manufacturing, Mr. Mizuno was involved in the establishment of the Ceramics Division for Semiconductor Manufacturing Equipment after being engaged in technological development in the Ceramic Product Business Group. He also served as Head of the Manufacturing Technologies Division and Chair of the Quality Committee and the Environmental Committee. He was appointed as a Audit & Supervisory Board Member in consideration of the knowledge

gained through these positions as well as his ability to monitor NGK business management.

**Ken Sugiyama** : After joining NGK, Mr. Sugiyama spent many years in the Finance Department, where he served as General Manager. In addition to involvement in the business management of an overseas subsidiary, he also has experience as head of the Auditing Department. He was appointed as an Audit & Supervisory Board Member in consideration of his wealth of knowledge and experience related to financial accounting and business auditing.

---

▶ **Supplementary principle 4-1 (1). Summary of scope of senior management delegation**

The NGK Board of Directors deliberates and determines matters prescribed to be resolved legally by the Board of Directors, as well as the importance and disposition of items corresponding to these matters as items appropriate for resolution at Board of Director meetings. The Board of Directors discusses management planning formulation and management strategies required to establish strategic direction in order to realize NGK's corporate philosophy, which is delegated to NGK senior managements who determine business-related matters based on this policy. Items deliberated and determined by the Board of Directors are explicitly defined in NGK's Articles of Incorporation and the regulations governing the Board of Directors. These mainly pertain to company-wide overall budgeting, corporate dissolution, mergers, alliances and other strategic planning, share handling regulations, general meeting of shareholder convocation notices, the appointment and dismissal of representative directors, approval of financial statements and business reports, the disposal and acquisition of important financial assets (long-term holdings of marketable securities, property, equipment, etc.), the appointment and dismissal of key employees and the establishment or restructuring of key organizational structures.

NGK introduced an executive officer system in an attempt to achieve prompt decision-making by separating the management decision-making and business execution functions. For matters other than the above, senior management makes decision based on a separately prescribed administrative authority chart.

---

▶ **Principle 4-9. Criteria for determining independence of independent outside director**

In addition to the treatment of outside director under the Companies Act, as well as the requirements for independent directors as established by the Tokyo Stock Exchange, NGK assumes that directors meeting any of the following conditions are not able to be considered as independent and outside director (hereinafter, "independent outside director"). However, even if any of these conditions apply to a person, NGK will consider the person to be appropriate as an independent outside director in light of their character or insights, sufficiently meeting the requirements for an outside director under the Companies Act and an independent director as defined by the Tokyo Stock Exchange. These persons are able to become independent outside director on the condition that a public explanation is provided as to the reasons they are thought to be appropriate as an NGK independent outside director.

Within this determination criterion, managing director means company managing directors, executive officers and corporate officers as well as managers and other employees, and NGK Group means NGK and its subsidiaries and affiliated companies.

1. Major shareholders, who at present possess 10% or more of ownership voting rights in NGK. If major shareholders are corporations, the managing directors of such corporations employed during the three most recent fiscal years.
2. Current managing directors of suppliers with whom transactions account for 2% or more of consolidated net sales of either the supplier or NGK Group in any of the last three fiscal years, including the most recent.
3. Managing directors employed during the three most recent fiscal years at financial institutions or other corporations that are major creditors upon which NGK depends and for which there are no alternatives and are indispensable in terms of NGK Group fund procurement.

4. Current directors or officers employed during the three most recent fiscal years at organizations receiving annual contributions or assistance from NGK Group in amounts exceeding 10 million yen or 30% of average annual expenses, whichever is larger.
5. Certified public accountants, tax accountants or members of auditing firms or tax accountancies employed by NGK Group as accounting auditors or accounting advisors during the three most recent fiscal years.
6. Attorneys, certified public accountants, tax accountants or consultants other than those mentioned above who during any of the three most recent fiscal years including last fiscal year has obtained annual profit of 10 million yen or more in cash or other financial assets from NGK Group apart from officer remuneration, or who are members of law offices, auditing firms, tax accountancies, consultancies or organizations providing advice other than those mentioned above who during any of the three most recent fiscal years including last fiscal year have received 2% or more of consolidated total sales payments received from NGK Group.
7. Managing directors during the last three fiscal years including the most recent fiscal year of companies for which NGK is a major shareholder at present.
8. Relatives, including the spouse, parents, relative in the second degree or offspring of anyone indicated in 1-7 above.

---

▶ **[Supplementary principle 4-11 \(1\). View on the balance between knowledge, experience and skills of the board as a whole, and on diversity and board size](#)**

NGK's Board of Directors is comprised of individuals who possess practical experience and leadership in each of our business areas, including manufacturing technologies, research and development, sales and planning, as well as financial, legal and labor-related knowledge. The Board also includes individuals from outside the company who are highly independent and possess a high degree of specialization in law and corporate finance as well as knowledge pertaining to international affairs, and social and economic trends. In accordance with the Articles of Incorporation, the number of directors is limited to 15 people. NGK recognizes that the promotion of women and foreigners is an important issue to be examined from the perspective of being necessary for the expansion of business going forward.

---

▶ **[Supplementary principle 4-11 \(2\). Director and audit & supervisory board member concurrent appointment as directors at other listed companies](#)**

Every year, NGK discloses the status of concurrent appointment of the Company's directors and audit & supervisory board members at other companies in general meeting of shareholder convocation notices, Securities Reports and reports pertaining to corporate governance.

---

▶ **[Supplementary principle 4-11 \(3\). Summary of analysis and assessment results pertaining to the efficacy of the Board of Directors](#)**

It is assumed that NGK's Board of Directors functions effectively, engaging in lively discussions and conducting proceedings appropriately in accordance with laws and regulations, the Articles of Incorporation, and internal rules. The Board of Directors conducted a survey of directors and auditors on the effectiveness of the Board for the fiscal year ended March 2016. The survey result was analyzed and assessed by a third-party organization, and findings were reported to the Board of Directors. According to the assessment, there are no issues with regard to the effective functioning of NGK's Board of Directors. The Board deliberates important matters sufficiently as a conference body with transparency and an optimal balance. The assessment, however, also points out that discussions at the Board should focus more on strategically important, long-term issues.

Based on this assessment result, NGK continues to secure and reinforce the effectiveness of the functioning of the Board.



▶ **Supplementary principle 4-14 (2). Policies on the training of directors and audit & supervisory board members**

In light of the directors and audit & supervisory board members' obligation for good manager's duty of cares, NGK has adopted the following training polices aimed at providing opportunities for learning that will enable these individuals to fulfill their responsibilities as management professionals and executive supervisors.

1. Corporate governance and compliance-related training involving the Companies Act, the Financial Instruments and Exchange Act and the Competition Law for internal directors.
2. With regard to outside director, we provide individual explanations concerning mainly Board of Director meeting proposals facilitated by personnel from relevant business divisions, as well as regular opportunities for the provision of information and exchange of opinions pertaining to business environment and related issues.

---

▶ **Principle 5-1. Policies related to the establishment of systems and initiatives aimed at promoting constructive dialogue with shareholders**

NGK is engaged in the maximization of corporate value through two-way communication with shareholders and investors, including efforts to provide accurate and timely explanations regarding management conditions and polices. NGK makes best effort to promote constructive dialogue through sincere responses to requests for interviews with shareholders and investors, questions raised at general shareholder meetings and inquiries sent through NGK's website, which are facilitated under the guidance of the directors in charge of the Finance and General Affairs departments, which work in close cooperation with the Corporate Strategy Office, the Public Relations Office and Legal Department when necessary. NGK also places importance on direct dialogue with institutional investors, conducting biannual earnings presentations and overseas IR road shows led by senior managements.

The details of these dialogues are regularly reported to the Board of Directors. This management feedback is used to improve management efficiency and transparency.

Shareholder and investor dialogues are conducted with the objective of increasing corporate value and capital efficiency, as well as promoting sustainable growth. The disclosure of material information not already publicly available within the context of these dialogues constitutes damage to the equality between shareholders. In principle, NGK does not disclose unannounced material information.

---

## Reasons for not implementing each principle of the corporate governance code

▶ **Principle 4-8. Appointment of two or more independent outside director**

At present, NGK's Board of Directors includes two outside director whose appropriate role is the strengthening of corporate governance through recommendations related to overall NGK management. One of them is paid expenses related to their commission as chairperson of a separately installed independent committee, and is not registered as an independent director.

Although this outside director is not registered as an independent director, there is no relationship of special interest with NGK. The company determines that this outside director independent is sufficiently fulfilling their expected role as independent from management, providing the Board of Directors with an outside perspective based on experience and knowledge, including minority shareholders.

The other outside director is registered as an independent director, fulfilling an important role in terms of sustainable corporate growth and midf to long-term corporate value improvement by providing the Board of Directors with recommendations based on their experience and knowledge.

In light of the demand for the appointment of two or more independent outside director in the recent Corporate Governance Code, NGK will consider how this condition will be met going forward.

▶ [Click here for related information.](#)

## Corporate Governance

### Internal Control Systems

---

The Board of Directors and the executive bodies overseen by the president are responsible for establishing and operating NGK's internal control system. The Auditing Department, a specialized internal audit body, is responsible for assessing the status of business execution at each operating division. Moreover, NGK has established the Internal Controls Committee to manage its reporting system for internal controls pursuant to Japan's Financial Instruments and Exchange Act.

The NGK Group Guidelines for Corporate Behavior were formulated as a policy embodying the Group's corporate philosophy. These guidelines specify the Group's fundamental stance with respect to business activities and corporate behavior to ensure it remains a company that is beneficial to society, even in the pursuit of its economic goals. The CSR Committee, under which Compliance Subcommittee, Security Subcommittee, and Social Contribution Subcommittee are organized, is responsible for a range of activities that include formulating NGK Group Guidelines for Corporate Behavior, ensuring compliance with laws, regulations and corporate ethics is fully entrenched throughout the Group, and developing responses to incidents and accidents which it believes could significantly impact the Company. The Committee's actions are designed to maintain and improve the level of the Group's internal control system.

Please note that the "resolution for the development of systems to ensure the appropriateness of operations" was amended at a Board of Director meeting held on December 21, 2015.

# Corporate Governance

## Corporate Governance Enhancement

---

Ongoing structural enhancements aimed at strengthening corporate governance include the introduction of an executive officer system and an external director system to improve the management supervision and monitoring functions and facilitate recommendations with respect to overall management.

April 1999	Formulated Guidelines for Corporate Behavior
April 2003	Revised to NGK Group Guidelines for Corporate Behavior
June 2005	Introduced an executive officer system
	Introduced a stock option
	Introduced an external director system
July 2005	Established the CSR Committee
April 2007	Established the CSR Office
June 2010	Appointed independent directors
July 2011	Major revision to NGK Group Guidelines for Corporate Behavior
April 2015	Signed on to UN Global Compact
June 2015	Established the Global Compliance Office
December 2015	<a href="#">Established committees for corporate governance</a>

## **CSR Management**

### **CSR Activities Concepts and Systems**

---

The NGK Group aims to realize its corporate philosophy through the provision of products and services that will bring new value to society and contribute to the creation of a better social environment. We will fulfill our social responsibilities through these activities, establishing and continually strengthening CSR objectives to meet the expectations and earn the trust of society.

CSR objectives are developed every year based on the CSR Promotion Items in line with the NGK Group Guidelines for Corporate Behavior.

# Corporate Philosophy

NGK Products and Technologies Must Create New Value and Contribute to the Quality of Life.



► [Corporate Philosophy, and NGK Group Guidelines for Corporate Behavior](#)

## CSR Management

### Establishing CSR Promotion Items (Materiality)

---

Aiming to develop a sustainable society and in consideration of a variety of stakeholder demands, the NGK Group established eight items from NGK Group Guidelines for Corporate Behavior as CSR promotion items determining the specific objectives and achievements for each item. Each year, we verify the achievement status of each objective in an attempt to continuously improve these efforts.

▶ [CSR Activity Objectives and Achievements](#)

#### Process of identifying materiality

The NGK Group has identified specific CSR Promotion Items, which constitute our CSR materiality, based on the Corporate Philosophy and the Guidelines for Corporate Behavior. In establishing the CSR promotion items that constitute an integral part of our core values and principles along with the Corporate Philosophy and the Guidelines for Corporate Behavior, we took social trends and needs into consideration and developed systems for information disclosure and promotion.

In line with this policy, we will address the needs of the times appropriately, based on feedback from our stakeholders and readers of this report.



## Process of establishing CSR Promotion Items

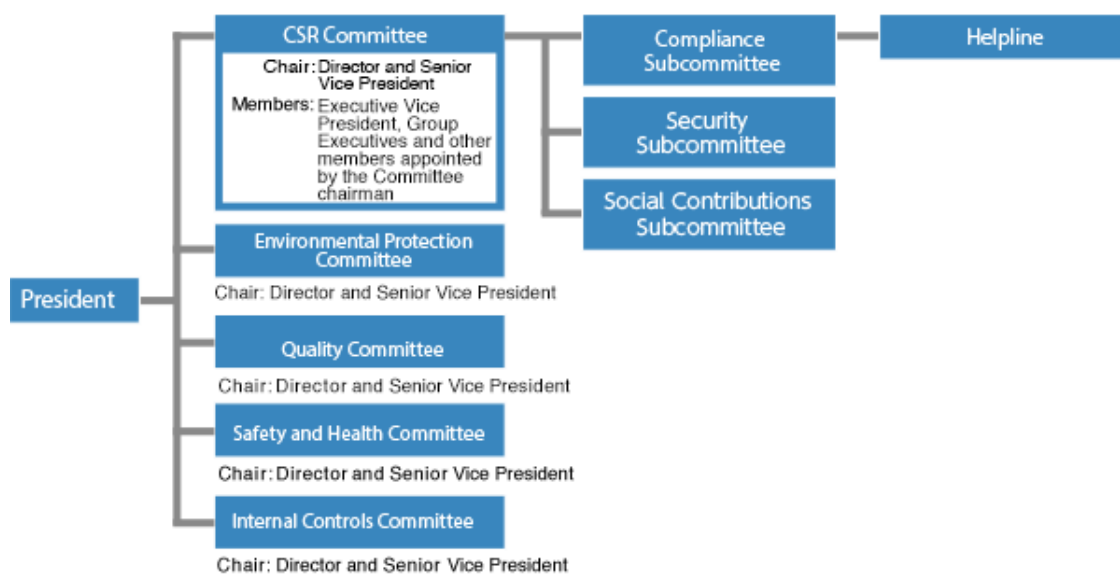
1986	Formulated the Corporate Behavior Principles, Management Philosophy, and code of conduct
1999	Formulated the Guidelines for Corporate Behavior
2008	<p>Revised the NGK Group Guidelines for Corporate Behavior</p> <p>The Guidelines were revised and positioned as guidelines for implementing the Corporate Philosophy from the Corporate Philosophy and CSR viewpoints. With due consideration paid to changes in social issues, the Guidelines set forth the ban on entertainment and gifts for the purpose of gaining dishonest profits, and initiatives for achieving a sound work-life balance.</p>
2009	<p>Established CSR Promotion Items</p> <p>The CSR of the NGK Group was defined as activities to realize our corporate philosophy, and the following promotion items (issues of materiality) were identified.</p> <ol style="list-style-type: none"> <li>(1) Provision of products that contribute to a better social environment</li> <li>(2) Disclosure of corporate information</li> <li>(3) Thorough enforcement of compliance; Risk management</li> <li>(4) Respect for humanity and assurance of a comfortable working environment</li> <li>(5) Implementation of fair, free, and transparent transactions</li> <li>(6) Preservation of the global environment</li> <li>(7) Coordination with local communities and promotion of contributions to society</li> <li>(8) Communications with stakeholders</li> </ol>
2011	<p>Revised the NGK Group Guidelines for Corporate Behavior</p> <p>To meet social demands, such as ISO26000, more appropriately, the Guidelines for Corporate Behavior were fully integrated with the CSR Promotion Items to represent a comprehensive corporate principle.</p>

# CSR Management

## CSR Promotion Framework

---

To promote CSR activities, the NGK Group has established the CSR Committee, the Environmental Protection Committee, the Quality Committee, the Safety and Health Committee and the Internal Controls Committee. In terms of legal and corporate ethics compliance activities, the CSR Committee discusses items necessary to assist decision-making by the president and CSR Committee chair, provides support in matters determined to potentially have a substantial impact on the company with respect to legal or ethical considerations, incidents or accidents, reviews and evaluates the promotion plans of each subcommittee, and conducts a wide range of activities, including the discussion of CSR-related items, determined to be important by the committee chair.



► [About the Roles and Functions of Each Committee](#)

# CSR Management

## Targeted Stakeholder and Response Policies

---

The NGK Group promotes an understanding of our business among customers, suppliers, shareholders, investors, employees and regional communities, continuously improving our activities and initiatives through dialogues with all our stakeholders.



### Connection with Customers

To earn and maintain the trust of customers, we engage in the creation of new value through the provision of products and services realizing global environmental conservation and social safety and peace of mind from a long-term and global perspective.

- ▶ [Quality Policy](#)

### Connection with Suppliers

With a basic policy centered on the three principles of openness and fairness, partnership and relationship with society, the NGK Group is engaged in fair, free and transparent business transactions with the procurement partners in our supply chain. We also established a supplier helpline to provide unwavering support for important inquiries in an effort to build and maintain fair supplier relationships.

- ▶ [Basic Purchasing Policy](#)
- ▶ [Supplier Helpline](#)
- ▶ [Supply chain: Fair and honest evaluation of procurement partners, and extensive resource diversification](#)

### Connection with Shareholders and Investors

The NGK Group aims to meet expectations for enhanced corporate value through dialogues and efforts to disclose information pertaining to management, finance, products, and services in a timely and appropriate manner.

### Employees

The NGK Group strives to create a safe and comfortable workplace environment with respect for employee humanity. We also support the growth of human resources and fair treatment enabling each employee to maximize their skills.

- ▶ [Basic Policy on Human Resource Development](#)

### Regional Communities

We proactively engage in social contribution activities in response to community needs with the intent of becoming a corporate citizen trusted by society with concern for social issues in all countries and regions where we do business.

# CSR Management

## Human Rights Initiatives

---

Having established respect for humanity in its Guidelines for Corporate Behavior, the NGK Group uses its intranet, which is available to all domestic Group company employees, to explain and disseminate the United Nations "Universal Declaration of Human Rights"\*1 and "Guiding Principles on Business and Human Rights." \*2 The NGK Group took advantage of its participation in the UN Global Compact in April 2015 as an opportunity to proactively spread awareness about the protection of human rights, and in May, conducted a seminar providing an overview of the UN Global Compact and an explanation of its proposals for the protection of human rights among other efforts to spread awareness about the importance of protecting human rights through compliance training.

Moreover, NGK participates in the human rights workshop organized by the Global Compact Network Japan, studying human rights initiatives. We are also producing materials for internal seminars and training sessions on human rights.

### ► [Compliance Training](#)

\*1 Adopted on December 10, 1948 at the Third United Nations General Assembly Session, this declaration expresses the rights to which all human beings in all nations are inherently entitled (General Assembly Resolution 217 (III)). The formal name is the Universal Declaration of Human Rights.

\*2 UN Guiding Principles on Business and Human Rights: Based on the "Report on Human Rights and Transnational Corporations and Other Business Issues" by John Ruggie, UN Secretary-General's Special Representative for Business and Human Rights (at that time).



The UN Global Compact is a global framework for realizing sustainable growth through companies and organizations acting as good members of society. Participating corporations support ten principles in the areas of human rights, labor, the environment and anti-corruption required in the practice of corporate activities.

### [The Ten Principles of the UN Global Compact]

#### Human Rights

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and  
Principle 2: make sure that they are not complicit in human rights abuses.

#### Labor

Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;  
Principle 4: the elimination of all forms of forced and compulsory labor;  
Principle 5: the effective abolition of child labor; and  
Principle 6: the elimination of discrimination in respect of employment and occupation.

#### Environment

Principle 7: Businesses should support a precautionary approach to environmental challenges;  
Principle 8: undertake initiatives to promote greater environmental responsibility; and  
Principle 9: encourage the development and diffusion of environmentally friendly technologies.

#### Anti-Corruption

Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

### ► [Related News](#)

# CSR Objectives and Achievements

\*Evaluation standards: ○ Target achieved △ 80% or more of target achieved ✕ Less than 80% of target achieved

## Provision of Products that Contribute to Better Social Environment



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

<p>Strengthen production system in response to market trends for automotive-related products.(NGK Group)</p>	<p>Strengthened global production system in response to expanding demand for automotive-related products. (NGK Group)</p>	<p>○</p>	<p>Increase sales growth rate for environmental products by 60% or above by fiscal 2020 (compared to fiscal 2013).                  NAS battery (wider use of renewable energy)                  DPF, HONEYCERAM, NOx sensor (automobile exhaust gas purification)                  Low-Level Radwaste Treatment System(NGK Group)</p>
--	---	----------	--

### Enhancement of Quality of Products and Services, Development and Provision of Safe and Secure Products and Services

<p>Conduct rigorous design verification and reliability evaluation to achieve zero major market complaints. Reduce defect costs through optimization and standardization of manufacturing conditions. (NGK Group)</p>	<p><a href="#">Achieved zero major market complaints in more than 90% of the entire Group divisions; failed to reduce defect costs at around 50%. (NGK Group)</a></p>	<p>△</p>	<p>Conduct rigorous verification for modifications and changes to eliminate risks associated with design and manufacturing. (NGK Group)</p>
---	---	----------	---

## Disclosure of Corporate Information



### Enhancement of Corporate Information Disclosure

<p>Enhance and continue to provide fair and honest information disclosure in a timely and appropriate manner. (NGK Group)</p>	<p><a href="#">Conducted ongoing fair and honest information disclosure in a timely and appropriate manner. (NGK Group)</a></p>	<p>○</p>	<p>Enhance and continue to provide fair and honest information disclosure in a timely and appropriate manner. (NGK Group)</p>
---	---	----------	---

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

<p>Curtail and clearly improve items identified by audits. (NGK Group)</p>	<p><a href="#">Improved all items identified by audits within the fiscal year. (NGK Group)</a></p>	<p>○</p>	<p>Improve items identified during audits. (NGK Group)</p>
--	--	----------	--

Raise efficiency in assessment and audit of processes rated favorably in the previous fiscal year. (NGK Group)	<a href="#">Raised efficiency in assessment and audit of processes rated favorably in the previous fiscal year. (NGK Group)</a>	○	Raise efficiency in assessment and audit of processes rated favorably in the previous fiscal year. (NGK Group)
--	---	---	--

## Thorough Enforcement of Compliance; Risk Management

<b>P</b> FY2015 Plan and Targets	<b>D</b> FY2015 Activities Summary	<b>C</b> Evaluation	<b>A</b> FY2016 Plan and Targets
----------------------------------	------------------------------------	---------------------	----------------------------------

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

Continue thorough awareness and inculcation of NGK Group Guidelines for Corporate Behavior and behavioral guidelines. (NGK Group)	<a href="#">Familiarized employees with career training, created a paper on awareness summarizing guidelines for corporate behavior distributed to all employees. (NGK Group)</a>	○	Continue thorough awareness and inculcation of NGK Group Guidelines for Corporate Behavior and behavioral guidelines. (NGK Group)
---	---	---	---

### Reinforcement of the Risk Management System

The CSR Committee will regularly follow-up on the status of Company-wide risk countermeasures.(NGK Group)	<a href="#">CSR Committee met three times, followed up on status of risk countermeasures. (NGK Group)</a>	○	The CSR Committee will regularly follow-up on the status of Company-wide risk countermeasures. (NGK Group)
Conduct CSA questionnaires. (NGK)	<a href="#">Conducted CSA questionnaires for a total of 1,703 employees, including executive officer and audit &amp; supervisory board member. (NGK)</a>	○	Conduct CSA questionnaires for directors and managers in Group companies in Japan. (NGK Group)

### Respect and Protection of Intellectual Property Rights

Conduct awareness programs for manager-level employees. (NGK)	<a href="#">Conducted an awareness program for manager-level employees, inviting external experts, in which around 100 employees participated. (NGK)</a>	○	Conduct awareness program for manager-level employees. (NGK)
<a href="#">Continue to conduct small group discussion-based seminars for young engineers. (NGK)</a>	<a href="#">Conducted five small group discussion-based seminars for young engineers in the R&amp;D and business divisions, attended by a total of 62 employees. (NGK) Provided e-learning programs for basics of patents, attended by a total of 136 employees. (NGK)</a>	○	Continue to conduct small group discussion-based seminars for young engineers and provide e-learning programs for basics of patents. (NGK)

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

Complete group-wide compliance with the Microsoft Edge browser ahead of the phase-out of Internet Explorer in January 2016. (NGK Group)	<a href="#">Followed up on security measures and software management status at four overseas Group companies, and provided individual guidance for inadequate efforts. (NGK Group)</a>	○	Continue to follow up on security measures and strengthen software licensing management. (NGK Group)
---	--	---	--



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

<p>Conduct programs to thoroughly instill awareness of competition law compliance. (NGK Group)</p>	<p><a href="#">Revised the competition law compliance rules of each Group company and built an appropriate compliance system according to international standards. Set up the Global Compliance Office to strengthen the relevant structures. (NGK Group)</a>  <a href="#">Considerably increased training opportunities directed at overseas Group companies, of which 26 received training. (NGK Group)</a>  <a href="#">Revised the competition law handbook and distributed a new edition to NGK and Group companies in Japan. Held briefing sessions in each business group to increase understanding of its content. (NGK Group)</a></p>	<p>○</p>	<p>Introduce e-learning programs to increase training opportunities. (NGK and domestic Group companies) Create overseas editions of the competition law compliance handbook (U.S., China)          Revise the Compliance Card. (NGK and domestic Group companies)          Launch e-mail archiving systems for Group companies (Japan and U.S.)</p>
--	--	----------	---

## Anti-corruption Measures

<p>Provide training on anti-bribery regulations involving foreign public officials. (NGK Group)</p>	<p><a href="#">Established internal anti-bribery rules, including ethical standards. (NGK Group)</a>  <a href="#">Provided training on anti-bribery regulations involving foreign public officials, as part of expatriate training. (NGK Group)</a>  <a href="#">Provided training on anti-bribery regulations at overseas Group companies. (NGK Group)</a></p>	<p>○</p>	<p>Launch internal anti-bribery rules involving foreign public officials. (NGK Group)          Provide training for anti-bribery regulations involving foreign public officials. (NGK Group)</p>
---	---	----------	--

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

<p>Conduct measures to increase understanding of the import/export handbook. (NGK)</p>	<p>Organized 17 training sessions for responsible persons from each division to raise awareness of the importance of the import/export handbook, attended by a total of approx. 350 persons. (NGK)</p>	<p>○</p>	<p>Inculcate thorough awareness of import/export handbook. (NGK)</p>
--	--	----------	--

## Respect of Humanity and Assurance of Comfortable Working Environment



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

<p>Focus efforts on safety training to prevent accidents before they occur. (NGK)</p>	<p><a href="#">Provided safety training for individual issues at relevant organizations, focusing on improving awareness and</a></p>	<p>○</p>	<p>Focus efforts on safety training to prevent accidents before they occur. (NGK Group)</p>
---	--	----------	---

	<a href="#">familiarization of emergency actions. (NGK)</a>		
Promote 5S workplace certification activities, continue to develop company-wide. (NGK)	<a href="#">Horizontally deployed successful case studies developed company-wide. (NGK)</a>	○	Promote 5S workplace certification activities, continue to develop company-wide. (NGK)
Continue health management for employees who routinely work long hours. (NGK)	<a href="#">Continued to offer health management programs, in which 226 employees participated. (NGK)</a>	○	Continue health management for employees who routinely work long hours. (NGK)

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

Plan highly effective human resource training. (NGK)	<a href="#">Promoted systematic training through approximately 120 programs. (NGK)</a>	○	Plan highly effective human resource training. (NGK)
Promote systematic training in attempt to strengthen onsite capabilities. (NGK Group)	<a href="#">Organized training programs to strengthen onsite capabilities, using certified in-house instructors with appropriate experience and expertise. (NGK Group)</a>	○	Promote systematic training in attempt to strengthen onsite capabilities. (NGK Group)
Ongoing language training (Goal: 80% of new hires score 600 or higher on the TOEIC). (NGK)	<a href="#">80% of new hires achieved a TOEIC score of 600 points or higher. (NGK)</a>	○	Ongoing language training (Goal: 80% of new hires score 600 or higher on the TOEIC). (NGK)

### Utilization of Diverse Human Resources

Maintain disabled employment rate at 2.0% or higher, as required by law. (NGK)	<a href="#">Achieved the 2.18% legally mandated ratio. (NGK)</a>	○	Maintain disabled employment rate at 2.0% or higher, as required by law. (NGK)
Continue to encourage use of systems for transferring to main career track positions. Increase the ratio of new female graduate employment against male employment. (NGK)	<a href="#">Ten employees transferred to main career track positions. New female graduate employment ratio increased to 40.3% from 23.7% in the previous fiscal year. (NGK)</a>	○	Raise career awareness of female employees and provide them with opportunities to demonstrate their potential. Increase the ratio of new female graduate employment and diversity of job assignment for females. (NGK)

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

Work with labor union to promote rectification of long working hours. (NGK)	<a href="#">In cooperation with the workers' union, reviewed causes of increasing overtime work hours and examined and conducted improvement actions, producing record-breaking results: more than 99% of employees used six or more granted days of paid leave, for the third consecutive year; the average number of used days of granted paid leave exceeded 10.0, for the fifth or</a>	○	Work with labor union to promote rectification of long working hours. (NGK)
---	--	---	---

	<a href="#">more consecutive year; and the use rate of granted paid leave exceeded 60%, for the fifth or more consecutive year. (NGK)</a>		
Increase use of expanded childrearing support measures. (NGK)	<a href="#">A total of 39 employees (29 females and 10 males) used systems to take childcare leave of absence; and a total of 53 employees used reduced working hours options for parents of young children. (NGK)</a>	○	Increase use of expanded childrearing support measures. (NGK)

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



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

Conduct assessments, focusing on new and important suppliers (representing around 10% of all applicable). (NGK)	<a href="#">Visited and assessed a total of 103 suppliers (representing around 10% of all applicable), consisting of 13 new and 90 existing companies. (NGK)</a>	○	Conduct assessments, focusing on new and important suppliers (representing around 10% of all applicable). (NGK)
Discuss BCP measures with individual suppliers, considering specific business relationships. (NGK)	<a href="#">Discussed BCP measures with individual suppliers, considering specific business relationships. (NGK)</a>	○	Discuss BCP measures with individual suppliers, considering specific business relationships. (NGK)

### Promotion of CSR Procurement

Maintain ongoing activities through reconfirming understanding and agreement of suppliers. (NGK Group)	<a href="#">Obtained written agreements from suppliers. (NGK Group)</a>	○	Maintain ongoing activities through reconfirming understanding and agreement of suppliers. (NGK Group)
--	---	---	--

## Preservation of Global Environment



### Prevention of Global Warming

Curb CO2 emissions. In Japan: Reduce CO2 emissions by 10% compared to fiscal 1990 (190,000 tons or less); by 20% compared to fiscal 2010 in terms of basic unit per net sales. Overseas: Reduce by 5% or more compared to fiscal 2010 in terms of basic unit per net sales. (NGK Group)	<a href="#">In Japan: Reduced CO2 emissions by 9.3% compared to fiscal 1990 (191,000 tons); by 27% compared to fiscal 2010 in terms of basic unit per net sales. Overseas: Reduced by 34% compared to fiscal 2010 in terms of basic unit per net sales. (NGK Group)</a>	In Japan △ Overseas ○	Basic unit per net sales: Reduce by 9% or more compared to fiscal 2013. (NGK Group)
---	---	--------------------------------	---

### Adoption of Environmentally Friendly Production Processes

Promote the development of innovative process technologies for overseas locations. (NGK)	<a href="#">Innovative processes developed by NGK and introduced to overseas sites entered the mass</a>	○	Increase adoption of innovative processes in overseas sites, particularly for building new
--	---	---	--

Group)	<a href="#">production phase. (NGK Group)</a>		
Promote energy conservation measures on general purpose equipment at Group companies in Japan and overseas. (NGK Group)	<a href="#">To promote voluntary energy-saving efforts at Group companies, created energy-saving guidelines and a list of best practices and distributed them to each Group company inside and outside Japan. (NGK Group)</a>	○	factory lines, introducing the latest facilities and expanding production capacity. (NGK Group)

### Promotion of Resource Recycling

Curb amount of discarded materials generated. In Japan: Reduce by 10% compared to fiscal 2010 in terms of basic unit per net sales. Overseas: Reduce by 5% compared to fiscal 2010 in terms of basic unit per net sales. (NGK Group)	<a href="#">In Japan: Reduced by 19% compared to fiscal 2010 in terms of basic unit per net sales. Overseas: Reduced by 40% compared to fiscal 2010 in terms of basic unit per net sales. (NGK Group)</a>	○	Basic unit per net sales: Reduce 13% compared to fiscal 2013. (NGK Group)
Promote and establish routine operations for resource recycling efforts in accordance with conditions in each country. (NGK Group)	<a href="#">In Japan: Maintained recycling rate level of at least 99%. Overseas: Established sorting management systems at each base, and set appropriate recycling rate targets. (NGK Group)</a>	○	Maintain recycling rate of at least 99% in Japan. (NGK Group)

### Strengthening of Global Environmental Management

Focusing on overseas Group companies, identify issues, and consider improvement actions as necessary. (NGK Group)	<a href="#">Identified overseas Group company bases that need to improve risk control and clarified issues. (NGK Group)</a>	○	Support bases that need to improve risk control; change regulatory value control methods, shifting focus from point-based to trend-based management. (NGK Group)
---	---	---	--

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



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

Maintain support to foreign students. (NGK)	<a href="#">Provided housing for 32 students from four countries and scholarships for 20 students from 12 countries. (NGK)</a>	○	Maintain support to foreign students. (NGK)
Continue to hold language classes and cross-cultural exchange meetings led by foreign students conducted	<a href="#">Held 20 Chinese language classes, and hosted 10 cross-cultural exchange sessions with foreign students from India.</a>	○	Continue to hold language classes and cross-cultural exchange meetings led by foreign students conducted

within and outside the company. (NGK)	<a href="#">Canada, Sweden, Turkey, France, Vietnam Malaysia, China, and Korea. (NGK)</a>		within and outside the company. (NGK)
Distribute information after support ends. (NGK)	<a href="#">Sent New Year's greetings to approximately 300 supported students, including alumni; and issued NGK International Friendship Club Membership Cards for students at the expiration of the support period. (NGK)</a>	○	Distribute information after support ends. (NGK)

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

Ascertain activity status and maintain distribution of information connected to the upcoming activities at each Group company. (NGK Group)	<a href="#">Received 70 articles from Group companies on social contribution activities, and posted several on NGK's website as part of corporate information sharing. (NGK Group)</a>	○	Ascertain activity status and maintain distribution of information connected to the upcoming activities at each Group company.(NGK Group)
--	--	---	---

### Support for Volunteer Activities by Employees

Continue to create an environment enabling employees to easily take part in volunteer activities. (NGK)	<a href="#">Continued to provide employees with various types of volunteer activity opportunities, including: assistance at science events, participation in Table for Two (TFT), assistance at marathon races, NGK Eco Point System, and tree-planting projects. (NGK)</a>	○	Continue to create an environment enabling employees to easily take part in volunteer activities. (NGK)
---	---	---	---

### Communications with Stakeholders



### Communication with Customers and Procurement Partners

Hold earnings results presentations for major suppliers. (NGK)	<a href="#">Held earnings results presentations for 131 major suppliers. (NGK)</a>	○	Hold earnings results presentations for major suppliers. (NGK)
Continue to operate the supplier helpline. (NGK)	<a href="#">Continue to operate the supplier helpline. (NGK)</a>	○	Continue to operate the supplier helpline. (NGK)
Conduct assessments, focusing on new and important suppliers (representing around 10% of total). (NGK)	<a href="#">Visited and assessed a total of 103 suppliers (representing around 10% of all applicable), consisting of 13 new and 90 existing companies. (NGK)</a>	○	Conduct assessments, focusing on new and important suppliers (representing around 10% of all applicable). (NGK)

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

Continue to interact with local communities. (NGK)	<a href="#">Interacted with local communities through six plant tours held at three sites. (NGK)</a>	○	Continue to interact with local communities. (NGK)
--	--	---	--

Enhance communications with external stakeholders. (NGK)	<a href="#">Exchanged opinions with individuals mainly from local administrations. (NGK)</a>	△	Enhance communication with external stakeholders. (NGK)
--	--	---	---

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

Continue two-way communication events with NGK and domestic Group company employees. (NGK and domestic Group companies)	<a href="#">Held 10 sessions in eight locations in Japan, attended by a total of 388 employees. (NGK and domestic Group companies)</a>	○	Continue two-way communication events with NGK and domestic Group company employees. (NGK and domestic Group companies)
Enhance CSR-Web content and use it for employee training (NGK and domestic Group companies)	<a href="#">Established routine operations for real-time information communications; started use for employee training (NGK and domestic Group companies)</a>	○	Enhance CSR-Web content and use it for employee training. (NGK and domestic Group companies)



## Realization of Higher Quality Products and Services

Guided by the Corporate Philosophy, which puts customers first, the NGK Group considers the provision of products and services that contribute to a better social environment to be one of its most important missions in an effort to create quality from the customer's perspective.

### Basic Approach

---

The NGK Group engages in the creation of quality from the customer's perspective by defining Quality Objectives each year in accordance with the Quality Policy based on the NGK Group Guidelines for Corporate Behavior.

#### **Quality Policy**

NGK is dedicated to quality and committed to providing valuable products and services that are trusted by our customers and respected by society.

#### **Quality Objectives 2016**

Clarify changes and evaluate impacts on design and production.

### Initiatives for fiscal 2016

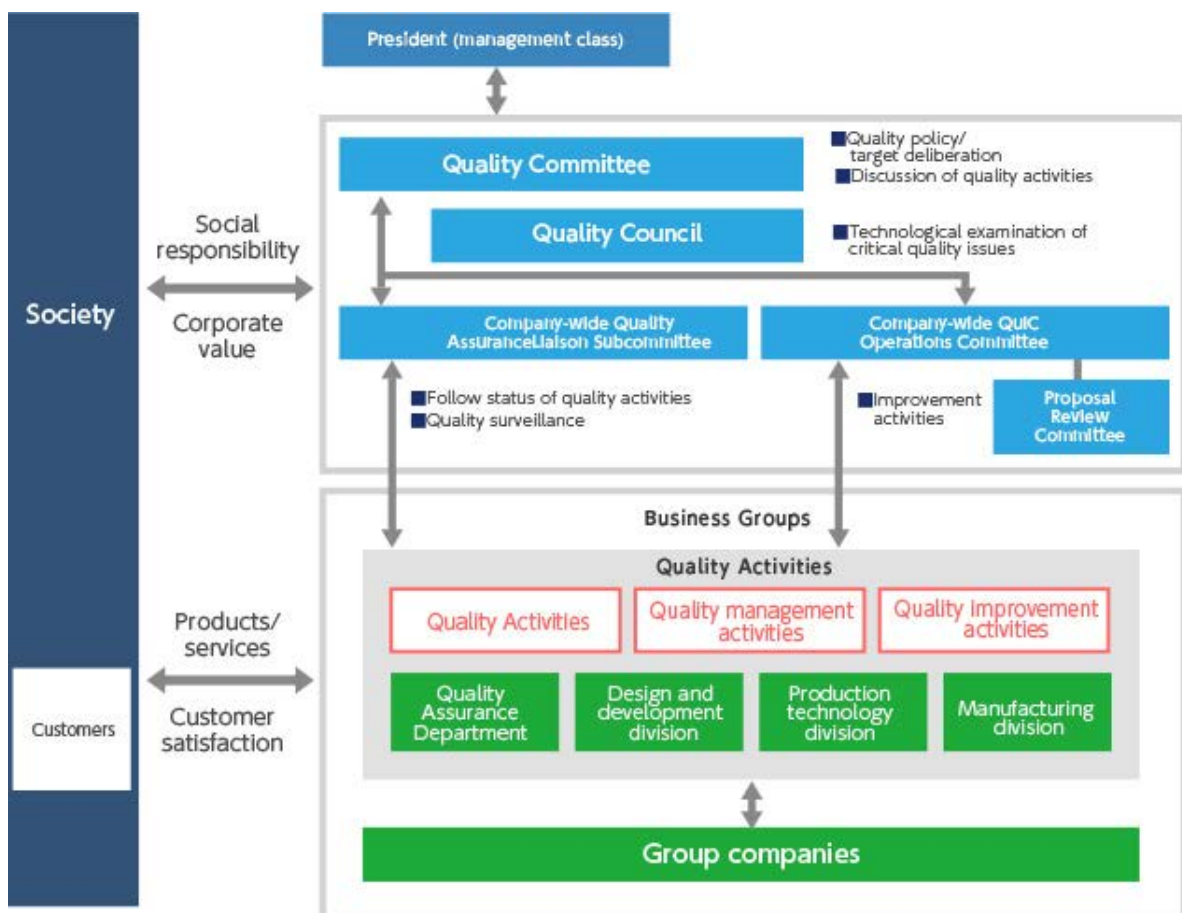
The fiscal 2015 quality objectives were: We continue to pursue this numerical target in fiscal 2016 as we were unable to achieve the objectives during fiscal 2015. In addition, we have set new quality objectives based on our review of the defects that occurred in fiscal 2015 and have started our efforts to this end.

# Realization of Higher Quality Products and Services

## Quality Activity System

The NGK quality activity system consists of a company-wide system, led by the Quality Committee chairman, and business division internal activity system, led by the heads of each business division. In terms of company-wide activities, the Quality Committee was established to function as a deliberative body assisting the Quality Committee chairman, while business division internal activities systems were put in place for each business line, creating appropriate quality systems for each. Quality assurance, quality control, quality improvements and quality education activities are promoted by the acquisition of ISO9001 or TS16949 certification.

### Quality Activity System



### Quality Management System Acquisition Status (March 2015)

The NGK Group quality management system has acquired 34 certifications (ISO9001 or TS16949) covering 100% of production bases in Japan and overseas.

# Realization of Higher Quality Products and Services

## Enhancing the Elimination of Quality Risks Company-Wide

---

### NGK Group Quality Activity Rules

The NGK Group promotes restructuring of its quality activities to respond more precisely to increasing and diversifying quality demands from customers in different target markets. In particular, quality activity rules have been formulated to eliminate quality risks in the market; we are promoting the establishment and improved efficacy of the rules.

The NGK Group promotes restructuring of  
**Four rules for quality activities**

**Quality confirmation rule:**

Establishes milestones, from development to start of production, and confirm conformance with six quality levels when production processes change.

**DR function strengthening rule:**

Registers DR plans with quality risks of medium or high level as important DR subjects with participation of DR reviewers. The Quality Management Department head holds company-wide DR for cases with particularly high risk level.

**Quality monitoring rule:**

Monitor and share information company-wide with respect to quality status changes or problems concerning products or markets. Manufacturing defects and customer complaints are shared company-wide every month through reports to the Quality Management Department, and the appropriateness of countermeasures is discussed.

**Handling major customer complaints rule:**

In the event of a serious customer complaint, including a potential complaint, the situation is promptly reported to the Quality Committee Chair to formulate company-wide countermeasures.

### From the Establishment of Rules to More Effective Operation

From fiscal 2012 to 2014, NGK conducted investigations on the establishment and operational status of the quality activity rules at divisions engaged in design, production engineering, and manufacturing of core product lines. Subsequently, we held a series of discussions to find ways to improve the quality activities of respective divisions.

Based on this result, in fiscal 2015, NGK worked to expand and deepening the Rules for Quality Activities. By expanding the rules, we ensured the introduction of our quality objectives to all Group companies. We monitored progress against numerical targets (numbers of complaints and amounts of manufacturing defect costs) and its key activities at each company on a six monthly basis. By deepening the rules, focusing on two important products, members of the Quality Management Department cooperated with development divisions in reviewing subjects related to product design, identifying how products are damaged in the market, and analyzing the actual causes of quality trouble. Through these processes, NGK tried our activities aimed at eliminating quality risks.

Nevertheless, quality troubles still occurred in fiscal 2015 caused by changes such as product design, facilities and operators. In fiscal 2016, we will further strengthen our efforts to verify the impacts by changes.

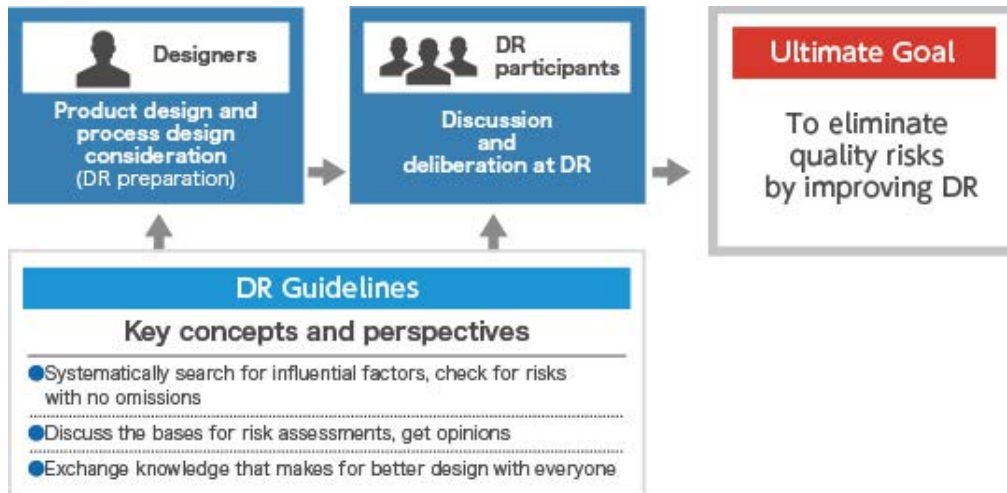
### Activities to Enhance DR Functions

The increasing and diversifying quality demands from customers call for the integration of knowledge among various members, not only from the Design division but also from the Manufacturing and Production Engineering divisions, throughout the development process. For this reason, the Group considers the Design Review (DR) to be the most critical

activity. DRs are conducted when development milestones are reached or when production processes change. Critical DRs are conducted by reviewers from throughout the company to support the elimination of risks.

The DR Guidelines were created to promote DR discussions and to eliminate quality risks thoroughly. We are constantly enhancing the effectiveness of DRs through efforts to spread this guidelines, including education and reviews of each DR. In addition, we have prepared and are utilizing the DR evaluation indicators to encourage improvements by visualize the progress of each division's level.

Furthermore, NGK organize a company-wide DR (Quality review meeting) for the quality trouble which is difficult to solve by one division, and discuss broad aspects of issues related to the reliability and safety of products by relevant engineers and experts across the company.



#### Received Excellent Partner Award from Tokyo Electron Limited

The Hi-Performance Ceramics Business of NGK received the FY2015 Excellent Partner Award from Tokyo Electron Limited, Japan's leading manufacturer of semiconductor manufacturing equipment. This award is given to companies that have delivered excellent performance, selected from all the suppliers that provide products to Tokyo Electron. The Hi-Performance Ceramics Business was evaluated highly for its involvement in the development of numerous new products and its swift response to a request for production increase at short notice, thereby contributing to the development of Tokyo Electron's business. The Hi-Performance Ceramics Business will continue to reinforce its production system through the concerted effort of technology, manufacturing, and quality assurance divisions. It is committed to the development of customers' business through a stable supply of high-quality products.



Shuhei Ishikawa, NGK's Director and Senior Vice President in charge of the Electronics Business Group (center), received the award from Tokyo Electron Limited presented by Toshiki Kawai, Representative Director, President & CEO (right) and Tetsuo Higashi, Corporate Director and Advisor (left)

## Realization of Higher Quality Products and Services

### Quality Activities at Overseas Production Bases

---

From their inception, overseas production bases have created quality systems appropriate to their situations and acquired ISO9001 or TS16949 certification. Monthly reports from each base regarding customer complaints and the status of manufacturing quality are discussed at quality activity meetings, enabling the entire NGK Group to evaluate the quality status in a timely manner. Moreover, quality activity rules and annual quality objectives are developed in an attempt to develop and enhance quality activities.

#### Seminar on the NGK Group's Quality Activities Held at an Overseas Plant

In September 2015, a meeting was held for managers at NGK Insulators Tangshan Co, Ltd. The meeting detailed the NGK Group's quality status and its quality activity system and rules.

The participants discussed issues to be addressed in order to prevent customer complaints and reduce manufacturing defects and deepened the understanding of their quality objectives that should be met as a member of the NGK Group.

## Realization of Higher Quality Products and Services

### QuiC Activities to Improve Quality with Full Employee Participation

Since 2003, the NGK Group develops QuiC (Quality up innovation Challenge) quality improvement activities in which all employees participate. These activities consist of quality improvement activities by small groups and suggestions that strive to enhance the quality of products and work; the best practices are shared by the entire NGK Group. Every July, NGK holds a company-wide contest at its headquarters to highlight examples of outstanding improvement activities with the intent of horizontal expansion throughout the company.

In fiscal 2015, 14 best practices, including two cases from overseas plants, were introduced. The case reports included an activity that won the Prize for Creativity of the Ministry of Education, Culture, Sports, Science and Technology, and another improvement activity promoted through the concerted effort of sales and manufacturing management divisions and a Group company. The presentation attracted some 400 audiences including the President and directors.

Fiscal 2015 Suggestion Activity Participation Rate	
Manufacturing divisions	100%
Non-manufacturing divisions	92%
Number of Suggestions	Approx. 37,000



#### CLOSE UP!

#### To understand an overseas plant is to accelerate improvement activities

In October 2015, employees who won improvement activity-related awards were dispatched to NGK Ceramics USA Inc. to observe and study the actual practices at an overseas plant, which we usually have no opportunity to examine. Participating in the tour were four employees who were commended for their suggestions for QuiC activities in fiscal 2014, and two employees representing a team that won the best award at the fiscal 2015 company-wide contest.

This event provided the tour participants with an opportunity to grow and realize the importance of the mother factory in Japan





through studying the actual practices of the plant and exchanging opinions with stationed staff and local workers. The program was also designed to develop their awareness of improvement issues of ACU's stationed employees and local workers, and motivate them to promote improvement activities.

# Realization of Higher Quality Products and Services

## Strengthening Quality Education

Traditionally, quality education at the NGK Group has focused on manufacturing site improvement methods such as the QC approach and QC tools.

In recent years, we face increasingly sophisticated and diversifying customer requirements for quality in many different markets. To meet such quality needs required for each product line and business division, we offer more practical programs where issues that are most relevant to participants are addressed.

### Main practical programs Strengthened in Fiscal 2015

program name	Numbers of days and participants	Objective
Quality Basic II (Organized by Human Resources Department)	63 days 40 (all technical personnel in the third year of joining the company)	Learn and practice problem-solving using quality engineering methods
Preventive action training	Lectures and workshops to examine issues by product line: 5 days; 60 in total	Way of thinking to become more aware of risks; understanding detailed procedures
	Sessions to examine risks involving development projects: 8 days; 30 in total	* Identify risks involving development projects * Review mechanisms of each division
Method of creation and Learning from Failure	3 days; 90 in total	Aim at improving skills to analyze past failures and implement countermeasures

### 51 employees passed the Self-Maintenance Expert Test

Fifty-one employees in manufacturing divisions and engineering centers who are engaged in NGK's voluntary maintenance activities passed the Self-Maintenance Expert Test (Japan Institute of Plant Maintenance) conducted in October 2015.

This qualification is given to those who possess a broad range of knowledge and skills necessary concerning quality management, safety, and machinery maintenance and are certified to have ability of planning and implementing voluntary maintenance activities and giving instruction. NGK will continue to encourage employees to acquire such qualifications in order to improve quality management capabilities at manufacturing sites.



# Realization of Higher Quality Products and Services

## System for Making Use of Customer Feedback in Management

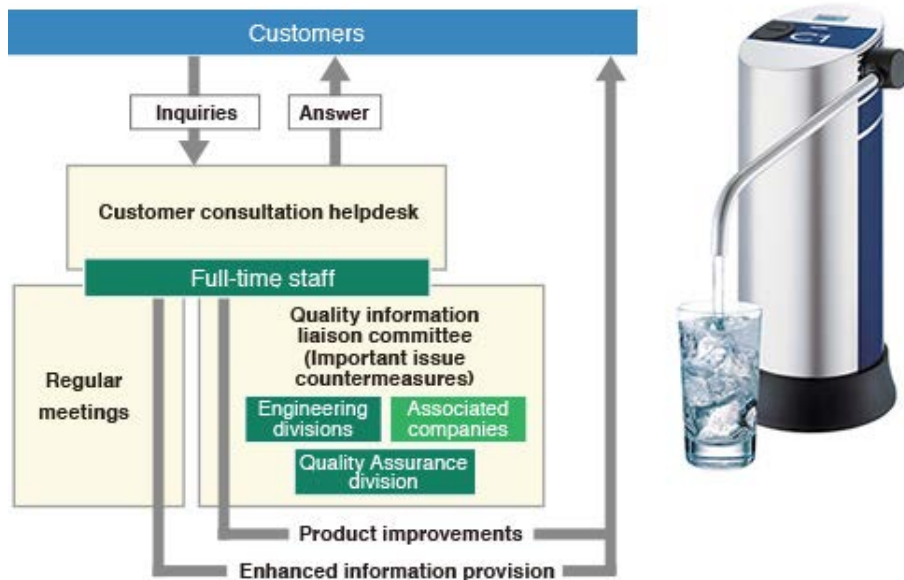
As the top industrial ceramics manufacturer in the industry, NGK makes use of its accumulated technologies to manufacture and sell C1 home-use water purifiers and promotes the creation of mechanisms for reflecting customer feedback.

### Establishment of a Customer Consultation Helpdesk

We set up a dedicated C1 customer consultation helpdesk in-house to create a mechanism for reflecting customer feedback in our products and services.

During fiscal 2015, in department stores across Japan, we launched over-the-counter sales and held taste tests at various events to convey the appeal of water purifiers in an attempt to communicate actively with customers.

We also respond to inquiries submitted through the NGK website.



### Customer Cards

We respond to customer feedback provided on customer cards sent to us when customers purchase the C1. This card includes a survey asking customers to fill in the location and reason for the purchase and the name, address and age of the customer. Customer's information is added to a list used to notify them when it is time to replace the cartridge.

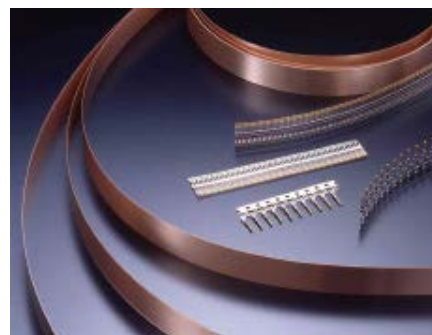
The left card is a 'Customer Card' with a survey and contact information. The right card is a 'Customer Card' with a survey and contact information.

### Localization of services

#### Laboratory and warehouse established at a business site in China

NGK Insulators (China) Investment Co., Ltd. established a laboratory to analyze beryllium copper alloy materials at its office in Shenzhen in order to swiftly respond to customers' requests for evaluation of prototypes. Previously, such evaluation took several months, because the analysis was conducted in Japan. Currently, it takes only a few days to identify the causes of defects and make suggestions on how to address such problems.

Technology and sales personnel responsible for beryllium copper alloys make visits at least once a year to each of the 1,000-plus customers located across China to provide technical and development assistance.



### Visit to an extra-high voltage transformer station Manufacturing products that exceed customers' expectation based on their requirements

Employees engaged in the Power Business visited Kita-Toyota Substation, an extra-high voltage transformer station, with support of Chubu Electric Power Co., Inc. This visit was in some way an answer to the wish of the employees in the Power Business who are working on a reform of business culture from the customers' perspective. They really wanted to watch how the products they designed, produced, or sold were actually used and listen to the customer's feedback.



#### Customer's voice

#### We have received support from NGK from the start of the substation's operation.

We at Chubu Electric Power Company are making utmost efforts to ensure uninterrupted, reliable supply of high-quality electricity by preventing facility problems through patrols and inspections. The insulators used at the Kita-Toyota Substation are mostly made by NGK. The insulators produced with NGK's high technological competence are highly reliable and support our mission of stable supply of power.

Mr. Masashi Aoyama

Transformer Section, Asahi Meito Sales Office, Chubu Electric Power Co., Ltd.



# Communication with Shareholders and Investors

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

## Basic Approach

---

The NGK Group corporate information disclosure is defined in "How to Engage in Business Activities" within the NGK Group Guidelines for Corporate Behavior (see below). Furthermore, along with timely and accurate disclosure of management and financial data through a variety of mediums, including via the corporate website, business reports and annual reports, the NGK Group strives for two-way communication enabling invaluable input from its shareholders and investors.

### **Disclosure of Corporate Information**

We will release, in an accurate and timely manner, any information sought by the public; including information on our management, finance, products and services to improve transparency in management and to gain society's trust in NGK Group companies.

### **Behavioral Guidelines**

We will promptly disclose any information required by society in accordance with applicable laws, regulations and our internal rules.

We will establish and adequately operate a mechanism for internal control relating to financial reports to disclose accurate financial information.

We will make good faith effort to answer any inquiry from customers pertaining to our products and services, providing responses in an appropriate manner.

▶ [NGK Group Guidelines for Corporate Behavior](#)

# Communication with Shareholders and Investors

## Management from the Shareholder's Perspective

---

### Open Shareholder Meetings

NGK endeavors to hold open shareholder meetings that its shareholders feel welcome to attend. Every year, we introduce NGK corporate activities at the shareholder meeting with permanent booths near the venue displaying product exhibits explained by NGK staff.

In an effort to expand shareholder meeting-related information, convocation notices were issued three weeks before the day prior to the meeting date. Starting in fiscal 2015, we post the convocation notice on the company's website the day before dispatching the paper notice. We have also made an electronic voting system available through the Tokyo Stock Exchange's Electronic Voting Platform.

We set up a booth at the venue of the Shareholders' meeting to introduce NGK's corporate activities to our shareholders.

Please click on the link below to view convocation notices, results of exercising voting rights and notices of resolution.

▶ [General Meeting of Shareholders-Related Information](#)

### Two-Way Communication

In addition to regular presentations held in Japan and overseas, the NGK Group conducts one-on-one meetings and participates in interviews among other ongoing initiatives to expand dialogues with institutional investors. NGK senior management also visits and conducts one-on-one discussions with institutional investors in Japan and overseas. Going forward, we will continue and expand these activities to further deepen communication with investors.

Activities in Fiscal 2015	Details
Japan	Senior management conducts presentations for analysts and institutional investors twice each year. They also conduct one-on-one meetings and participate in interviews.
Overseas	Senior management conducts overseas IR targeting analysts and institutional investors twice each year.
Click here to access online IR Library <a href="#">IR Information</a>	Includes reporting information and the timely disclosure of non-reporting information, securities reports, annual reports, General Meeting of Shareholder materials and other information.

### Measures for Returning Profits to Shareholders

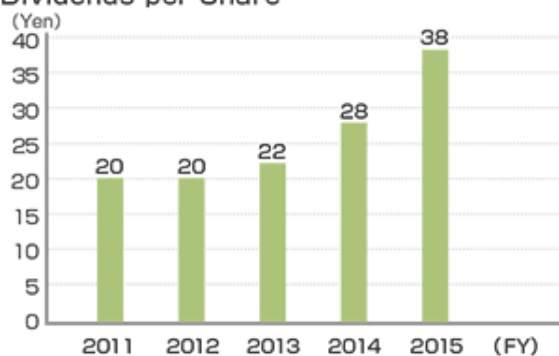
NGK implements its capital policy in view of facilitating the betterment of sustainable corporate value, based on communications with shareholders and investors.

We strive to secure profitability above the capital cost and to maintain financial soundness. We opt to proactively return profits to our shareholders from the mid- to long-term perspective. At the same time, NGK aims at maintaining profit margins, capital turnover ratio, and financial leverage at sound levels, using ROE, a dividend payout ratio, and dividends on equity as critical indicators.

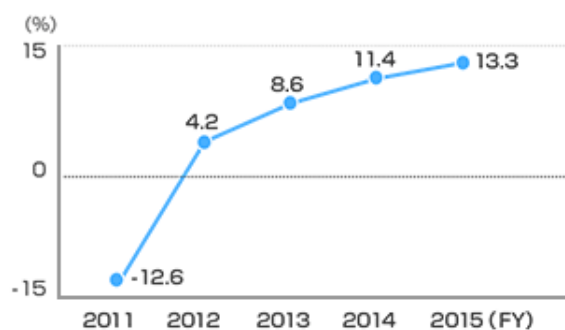
In fiscal 2015, demand for ceramic products used in automotive-related products and semiconductor manufacturing equipment was steadily favorable, and NGK posted record-high net sales and profits. As a result, ROE improved by 1.9% year-on-year to 13.3%. Taking this favorable performance into account, we increased the annual dividend by 2 yen to 40 yen per share. The consolidated payout ratio stood at 29.2%.



## Dividends per Share



## Return on Equity (ROE)

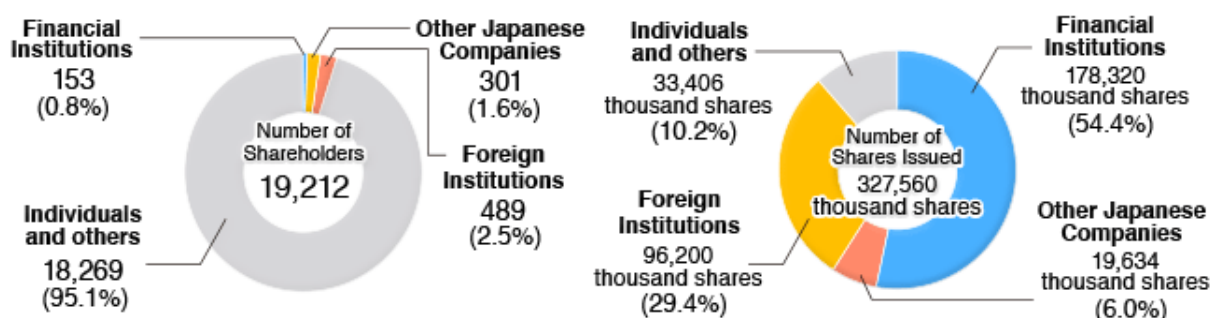


## Shareholders Information

### Shares Information (as of March 31, 2016)

Total number of Shares authorized	735,030 thousand
Total number of shares issued	327,560 thousand
Number of shareholders	19,212

### Share Distribution (as of March 31, 2016)



### Major Shareholders

Name of shareholder	Number of shares held (1,000 shares)	Shareholding ratio (%)
The Master Trust Bank of Japan, Ltd. (Trust Account)	38,445	11.77
The Dai-ichi Life Insurance Company, Limited	21,457	6.57
Japan Trustee Services Bank, Ltd. (Trust Account)	21,343	6.53
Meiji Yasuda Life Insurance Company	18,695	5.72
State Street Bank and Trust Company	11,402	3.49
The Bank of Tokyo-Mitsubishi UFJ, Ltd.	10,292	3.15
The Bank of New York, Non-Treaty Jasdec Account	5,451	1.66
Aioi Nissay Dowa Insurance Co., Ltd.	4,387	1.34
Nippon Life Insurance Company	4,313	1.32
National Mutual Insurance Federation of Agricultural Cooperatives	4,309	1.31

Note: Shareholding ratios above are calculated based on the number of shares derived by deducting the number of treasury stocks from the number of shares issued and rounded down to two decimal places.

▶ [Stock data and other related information](#)

## Thorough Compliance

Viewing compliance as the foundation of CSR, the NGK Group positions enhancing trustworthiness as the most important initiative and strives to create specific systems to inculcate this view among employees, prevent corruption and comply with laws and regulations.

## NGK Group Guidelines for Corporate Behavior

---

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

### Guidelines for Corporate Behavior and Thorough Observance of Behavioral Guidelines

The NGK Group Guidelines for Corporate Behavior and Behavioral Guidelines, initiatives conducted individually, are thoroughly observed. We created awareness handbooks a paper on awareness summarizing guidelines for corporate behavior and portable compliance cards distributed to all employees including contract manufacturing employees and temporary employees, at NGK and all domestic Group companies.

Efforts are also made to ensure a thorough understanding of the Guidelines for Corporate Behavior and Behavioral Guidelines among NGK employees at training for new hires, while promotion-related training includes an explanation of the Behavioral Guidelines.

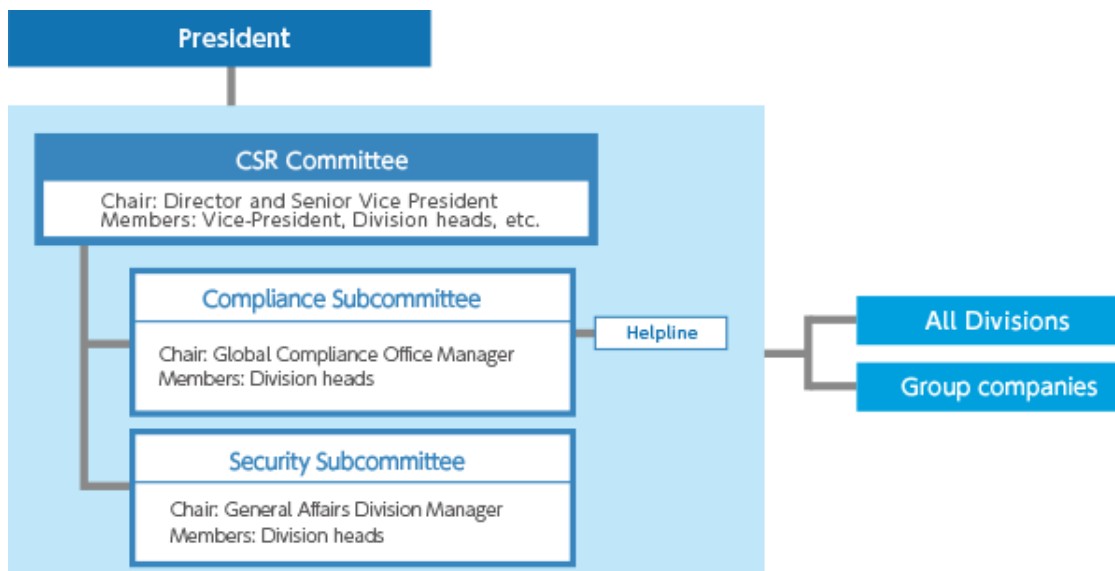
The purpose and significance of the Guidelines for Corporate Behavior and Behavioral Guidelines are also explained at CSR Talk Live events held by the NGK Group. At overseas Group companies, rules are formulated in response to the specifics of each company and country and region in light of the Behavioral Guidelines.

- ▶ [Corporate Philosophy and Behavioral Guidelines](#)
- ▶ [CSR Talk Live Dialogue](#)

# Thorough Compliance

## Compliance Promotion Structure

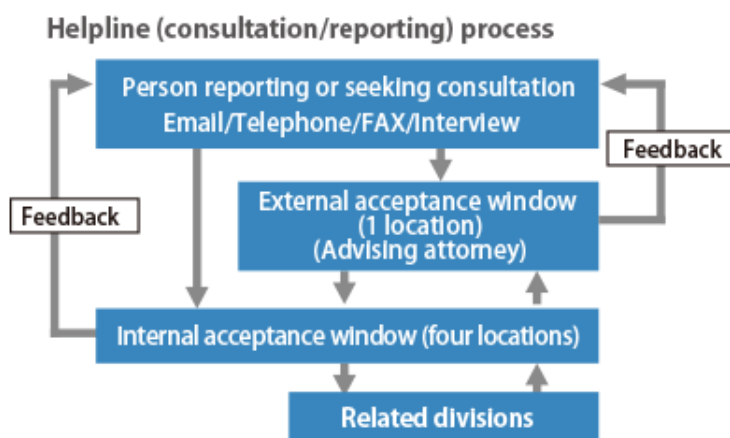
We established the Compliance Subcommittee under the CSR Committee to ensure strict observance of laws, regulations and corporate ethics within the Group. Furthermore, we established the Security Subcommittee to respond to incidents and accidents with the potential to significantly impact the Company.



### Whistle-Blowing System

We established a helpline to receive inquiries and reports from employees aimed at curtailing and preventing activities contrary to the spirit of the NGK Group Guidelines for Corporate Behavior and to facilitate the quick resolution when issues occur. Each overseas Group company has its own helpline. Those seeking advice or reporting issues are promised protection under corporate regulations.

NGK also has a [Hotline](#) as a separate internal reporting system dedicated to reporting directors' injustice or legal violations, as well as their infringement of competition laws and overseas anti-corruption regulations.



## Thorough Compliance

### Promoting Compliance Education

---

Compliance education and awareness among corporate officers and employees is driven primarily by the CSR Office, Global Compliance Office and Legal Department. Legal Compliance Liaison Meetings are held to introduce case studies, explain legal statutes and provide career and overseas post education. In fiscal 2015, we upgraded education programs on competition laws and regulations pertaining to anti-bribery of foreign public officials and expanded the scope of eligible trainees. Specifically, we started programs on competition laws for newly hired employees and those who have just been promoted as well as programs on regulations pertaining to anti-bribery of foreign public officials for newly appointed managers and those who have just been promoted.

## Compliance Education Conducted in Fiscal 2015

Title	Target	Content	Conducted
Career Education	New hires	Compliance basics, competition laws	2 times
	Midcareer Regularly appointed Q,R group promotions, transferred employees	Compliance basics, competition laws, regulations pertaining to anti-bribery of foreign public officials	2 times
	Newly appointed S group	Compliance basics, competition laws, regulations pertaining to anti-bribery of foreign public officials, security export control	1 time
	Newly appointed key personnel	Compliance basics, competition laws, regulations pertaining to anti-bribery of foreign public officials, security export control	1 time
	Key personnel second grade promotion	Compliance basics, competition laws, regulations pertaining to anti-bribery of foreign public officials, security export control	1 time
Training for Japanese expatriates (global training)	Employees scheduled for postings abroad	Competition laws, regulations pertaining to anti-bribery of foreign public officials, security export control	1 time
Informative Seminars for Laws and Compliance	Key personnel and other targets depending on content	<p>May 20 (Wed), 2015 United Nations Global Compact Lecturer: Hideaki Yahiro (Executive Manager, Global Compact Network Japan) 295 participants</p> <p>July 22 (Wed) and 27 (Mon), 2015 Strict Adherence to the Subcontractor Act Lecturer: Global Compliance Office 400 participants (including 60 on 27th from Corporate R&amp;D)</p> <p>September 30 (Wed), 2015 Latest developments of insider trading regulations Lecturer: Legal Department 328 participants</p> <p>November 19 (Thu), 2015 Protection of Confidential Information of Companies Lecturer: Tashun Aizawa, Attorney at law 400 participants</p> <p>January 19 (Tue), 2016 NGK's New Corporate Governance Scheme Lecturer: Corporate Strategy Office 433 participants</p> <p>March 28 (Mon), 2016 Regulations pertaining to anti-bribery of foreign public officials Lecturer: Kensaku Munenaga, Corporate Auditor, Japan Freight Railway Company</p>	6 times

		333 participants	
Competition laws training for newly appointed directors	Newly appointed directors and executive officers	U.S. competition laws	2 times
Competition laws compliance lectures	All corporate officers, all key personnel and salespeople of NGK and its Group companies in Japan	Competition laws and anti-bribery: Focusing on regulations in China in light of the world regulatory trends	9 times (2 live lectures and 7 DVD lectures in respective areas)
Competition laws training for overseas Group companies	Salespeople and managers of overseas Group companies; and NGK temporarily assigned staff	Lectures by lawyers: 26 companies (10 in U.S.; 1 in South Korea; and 4 in China) Lectures by original DVDs: 7 companies Training using original paper materials: 4 companies	
Training of regulations pertaining to anti-bribery of foreign public officials for overseas Group companies	Directors, managers, and salespeople of overseas Group companies; NGK temporarily assigned staff	Lectures by lawyers: 18 companies (10 in U.S.; and 1 in South Korea) Lectures by original DVDs: 7 companies	
Training for Group companies in Japan	Directors and employees of Group companies in Japan	<ul style="list-style-type: none"> <li>▪ Seminar at NGK Electronics Devices, Inc. for directors and employees</li> <li>▪ Training using original DVDs, which distributed by NGK, for targets in all Group Companies in Japan.</li> </ul>	1 time As needed
On-demand seminar on competition laws	Targets depending on content	Training provided upon request from divisions. Explanation of outline of competition laws, internal regulations and actions to comply with the competition law.	14 times
Other training	Purchasing officers/persons in charge	Subcontract Act explanatory meeting	2 times (1 at a Group company and 1 at NGK)

**CLOSE UP!**

### Seminar on the United Nation Global Compact held

NGK held an Informative Seminar for Laws and Compliance on May 20 at the hall on the first floor of the main building. At the seminar, an outline of the Global Compact, which NGK signed on April 2, was explained.

Briefings on the requirements for initiatives concerning race, the environment, labor, and anti-corruption were also given.







Mr. Hideaki Yahiro, Executive Manager of the Global Compact Japan Network, invited as a lecturer



Some 300 employees attended the seminar and learned about the social responsibilities that should be fulfilled as a global company.

## Thorough Compliance

### Corruption Prevention Structure

---

To practice fair and transparent business transactions, the NGK Group promotes the prevention of corruption. In fiscal 2015, we formulated internal rules to ensure compliance with anti-bribery laws and regulations and ethical standards to which employees should adhere in fulfilling their duties.

#### Anti-Bribery Regulation Training

In fiscal 2015, NGK provided employees scheduled to be assigned overseas with education on anti-bribery regulations pertaining to foreign public officials. Seminars on anti-bribery regulations were conducted also at overseas Group companies through lectures by lawyers or study sessions using independently produced DVDs.

- ▶ [Observing the Competition Laws and Other Laws and Regulations Pertaining to Business Transactions](#)

# Thorough Compliance

## Observing the Competition Laws and Other Laws and Regulations Pertaining to Business Transactions

---

The NGK Group strictly adheres to competition laws (Antimonopoly Act), the Subcontract Act and other laws and regulations pertaining to business transactions. The thorough observance of laws and regulations, including the NGK Group Guidelines for Corporate Behavior and Behavioral Guidelines that mandate the observance of the Antimonopoly Act, and initiatives in Japan and overseas aimed at strengthening employee awareness of Competition Laws Compliance Rules revised to meet global standards enable us to refrain from improper conduct or transactions and engage in the creation and maintenance of fair and equal business relationships with suppliers.

In fiscal 2015, the Global Compliance Office became the department responsible for compliance, replacing the Legal Department. In addition, we established substantially more training programs for overseas Group companies.

▶ [Plea Agreement with U.S. Department of Justice concerning ceramic substrates for catalytic converters](#)

## Strengthening Our Compliance System Related to Competition Laws

Year conducted	Regulation Development	Creation of Internal Systems	Training
FY1997	<ul style="list-style-type: none"> <li>Formulated guidebook and briefing document for the Anti-Monopoly Act</li> </ul>	<ul style="list-style-type: none"> <li>Required each business group to submit a Compliance Status Report on the Anti-Monopoly Act</li> </ul>	<ul style="list-style-type: none"> <li>Lectures on the Anti-Monopoly Act by outside instructors (attorneys) (subsequently held annually)</li> </ul>
FY2011	<ul style="list-style-type: none"> <li>Formulated Competition Laws Compliance Rules *1</li> </ul>		
FY2012	<ul style="list-style-type: none"> <li>Created and distributed the Competition Laws Compliance Handbook *2</li> <li>Created and distributed an Appendix to the Competition Laws Compliance Handbook</li> </ul>	<ul style="list-style-type: none"> <li>Established an independent committee</li> </ul>	<ul style="list-style-type: none"> <li>In-house training led by legal department staff</li> <li>Lectures by local attorneys held at overseas subsidiaries</li> </ul>
FY2013			<ul style="list-style-type: none"> <li>Conducted briefing on the Competition Laws Compliance Handbook</li> <li>Invited U.S. attorneys to lecture on Competition Laws</li> </ul>
FY2014	<ul style="list-style-type: none"> <li>Revised Competition Laws Compliance Rules *3</li> <li>Launched operation of a database for advanced notifications and participation reports pertaining to meetings</li> <li>Launched operation of an e-mail monitoring system</li> <li>Revised Competition Laws Compliance Rules at North American sales subsidiaries</li> </ul>	<ul style="list-style-type: none"> <li>Introduced company-wide centralized supervision and reporting structures led by the Board of Directors (independent of the President)</li> <li>Appointed company-wide Competition Laws supervisory managers</li> <li>Enhanced the helpline</li> </ul>	<ul style="list-style-type: none"> <li>Conducted study meetings for newly appointed directors on Competition Laws and the Companies Act by Japanese and U.S. attorneys (subsequently held annually)</li> <li>Conducted study meetings on Competition Laws at overseas Group companies (corresponding to laws and regulations in each country)</li> </ul>
FY2015	<ul style="list-style-type: none"> <li>Competition Law Compliance Rules of all NGK Group companies in and outside Japan were revised to ensure that the NGK Group's compliance system meets global standards. The Compliance Laws Compliance Handbook was revised. Review of compliance status by third parties *4</li> </ul>	<ul style="list-style-type: none"> <li>The Competition Laws Compliance Program was resolved by the Board of Directors</li> <li>Established the Global Compliance Office</li> </ul>	<ul style="list-style-type: none"> <li>Conducted study meetings on Competition Laws for new employees</li> <li>Distributed a Competition Laws related DVD to domestic group companies</li> <li>Upgraded training on compliance with competition laws provided inside and outside Japan</li> </ul>

**The NGK Group is engaged in the following initiatives to strengthen our competition laws compliance system.**

- FY2011      Established Competition Laws Compliance Rules to define compliance duties for corporate officers and employees, management structures and do's and don'ts. \*1
- FY2012      Created the Competition Laws Compliance Handbook and distributed it to all NGK officers and employees (who are in a management positions or are general staff in divisions that are relevant to competition laws). \*2

- FY2014 Revised the Competition Laws Compliance Rules, introducing a mechanism for the effective operation, management and verification of a competition laws compliance program via a company-wide centralized supervision and reporting structures led by the Board of Directors. \*3
- FY2015 Worked with compliance specialists from PricewaterhouseCoopers to confirm from a neutral point of view the status of a competition laws compliance program and a company-wide centralized supervision and reporting structures. \*4

To promote the use and thorough awareness of the Competition Laws Compliance Rules and Competition Laws Compliance Handbook, we held meetings to explain the Rules and the Handbook. At overseas Group companies, training sessions were led by lawyers well-versed in competition laws or conducted by using original DVDs. In fiscal 2016, we plan to further improve our training programs through the use of e-learning and to undergo a third-party review of the operation status of the competition laws compliance program.

## Establishment of the Global Compliance Office

In June 2015, we established the Global Compliance Office with an aim to build a group-wide foundation for an effective compliance scheme at a global level.

### Missions

<b>Work to establish and develop compliance as a corporate culture of the entire NGK Group</b>
<b>Supports Group companies inside and outside Japan in strengthening and operating their compliance systems through active provision of compliance education</b>
<b>As for overseas Group companies in particular, the Global Compliance Office ensures effective compliance for our globalized operation by obtaining the most up-to-date information on relevant laws and social demands in each region.</b>

### Initiatives in fiscal 2015

In fiscal 2015, the NGK Group revised the respective Competition Laws Compliance Rules of Group companies in and outside Japan, thereby establishing a system to ensure compliance with competition laws on a global scale, and introduced the competition laws compliance program to the Group companies. We also formulated internal rule pertaining to anti-bribery of foreign public officials. We reviewed the NGK's compliance system with regard to overseas Group companies as well as measures taken by the Head Office. In fiscal 2016, we will conduct survey on compliance for overseas Group companies to help the companies reinforce and operate their systems

## Training on Competition Laws Provided in Fiscal 2015

	No. of sessions	Major themes
Seminars on competition law for directors	1	Competition law and bribery prevention
Seminars on competition law for newly appointed directors	2	Competition law
Lectures by external experts	1 <sup>*1</sup>	Competition law and bribery prevention
Guidance to overseas Group companies	18 <sup>*2</sup>	Details of competition law, enforcement status, and points of note for conducting business in compliance with the law
Guidance by internal instructors	14	Basics of competition law and points of note for conducting business in compliance with the law

\*1. In addition, a total of seven video lectures were provided in each location.

\*2. Provided to a total of 26 companies



Training for employees



Training for corporate officers



The Competition Law Compliance Handbook was revised in February 2016 to provide easier-to-understand descriptions on responsibilities and requirements of compliant directors and employees. The revised handbook was distributed to each individual director and employee of NGK.



## Thorough Compliance

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

---

As part of its thorough compliance efforts, NGK is engaged in the strict adherence to laws and regulations relating to export management. Behavioral Guidelines within the NGK Group Guidelines for Corporate Behavior establish the observance of security export control-related regulations, while management and training is conducted based on internal rules and the Export/Import Handbook.

#### Using Databases to Conduct Comprehensive Inspections and Customs Management

In response to the Foreign Exchange and Foreign Trade Act and other export control-related laws and regulations, NGK screens exports and judges whether export licenses are required and records screening results in a security export control database. Furthermore, export management with respect to the export of certain products is conducted using specified export declaration systems.

NGK commenced use of an export cargo management ledger in May 2015. As for imported cargo, we conducted voluntary inspections as in the previous year. In addition, we began efforts to verify the completeness of export-import cargo management ledgers by using the NACCS data (Customs' export-import data). We also conducted surveys of domestic Group companies to verify the status of custom clearance management. For fiscal 2016, we plan to conduct voluntary inspections on both exported and imported cargo.

#### Familiarization with the Export/Import Handbook

NGK also made efforts toward thorough compliance with the Export/Import Handbook, which was published in fiscal 2012 and summarizes items for the observance of export/import customs clearance regulations. In addition to publishing this handbook on the company intranet where it can be viewed throughout the entire company, we provide training to spread awareness of the spirit of handbook through study meetings related to export/import management conducted internally in each business division.

Export/import management study meetings are held one or more times per year targeting relevant staff in divisions responsible for export and import activities. In fiscal 2015, these meetings were held 17 times, with about 350 employees in attendance.



## Thorough Compliance

### Privacy Policy and Structure

---

The NGK Group has established internal rules for privacy policy management in an effort to handle, manage and protect personal information provided by customers.

In fiscal 2015, NGK formulated and made public our Basic Policy on Specific Personal Information in response to the enforcement of the Act on the Use of Numbers to Identify a Specific Individual in Administrative Procedures.

▶ [About NGK's privacy policy](#)

# Thorough Compliance

## Information Security Training

---

The NGK Group CSR Committee's Security Subcommittee takes responsibility for supervising overall information security, and supports the General Affairs and Information Systems divisions based on the Basic NGK Group Information Security Policy, in an attempt to properly manage and operate information assets.

Every year, personnel of NGK's Information Technology Department visit several Group companies to conduct on-site checks and provide guidance on their implementation of IT security measures. In fiscal 2015, four overseas Group companies received such inspections.

▶ [Basic NGK Group Information Security Policy](#)

### Formulation of Basic NGK Group IT Security Standards

The rapid advance in information communication technologies and devices has made the quest for consistent IT security on a Group-wide level an urgent concern, thus in 2010 we formulated the NGK Group IT Security Standards with the goal of developing an IT security structure based on commonly shared Group standards and enhancing IT security.

Every year, each Group company drafts action plans for the enactment of countermeasures in an attempt to systematically strengthen security. Through these countermeasure action plans, NGK confirms initiatives at each Group company and provides guidance as necessary.

### Information Security Training

The following training sessions are conducted throughout the year to ensure strict adherence to information security amongst all employees.

- Training for newly hired employees
- Training for newly promoted supervisors and key personnel
- e-Learnings targeting all employees

## Thorough Compliance

### Status of Law and Regulations Violations

---

NGK disclosed a past violation of the law in fiscal 2015.

- ▶ [Plea Agreement with U.S. Department of Justice concerning Ceramic Substrates for Catalytic Converters](#)

# Risk Management

In line with business expansion, the NGK group is also engaged in minimizing risks related to globalization and diversification while augmenting our risk management structure. The CSR Committee periodically confirms and follows up on the status of Company-wide risk countermeasures to ensure every effort is being made to manage business risks.

## Basic Approach

---

The NGK Group Guidelines for Corporate Behavior were announced within and outside the company as our basic stance toward the realization of the NGK Group corporate philosophy of creating new value by providing products and technologies that contribute to a better social environment. This includes initiatives that strictly observe the protection of third party rights and corporate assets and trust through the practice of risk management.

▶ [Corporate Philosophy and Guidelines for Corporate Behavior](#)

## Risk Analysis and Response

The NGK Group assumes six categories of company-wide risks pertaining to compliance, information, employment and labor, making an effort to avoid and prevent these risks through deliberation of budgets and plans and overall examination and analysis in the course of execution and settlement processes at Strategy Committee and Executive Committee meetings.

Business continuity planning (BCP) was formulated to ensure the continuation of critical business functions in the event of large-scale natural disasters including wind and flood damage and earthquake, massive transportation accidents or other emergency situations, which will be addressed by the Central Disaster Prevention and Control Headquarters and BCP Countermeasures Headquarters.

### Company-wide Shared Risks

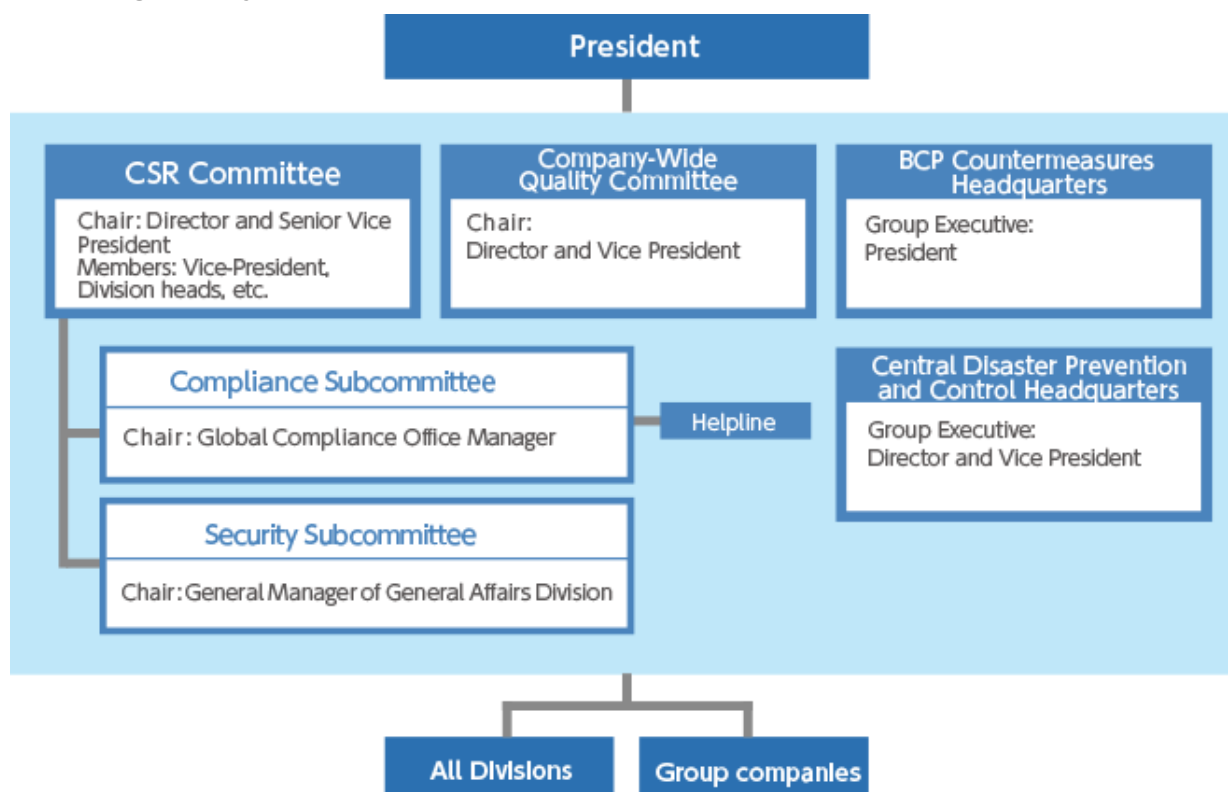
Category	Risk	Category	Risk
1.Compliance	Legal/Regulatory infractions / improper accounting	3.Employment/Labor	Labor troubles
	Misappropriation by individuals		Labor accidents
	Bribery		Traffic accidents
	Violation of intellectual property rights		Long-working hours/health management
	Human rights violations/harassment		Support for unskilled labor
	Trouble with local communities	4.Incidents/Accidents /Disasters	Incidents and accidents
	Support for antisocial forces		Natural disasters
2.Information	Information systems breakdown	5.Environment	Environmental management trouble
	Leak of proprietary or personal information		EMS insufficiency
	Inappropriate use of SNS	6.Product safety	Defective products

# Risk Management

## Risk Management System

NGK operates a risk management promotion structure led mainly by the CSR Committee. A person of responsibility and response structure is established for each risk category in an effort to improve risk response capabilities and risk prevention activities.

### Risk Management System



### Risk response

Normal operations	Follow up by CSR Committee and other committees	
Emergency situation	Legal/Ethical or incident/accident response	CSR Committee is in charge. Initial response by five people chosen ahead of time to handle emergencies +relevant corporate officers.
	Quality-related accidents	Company-Wide Quality Committee is in charge
	Disaster-related incidents	Central Disaster Prevention and Control Headquarters and BCP Countermeasures Headquarters are in charge

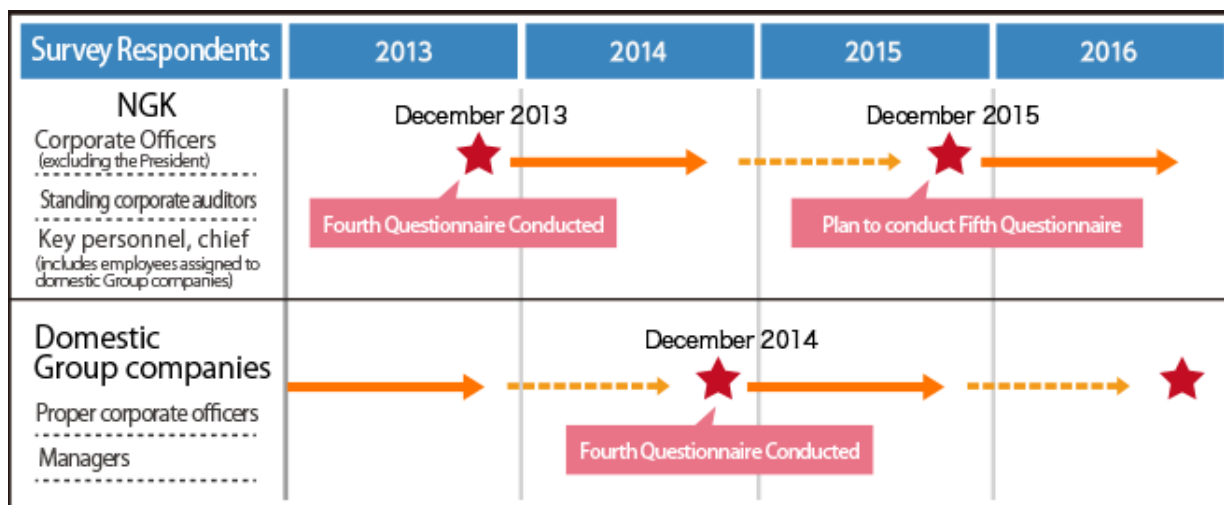
### Identifying and Preventing Risks Based on the CSA Questionnaire

As one part of enhanced risk management structure, NGK and domestic group companies conduct the Control Self-Assessment (CSA) questionnaire, which tests the knowledge of respondents regarding potential risks and their impact with the aim of ascertaining and avoiding various potential risks arising from daily business operations. Questionnaires targeting NGK and domestic Group companies are distributed every two years. In fiscal 2014, domestic



Group companies received the questionnaire to follow-up on risks identified by the CSR Committee. The CSA questionnaire, which also functions to raise awareness regarding attempts to prevent and accurately respond to risks, will continue to be implemented going forward.

### CSA Questionnaire Status



Number of applicable employees and response rate for the questionnaire conducted in December 2015: Number of applicable employees: 1703/Number of respondents: 1640 (Response rate: 96.3%)

\* Response rates in 2013 and 2011 were 96.6% and 89.2%, respectively.

### Risk Management Measures Based on the CSA Questionnaire

Company-wide risks Note: Human Resources, Legal, General Affairs, Purchasing, Information Systems, Environmental Management, Company-wide Quality Management and Construction and Maintenance departments

Major Risks	Countermeasures
Compliance	Enhance competition laws and bribery compliance framework (including overseas Group companies)
Information	Prohibit cameras, require confidentiality agreements
Employment and labor	Conduct organizational diagnostics, manage working hours, provide guidance to people and workplaces working long hours/overtime
Incidents, accidents and disasters	Comprehensive disaster-preparedness drills, BCP drills, disaster planning in each area
Environmental/Product safety	Patrols and drills, follow ups at Quality Committee and Quality Review meetings

### Legal Risk Management at Overseas Group Companies

The NGK Group is engaged in strengthening its ascertainment of legal risk management status in overseas business to minimize the globalizing and diversifying risks associated with business expansion.

We ask all overseas group companies to report information pertaining to the status of lawsuits, legal affairs and consultation with lawyers twice a year, and helpline usage, export controls and access to legal-related information once a year. Major issues found in such reports are reported to the Compliance Subcommittee and CSR Committee to share information. Consultations from overseas locations were handled by lawyers and legal departments to avoid risks.

# Risk Management

## Business Continuity Planning (BCP) Initiatives

---

### BCP Initiatives

The NGK Group is developing Company-Group-wide Business Continuity Planning (BCP) through the establishment of the BCP Headquarters, an organization for leading business continuity and quick recovery in the event of a large-scale natural disaster, led by the President. Countermeasure initiatives include the establishment of multiple manufacturing bases and procurement sources, the damage mitigation measures related to building and equipment and employee safety assurance.

### Fiscal 2015 Initiatives

We stockpiled supplies, such as food and blankets, at facilities that can also be used by the general public. (For the case of when a disaster prevents visitors' leaving)

As in fiscal 2014, a drill was conducted to deal with a situation assuming five to six hours after a large-scale earthquake. In addition, we conducted another drill assuming three days after the earthquake and exercised procedures up to decision-making on a restoration policy. We carefully examined pieces of information that will be necessary to make a decision on the restoration policy, and identified any problems in our existing plan.



### Initiatives Going Forward

We augment BCP efficacy through more practical drill and more advanced scenarios, expanding scope of training to include more employees in an effort to improve initial response and continue business activities.

#### Q&A with Person in Charge

**Q:** What improvements have been made to drill plans over the past few years? What benefits have you achieved from them?

**A:** Practical drills provide more findings than what we can assume from the desk, and these have helped us to improve our plan. We become more able to make fine-tuned improvements every year.

**Q:** What problems did the actual drills reveal? What is your plan for

**addressing the problems?**

**A:** How to convey constantly changing information in an easy-to-understand manner. We will examine this issue repeatedly by conducting a specific drill that synchronizes an assumed actual timeline from the onset of a disaster to the point of finalizing a restoration policy.



Minako Nojima, Corporate  
Strategy Office

# Risk Management

## Intellectual property management

---

The NGK Group encourages the creation of intellectual property rights with intellectual property education, and works to ensure its proper acquisition and use of intellectual property rights based on a policy of respect for the intellectual property rights of others and ourselves. Our business, research and development, and intellectual property divisions collaborate closely with the goal of building a competitive patent network for the Company. As of March 31, 2016, NGK holds 2,907 national patents in Japan and 4,042 foreign patents.

Number of patents held as of March 31, 2016	National patents of Japan	Foreign patents
	2,907	4,042

### Awareness Programs for Managers

NGK conducted manager-class awareness programs to enhance intellectual property strategy in the research and development and business divisions, making use of issues identified in these programs in NGK's intellectual property strategy.

In fiscal 2015, we held the 7th session of the lecture series "Considering Intellectual Property" on November 26. We invited Takashi Nagayasu, Advisor of Intellectual Property Group, Legal & Intellectual Property Department, YKK Corporation to give a presentation. Under the title of "Intellectual Property Activities of YKK Corporation," he lectured on the YKK Group's global intellectual property initiatives, relationship between the YKK's business model and patents, and the company's intellectual property activities in China. Appropriately 100 members attended the lecture meeting.

### Promoting Intellectual Property Training

#### Young Engineer Training

NGK continuously conducts presentations on patent map utilization and uses educational graphs and charts for the visualization of intellectual property information targeting mainly young engineers in research and development divisions. e-Learning has been used Company-wide for basic education.

In fiscal 2015, presentations on patent map utilization were held once, with a total of two employees taking part. 136 employees participated in e-learning. Furthermore, interactive-style small group seminars were held five times primarily for young engineers in the research and development and business divisions. These seminars were attended by a total of 62 employees who exchanged opinions on subjects including fundamental patent knowledge, how to view inventions seen in patent applications by other companies, internal invention incentive system, prior art search and how to read patent specifications.

#### Employee Invention Reward System to Provide Incentives for Employee Inventions

NGK established an employee invention compensation system comprised of application incentives, registration incentives and performance incentives and fairly compensate employees to encourage employee inventions and from the legal viewpoint based on the Patent Act. A portion of the profit from profitable products, for which the patent is used, is distributed to the inventors as performance incentives.

Since the system was established, a portion of the profit from products, including ceramics products used for purifying automobile exhaust gas and in semiconductor manufacturing equipment, has been distributed to the inventors.

Domestic Group companies have also established an employee invention reward system equivalent to that of NGK, whereby the NGK Group encourages the development of inventions by its employees.

Moreover, we are promoting intellectual property initiatives on a global scale by gradually introducing the employee invention reward system into overseas Group companies in accordance with local legal systems and labor practices to encourage intellectual property activities and to protect the property rights of individuals.

**Response to Intellectual Property Risks Overseas**

To support NGK's automotive exhaust purification ceramic products business engaged in global production activities, we have built a mechanism for appropriately managing inventions overseas. NGK promotes an intellectual property management practice overseas at the same level as in Japan.

## Respect for People and Ensure Comfortable Workplace

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.

### Basic Approach

In the NGK Group Guidelines for Corporate Behavior, our relationship with employees is based on Respect of Humanity and Assurance of Comfortable Working Environment and defined as follows.

**We will hire and treat our people in a proper and fair manner and will provide a safe and pleasant working environment in which our people can work comfortably without sacrificing their family life.**

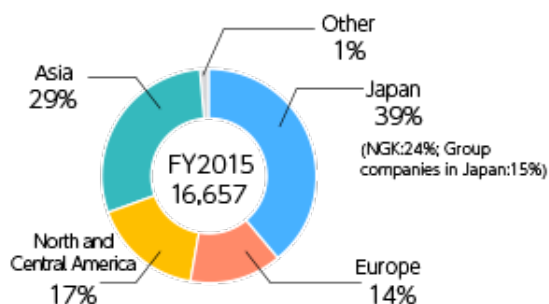
**We will make available the place and opportunities that can be challenged by people with versatile talent and will support the development of human resources through acquisition of knowledge and expertise.**

**We will prevent any bullying, discrimination, harassment or other acts that violate human rights and, if there is any violation, we will take appropriate actions in an expeditious manner.**

#### NGK Group Number of Employees

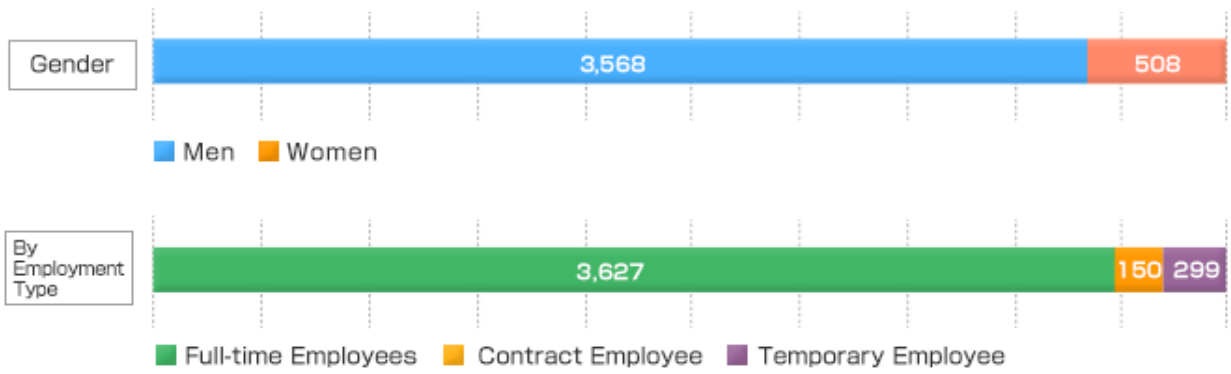
	FY2011	FY2012	FY2013	FY2014	FY2015
Number of Employees	12,372	13,159	13,210	16,217	16,657

#### NGK Group Employee Composition by Region



	Japan	Europe	North and Central America	Asia	Other
Number of employees	6,511	2,310	2,755	4,894	187

#### NGK Employee Status in Fiscal 2015



NGK has entered into direct contracts with Full-time and Contract Employees and indirect contracts with Temporary Employees.

Average age	Average number of years worked	Turnover ratio	Average salary
38.6 years old (Men: 38.6 / Women: 39.2)	15 years (Men: 14.8 years / Women: 16.3 years)	1.2%	7,746,664yen

#### Number of New Hires Remaining at the Company (3 years)

	Total	Men	Women
New graduate hires in 2013	87	77	10
Retention in 2016	82	73	9



# Respect for People and Ensure Comfortable Workplace

## Health and Safety

---

Aiming for zero industrial accidents, NGK has introduced an Occupational Safety and Health Management System (OSHMS) in fiscal 2007 as a mechanism for the ongoing systematic implementation of safety and health initiatives based on company-wide safety and health policies. 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.

### Companywide Health and Safety Policy

'Securing the safety and health of each employee is the very foundation of a company's operation and existence'

1. Comply with Occupational Safety and Health Law and Company Regulations.
2. Engage in activities in line with the OSHMS to continuously raise the safety and health standards.
3. Promote safety and health activities under good communication with employees.
4. Eliminate the risks of hazards and prevent accidents to provide a pleasant workplace.
5. Prevent employees' health disorders and promote health enhancement activities.

### Enhancing Safety and Health Activities

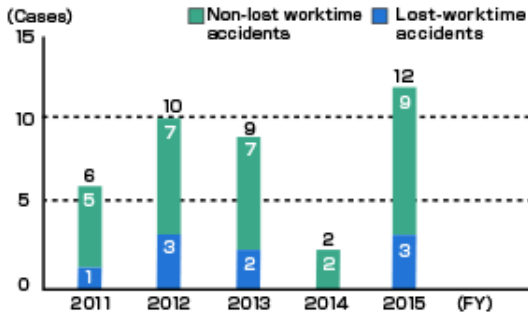
After an accident at the Chita Site in July 2012, NGK formulated a three-year action plan and strengthened safety measures. In fiscal 2015, even after the plan had been completed, we continued the exhaustive risk assessment which we began in fiscal 2012, formulating measures sequentially against the risks picked up from operations which are based on the degree of importance and risk. We set the degree of risk by assigning points to individual events based on the frequency of occurrence at work as well as possibility and seriousness of injuries.

Responding to this accident with sincerity, we expanded the scope of assessment into areas such as immediate responses, conducting an emergency review of the potential for serious accidents, such as getting caught or pulled into machinery and electric shock hazards, with the aim of promoting both tangible and intangible safety countermeasures.

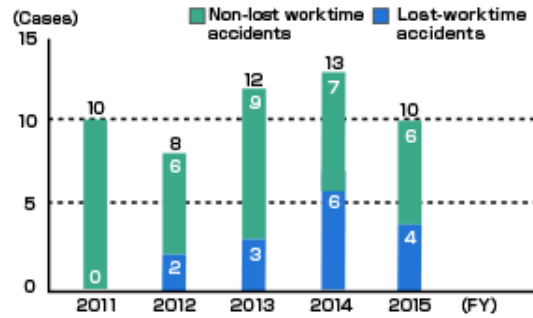
### Safety and Health Education Targeting the Prevention of Workplace Accidents

We also engaged in training to heighten safety and health awareness among employees. In fiscal 2015, we conducted individual safety education, safety awareness raising activities, and emergency response training as activities for developing safety-conscious employees. In the individual safety education, we focused on residual risk education, and in safety awareness raising activities we focused on enhancing awareness. In emergency response training, we provided an action manual and conducted drills on the initial actions. In addition to OJT for contract workers, accident prevention and traffic safety trainings are conducted one time a few months after an employee is hired as a company-wide follow-up training effort.

### Work-Related Accidents (NGK)



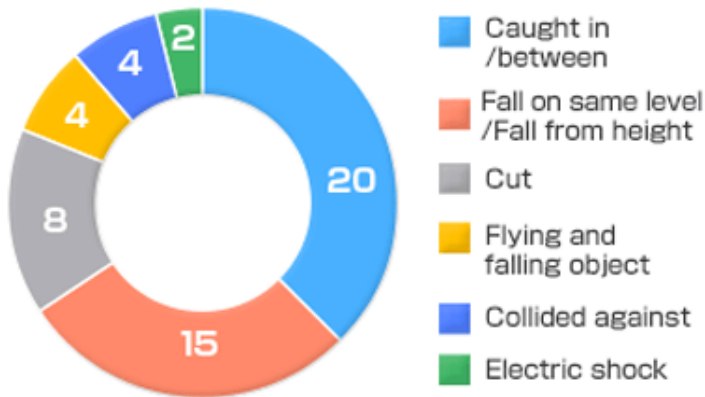
### Work-Related Accidents (Domestic Group Companies)



### Rate of Lost-Worktime Injuries (NGK)

	FY1990	FY2012	FY2013	FY2014	FY2015
All industry total	1.95	1.59	1.58	1.66	1.61
Manufacturing industry total	1.30	1.00	0.94	1.06	1.06
NGK Company-wide total	0.60	0.41	0.28	0.00	0.41

### Work-Related Accidents by Type (past 7 years)



### Rate of Occupational Disease (NGK)

FY2011	FY2012	FY2013	FY2014	FY2015
0.71	0.41	0.14	0	0

### Number of Deaths from Work-Related Accidents (NGK and Domestic Group Companies)

	FY2011	FY2012	FY2013	FY2014	FY2015
(Person)	1	0	0	0	0

### Company-wide Deployment of 5S Activities

Since fiscal 2012, NGK has been promoting the expansion of 5S\* activities Company-wide to include administrative divisions. Teams formed in each workplace promote the establishment of team objectives and periodic times to conduct activities. Successful examples were reported to the Company-wide Safety and Health Committee and deployed throughout

the company

\* Sort, Set in order, Shine, Standardize and Sustain the workplace.

## Following Up with Employees Working Long Hours

NGK provides employees working long hours, including non-regular and part-time employees with ongoing opportunities to meet with industrial doctors for health consultations and exams.

The results are reported to and followed up on by Safety and Health Committees at each worksite.

### Consultations by Employees Working Long Hours

Consultations (people)	FY2011	FY2012	FY2013	FY2014	FY2015
General employees	135	125	118	63	154
Managers	149	107	46	46	72

Note: Figures are total number of people. Counted as 80 hours/month, 300 hours/six months.

## Enhanced Safety and Health Management

### Overtime Work Hour Trends (General employees)

Hours worked (per person)	FY2011	FY2012	FY2013	FY2014	FY2015
Annual fixed working hours	1,919	1,919	1,919	1,919	1,919
Annual actual working hours	2,103	2,089	2,087	2,077	2,085
Average overtime work per month	24.6	24.1	24.4	24.5	26.4

Aiming for zero accidents, NGK is promoting the creation of an Occupational Safety and Health Management System (OSHMS). Under the Company-wide Safety and Health Committee, we have established Safety and Health Committees at each site, department, factory and workplace, applying a PDCA cycle, with the aim of systematic and organizational improvement of occupational safety and health activities.

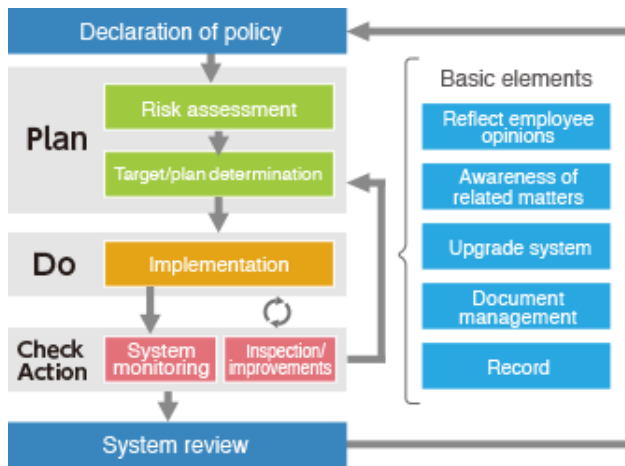
In fiscal 2015, we focused our efforts on activities for developing safety-conscious employees and improving hygiene. We will continue our focus on improving the work environment in accordance with OSHMS.

### Worksites with External Certification in Safety and Health Management Systems (JISHA system OSHMS)

Worksite	Year Acquired	Renewed
NGK	Nagoya Site	2008 2014 Acquired certification after second renewal inspection
	Chita Site	2009 2013
	Komaki Site	2009 2015 Second renewal inspection scheduled



## PDCA Cycle



### Holding a Global Safety and Health Managers Meeting to Review Safety Measures and Prevent Risks from Arising

The Ceramic Products Business Group of NGK held its first Safety Process Expert Meeting (PEM) in September 2015. The purpose of this meeting was to encourage group-wide involvement in reviewing safety measures and preventing the occurrence of risks. Eleven supervisors in charge of safety and health and nine manufacturing managers from inside and outside of Japan gathered at headquarters to report problems and issues specific to their individual locations, and discussed causes in reference to past disasters as well as the future direction of safety activities.



### NGK Employees' Volunteer Team Wins the All-Round Category of Emergency Handling Skill Contest

The emergency relief team formed by voluntary employees of NGK Insulators Tangshan participated in the Safety Production Emergency Handling Skill Contest held on May 23, 2015 in Tangshan, China, and won in the team all-round category. Twenty-seven teams comprised of 594 people in total participated in the contest, and competed on the speed and accuracy of extinguishing a fire and rescuing injured people. The NGK Insulators Tangshan emergency relief team marked high scores in all categories.

We will continue with our efforts to improve our employees' safety awareness by regularly conducting drills with our employees to practice fire-fighting and rescue procedures.



## Promotion of Activities Supporting Mental and Physical Health

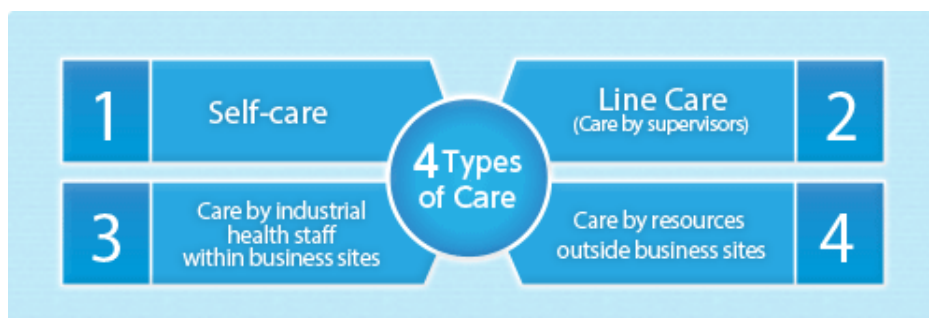
### Four Types of Care for Mental Health

NGK emphasizes the importance of promoting the health, both physical and mental, of its employees. The medical status of

employees working long hours and the condition of those who need medical treatment are reported at monthly Safety and Health Committee meetings held at each site in an effort to thoroughly promote the reduction of work performed outside normal working hours.

We deploy ongoing activities focused on the Four Types of Care recommended by the Ministry of Health, Labour and Welfare. In fiscal 2015, we worked on taking adequate personnel measures by closely exchanging information between our industrial physicians and the Human Resources department on employees with mental health problems. We are conducting mental health surveys including questions on sleep disorder, and our industrial physicians interview those employees who have any trouble. We will conduct stress checks starting in September 2016.

#### Four Types of Care



#### Position-Based Mental Care Education

We conduct ongoing position-based mental care education. Again in fiscal 2015, we provided education for new hires, regular employees and managers totaling 558 people. The education of managers focused on practical study, not only learning from lectures, but also through support for people in the workplace who are mental and practicing methods of careful listening\*1 and autogenic training\*2.

In addition, NGK gives consideration to employees on sick leave, providing systems such as starting back to work on a half-day basis, gradually increasing to regular work hours after consultation with an industrial physician, enabling employees to devote their full attention to recovery with peace of mind.

Also, in consideration of the various stress-inducing aspects of overseas postings, such as climates, cultures and environments that differ from Japan, NGK makes an effort to provide health consultations focused on mental healthcare.

\*1 The careful listening method: Practical instruction involving two people role play as listener and speaker while pretending to discuss a problem. The objective is to better understand the speaker (subordinates), build better relationships and eliminate stress.

\*2 The autogenic training method: Training method for physical and mental relaxation aimed at recovering from physical exhaustion, easing stress, improving work productivity and mitigating depression and anxiety.

#### Position-Based Mental Care Education is conducted at NGK. (People)

	FY2011	FY2012	FY2013	FY2014	FY2015
New hires	97	103	88	56	199
General employees	178	227	293	291	272
Managers	40	63	95	95	87

#### Elimination of Harassment

The NGK Group deals strictly with harassing behavior (for example, sexual harassment or power harassment) by employees that is injurious to individual dignity and interferes with workplace order and business execution.

Efforts are made to respect the diversity, character and individuality of each of our employees, while avoiding discrimination based on one's birthplace, nationality, creed, religion, gender, race, ethnicity, age, physical abilities, medical history, education or social position. Furthermore, we do not allow forced labor, child labor or any other forms of inhumane conduct. In addition to holding lectures aimed at preventing harassment, we also cover the prevention of harassment in compliance training to inculcate a thorough awareness among employees at all levels and positions. We established the helpline for

consultation and reporting of harassment in the workplace.

- ▶ [Compliance training](#)
- ▶ [Helpline system](#)

#### **NGK Group Harassment Elimination Activities**

	FY2011	FY2012	FY2013	FY2014	FY2015
Lectures held	6	6	4	6	11
Participants	227	229	189	203	277

# Respect for People and Ensure Comfortable Workplace

## Diversity

It is NGK Group basic policy to recruit human resources and offer stable employment and equal opportunities regardless of race, nationality, creed, gender, or physical abilities. 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.

### NGK New Graduate Hires

Note: Excluding new graduates planned to transfer from temporary to regular positions

(People)

Joined company	University graduate			Junior college/ Vocational School	High school graduates
	Total	Men	Women		
April 2012	60	50	10	0	42
April 2013	62	53	9	0	25
April 2014	36	28	8	0	20
April 2015	38	29	9	0	30
April 2016	94	67	27	0	60

### NGK Mid-Career Hires

(People)

Joined company	Total				
	Total	Men university graduates	Women university graduates	Other men	Other women
April 2011 - March 2012	82	30	6	37	9
April 2012 - March 2013	53	17	15	21	0
April 2013 - March 2014	7	3	1	3	0
April 2014 - March 2015	49	15	4	30	0
April 2015 - March 2016	200	69	12	116	3



## Promoting the Success of Women

### Appointment of Female Key Personnel (Management Staff)

The NGK Group strives to increase opportunities for motivated and skilled people to enhance their skills regardless of gender. We are also engaged in the creation of an environment that makes working comfortable for women. The number of female key personnel (management staff) of NGK in fiscal 2015 was 14.

### Promoting Use of the System for Transferring to General Employment Jobs among Women

NGK has instituted a System for Transferring to General Employment Jobs, enabling employees who joined the company in general employment positions to transfer into career-track positions offering a wider range of duties and specializations. Career plan roundtable discussions led by employees who have transferred to career-track jobs and other activities to promote use of this system resulted in a total of 70 employees, including 10 in fiscal 2015, transferring from office work to general employment jobs.

### Establishment of a Career Consultation Helpdesk

In March 2016 we established a career consultation helpdesk for employees to discuss career-related concerns for women while working at a workplace with few women. At the helpdesk, certified career counselors provide support and consultation services to employees, while strictly observing confidentiality.

### Certified as a Company Promoting Women's Activities by the City of Nagoya\*

In recognition of our efforts to create a workplace environment that encourages women's activities such as revising our System for Transferring to General Employment Jobs, we were certified as a Company Promoting Women's Activities by the city of Nagoya in January 2012. In 2014, our certification was renewed in recognition of our continuous efforts to promote women's active participation to their working life and to further improve our internal systems.

\* Note: System for certifying companies that conduct outstanding initiatives enabling women to actively participate in the workplace in the areas of (1) awareness improvement, (2) work-life balance and (3) promotion of women's active participation.



### January 2012 Company Promoting Women's Activities (City of Nagoya)

NGK is certified as a Company Promoting Women's Activities by the city of Nagoya.

### Submitting our Action Plan for Promoting Women's Active Participation to their Working Life to MHLW

On January 28th, 2016, NGK submitted a notification of formulating an action plan in accordance with the Act to Advance Women's Active Participation to their Working Life to the Ministry of Health, Labour and Welfare. This submission was made together with seven companies within the prefecture prior to other certified companies. We formulated an action plan for creating employment and workplace environment which enhances women's participation. In order to achieve our goals, we will continue working to solve problems through various initiatives.



Tadaaki Yamada, Vice President and General Manager of the Human Resources Department, is submitting the action plan (on the right in the photo). He said, "We will provide a wide range of opportunities for female employees, and make the most of their inherent potential through each suitable work style. We wish them to advance their skills."

## Action Plan

### Topics

- Although gender is not a consideration in terms of issues, criteria for promotion, and service years, the number of

women in management positions and its candidates is small.  
 - Occupational range (job types, job locations and titles) for successful women is limited.

## Goals

- Fostering a corporate culture that promotes women's active participation
- Increasing the number of candidates for managers (section chief level) by 1.5 times and preparing them for appointment to management positions in future.

Initiative 1: Raising career awareness of female employees, and utilizing their inherent potential.

Initiative 2: Increasing the ratio of women among new graduate hires and diversifying career opportunities.

## Ratio of women employees

	FY2011	FY2012	FY2013	FY2014	FY2015
Ratio of women employees *1	13.1%	13.4%	13.3%	12.9%	12.6%
Ratio of women key personnel *2	1.1%	1.0%	1.5%	1.8%	1.8%
Ratio of women general employees *3	16.6%	16.9%	16.6%	16.1%	15.6%

## Ratio of Women in Managerial Positions at Overseas Group Companies (as of August 2015)

	Europe	North and Central America	Asia	Other
Ratio of women in managerial positions *2	7%	12%	28%	22%

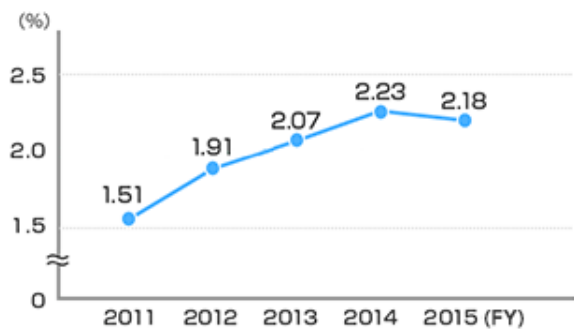
\*1 Ratio among all employees \*2 Ratio to all key personnel \*3 Ratio among all general employees

## Expanding Employment of the People with disabilities beyond the Legally Stipulated Rate

The NGK Group is engaged in initiatives to expand employment of people with disabilities. As a result of promoting employment by accepting students from special needs schools as trainees and hiring participants from employment seminars for people with disabilities, the ratio of people with disabilities employed by NGK at the end of fiscal 2015 was 2.18%, which exceeded the legally mandated ratio of 2.0% instituted in April 2013 for the third straight year.

In fiscal 2015, trainees from special needs schools have increased as a part of our attempt to promote recruiting them for manufacturing division.

## Percentage of Employees with disabilities (NGK)



## Various Systems Attempting to Make Use of Diverse Human Resources

The NGK Group employs systems promoting the use of human resources based on the idea that human resource diversity is linked to changes in organizational culture.

### Human Resources Utilization Systems Aligned with Employee 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. Open positions are announced internally and eligible applicants are appointed, a system for career track registration 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, and a system designated as “FA (free agent)” for employees to register their personal desires and preference of jobs to appeal themselves internally.

### Internal Job Application System Results

Fiscal year	2011	2012	2013	2014	2015
Applications (Cases)	16	3	2	19	25
Recruits (People)	27	4	3	23	36
Applicants (People)	9	8	3	12	23
Successful applications (People)	3	4	1	8	9

### Career Follow-Up System

Fiscal year	2011	2012	2013	2014	2015
Registered (People)	2	7	5	2	2
Transferred (People)	2	2	0	1	1

### FA System

Fiscal Year	2015
Registered (People)	2
Transferred (People)	1

## Promoting the Regular Employment of Manufacturing Contract Employees

NGK established a system for appointing manufacturing contract employees to become regular employees, and 25 employees were appointed in fiscal 2015. Excellent employees are identified through biannual human resource assessments and recommended by division heads to sit for the regular employee promotion exam. Those who pass the exam become regular employees.

Excellent workers out of the ones who transfer to regular employment positions also have a chance for promotion to two higher ranks of company qualification. In fiscal 2015, 11 employees were promoted under this system.

### Transfers from Contract Manufacturing Worker to Regular Employee

Fiscal year	2011	2012	2013	2014	2015
Converted employees	23	17	4	27	25

### Double Promotions

Fiscal year	2011	2012	2013	2014	2015
Promoted employees	11	11	7	4	11

## Management of Follow-up System to Fit Young Employees in the Workplace

To prevent career mismatches, there is a follow-up system for younger employees in NGK. We conduct surveys and interviews about their jobs and the work environment to employees in their second year and manufacturing technology staff in their third or fourth year of employment. If they desire, feedback is provided to their superior managers, leading to younger employee's job stability. A job rotation system is provided for young career-track employees, and those in their fourth year and beyond are transferred to a different job including overseas and outside of the departments to which they currently belong.

## System for Rehiring Employees Including Half-Time Employment Option

NGK introduced a rehiring system after retirement for regular employees in 2001, and for management staff in 2007. In fiscal 2013, we upgraded this system in accordance with the work style of senior employees by offering full-time or half-time employment options.

### NGK Rehiring System

Fiscal year	2011	2012	2013	2014	2015
Rehired employees	222	213	196	150	157
Of which are half-time employees	53	65	62	33	26
Ratio of rehired employees among all employees*	6.1%	5.8%	5.3%	4.0%	3.9%

Note: All employees excluding contract and part time employees.

# Respect for People and Ensure Comfortable Workplace

## Work-life balance

---

To promote a work-life balance and reduce long working hours, in fiscal 2011 NGK formulated specific rules based on initiatives that had been conducted by labor-management over the previous three fiscal periods.

### Seven Rules for Promoting a Work-Life Balance

1. No more than 70 hours of overtime work per month
2. Overtime work exceeding 45 hours per month limited to six months each year
3. At least six days of paid leave must be taken each year
4. No more than 300 hours of overtime work per six months
5. In principle, there will be no overtime work on refresh days (Wednesdays and Fridays). If overtime is necessary, a prior permit application must be submitted.
6. In principle, work must not be performed for more than seven days straight. If work in excess of seven days straight is necessary, a prior permit application must be submitted.
7. Written applications must be submitted when requesting employees work on holidays or late at night.

### Initiatives to Limit Overtime Work

If, for any reason, overtime work in excess of 45 hour per month appears likely, the reason for the increase in overtime work must be confirmed through prior labor-management consultations to distribute time periods and workloads or increase the number of employees.

### Countermeasures for Mitigating Increased Overtime Working Hours

Each year, the NGK discloses hours worked and paid leave utilization statistics to its Worker's Union for discussion and countermeasure deliberation purposes.

For employees identified as working long hours, the Worker's Union meets with each workplace individually to discuss these details and devise countermeasures.

Employees who have been temporarily assigned overseas must submit in writing the reason for working long hours and are required to submit to a health check.

### Rate of Paid Leave Utilization at NGK

Fiscal year	2011	2012	2013	2014	2015
Days granted	17.1	17.6	17.8	18.4	18.3
Days used	10.5	10.9	11.2	12.7	11.9
Utilization rate	60.6%	62.0%	62.6%	69.1%	65.2%

For the third consecutive year,  
more than 99% of employees use six  
or more granted days of paid leave

For the fifth or more consecutive year,  
average number of used days of  
granted paid leave exceeds 10.0

For the fifth or more consecutive year,  
use rate of granted paid leave  
exceeded 60%

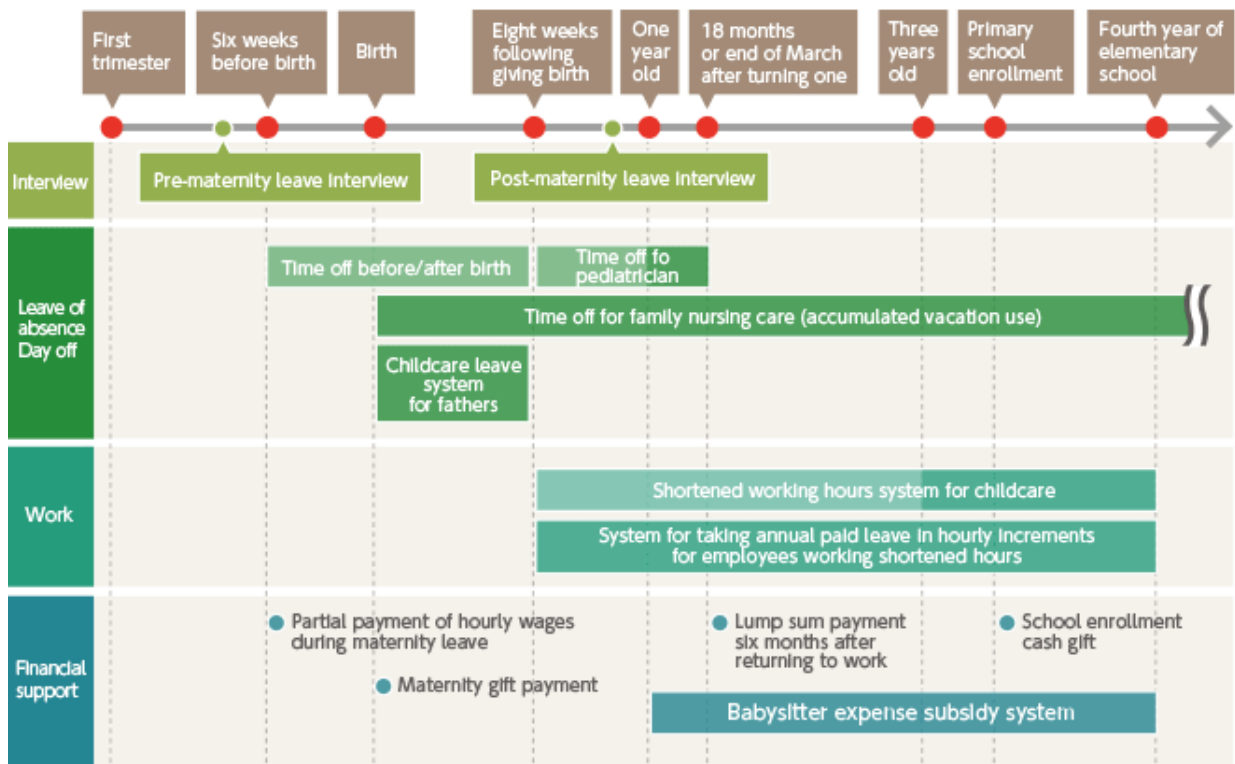
## Enhancing Systems Supporting Work-Life Balance

### Enhancing Systems Supporting Work-Life Balance

NGK offers flexible systems to help employees maintain a balance between work and lifestyle, especially family care. To support childcare and nursing care, we are enhancing financial support by providing a babysitter expense subsidy system, and a lump-sum payment system for nursing care support. Considering , the working environment, we support by providing shortened working hour system.

### Enhancement of Work-Life Balance System

In 2010, NGK made a major revision to its human resource system, and we have since been continuously enhancing our support measures by identifying employees' needs. One recent example is the establishment of a system in 2013 to allow employees to take a leave of absence for accompanying a spouse posted overseas for work.



### Overview of Childrearing Support Measures and Users

#### Systems that Exceed Legal Requirements

System name	Details	Fiscal Year	Number of users			
			2012	2013	2014	2015
Childcare leave of absence	Last day of the month in which the child turns 18 months old or the end of March after the child turns one, whichever longer (Legal requirement: until child is 18 months old)	Female	16	21	26	29
		Of which returned to work (Ratio of returned)	16 (100%)	19 (90.5%)	24 (92.3%)	- (Taking a leave of absence)
		Ratio of employees still working a year after returning to work	100%	100%	100%	- (Taking a leave of absence)
		Male	9	8	11	10
		Of which returned to work (Ratio of returned)	9 (100%)	8 (100%)	11 (100%)	9 (Taking a leave of absence)
		Ratio of employees still working a year after returning to work	100%	100%	100%	- (Taking a leave of absence)
Shortened working hours during childrearing	Six hours or seven hours per day for employees until the fiscal year when their children start fourth grade in elementary school (Legal requirement: Only for children not yet three years old)	Users	33	38	43	53

**Systems Operated Independently by NGK**



System name	Details	FY2012	FY2013	FY2014	FY2015
Lump sum payment six months after returning to work	Lump-sum payment received six months after returning to work	11	13	20	16
System for taking annual paid leave in hourly increments for employees working shortened hours	Paid leave can be taken in hourly increments by employees working shortened hours (one day). Convenient for those with children who suddenly develop a fever and need to leave early	Unintroduced	13	20	53
Childcare leave system for fathers	Unused annual paid holidays can be used for childcare leave of absence	9	8	11	11
Pre-maternity leave interview	Interview attended by employee, HR and supervisor to provide the employee with peace of mind while on maternity leave and ensure both sides have proper understanding of procedures related to systems supporting childcare and work.	15	23	25	22
Interview before returning to work	Supports smooth transition back to work focused on work details and work style.	13	14	14	27
System for accompanying family on overseas assignment	Enables employees to take a leave of absence of up to two years and six months while accompanying a spouse (including a non-NGK employee) posted overseas for work, and allows employees to continue their career path, which was difficult to do prior to the establishment of this system.	-	1	1	2
Maternity gift (family fund)	¥50,000 gift when a child is born	156cases	165cases	183cases	173cases
Elementary school enrollment gift (family fund)	¥50,000 gift when a child enrolls in elementary school 106 cases	106cases	134cases	137cases	124cases
Babysitter expense subsidy (family fund)	Provides up to ¥100,000 per year for employees who must pay for a babysitter or daycare due to working hours.	25	33	13	5

### **A user of the system for accompanying family on overseas assignment**

**Noriko Izumi, Sales and Marketing Division, Power Business Group**

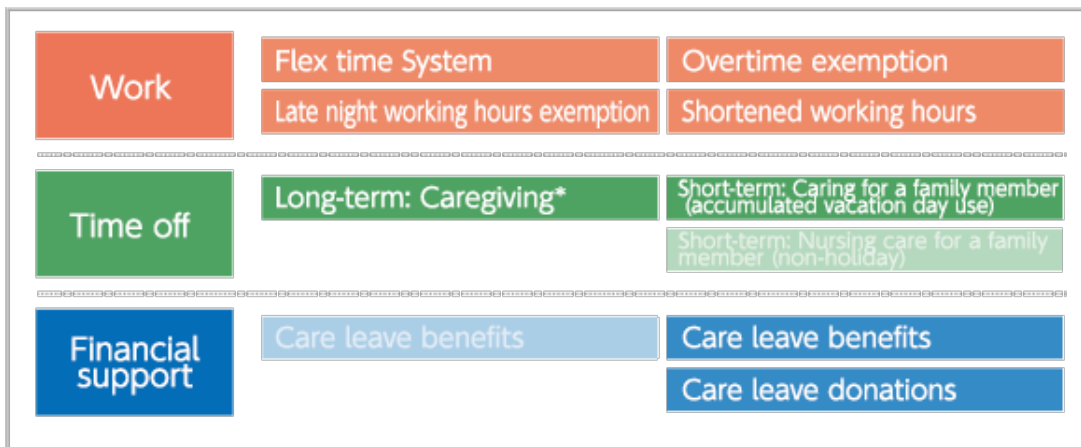
When my husband was posted to Holland, I decided to use this system and accompany him in consideration of the

family environment for our two small children. We have been able to share a lot of time together in Holland because we live together. Living in Europe where there are many countries close to each other has been a good opportunity for our children to experience different cultures directly.

When I return to work, I want to use the energy I have accumulated during this leave to perform much better than before.



### List of Systems for Nursing Care Support



#### \* Time off for caregiving

1. In principle, taken once for the reason of caregiving for the same family member. (Period: Last day of month one year after taking leave)

2. For caregiving requiring a total of 93 days or less, employees can repeatedly take multiple days off for the reason of caregiving for the same family member. (Period: Up to a total of 93 days)

### Revising the Mutual Aid System to Enhance Support for Family Care

In September 2015, we enhanced our mutual aid system, the Family Fund, for the welfare of employees belonging to NGK, the NGK Workers' Union and the NGK Health Insurance Association. Major revisions include the areas that were difficult to complement in the previous system such as supporting nursing care for elders, lump-sum payment at the time of retirement and rehiring, and congratulatory or condolence money. In particular, nursing care support is a social issue that anybody could face, and so we consider a wide range of support is required in this area. In addition to the existing system of supporting leaves of absence for nursing care, we newly established a system to provide lump-sum payment for employees whose family members are certified as requiring nursing care.

### Establishment of a Work and Life style, Especially Family Life Support Site on the Company Intranet

To spread awareness of childrearing measures, a work and family support site was created on the company intranet to describe various systems and support measures, as well as introduce feedback from users of these systems. A consultation function

was added, enabling employees to communicate directly with the people responsible for facilitating support. The same information is provided in internal company reports. Furthermore, employees taking time off to give birth or care for children are provided with a presentation explaining how these systems work, which includes the participation of their supervisor to ensure both sides have a clear understanding of what these policies entail in an effort to create an environment in which taking advantage of these systems and support is as easy for the user as possible.



[December 2012 Company Supporting Childcare \(Ministry of Health, Labour and Welfare\)](#)

# Respect for People and Ensure Comfortable Workplace

## Human Resource Development

---

At NGK, people are our most precious management resource. With respect for employee motivation and ambition, we engage in the cultivation of human resources who will lead the next generation. In recent years, NGK has concentrated efforts on the enhancement of training to develop future leaders to take management positions as well as global talented staff to support our overseas business expansion.

In fiscal 2015, we reinforced education programs for globalization and innovation.

In global training, we newly introduced global mindset training for all newly appointed section chiefs. We provided global training to a wider range of employees in terms of job grades and job types, by introducing personal counseling and mindset training to English language lessons for new employees, and expanding training for developing global human resources to domestic workers while this training was limited to the candidates for overseas posts.

Innovation training was revised by expanding the scope of target trainees and upgrading the contents. In terms of target trainees, innovation training was included in training for newly appointed section chiefs. Regarding the contents, we newly implemented a program jointly with other companies to encompass idea generation through to the proposal of new businesses.

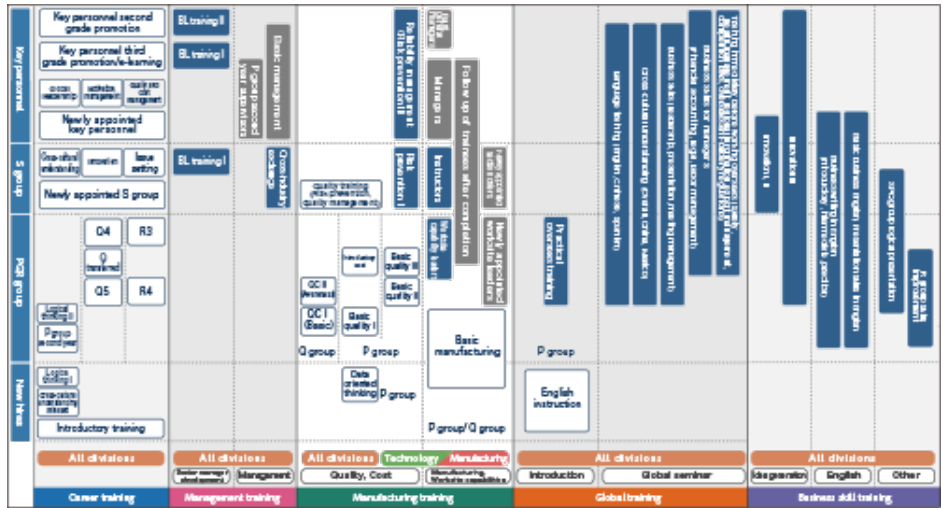


### Promoting Systematic Education through Nearly 120 Programs

NGK is engaged in systematic human resources training covering the four areas based on training conducted at each juncture of an employee's career, such as when joining the company or receiving a promotion. Other than compulsory position-based training, we conduct functional training, offering approximately 120 types of programs throughout the year. NGK conducts management training, including management foundational training targeting newly appointed Group managers, which we are expanding to include younger key personal. Manufacturing training covers categories including worksite capability enhancement and supervisor training, while training for younger employees continued to focus on materials, forming, processing, drying, firing and other ceramics manufacturing fundamentals. Global training includes mindset such as cross-cultural communication, presentation skills, business skills such as international law and labor management, health and safety management, and compliance related education. Foreign language training for various languages is also provided.

Business skills training is provided as a program aimed at enhancing the skills of all our employees. We are engaged in planning optimized training in consideration of not only company needs but also employees' business needs.

### FY2015 Training Scheme



Legends:   
 [White box] Selecting trainees based on employment status such as new hire, promotion, and service years (Position-based training)   
 [Grey box] Selecting trainees based on job site and position   
 [Blue box] Selecting trainees by picking out or needs

Enlarge the image



Innovation training



Leadership training for enhancing worksite capabilities

**Training Participant Summary (total participants)**

**Average time spent in training annually per employee**

	FY2013	FY2014	FY2015
Men	28	22	21.8
Women	15	14	15.4
key personal	18	15	15.3
General employees	28	23	22.5

	FY2013	FY2014	FY2015
Key personal Men	927	960	876
Key personal Women	37	30	16
General employees Men	2,779	2,752	2,775
General employees Women	308	302	321
Men (total)	3,706	3,712	3,651
Women (total)	345	332	337

#### Average annual cost of training per full-time employee (¥10 thousand)

	FY2011	FY2012	FY2013	FY2014	FY2015
Average expenses	11	11	11	11	10

### Quality Improvement Training for manufacturing

In line with a younger workforce and an increase in mid-career hires coming from a variety of backgrounds, it is necessary to create training programs that cover a variety of needs. Given these conditions, we provide quality improvement training for employees in manufacturing divisions in four classes based on the skills and experience of the participants. The trainees learn and try practical exercise based on their level of understanding and type of job.

#### Number of Participants in Quality Improvement Related Training in FY2015

Leader training for worksite capability enhancement	8
Leader training for worksite capability enhancement at Ishikawa Plant	8
Follow-up training for worksite capability enhancement	30
Instructor development training for worksite capability enhancement	5
Instructor brush-up training for worksite capability enhancement	19
Worksite IE basic	16
Quality control I	26
Quality control II	90

## Measuring Human Resource Development Achievements Using Quantitative Indices

We introduced quantitative indices to objectively evaluate the results of human resource development. We aim to accelerate employee skills development by making use of these objective evaluations.

### Quantitative Indicators to Measure the Outcomes of Human Resources Development

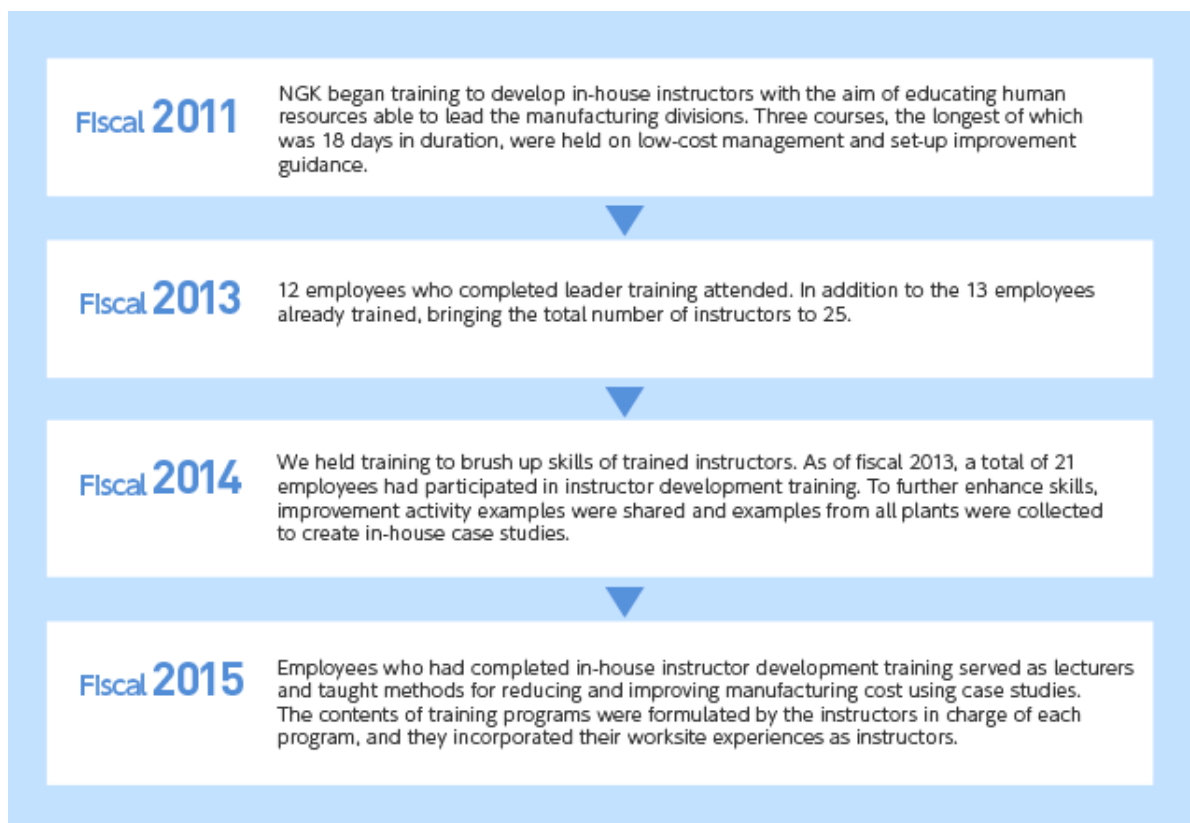
- Implementing assessments of understanding and satisfaction level after training using post-training surveys
- Checking the achievement level by the TOEIC test and instructors (native speakers of the target language)
- Tests during and after the training
- Calculated cost of loss
- Evaluation scores by judges etc.

## Onsite Leader Human Resource Development

As veteran employees retire in large numbers, the ratio of employees with limited experience is increasing at manufacturing sites. The NGK Group is systematically promoting training aimed at strengthening worksite capabilities.

### Progress of Training Aimed at Strengthening Worksite Capabilities





Furthermore, in fiscal 2011, NGK began training for all manufacturing site worksite leaders aimed at improving the leadership qualities and communication skills of on-site leaders that guide and cultivate younger employees. In fiscal 2015, 41 newly appointed worksite leaders underwent training on labor management and recognition of the role of the worksite leader.

In training aimed at enhancing worksite capabilities, actual work improvement ability details were converted to a yen amount as one means of assessing the results of improvements.

#### FY 2015 Training Results

In-house instructor development training: 4 days	5 completed
Brush-up training: 2 days	7 completed
Worksite leader training: 2.5 days	41 completed
Financial impact of improvement training results (Total amount)	6.41 million yen
Financial impact of individual improvement results	0.8 million yen

## Voice of an In-House Instructor

Tadayoshi Sasaki  
NGK ADREC CO., LTD.

I play a role as an in-house instructor. In order to keep up with the accelerating speed of business, we need to promptly develop worksite leaders who can take the initiative so that we can enhance manufacturing capabilities and succeed in global competition. When training my juniors, I try to have them experience joy, accomplishment, and exhilaration by solving problems with colleagues so that they can pursue higher goals while finding satisfaction in the process.



Mr. Sasaki introducing cost-reduction improvement cases in his training program.



Currently we have about 30 in-house instructors. They improve the training programs through continuous discussions.

## English Instruction for New Employees

With the aim of rapidly cultivating global human resources, we began English language instruction in fiscal 2011 targeting all new hires in general positions.

The training is level-based and conducted during the first year of employment, consisting of foundation development training led by Japanese instructors and training to develop practical business skills led by native speakers to meet the individual achievement levels. In addition, teams are formed with trainees of different levels of ability in an attempt to enhance capabilities through friendly competition during the training.

In fiscal 2015, we added a program to enhance external communication skills required for global human resources. In order to reinforce employees' awareness of globalization and to raise their motivation, we added global mindset training and encouraged self-driven initiatives based on an awareness of their own goals. Furthermore, we started to offer personal counseling in July and November for instructors and secretariat to gain a better insight of individual progress and to provide good advice.

Time spent learning English  
per employment new hire  
(fiscal 2015 results)

128 hours  
per  
year

## Practical Overseas Training

NGK conducts overseas practical training conducted over a period of six months at global Group companies with the aim of developing global human resources. The training focuses on developing practical business and communication skills in a cross-cultural environment targeting young employees who are future candidates for overseas postings.

In fiscal 2015, two employees recommended by their divisions participated in language training for two months in the U.K. and in China. After the training, one of them was posted to Germany and the other participated in another four-month

practical training in China. Since this training system started in 2010, a total of 48 employees have participated in the training programs and 31 of them have been posted overseas.

# Respect for People and Ensure Comfortable Workplace

## Dialogue with Employees

---

### CSR Talk Live (Dialogue with Employees Aimed at CSR Practices)

To deepen each and every employee's understanding of CSR initiatives, NGK conducts "CSR Talk Live," a talk event facilitating direct discussion between senior management and employees held at all domestic sites since fiscal 2009. Going forward, we will attempt to further inculcate CSR through additional direct dialogues.

An overview of fiscal 2015 CSR Talk Live is presented in the digest.

▶ [CSR Talk Live](#)

### Distributing the Latest Information on CSR Activities on the CSR-Web

The CSR-Web was established on our intranet to introduce Group CSR initiatives with the intent of inculcating an awareness of CSR among all NGK domestic Group In addition to sharing CSR topics with all employees and presenting objectives for each area, information on the site is regularly updated to include CSR Committee meeting discussions and all, in principle, Q&A between senior management and general employees who attend the CSR Talk Live event in an attempt to provide a wealth of content only available on this website.



### Communication between Labor and Management

NGK makes an effort to build labor-management relations founded on mutual trust through communication with various consultative bodies, such as the Labor-Management Advisory Board, the Office Advisory Board and the Regular Labor-Management Council.

NGK and the NGK Worker's Union hold Labor-Management Advisory Board meetings to talk about business conditions and performance, and Office Advisory Board meetings to share issues pertaining to manufacturing, work systems and workplace environments from each worksite. In addition, at Regular Labor-Management Council meetings, labor and management also proactively exchange opinions.

Labor and management value the implementation of measures to improve employees' work styles in diverse ways, rather than just focusing on work hours. In fiscal 2015, we regularly held study sessions covering all work-life balance issues. As a result of these discussions, it became possible to use accumulated paid leave for infertility treatment starting in July 2015, and in September 2015 a lump-sum payment system was introduced for nursing care support.

### Survey on Workplace Vitality

NGK conducts a survey to measure workplace vitality every two years, collecting responses from the entire workforce. The survey aims to identify organizational issues associated with the workplace by analyzing responses to questions to evaluate employee satisfaction, and carry out measures to increase their satisfaction with jobs and work systems. Overall survey results are reported in the internal newsletter, while the results of individual organizations are provided to each related manager for use in day-to-day activities to improve the workplace environment.

# Respect for People and Ensure Comfortable Workplace

## CSR Talk Live

---

In an effort to deepen employees' understanding of CSR and related initiatives, the NGK Group hosts "CSR Talk Live." This event is held at all sites in Japan to provide an opportunity for direct discussion with senior management on this topic, starting in fiscal 2009.

In fiscal 2015, a total of ten events were organized in seven locations, including NGK Filtech, Ikebukuro Horo Kogyo and NGK Fine Mold, and were attended by a total of 388 employees.

In each session, a senior manager talked about the importance of NGK Group CSR initiatives, while representatives from the Environmental Management Department and CSR Promotion Office detailed the CSR Report, using specific examples. These presentations were followed by a Q&A session focusing on topics including environmental conservation, workplace safety, CSR activities and utilization of the helpline.

A post-event survey was conducted to collect feedback, which included statements such as "This event has made me feel proud about being a member of the NGK Group," and "This event should also be held at overseas sites." These comments illustrate the depth of employee understanding about CSR activities. We will continue this activity in order to further facilitate CSR efforts within the Group.

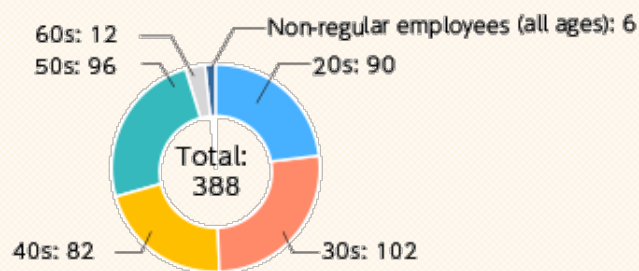
### CSR Talk Live Held in Fiscal 2015

Place	Date	Number of Participants
Nagoya Site, Aichi Prefecture	December 8	50
	December 11	49
	December 16	50
Chita Site, Aichi Prefecture	December 2	48
Komaki Site, Aichi Prefecture	October 20	49
Ishikawa Plant, Ishikawa Prefecture	November 25	23
NGK Filtech, Ltd.	October 28	26
Ikebukuro Horo Kogyo Co., Ltd.	December 1	37
NGK Fine Molds, Ltd.	November 5	30
Group companies in Nagoya Site	December 10	26



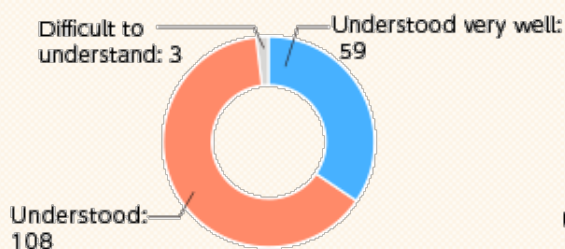
### CSR Talk Live Questions and Answers in the CSR Talk Live (Excerpt)

## ● Number of Participants by Age Group

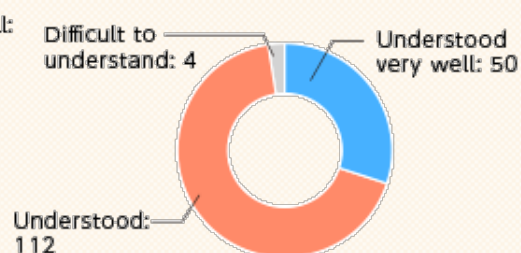


## ● Evaluation of Presentation (Number of survey responses)

CSR Activities of the NGK Group



CSR Report



### Human resources: Diversity

#### Q. What are NGK's major initiatives to promote women's career advancement and empowerment?

A. We are striving to employ more women and increase the number of women promoted to key positions, and working on setting goals for that purpose. NGK may be behind other companies generally in this field, but we have promoted a current total of 14 female employees to key positions. This number is coming close to the average level in the manufacturing sector. We are planning to expand female employment for career track positions in the future.

### CSR: Management

#### Q. NGK is pursuing CSR activities in business engagement in addition to the area of volunteer work and social action. What are key approaches to fulfilling CSR in actual business activities?

A. One key approach is to comply with social rules. We also place great efforts on contributing to society through pursuing our business growth, for which we will focus primarily on supplying quality products. It is also important to assess the working environment of suppliers. To do this, we will conduct various surveys in this field.

### CSR: Overseas bases

#### Q. Will you tell us about activities to raise CSR awareness at overseas Group companies?

A. We have not yet launched CSR Talk Live or distributed the relevant handbooks overseas. Acknowledging that it is difficult to simultaneously expand activities conducted in Japan to other locations on a full scale, we are planning to introduce important themes in a stepwise manner, starting with safety and compliance. In doing so, we need to pay due consideration to differences from Japan with regard to legal systems and cultural background.

### Environment: Reducing CO<sub>2</sub> emissions

#### Q. It seems that our potential to reduce CO<sub>2</sub> emissions is reaching its end. How will we continue our CO<sub>2</sub> reduction efforts in the coming years under the new Five-Year Plan?

**A.** CO<sub>2</sub> reduction has been defined as an important theme in the new Five-Year Plan. As correctly pointed out just now, it seems that we have done almost everything we can in this area. But we can still continue working to achieve improvement to get to minimal levels, even at 1 or 2%, compared with the drastic reductions attained in past years. We believe that we can accomplish the targets by adequately pressing ahead with new/reformed manufacturing structures initiatives.

**Compliance: Competition law**

**Q.** When talking with partner companies recently, I often feel deep concern that competition-related regulations have been tightening. This becomes a major issue we face when wishing to use technologies owned by rival companies, which occasionally is a critically important requirement. What should we do about engaging in technology exchange?

**A.** In principle, for technologies, we recommend vigorous information exchange with competitors. But you need to be careful not to cause misunderstandings. Since specific competitors vary in each division, ask advice from your manager as necessary. When you are not confident about what to do, consult the Global Compliance Office. You should not decide for yourself alone.



## Supply Chain

With a basic policy centered on the three principles of openness and fairness, partnership and relationship with society, the NGK Group is engaged in fair, free and transparent business transactions with the procurement partners in our supply chain.

## Basic Approach

---

The NGK Group has established the Basic Purchasing Policy in an attempt to conduct fair and honest business transactions and to prosper together with all our procurement partners.

### Basic Purchasing Policy

#### **Open and Fair**

Open, fair, and equitable procurement  
Pursuit of the competition principles and profitability

#### **Partnership**

Mutual prosperity based on mutual trust with suppliers

#### **Relationship with Society**

Compliance with laws  
Preservation of global environment

# Supply Chain

## Promotion of CSR Procurement

---

The entire NGK Group gives priority to select suppliers with the same amount of consideration for the importance of CSR as the NGK Group, as well as green procurement, which gives priority to purchasing products and services with low environmental impact amid increasing societal demand for the realization of CSR activities as overall supply chain activities. In fiscal 2013, the CSR Procurement Guidelines were revised.

### CSR Procurement Guidelines

In fiscal 2013, the NGK Group revised the CSR Procurement Guidelines. This involved organizing previously established guidelines in accordance with the Basic Purchasing Policy and adding sections on disputed minerals, corruption and principles regarding human rights and labor. Having partially revised existing Green Procurement Guidelines, we newly incorporated them as "Green Procurement Standards" into the CSR Procurement Guidelines as a supplemental material. While these guidelines apply to all NGK Group suppliers, we also ask that they are understood and followed by the suppliers who supply our suppliers. We constantly attempt to expand and practice these initiatives by disclosing these guidelines to all NGK and global Group company suppliers. The CSR Procurement Guidelines are published in Japanese, English and Chinese languages, available below.

▶ [CSR Procurement Guidelines Supplemental Materials](#)

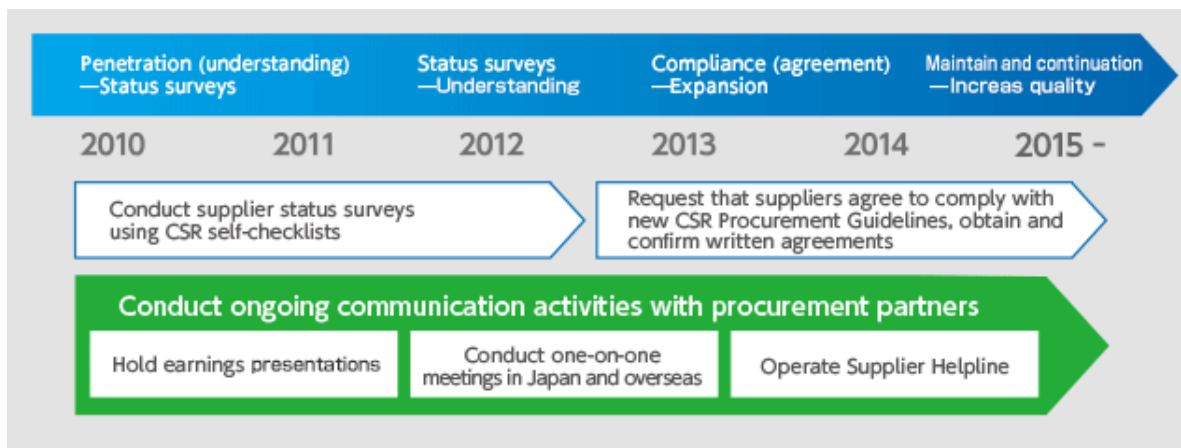
### Procuring Resources and Raw Materials Responsibly

The NGK Group conducts procurement activities that consider impacts on regional communities stemming from the use of raw materials (e.g. "conflict minerals" including tin, tantalum, tungsten and gold from the Democratic Republic of the Congo and neighboring countries, as well as minerals that are the source of funds for armed insurgencies in that region) with the potential to cause social issues such as human rights violations and poverty, and takes steps to avoid using such materials when there is risk of adverse impact.

### Developing CSR Procurement in Conjunction with Societal Trends

The NGK Group has engaged in the expansion of CSR Procurement by inculcating an understanding of CSR Procurement among its suppliers and conducting status surveys by fiscal 2013, and by taking proactive steps to compliance with the CSR procurement Guidelines since fiscal 2014 while expanding CSR Procurement activities to new suppliers. Going forward, we will consider societal trends by confirming the initiatives of leading organizations and business partners while aiming for greater quality through the maintenance and continuation of CSR Procurement activities with suppliers. We will also promote appropriate activities in each country and region where we operate overseas Group companies.

#### ■Ongoing Promotion of CSR Procurement



### Held Buyer Training for Employees of Overseas Group Companies

The Purchasing Department of NGK held buyer training for the employees in charge of procurement for NGK Ceramics Indonesia in November 2015, and for NGK Ceramics Poland in February 2016. This training aimed to reinforce the procurement capabilities of overseas NGK companies and upgrade the skills of employees in charge of procurement. The trainees learned how to conduct procurement efficiently, including knowledge on the roles of the procurement department, procurement know-how, and supplier management.



# Supply Chain

## **Fair and Honest Procurement Partner Evaluations and Extensive Resource Diversification**

---

In accordance with the Basic Purchasing Policy, the NGK Group selects procurement partners based on fair and honest evaluations. We also attempt to ensure procurement when disasters occur through the extensive diversification of procurement resources.

### **Selection of Suppliers Based on Fair and Honest Evaluations**

NGK opens its doors to a wide range of procurement sources, including companies with which it has had no previous transactions. In terms of selecting new suppliers, we choose from multiple companies through fair and honest evaluation of their CSR initiatives, environmental conservation efforts and financial condition as well as quality, cost and delivery (QCD). In addition to the procurement department being involved in the selection of suppliers, multiple departments are also involved in this process, which requires multi-stage approval before selection occurs in an effort to ensure fair and honest evaluation and decision-making.

### **Promoting Business Continuity Planning (BCP) through the Diversification of Procurement Resources**

In the event of unforeseen circumstances such as a major natural disaster, NGK promotes the sourcing of raw materials, equipment, secondary materials and other critical purchased parts from multiple suppliers as part of its BCP efforts to ensure procurement is uninterrupted. For items which are available from only one supplier, we are in the process of ensuring sufficient inventory and that the storage facilities for these items are located in a safe place that cannot be damaged by tsunami. In addition, when selecting a new procurement partner, we take into consideration the existence or absence of multiple locations and efforts to ensure inventory.

## Supply Chain

### Communication Activities with Procurement Partners

---

#### Earnings Presentations for Suppliers

NGK held an earnings presentation for major suppliers in June 2015 attended by 229 people from 131 companies.

In the earnings presentation, the General Manager of the Construction & Maintenance Department asked the key business partners for further support and cooperation as we expect capital investment in manufacturing sites both in Japan and overseas. The Disclosure Group of the Finance & Accounting Department explained the performance of NGK. The General Manager of the Purchasing Department explained our initiatives in response to global production and our actions for CSR procurement.



Suppliers invited to the earnings presentation.

#### Ongoing Operation of the Supplier Helpline

In 2008, NGK established the supplier helpline system. Receiving consultation via email, fax and telephone, we make an effort to respond with solutions quickly. In fiscal 2016, we continue to build and maintain fair supplier relationships through the ongoing operation of [the Supplier Helpline](#).

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

To procure from the most suitable suppliers, NGK visits suppliers around the world to conduct a fair and honest evaluation in terms of quality, cost and delivery (QCD). In fiscal 2015, we visited 13 new suppliers and 90 existing suppliers, a total of 103 companies.

We confirmed that, among the existing suppliers we visited for monitoring QCD, 12 companies had made improvements. After explaining monitoring results, we asked suppliers to make improvements in areas receiving a low evaluation.

In fiscal 2016, we will continue visiting new and major suppliers to conduct evaluations.

## Preservation of Global Environment

The NGK Group is engaged in ongoing environmental conservation efforts by improving manufacturing processes through the development and introduction of innovative manufacturing technologies and the development of products and services that contribute to reducing environmental impacts.

### 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 companies: 12 manufacturing-related consolidated subsidiaries (Including Heisei Ceramics, Co., Ltd., a company dissolved in March 2016. Excluding NGK Electronics Devices, Inc., a company added to consolidated subsidiaries in January 2015.)
- Overseas Group companies: 16 manufacturing-related consolidated subsidiaries

## 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 based on Environmental Philosophy and Environmental Action Guidelines in order to bring its corporate activities into harmony with the environment. On the basis of this policy, the NGK Group works to reduce the environmental impact of business activities, and actively strive to help protect the environment by developing products and technologies to that end.

### NGK's Core Policy on the Environment

#### Environmental Philosophy

Given its corporate philosophy—"NGK products and technologies must create new value and contribute to the quality of life"—NGK will contribute to tackling environmental issues through its "Triple-E" business segments of ecology, electronics, and energy to create a comfortable environment for future generations.

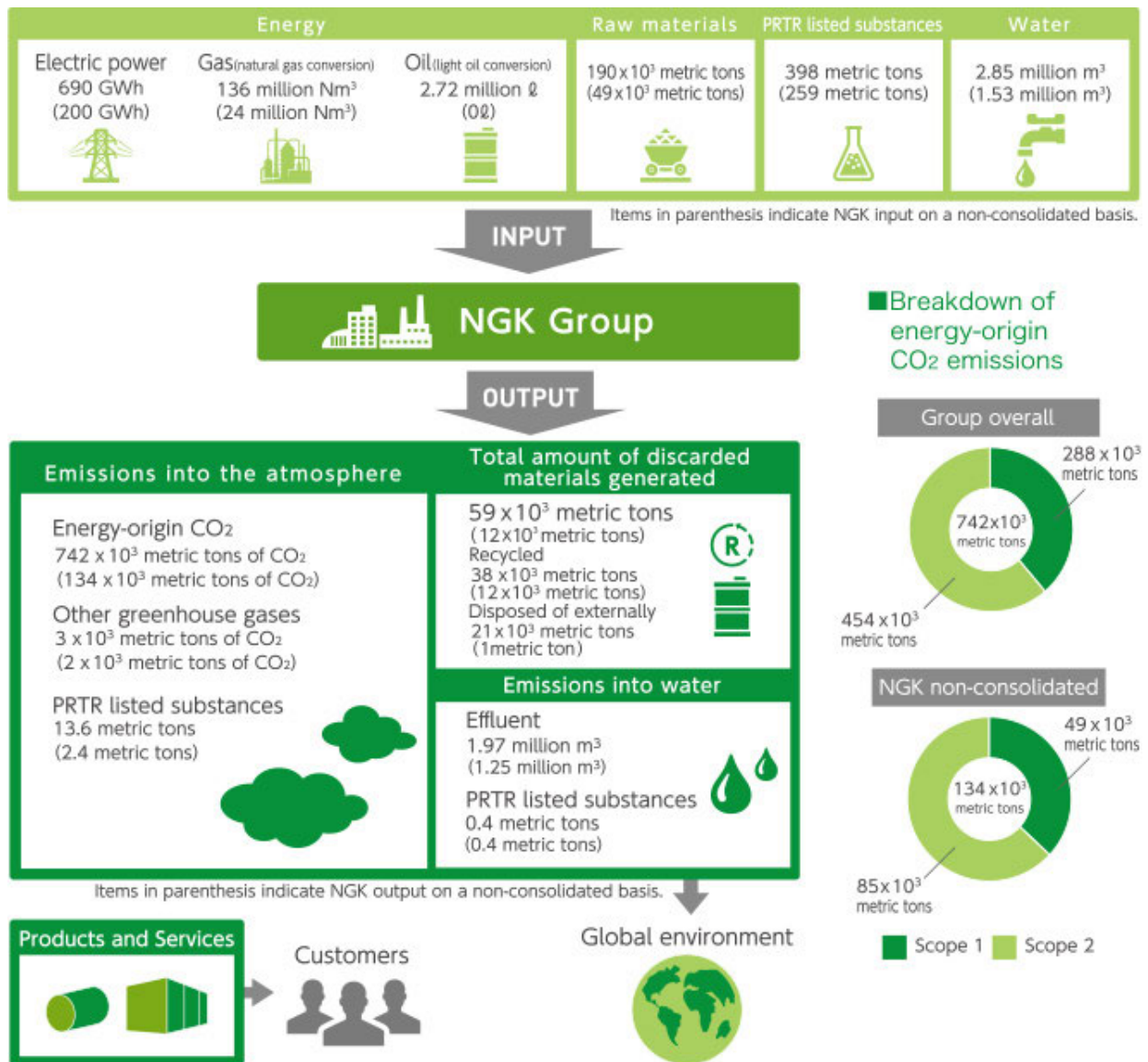
#### Guidelines for Environmental Action

1. Strive to develop, design, and manufacture products that contribute to the environment and products with low environmental impact.
2. Work to reduce the environmental impact arising from business activities.  
Conduct design reviews to scientifically study and evaluate the environmental impact of business activities.
  - Promote energy conservation measures for all processes and facilities, and make efforts to control CO<sub>2</sub> emissions
  - Promote resource saving and recycling, and make efforts to control the generation of by-products.
  - Through the appropriate use and control of chemical agents, work to reduce the risks inherent in toxic substances.
  - Give precedence to environmentally friendly materials, parts, products, and facilities in procurement and purchasing, strengthening cooperative alliances with our business partners.
3. Enhance environmental management systems from a global perspective while continuously reducing our environmental impact.
4. Not only abide by environmental laws, regulations, and other requirements, but also institute voluntary standards and work to improve our own environmental conservation.
5. Provide environmental information to the public at the appropriate time and pursue dialogue with all stakeholders. Proactively develop social action programs. Also, engage in education and publicity in order to improve employees' environmental consciousness.

# Preservation of Global Environment

## Overall Perspective of Environmental Impact

The diagram below shows inputs and outputs in business activities conducted by NGK (excluding NGK Electronics Devices, Inc.). It shows inputs of raw materials and energy etc. and outputs in the form of manufactured products and services, as well as substances that are discharged into the atmosphere and into water. In line with expanded production activities, the NGK Group output of substances impacting the environment is on the rise. However, efforts to introduce the latest manufacturing processes have resulted in the rate of increase for emissions that impact the environment being lower than the rate of increase for products and services (net sales) provided to customers.



**Notes:**

1. Environmental performance values in this report have been rounded up for convenience; therefore the sum of individual values may not match the totals.
2. "Discarded materials" indicates the total amount of industrial waste and valuables. ♻️ indicates outside recycling.

**Calculation Method**

<b>INPUTS</b>	
---------------	--



## 1. Energy

---

Electric power: Consumption amount of electric power

Gas: Consumption volume of each type of fuel gas converted into natural gas volume =  $\Sigma(\text{Consumption volume of each fuel gas} \times \text{Unit heating value of each fuel gas} / \text{Unit heating value of natural gas})$   
<Unit heating value of fuel gas>

Natural gas: 40.9 MJ/Nm<sup>3</sup> City gas: 46.05 MJ/Nm<sup>3</sup>

LPG: 50.2 MJ/kg LNG: 54.5 MJ/kg

\*For city gas used by NGK Headquarters/Nagoya site, Chita and Komaki sites and two domestic Group companies, 46.05 MJ/Nm<sup>3</sup> between April and August 2015 and 45.0 MJ/Nm<sup>3</sup> between September 2015 and March 2016

Oil: Consumption volume of each type of fuel converted into light oil volume =  $\Sigma(\text{Consumption volume of each fuel} \times \text{Unit heating value of each fuel} / \text{Unit heating value of light oil})$   
<Unit heating value of fuel gas>

Light oil: 38.2 MJ/L Fuel oil: 39.1 MJ/L Kerosene: 36.7 MJ/L

## 2. Water

---

Total consumption volume of city water, industrial water, well water and rainwater

## 3. PRTR Substances

---

Total amount handled of Japan's PRTR Type 1 listed substances

## 4. Raw materials

---

Total weight of raw materials used in product manufacturing

## OUTPUTS

### 5. Energy-origin CO<sub>2</sub> emission volume

---

Energy-origin CO<sub>2</sub> emission volume =  $\Sigma(\text{Consumption of each energy} \times \text{CO}_2 \text{ conversion factor of each energy})$

<CO<sub>2</sub> conversion factor of energy>

Unit of electric power kgCO<sub>2</sub>/kWh Unit of fuel factor: kgCO<sub>2</sub>/fuel unit factor:

Electric power 0.42  
(domestic):

Electric power United States 0.709, Belgium 0.292, France 0.061, Poland 0.986, South Africa 1.096,  
(Overseas): China 0.983, Thailand 0.687, Indonesia 0.790, Australia 1.390, Mexico 0.741  
Fuel: Natural gas (Nm<sup>3</sup>) 2.02, City gas (Nm<sup>3</sup>) 2.347, LPG (kg) 3.007, LNG (kg) 2.70,  
Light oil (L) 2.64, Fuel oil (L) 2.68, Kerosene (L) 2.49

\*For city gas used by NGK Headquarters/Nagoya site, Chita and Komaki sites and two domestic Group companies, 2.347 between April and August 2015 and 2.29 between September 2015 and March 2016

### 6. Emission volume of other greenhouse gases

---

Emission volume of other greenhouse gases = active mass × emission factor × global warming potential

<Global warming potential>

CO<sub>2</sub>: 1, CH<sub>4</sub>: 25, N<sub>2</sub>O: 298, HFC: Differs by type, PFC: Differs by type, SF<sub>6</sub>: 22800, NF<sub>3</sub>: 17200

### 7. Effluent

---

Total amount of effluent excluding rainwater

### 8. PRTR Type1 listed substances

---

Emissions into water: Total emission amount of Japan's PRTR Type 1 listed substances into public waters

Emissions into atmosphere: Total emission amount of Japan's PRTR Type1 listed substances into atmosphere

### **9. Total amount of discarded materials generated**

---

Total amount of discarded materials generated = Externally disposed amount\*<sup>1</sup> + externally recycled amount

Recycled amount: Externally recycled amount = Paid disposal\*<sup>2</sup> + Valuable amount (selling off)

\*1 Externally disposed amount: Direct disposal by landfill, or simple incineration

\*2 Paid disposal: Outsourcing disposal and paying for recycling

# Preservation of Global Environment

## Five-Year Environmental Action Plan

---

### Results of the Third Five-Year Environmental Action Plan (2011-2015)

The NGK Group formulates an environmental action plan for every five years. With the Third Five-Year Environmental Action Plan launched in fiscal 2011, the NGK Group as a whole focused on activities to reduce environmental impacts on a global scale. As a result, we achieved all targets in the five-year plan except for domestic CO<sub>2</sub> emissions, and greatly exceeded the target values of basic unit per net sales, particularly for CO<sub>2</sub> emissions and discarded materials overseas. While the reduction of domestic CO<sub>2</sub> emissions surpassed the basic unit target, the emissions in fiscal 2015 missed the target slightly because of a dramatic increase in production volume.

Categories	Items	Management items	Five-Year Plan Objectives (Fiscal 2015)	Achievements	Self-evaluation*1
 Global warming prevention	Reduction of CO2 from production	Domestic CO2 emissions *2	190 × 10 <sup>3</sup> metric tons (10% reduction from fiscal 1990)	191 × 10 <sup>3</sup> metric tons (9.3% reduction)	△
		Domestic basic unit per net sales	20% reduction from fiscal 2010	27% reduction	○
		Overseas basic unit per net sales	5% reduction from fiscal 2010	34% reduction	○
	Reduction of CO2 from logistics	NGK basic unit per transport volume *3	1% reduction each year	Average reduction 1.7%/year	○
 Effective use of resources	Reduction of discarded materials	Domestic basic unit per net sales	10% reduction from fiscal 2010	19% reduction	○
		Overseas basic unit per net sales	5% reduction from fiscal 2010	40% reduction	○
	Promotion of resource recycling	Domestic recycling rate	99% or higher	99.3% reduction	○
		Overseas recycling rate	Set and manage recycling rates established with consideration for the conditions in each country	The management of waste material separation is thoroughly enforced in each location.	○
	Effective use of water resources	Plan progress rate	Create standards for efficient usage	The scope of appropriate recycling rate is set.	○
 Ensuring chemical substances management	Improvement in level of chemical substances management	Plan progress rate	Upgrade chemical substance management systems	Rolling out the usage standard to the Group companies in Japan and overseas	○
 Provision of eco products	Promotion of environmental contribution through products	Plan progress rate	Formulate quantitative standards for degree of environmental contribution from products	System upgrade completed/Appropriate operation in place	○
	Promotion of green procurement		Complete green supplier certification	Conducted and publicized quantitative assessments of key products(Completed in fiscal 2012)	○
 Promotion of environmental communication	Robust environmental contribution activities	Plan progress rate	Continue and expand activities related to regional communities	Continuation of community activities including greening and cleaning Contribution to regional communities by introducing the Eco Point System	○

	Improvement in environmental awareness		Continue and expand environmental education, information disclosure	Continuation of education by giving environmental lectures Enhancing information disclosure with Talk Live, CSR report, etc.	○
--	--	--	---	---	---

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

\*2. 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 A (liters): 2.677, Diesel fuel (liters): 2.64, Kerosene (liters): 2.49, City gas (Nm<sup>3</sup>): 2.347 (April-August 2015), 2.29 (September 2015-March 2016), LPG (kg): 3.007, LNG (kg): 2.70, Gasoline (liters): 2.322

Sources: The Federation of Electric Power Companies of Japan (actual figures for fiscal 1990), Ministry of the Environment. Some factors have been calculated independently by NGK.

Incidentally, the fiscal 2015 energy-origin CO<sub>2</sub> emissions volume for NGK on a non-consolidated basis is 151 x 10<sup>3</sup> metric tons when using the CO<sub>2</sub> conversion factor provided by the Order for Enforcement of the Act on Promotion of Global Warming Countermeasures (revised in February 2016).

\*3. NGK basic unit per transport volume expresses in metric ton-kilometers the amount of crude oil equivalent fuel used.

## The Fourth Five-Year Environmental Action Plan (2016-2020)

NGK formulated the Fourth Five-Year Environmental Action Plan and newly set goals for its environmental activities in the period between fiscal 2016 and 2020.

### Outline of the Fourth Five-Year Environmental Action Plan

With the Fourth Five-Year Environmental Action Plan, we will take actions in accordance with the following ideas, to include environmental issues expected to be tackled by companies in our global indicators and guidelines for environmental management.

- We will put priority on the development and spreading of products that contribute to the environment by interpreting our corporate philosophy, “NGK products and technologies must create new value and contribute to the quality of life,” from an environmental perspective as we engage in environmental actions.
- To reduce environmental impact, we will endeavor to reduce CO<sub>2</sub> emissions and the amount of discarded materials generated as a global effort in coordination with one of our important activities, the New/Reformed Manufacturing Structures. The base year for the major management items is set as fiscal 2013, the same as the base year for the New/Reformed Manufacturing Structures for this reason.
- In response to rising social demands, we will enhance our efforts for preserving biodiversity, managing risks of water resources, and efficiently using water.
- We will continue actively to promote other environmental communication related activities. Through these activities, NGK will aim to achieve sustainable growth while contributing to the development of a low-carbon, recycling-oriented and environmentally symbiotic society.

Key contents of the plan are outlined below:

1. In order to contribute environmentally to society with our products, we will continue to derive at least 50% of our sales from products that contribute to the environment, based on NGK’s definition, as well as to aim for sales growth of at least 60% compared to fiscal 2013.
2. To promote the reduction of environmental impacts globally, we will set consolidated reduction targets for CO<sub>2</sub> and other emissions from our manufacturing activities.
  - (1) We will reduce the CO<sub>2</sub> emissions from our manufacturing activities by 20% from the amount in fiscal 2013 by fiscal 2020 in terms of basic unit per net sales.  
In addition, we will aim to achieve a 15% reduction from fiscal 2013 in term of reduction rate against BAU\*, which shows the ratio of strategic reduction.
  - (2) We will reduce the amount of discarded materials generated from manufacturing activities by 30% from fiscal 2013 by

fiscal 2020 in terms of basic unit per net sales.

In addition, we will aim to achieve a 20% reduction from fiscal 2013 in term of reduction rate against BAU\*, which shows the ratio of strategic reduction.

3. We will expand our activities in response to international goals for preserving biodiversity, the “Aichi Target.”

4. We will expand our activities for risk management of water resources and efficient use of water in all manufacturing sites.

\*Reduction rate against BAU: The ratio of the amount of reduction compared to the amount without reduction efforts.  
(BAU: Business as Usual)

#### **Scope of reporting for the Fourth Five-Year Environmental Action Plan**

- NGK Headquarters/Nagoya Site/ Chita Site/Komaki Site/Ishikawa Plant (not including the Tokyo Main Office, Osaka Branch and six other sales offices)
- Domestic Group companies: 12 manufacturing-related consolidated subsidiaries (including NGK Electronics Devices, Inc., which became a consolidated subsidiary in January 2015)
- Overseas Group companies: 16 manufacturing-related consolidated subsidiaries

[Please see Special Feature for details.](#)

# Preservation of Global Environment

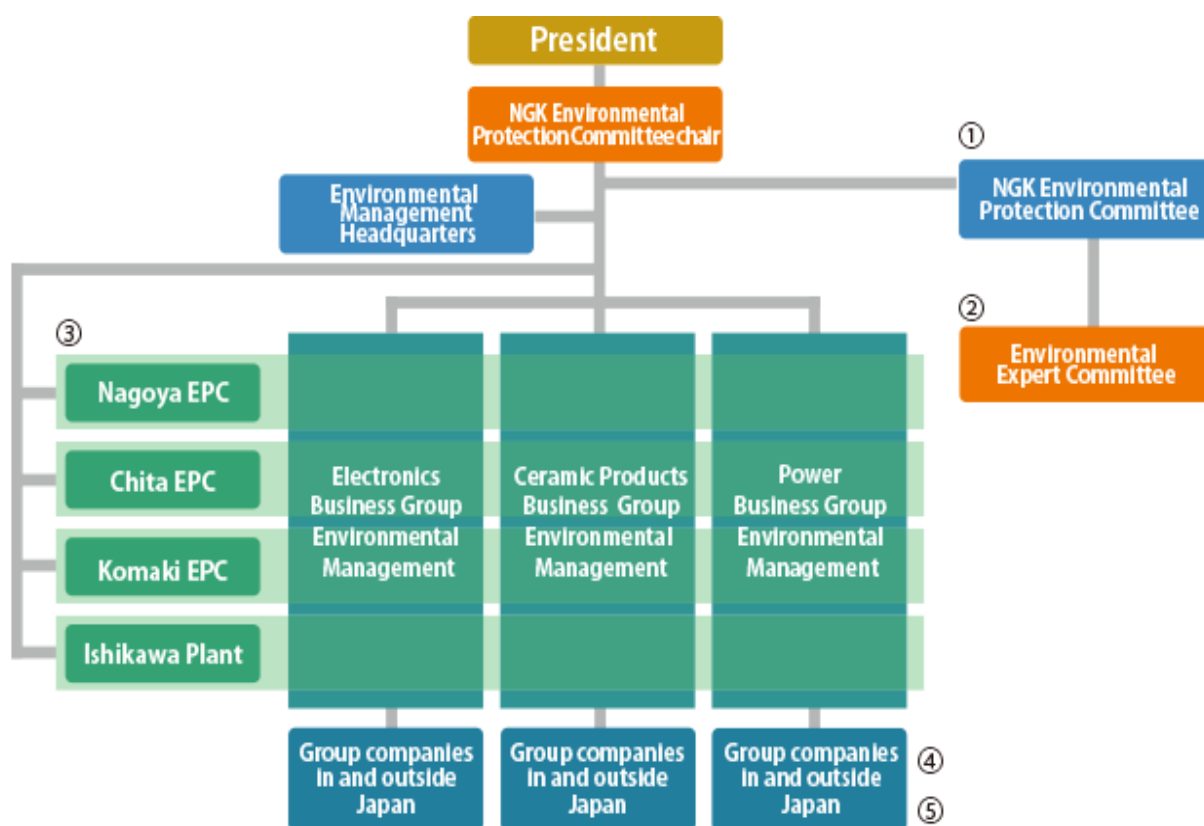
## Environmental Management Frameworks and Environmental Management System

The NGK Group promotes environmental conservation activities in accordance with our Core Policy on the Environment through initiatives pertaining to environmental management frameworks and the Environmental Management System (EMS) implemented by global Group companies working in conjunction with one another.

### Consolidated Environmental Management Promotion System

In addition to environmental management systems at the Nagoya, Chita, and Komaki sites and Ishikawa plant, we promote consolidated environmental management through a consolidated management system that includes domestic and overseas Group company business groups as activity leaders.

One feature of this business group-based environmental management system is that it enables Group promotion of environmental management initiatives regarding issues such as reducing CO<sub>2</sub> controlling discarded materials emissions and strengthening chemical substance management. In an attempt to unify Group company environmental management, in addition to annual domestic Group company liaison committee meetings, since fiscal 2013, we have also held liaison committee meetings at Group companies outside Japan and exchange information from both committees to respond to matters of concern. Furthermore, Headquarters staff visits Group companies to provide support for energy conservation diagnostics and countermeasure reviews.



#### ① NGK Environmental Protection Committee

In principle, meets twice each year. Other meetings are held at the discretion of the chairman.

◆Governing Structure



Chairman	President makes decision in light of Executive Committee deliberations (As of June 2016, Director and Vice President)
Vice Chairman	Appointed by NGK Environmental Protection Committee Chair (As of June 2016, General Manager of Environmental Management Dept.)
Members	Executive Vice President, Vice Presidents responsible for Head Office Departments, Group Executives, General Managers, General Manager of Pollution Control at each site, General Manager of Environmental Management Dept., General Manager of Safety and Health Management, General Manager of Corporate Strategy Office, General Manager of Human Resource Department, General Manager of CSR Office, General Manager of Finance & Accounting Dept., General Manager of Legal Dept., General Manager of General Affairs Dept., General Manager of Purchasing Dept., General Manager of Public Relations, General Manager of Construction & Maintenance Dept., others designated by the Committee Chairman

## ② Environmental Expert Committee

In principle, meets twice each year. Meets before the NGK Environmental Protection Committee to review and discuss items to be reported to the committee.

### ◆Governing Structure

Expert Committee Chair	General Manager of Environmental Management Dept.
Vice Chairman	General Manager of Construction & Maintenance Dept.
Members	General Manager of Business Planning Dept., Persons in charge of promoting environmental activities in each division, Group Manager of Environmental Management Dept., others designated by the Expert Committee Chair

## ③ Environmental committees in each area (Nagoya site, Chita site, Komaki site, Ishikawa plant)

In principle, meets twice each year in each area. Thoroughly conveys matters determined by the NGK Environmental Protection Committee, communicates and discusses issues and topics in each area (all four areas meet twice each year for a total of eight meetings)

## ④ Domestic Group company liaison meetings

Meets once each year. Conveys the Group-wide policy on environmental initiatives to manufacturing Group companies and attempts to share each company's environmental management status and information on effective initiatives to promote the unification of domestic Group company environmental conservation activities.

## ⑤ Sharing information with overseas Group Companies

The Environmental Performance questionnaire is used to conduct an annual survey into the status of compliance with environmental laws at each company. Main Group companies are visited every 2-3 years to ascertain management conditions through hearings.

## History of NGK's Environmental Activities

April	1972	Environmental Protection Committee and Environmental Preservation Office (currently, Environmental Management Dep.) established
June	1992	Waste Countermeasures Commission established
March	1993	NGK's Voluntary Plan for Environmental Conservation established
December	1994	Chlorofluorocarbons (CFCs) and 1,1,1-trichloroethane abolished
February	1995	Internal environmental audit conducted
April	1996	NGK's Core Policy on the Environment established
December	1996	CO <sub>2</sub> Countermeasures Commission established
March	1998	NGK's three production bases (Nagoya, Chita and Komaki) simultaneously received ISO 14001 certification
March	1999	Environmental Report published
April	1999	Environmental accounting introduced
October	1999	Green Purchasing Commission established
November	1999	Environmental audits of domestic Group companies started
February	2000	Environmental Partnership Organizing Club (EPOC) established and active participation therein begun
October	2000	Chemical Substances Safety Committee established; Chemical Substances Management System introduced
March	2001	First Five-Year Environmental Action Plan established
April	2001	Compilation of environmental performance data for domestic Group companies started
October	2001	Operating of Recycling Yard begun
January	2002	Compilation of environmental performance data for overseas Group companies started
April	2002	New "Green Management" three-year management plan instituted
April	2003	Moves made toward a full business group environmental management system; "Waste Countermeasures Commission" renamed "Recycling promotion Commission" and "wastes" renamed "by-products."
March	2004	Three-year and long-term plans for reduction of CO <sub>2</sub> emissions instituted
March	2005	Company-wide medium-term plan for the reduction in by-products established
April	2005	Environmental Action Guidelines revised; Green Procurement Guidelines revised
October	2005	Third-party review of environmental performance begun
April	2006	Second Five-Year Environmental Action Plan established

September	2006	Initiated environmental surveys of overseas Group companies
May	2007	Introduction of a consolidated goal for CO <sub>2</sub> and by-products for domestic Group companies
April	2008	Establishment of the Environmental Management Department
January	2009	Introduction of goals to reduce CO <sub>2</sub> by-products, and chemical substances for overseas Group companies
January	2010	Expanded scope of goals to reduce CO <sub>2</sub> by-products, and chemical substances for overseas Group companies
April	2011	Formulated the third Five-Year Environmental Action Plan, "by-products" renamed "discarded materials."
March	2012	Three NGK sites (Nagoya, Chita and Komaki) received integrated ISO 14001 certification
March	2013	The Ishikawa plant received ISO 14001 certification (joint certification with three NGK sites)
April	2013	NGK established the Environmental Expert Committee as the authority handling matters related to CO <sub>2</sub> discarded materials and other important environmental management items (created through the combination of the former CO <sub>2</sub> Countermeasures and Recycling Promotion Commission)
August	2013	Conducted environmental liaison meeting at overseas Group companies as part of attempts to strengthen global environmental management
February	2015	NAS Battery wins the Gold Prize at the 2015 Aichi Environmental Awards
April	2016	Formulated the Fourth Five-Year Environmental Action Plan

### Environmental Management System (ISO14001, etc.) Initiatives

The NGK Group promotes the acquisition of ISO14001 or third-party certifications meeting this standard to systematically and continuously develop environmental conservation activities in line with the Core Policy on the Environment. Three NGK sites (Nagoya, Chita, Komaki), the Ishikawa plant, all 13 domestic Group companies (including NGK Electronics Devices, Inc., a company added to the Group in January 2015) and all 16 overseas Group companies have completed certification. We will make effective use of these environmental management systems going forward with the intent of reinforcing environmental management.

## Certification of Environmental Management System

Categories		No. of manufacturing bases	No. of bases certified
NGK		4	4
Domestic Group	Power Business	3	3
	Ceramic Products Business	6	6
	Electronics Business	10	10
Overseas Group	Power Business	4	4
	Ceramic Products Business	9	8
	Electronics Business	4	4

The counting method of manufacturing bases was changed in fiscal 2014.

## Environmental Audits

NGK conducts internal environmental management system audits and is inspected by third parties at the Nagoya, Chita, and Komaki sites, as well as the Ishikawa plant. Group companies also conduct these same internal audits and external reviews of the environmental management systems are conducted by external auditors at all Group companies.

In fiscal 2014, no significant findings were made. In the event of a significant finding, the relevant division and Environmental Management Department work together to review and implement countermeasures as well as inform environmental committees in each area in an attempt to horizontally deploy these measures.

## Environmental Risk Management

In addition to working to prevent environmental pollution, including atmosphere and water pollution, NGK periodically revises its environmental management framework and strives to prevent accidents. The company is also conducting emergency response training and making every effort to prepare for the unlikely event of an accident.

## Regulatory Compliance

In addition to observing relevant regulations and agreements with control authorities, NGK has concluded environmental preservation-related and other agreements with the municipalities where its plants are located and is striving to prevent environmental pollution by voluntarily adhering to standards that are stricter than required by regulations. As a result, there were no legal violations in fiscal 2015.

## Environmental Patrols and Emergency Response Drills

NGK implements environmental patrols in line with annual plans to prevent environmental pollution and conducts response drills based on emergency scenarios to minimize damage. In fiscal 2015, environmental patrols were conducted at the Nagoya, Chita and Komaki sites and the Ishikawa plant to prevent atmosphere and water pollution, ensure the appropriate management of chemical substances and suppress noise and vibrations. Response drills based on emergency scenarios were also conducted at these four areas. Going forward, NGK will continue to proactively engage in patrols and drills in an attempt to improve operational methods and mitigate environmental risks.

		Atmosphere	Water	Noise and vibrations	Chemical substances
Nagoya	Environmental patrols	2	2	2	2
	Emergency response drills	3	2	-*	2
Chita	Environmental patrols	1	2	1	2
	Emergency response drills	4	5	-	-
Komaki	Environmental patrols	2	2	1	1
	Emergency response drills	9	7	-	-
Ishikawa	Environmental patrols	2	2	2	1
	Emergency response drills	2	2	-	-

\* - Indicate emergency response drills were considered of low importance and not conducted

# Preservation of Global Environment

## Environmental Impact Reduction Initiatives

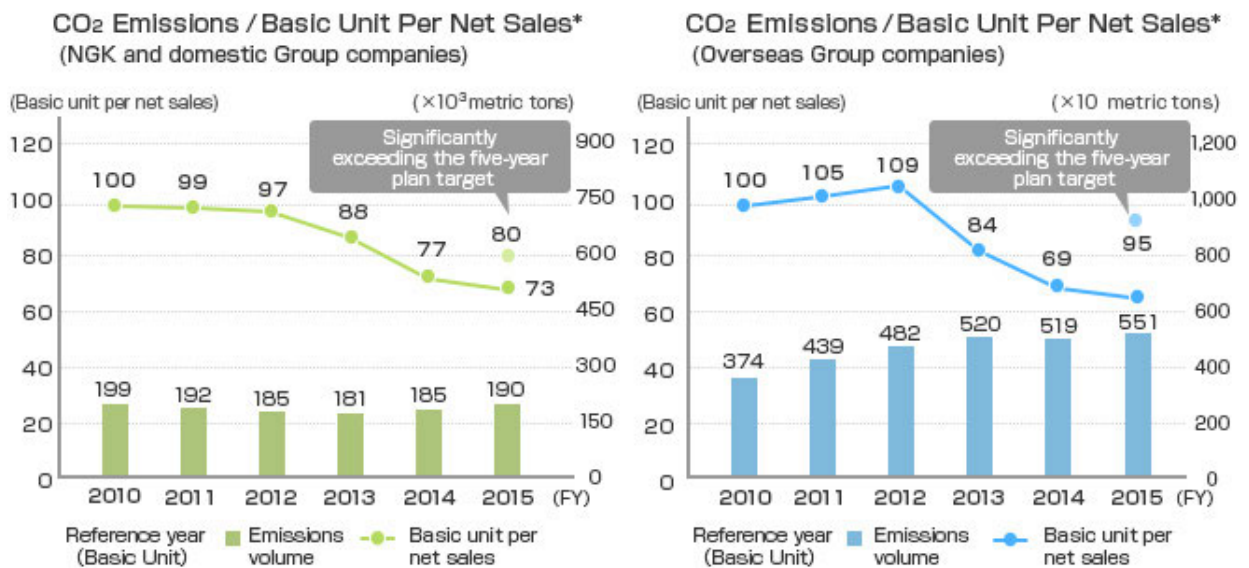
The NGK Group strives to reduce impact on the environment by promoting the reduction of CO<sub>2</sub> emissions and the amount of discarded materials generated through production activities.

### Prevention of Global Warming

We have established reduction targets for CO<sub>2</sub> emissions, one cause of global warming, in overseas manufacturing activities. The NGK Group promotes initiatives globally to control and reduces CO<sub>2</sub> emissions.

#### Domestic and Overseas CO<sub>2</sub> Reduction Plans Progressing on Track

The NGK Group has been steadily improving its CO<sub>2</sub> reduction, which is a major cause of global warming, by setting reduction targets for the medium to long term in its Five-Year Action Plan, and formulating and managing annual improvement plans in line with the business plan at all manufacturing sites inside and outside of Japan. In fiscal 2015, we were able to achieve the five-year target by reducing CO<sub>2</sub> emissions by 3,300 tons, equivalent to approximately 2% of domestic CO<sub>2</sub> emissions, and improving the basic unit per net sales by 5% compared to the previous year. However, we slightly underachieved the target for emission volume because the production volume increased. Overseas companies of the NGK Group were able to make improvements by greatly exceeding the five-year target and reduced CO<sub>2</sub> emissions by 13,400 tons, equivalent to over 2% of emission volume, and improving the basic unit per net sales over 4%.



### Introduction of Green Power

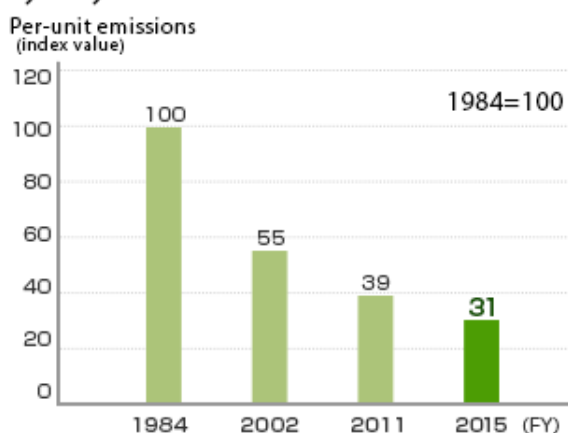
As part of our corporate activities aimed at harmony with the environment, NGK began introducing Green Power (energy sources such as wind and solar power and biomass fuels) in 2002, earlier than any other company. The Green Power Certification System contract we signed with Japan Natural Energy Company Limited calls for them to generate two million kilowatt hours of wind power for us each year. This is equivalent to about 60% of the power consumed annually by the NGK headquarters building, a reduction of approximately 800 metric tons of CO<sub>2</sub> emissions per year and the annual amount of CO<sub>2</sub> absorbed by approximately 60,000 cedar trees.



## 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, the NGK Group makes efforts to reduce environmental impacts resulting from production. Also, our "Reformed Manufacturing Structures" aimed at enhancing competitiveness significantly contribute to the realization of eco-processes. We will create further advanced eco-processes through our "New/Reformed Manufacturing Structures".

## Change in CO<sub>2</sub> emissions from continuous kilns by the year of introduction



## Controlling CO<sub>2</sub> Emissions through Highly Efficient Manufacturing Processes

As the NGK Group continues to expand overseas manufacturing, we are focusing efforts on manufacturing efficiency at our overseas locations in an attempt to reduce the amount of CO<sub>2</sub> and discarded materials released. We have made steady progress as a result of introducing improvements to facilities and operations conducted in Japan to our overseas manufacturing locations and continue achieving solid results from the implementation of energy-saving activities targeting general-purpose equipment. For energy-saving activities targeting general-purpose equipment, we created a booklet with guidelines summarizing tips and considerations in energy-saving activities along with some case studies, and distributed copies to manufacturing divisions and sites.

These initiatives aimed at highly efficient manufacturing processes at overseas locations in fiscal 2015 achieved significant results, including an annual CO<sub>2</sub> reduction effect of 13,000 metric tons (a reduction rate of 2.4%).

## Examples of initiatives aimed at reducing CO<sub>2</sub> emissions



Categories	Measures	Effects
Highly efficient manufacturing processes	<p>Main production efficiency initiatives at overseas locations</p> <ul style="list-style-type: none"> <li>▪Introduction of innovative production processes</li> <li>▪Equipment improvements</li> <li>▪Management improvements</li> </ul>	<p>CO2 reduction effect Domestic: 3,300 metric tons Overseas: 13,400 metric tons</p> <p>Of which</p> <ul style="list-style-type: none"> <li>▪Production process improvements Domestic: 1,300 metric tons Overseas: 10,800 metric tons</li> <li>▪General purpose equipment energy savings Domestic: 2,000 metric tons Overseas: 2,600 metric tons</li> </ul>
Group company energy-saving diagnostics	<p>Energy-saving diagnostic initiatives</p> <ul style="list-style-type: none"> <li>▪Used proprietary energy-saving guidelines formulated up until last fiscal year</li> <li>▪Targeted general-purpose equipment and manufacturing processes at Group companies in Japan and overseas</li> <li>▪Conducted in conjunction with local employees</li> <li>▪Identified areas for improvement and formulated improvement plans</li> </ul>	
General-purpose equipment energy-saving activities	<p>Horizontally deployed main improvements</p> <ul style="list-style-type: none"> <li>▪Eradicated air and steam leaks from plumbing</li> <li>▪LED lighting</li> <li>▪Eliminated wasteful air conditioning</li> </ul>	

## Environmental activities at overseas Group companies

### NGK Ceramics Europe S.A.

#### Introduction of a Solar Power Generator to Reduce Electric Power Usage

In response to strict environmental regulations in Europe, NGK Ceramics Europe has been engaging in energy-saving activities since fiscal 2003. It has been reducing environmental impact by improving manufacturing processes and productivity. In August 2013, a solar power generating system was introduced, the only such unit among overseas Group companies, and it has greatly reduced CO2 emissions by effectively using reusable energy. It can reduce CO2 emissions equivalent to about 18 tons annually by generating power of 60,000 kWh.



### NGK Metals Corporation

#### Reducing CO2 with Automated Control Units

NGK Metals is reducing CO2 emissions by updating control systems and improving the operation of production equipment. Among various efforts, automating the control units of the oil circulation system for rolling mills in December 2013 was remarkably effective. Prior to the automation, complex manual processing was required, but automation eliminated unnecessary pump operation. This change reduced electric power consumption as well as CO2 emissions.





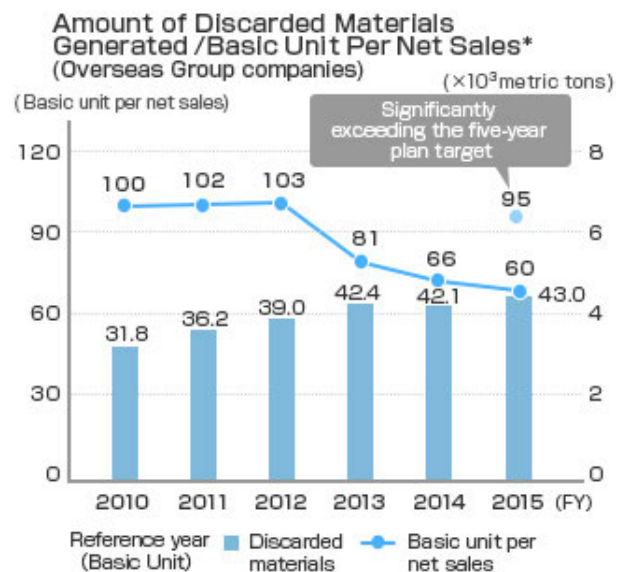
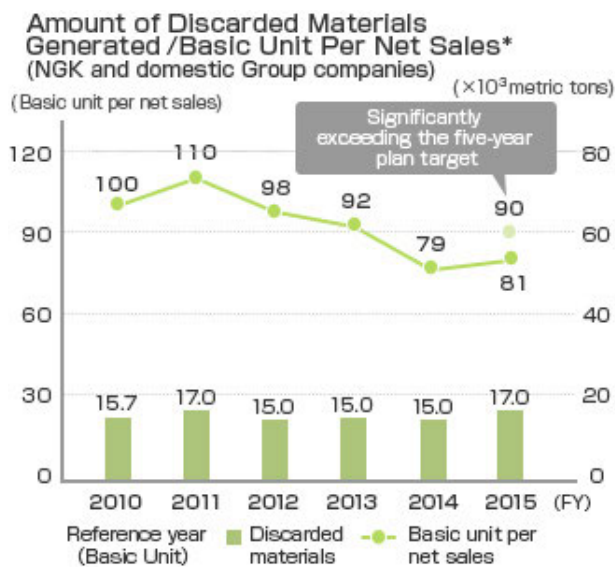
## Promotion of Resource Recycling

To boost yield from manufacturing process improvements, NGK Group reuses in-process materials in an effort to curb discarded materials while also focusing efforts on recycling to reduce final disposal volumes to promote resource recycling.

### Discarded Material Reduction Plans are Proceeding on Track in Japan and Overseas

The NGK Group has been greatly reducing the emissions of discarded materials generated by formulating and managing annual improvement plans to achieve its five-year target for reducing discarded materials generated, in the same way as for CO<sub>2</sub> reduction.

In fiscal 2015, discarded materials were reduced by 900 tons in Japan, equivalent to 5% of total disposal. Because of the increase of prototypes that do not contribute to sales, the basic unit per net sales worsened compared to the previous year, but we were able to far exceed our five-year target. In overseas sites, discarded materials were reduced by 3,900 tons, equivalent to 9% of total disposal, and the basic unit per net sales was improved by approximately 9% compared to the previous year, far exceeding the five-year target.

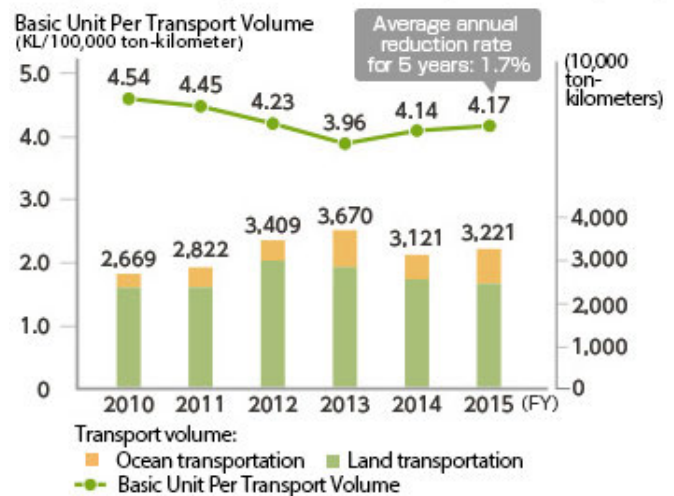


\* Basic unit per net sales calculated as 100 in fiscal 2010.

## Reduction of CO<sub>2</sub> from Logistics

NGK works to reduce CO<sub>2</sub> emissions from logistics, setting a target of improving the basic unit per transport volume by 1% each year under the Five-Year Plan. To achieve the target, we have conducted a number of measures, including raising loading efficiency and promoting a modal shift. As a result, we have achieved an average annual reduction rate of 1.7% for five years under the Third Five-Year Plan, thus exceeding the target.

### Transport Volume/Basic Unit Per Transport Volume (NGK)



## Promoting Recycling at all NGK Group Companies

Through systematic sorting, separating and the quest for new recycling methods, the NGK Group focuses efforts on reducing discarded materials and promoting resource recycling. Consequently, NGK and its domestic Group companies together have maintained a total domestic recycling rate of at least 99% since fiscal 2013. In particular, the amount of landfill

disposal by NGK alone was only one tonne in fiscal 2015, and its recycling rate is reaching almost 100%. Regarding overseas Group companies, where situations differ by country and region, we set objectives in consideration of individual circumstances. Among 16 manufacturing companies in the Group, three companies are facing difficulties in recycling, but other companies have been able to maintain a recycling rate of around 90%.

### Overseas Group Company Implementation Examples

At overseas Group companies, waste material separation management is strictly enforced. Waste separation rules are posted where waste materials are stocked and color-coordinated containers are provided for each category of waste to avoid confusion.



NGK Ceramics Europe



NGK Ceramics USA

### Environmental activities at overseas Group companies

#### NGK Ceramics South Africa (Pty) Ltd.

##### Concentrating on Recycling to Reach 100% Recycling of All Discarded Materials

NGK Ceramics South Africa commenced its recycling promotion activities in fiscal 2006, and has been focusing its efforts on recycling. Previously, discarded materials were disposed of as landfill, but in 2009 the company reviewed its waste management process and selected recycling vendors that are able to process discarded materials in environmentally considerate ways according to the type of discarded material. As an example, honeycomb ceramics discarded during transportation or the sintering process are recycled by brick manufacturers as a raw material for bricks. Waste plastic materials and cardboard for packaging are already 100% recycled through the waste separation management system. To enable all employees to engage in the processing and sorting of waste materials, we conduct environmental training periodically and aim to continue improving the recycling rate.

#### NGK Stanger Pty Ltd.

##### Environmental Contribution by Reusing and Recycling Pressure Gas Switches

Stanger is the only manufacturer of electric power distribution equipment in Australia. Since fiscal 2010, we have been engaged in reusing and recycling the pressure gas switches\* that we have delivered to our customers. Previously, we had relied on our customers to dispose of used switches, but we began to retrieve them after learning that many used switches were sitting in customers' storages and taking up space. After retrieving used switches, our assembly staff disassemble them and reuse the ones that can be repaired. Switches that cannot be repaired are disassembled into small parts, separated into material types, and then transferred to designated recycling companies.

We are contributing to the reduction of discarded materials and environmental impact by processing usable resources rather than disposing of them.

\*Power distribution equipment which is typically installed on a utility pole and serves as a switch to turn on and off electric power.

## NGK Group Water Resource Initiatives

### Water Risk Evaluation

Regarding water risks at manufacturing bases, including Group companies in Japan and overseas, we make efforts to ascertain the status of responses to water risks at each location through regular inspection of regulatory trends in regions where we do business, initiatives aimed at water usage conditions (overall amount and per basic unit) and the appropriate use of water at each location and use "Aqueduct"\* and others to conduct analysis.

We also analyzed locations that take in a lot of water and confirmed no serious risks in those locations.

Note: Global water risk analysis tool made available to the public by World Resources Institute (WRI).

### Water Usage Guidelines

NGK created guidelines (an implementation status checklist) aimed at appropriate water usage and launched inspections to ascertain the efficacy of water usage at all manufacturing bases in Japan and overseas.

Going forward, we will attempt to expand these guidelines through case studies from each location while promoting initiatives appropriate for bases located in highly water-stressed regions.

### Examples of Group Company Initiatives

We strive to use precious water resources as appropriately and efficiently as possible, including the recycling of water used inside plants, at Group companies located in highly water-stressed regions.

For example, at NGK Ceramics Mexico, manufacturing process waste water is filtered using reverse osmosis membranes and the recycled water is reused as coolant and boiler water or sprinkled on vegetation.



Filtration device using reverse osmosis membranes

## Strengthening of Global Environmental Management

In accordance with the Guidelines for Environmental Action, 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.

### Mitigating Potential Risks throughout the Group

All NGK Group companies in Japan and overseas have completed acquisition of ISO14001 or third-party certifications meeting this standard and implement environmental management in line with environmental management systems.

NGK shares information regarding changes in domestic environmental laws and regulations with Group companies and has created a structure to ascertain the status of responses to these changes. Overseas, NGK Headquarters is enhancing its ability to regularly ascertain the status of responses and management in terms of important legal and regulatory system revision information in the countries and regions where Group companies are located.

Additionally, in fiscal 2014, NGK conducted a survey regarding past issues and countermeasures at all manufacturing bases, including those located overseas, to organize items that need confirmation aimed at mitigating potential risks. We will identify issues at each location based on these results and consider responses as necessary.

### Strengthening Environmental Management Linked to Business Planning

The NGK Group promotes environmental management responsive to continuously evolving business plans.

Initiatives aimed at reducing impacts on the environment in accordance with business plans include conducting forecast estimates and achievement evaluations in each business group, product line and global manufacturing base every six months to determine which initiatives to pursue next.

These efforts include the establishment of the Environmental Expert Committee under NGK Environmental Protection Committee, as a company-wide decision-making body. The Environmental Expert Committee facilitates discussions among managers from planning and production divisions who formulate and promote actual business planning in each business division, strengthening the company-wide environmental management system. Going forward, we will continue to strengthen

management integration with the aim of promoting environmental management that combines global environmental protection and corporate growth.

## Preservation of Global Environment

### Creating Products that Contribute to the Environment

---

The NGK Group considers the provision of products and services that contribute to a better social environment to be one of its most important missions. For nearly a century since its founding, NGK has made use of accumulated technologies to develop and provide products and technologies that reduce burdens on the global environment.

#### Contributing to the Preservation of the Global Environment through Products

The NGK Group makes an effort to develop products that contribute to the environment in response to societal needs including the automobile exhaust purification and the spread of renewable energy. Expanding the manufacturing capability and global delivery of products that contribute to the environment contributes to society and the environment.

[Please check here for NGK's activities through its products that contribute to the environment.](#)

#### Completion of an NAS Battery for the Oki Hybrid Project

In October 2015, NGK manufactured and delivered an NAS Battery energy storage system to be used in a hybrid storage battery system demonstration project (the "Oki Hybrid Project") by Chugoku Electric Power Co., Inc. Under this project Chugoku Electric will expand its introduction of renewable energy in the Oki Islands. In these remote islands, there are no transmission cables connecting to the mainland and the scale of the power grid is small and greatly affected by the fluctuation of renewable output. To solve this issue, a hybrid storage battery system was installed by combining an NAS Battery with excellent long-term output and stable power generation characteristics and a lithium-ion battery with short-term output characteristics to perform coordinated control. By September 2018, this project will demonstrate technology for efficiently managing charging and discharging and control of the storage battery system. NGK will continue to cooperate with this advanced, leading project in Japan.



# Preservation of Global Environment

## Biodiversity Initiatives

In addition to the aim of realizing a sustainable society, the NGK Group also recognizes the conservation of biodiversity as an important issue for the company and is engaged in the following initiatives.

### Activities Aimed at Achieving the "Aichi Target"

The NGK Group recognizes the conservation of biodiversity as an important issue for the company. We are taking actions in response to the "Aichi Target" international goals agreed upon at The Tenth Meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 10). In fiscal 2015, we registered two NGK employees to serve as Nagoya citizen researchers into living creatures, and started participating in the activities of the Nagoya Biodiversity Center (Environmental Affairs Bureau, City of Nagoya) in addition to our conventional activities. We will continue to expand our efforts for conserving biodiversity.

Aichi Target		NGK Activities
Target 1	Spread awareness	Employee environmental education (Eco Point System, Eco Test taking support), next-generation education (Guest lectures at elementary schools, employee environmental education lecturer volunteers)
Target 4	Sustainable production and consumption	CO2 reductions, reduction of discarded materials, promotion of recycling, effective use of water, green procurement, expanding sales of products that promote the introduction of renewable energy (NAS® batteries)
Target 5	Inhibit loss of all natural habitats	Participation in volunteer activities including maintenance of Asian skunk cabbage colonies (NGK Okhotsk), "OISCA Forest" (Aichi Prefecture) forestation (NGK)
Target 8	Control pollution by chemical substances, etc.	Strengthen chemical substance management, management of exhaust and waste water, expanding sales of products that prevent air pollution (ceramic products to purify automotive exhaust, NOx sensors, etc.)
Target 11	Conserve protected areas	Participation in volunteer activities including maintenance of Asian skunk cabbage colonies (NGK Okhotsk), "OISCA Forest" (Aichi Prefecture) forestation (NGK)
Target 14	Ecosystem services	Participation in volunteer activities including maintenance of Asian skunk cabbage colonies (NGK Okhotsk), "OISCA Forest" (Aichi Prefecture) forestation (NGK)

### Specific "Aichi Target" Initiatives

#### Environmental Contribution Activities

The NGK Group promotes environmental contribution activities that involve regions and communities, including wetland and forest preservation activities from the perspective of biodiversity. Also, NGK provides information on its intranet regarding information on volunteering opportunities with OISCA-International, a charity engaged in tree planting and environmental protection, enabling employees to participate in tree planting and grass cutting activities.

Please [check here](#) for fiscal 2015 activities.



# Preservation of Global Environment

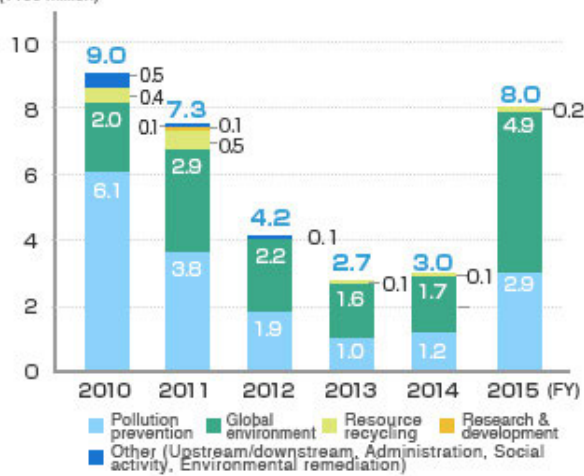
## Environmental Accounting

As an important index of environmental management, NGK has begun conducting environmental accounting and announcing the results. In addition to announcing the costs of environmental conservation (capital investment, expenses), the economic benefits of environmental accounting, and the cost effectiveness of environmental accounting, information on the environmental efficiency of CO<sub>2</sub> and discarded materials has been added since FY2007.

### Environmental Conservation Cost (NGK and Domestic Group Companies)

#### Capital Investment

(¥100 million)



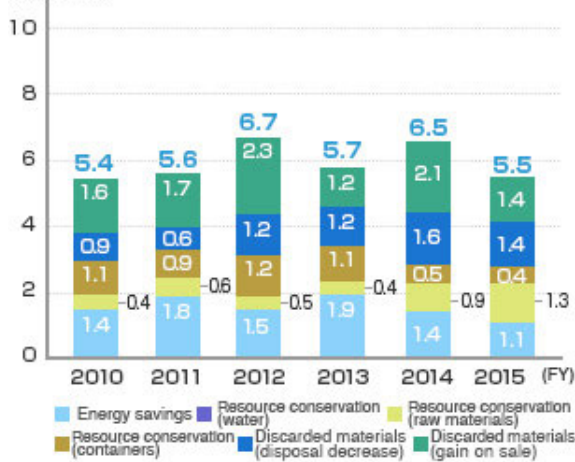
#### Expenditures

(¥100 million)



### Economic Benefits (NGK and Domestic Group Companies)

(¥100 million)

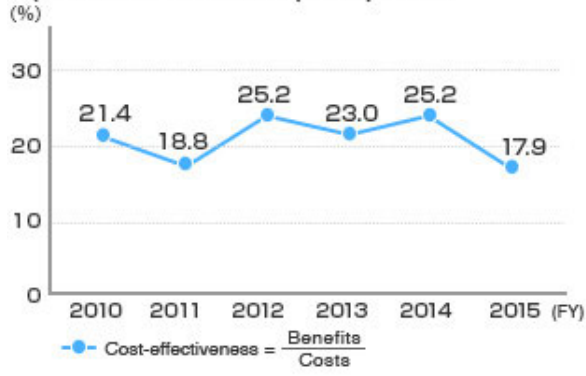


\* Unit costs for energy, water and discarded materials disposal use baseline figures from 2001.

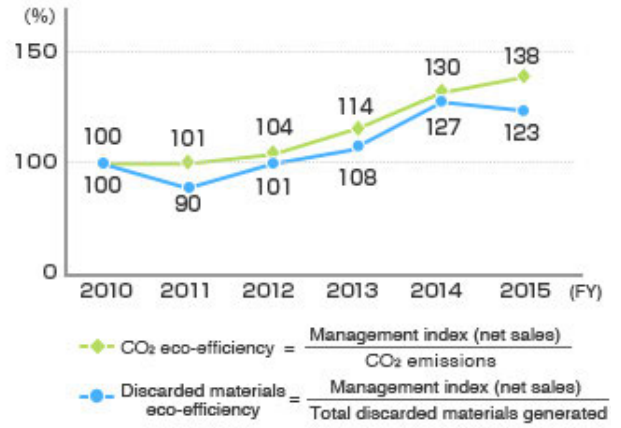
\* Cost increases have not been offset.

The numerical values in these graphs have been rounded up.

**Cost-Effectiveness**  
(NGK and Domestic Group Companies)



**Environmental Efficiency**  
(NGK and Domestic Group Companies)



\*Displayed as an index with fiscal 2010 as 100



# Preservation of Global Environment

## Environmental Education and Communication

---

In accordance with NGK's Core Policy on the Environment, we conduct ongoing environmental education and awareness activities through the establishment of action guidelines for educational and publicity activities aimed at increasing employee environmental awareness. Our aim is to deepen the understanding of environmental problems among each employee to inculcate an awareness of environmental conservation activities.

We also provide on-site classes at elementary schools and conduct environmental events and provide information to a wide range of stakeholders including the next generation to increase environmental awareness.

### Environmental Education inside the Company

To facilitate an understanding of the aims and content of NGK's environmental policies, we conduct position-based training related to environmental management. We also conduct specialized environmental training targeting personnel in charge of environmental management.

To raise the environmental awareness of employees, we are promoting various activities including encouraging the reuse of office supplies and fixtures, using staircases and controlling the temperature setting of air-conditioning in summer, soliciting "ECO proposals" to collect environment-related proposals, providing support for employees to create "green curtains" at home, promoting the "NGK Eco Point System" ([click here for details](#)) to make donations to local administrative offices based on the points earned by entering environment-related actions into the system, and so forth.

### Environmental Education outside of the Company

In fiscal 2015, we participated in the Aichi Environment Day 2015 in May and displayed water resource related panels. Two hundred people attended this event including students from Nagoya City Mitsurugi Elementary School. We communicated the importance of the water resources around us through our display.

We also participated in the guest lecture program organized by the Environmental Partnership Organizing Club (EPOC) as its annual event, and gave lectures on water resources. We conducted the lecture at three sites: Ichinomiya City Konobunakajima Elementary School (106 participants) on June 17, Hekinan City Tanao Children's Recreation Center on July 17 (14 participants), and Anjo City North Children's Recreation Center on August 4 (21 participants). To date, approximately 2,100 people have attended our guest lectures.

### Promoting the Acquisition of Qualifications

To continue conducting environmental conservation activities in compliance with laws and regulations, we make an effort to develop and increase the skills of legally qualified personnel through support in each department for the acquisition of environment-related legal qualifications targeting managers engaged in pollution prevention required for the management of each area.

We systematically educate Qualified Energy Managers in the Engineering Department, Special Controlled Industrial Waste Managers and others involved in waste-related activities in the Environmental Management Department and other business divisions. Managers involved with the prevention of pollution in each business division also receive systematic training, while anyone required to study for and take qualification exams by the Environmental Management Department receives expenses provided by each divisions.

### Qualifications Acquired as of March 31, 2016 (NGK)

Pollution Control Managers			Qualified Energy Managers	Special Controlled Industrial Waste Managers	Waste Disposal Facility Technical Managers
Air	Water	Noise/Vibration			
70	83	15	17	13	4

## Support for Acquisition of Eco Test Certification

NGK supports employees sitting for the Eco Test\* in an aim to ensure each employee acquires a strong environmental awareness and a wide range of knowledge with respect to the environment. Our Board of Directors are also actively acquiring certification.

Support provided by NGK includes lending reference materials to those who require them and providing test-related expenses. To date, a total of 471 people, more than 10% of NGK (alone) employees, have passed the test. In fiscal 2015, 92 passed the test.

\* The Eco test is an environmental and social certification test administered by the Tokyo Chamber of Commerce and Industry focused on a wide-range of environmental issues. The first test was administered in October 2006, and has been held in July and December every year since. In fiscal 2015, 23,849 people sat for the test nationwide, of which 13,704 people passed (a pass rate of 57.5%).

## NGK Eco Point System

Employees earn points for environmental behaviors conducted at work and in the home, a portion of which is converted into cash and donated to funds such as regional municipalities (environmental funds), contributing to regional communities. This system was introduced at the Chita Site in fiscal 2012 as a trial and then expanded throughout the entire company in fiscal 2013.

### The First Recognition of Top-Ranked NGK Eco Point Collectors

We aggregated the NGK Eco Points earned by employees through their engagement in environmental activities in fiscal 2015 for three business sites, Nagoya (Headquarters, Mizuho, and Atsuta), Chita and Komaki, and individual districts for the Ishikawa Plant. We commended the top-ranked employees for the first time. The NGK Eco Point System allows employees to select whether to use earned points in exchange for some Eco goods or to donate to a fund. Every year the number of employees choosing donation is increasing, reflecting increased environmental awareness.

### Voice of the Top Award Winner

#### Satoshi Inaba (Metal Tube)

I was surprised to be ranked top by living in harmony with nature. I will try to beat my Eco point record again this year.



## Collaboration on Environmental Education

### Conducting Guest Lectures at Elementary Schools

NGK collaborates with Environmental Partnership Organizing Club (EPOC)\* on next-generation educational activities by conducting guest lectures for elementary school students. Up to now, NGK has participated in guest lectures presented to approximately 2,100 elementary school students. The importance of water resources is conveyed through lectures using an original textbook created by NGK, picture-story shows, quizzes and experiments.

In fiscal 2015, guest lectures were conducted three times at the



Class for purifying water using soil and activated charcoal

following locations: Ichinomiya City Konobunakajima Elementary School (June 17, 106 students), Hekinan City Tanao Children's Recreation Center (July 17, 14 students), and Anjo City North Children's Recreation Center (Aug. 4, 21 students).

Note: Comprised mainly of environmental opinion leaders from industries located in Japan's Chubu region, this organization was established in February 2000 with the intent of creating the world's leading environmentally advanced region and establishing a "recycling-based economic society" while disseminating information regarding environmental responses.

### **Employee Volunteers Teach Parent-Child Insect Classes**

At Tsuruma Park in Nagoya's Showa Ward, NGK employees teach Summer Break Insect Observation classes for parents and their children (sponsored by the Nagoya City Greenery Association), introducing the various names and ecosystem of insects living in the park.

Through the experience of seeing and touching actual cicada, dragonflies and other insects, the children's eyes sparkled as they became aware of how many insects live close to them.



Each year, the number of participants exceeds the class capacity of 50 people

## Connection to Society

The NGK Group is concerned about social issues in all nations and regions. We engage in social contribution activities in response to needs in each region in an aim to become a corporate citizen trusted by local communities.

## Basic Approach

The NGK Group promotes social contribution activities based on the following concepts.

### Focus of Activities

Centered on people and education, the environment and community involvement.

### Company Activities and Employee Involvement

- NGK provides employees with opportunities to experience activities.
- NGK proactively encourages individual activities to engender employee satisfaction and a sense of confidence in the company.

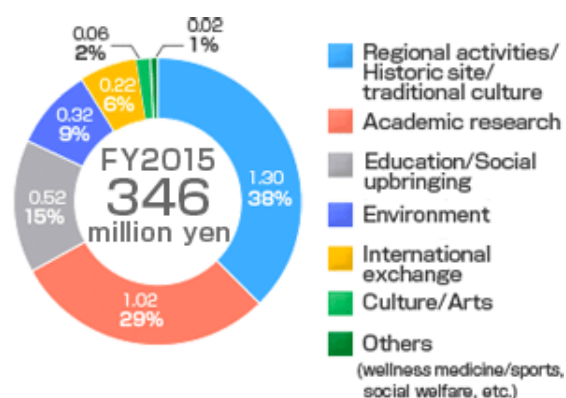
### Information Disclosure

NGK promotes an understanding of activities and provides activity information to inculcate a social contribution mindset among employees.

The NGK Group centralizes information on its social contribution activities from NGK Group companies in Japan and around the world. In fiscal 2015, 70 activity reports were filed.

### Social Contribution Activity Promotion Status

	FY2012	FY2013	FY2014	FY2015
Social contribution expenditures	346 million yen	348 million yen	331 million yen	346 million yen
Number of social contribution programs	9	9	8	9
Number of collaborations with NPO/NGO	2	3	5	4



## Connection to Society

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

---

NGK conducts ongoing support activities launched in 1997 with the establishment of [the NGK Foundation for International Students](#). The Foundation provides housing and scholarships to International students visiting Japan with the aim of contributing to human resource cultivation that fosters the development of an international community.

These activities were launched as a way of expressing gratitude for the warm support extended by regional communities around the world to NGK's expatriate employees and their families when NGK first advanced into the global market back in the 1930s. Our activities are conducted in the hope that the students will feel glad that they came to Japan and develop a fondness for the country.

In fiscal 2015, we provided housing to 32 students from four counties, and scholarships (non-repayable) to 20 students from 12 countries.



NGK International House, providing housing for students from overseas



Reception party held for international students with invited NGK employees

### Exchange between Supported Students, Communities and Employees

NGK conducts a variety of events that are opportunities for grassroots international relations among supported students, regional communities and employees. Since fiscal 2000, we have conducted language classes taught by International students. Since 2006, we have held cross-cultural exchange meetings where International students introduce their native countries.

In fiscal 2015, Chinese language classes were held and were attended by 24 local residents, while 10 cross-cultural exchange meetings were hosted, offering presentations by students from India, Canada, Sweden, Turkey, France, Vietnam, Malaysia, China, and Korea. On the last day, a dumpling feast was held, providing a great opportunity for local residents and NGK employees to interact with the students. The cumulative total number of participants reached 850 in fiscal 2015.





Chinese language class: A student from China served as the instructor.



Dumpling feast

## Communication after Support Ends

To maintain relationships with supported International students after support ends, each year, we send out a New Year's greeting that includes a company status report to former participants and supported students. We also distribute "NGK International Friendship Club Members Cards" that include our contact information to International students after support ends.

In fiscal 2015, we sent New Year's greetings with updates on the Foundation and NGK to approximately 300 students who have received support in the past. In turn, they sent us New Year's cards and emails informing us of how they were doing.

## CLOSE UP!

### Introducing NGK's international student support activities

On March 17, 2016, NGK's CSR Office hosted a meeting of the Chubu CSR Corporate Liaison Network at the NGK International House, where the Group's international student support activities were introduced. Comprised of CSR staff members from 13 companies in the Chubu region, the Network assembles regularly to exchange views on the promotion of CSR activities. This time, presentations were also given by two foreign students residing at the NGK International House on their life in Japan and their thoughts. The presentations were followed by a tour of the House, including the students' rooms, shared kitchen and dining room, and study room.



The NGK International House was visited by 28 CSR staff members.



A student from China speaks of her fulfilling school life supported by the NGK Foundation for International Students.

## Connection to Society

### Social Contribution Activities in Collaboration with Regional Communities and NPOs

Aiming to be a corporate citizen trusted by regional communities, NGK collaborates with regional communities and NPOs to engage in social contribution activities in response to regional needs. In addition, employee volunteers from NGK Group companies in Japan and around the world conduct a variety of social contribution activities rooted in their regional communities.

#### Donating Emergency Supplies, Cooperating with Foodbanks

NGK promotes foodbank initiatives, including donating water and food nearing its expiration date from emergency supplies prepared in the event of a disaster, to organizations that support needy people and foreigners.

In fiscal 2015, with the aim of making effective use of food nearing its expiry date, the NGK headquarters, the Chita and Komaki sites, and the Hokuriku, Takamatsu, and Fukuoka sales offices donated their emergency food supplies to NPO Second Harvest (Nagoya) and Komaki Council of Social Welfare. A total of around 3,400 cans of bread and 2,300 bottles of mineral water with a few months left on their expiry dates were presented to help needy people.



Handing over food supplies to a representative of the Komaki Council of Social Welfare (left).



Canned bread and mineral water were donated.

### CLOSE UP!

#### Support of areas hit by the Kumamoto Earthquake

For early recovery of power systems infrastructure in areas hit by the Kumamoto Earthquake, the entire NGK Group helped to manufacture and supply insulators and other related equipment. A monetary donation of 10 million yen was also offered to support disaster victims and regional restoration. In addition, donations were collected from employees, to which the same amount of money was added by NGK to offer matching gifts. Furthermore, food supplies and mineral water stockpiled at NGK headquarters were delivered to the disaster-hit areas via NPO Second Harvest(Japan).



Water and food items were delivered swiftly to disaster-hit areas.



Members of the local communities were delighted to receive our stockpiled food supplies.

### Offering workplace experience to junior high school students from Rikuzentakata City

In January 2016, NGK cooperated with the Nagoya City Board of Education to offer two junior high school students an opportunity to try their hand at the setting in and removal from a kiln of HONEYCERAM at NGK's AC Plant. The Boards of Education of Nagoya City and Rikuzentakata City concluded a friendship agreement in 2012 with the aim of fostering ongoing mutual exchange between the children of each area. Ever since, junior high school students in the two cities have been visiting each other on an annual basis. In fiscal 2015, 20 students from a public junior high school in Rikuzentakata visited Nagoya over three days from January 6, undertaking workplace experience at 10 companies including NGK and interacting with junior high school students in Nagoya.



Along with words of encouragement, President Taku Oshima presented footballs to Keita Endo of Yokota Junior High School (left) and Akihito Sugawara of Takatahigashi Junior High School.



### Feedback from the students

"We got to set and remove products in and from a kiln, check for defective products, and align the fragile products carefully but swiftly. All these tasks were new to us and therefore really wore us out, but we managed to complete them."

"Major corporations in Rikuzentakata were swept away by the tsunami, so we are extremely grateful for this precious opportunity to engage in work experience at NGK, one of Japan's leading companies."



"I'm hoping to not only fully absorb what I've learned, but also to tell my friends and neighbors all about it."

### Catering service for the elderly

On September 17, 2015, two NGK employees engaged in voluntary work at a luncheon event held at the Mitsurugi Community Center in Mizuho Ward, Nagoya City for older members of the community who live alone. The luncheon is hosted regularly by Mizuho Ward's Local Community Welfare Council as part of its catering service project for the area's elderly residents. The event was attended by 90 people this time.

NGK has been supporting the luncheon event every year since 1996 by providing help at the venue and donating prizes for games.



Bingo games were enjoyed at the luncheon event



An NGK employee who participated as a volunteer gave greetings on behalf of the Group, saying, "We hope to continue interacting with the members of the local community and provide ongoing support."

## Connection to Society

### Support for Volunteer Activities by Employees

The NGK Group proactively supports activities and provides information to create opportunities for employees to participate in volunteering outside the company.

#### Science volunteer activities

As a manufacturer, NGK is working on activities to share the joys of science with children and offering clearly presented information with the aim of sparking their interest in science and technology.

In 1997, we started running a regular feature entitled NGK Science Site: Experiments at Home Series in Newton, a science magazine, as a corporate advertisement. NGK also operates a dedicated webpage in tandem with the series, providing viewers with details of the featured experiments supervised by experts on a monthly basis. By using readily available items such as PET bottles, batteries, vegetables, and seasonings, the experiments help spark children's interest in science. The series presented its 220th experiment in January 2016.

NGK employees also demonstrate the experiments introduced in NGK Science Site as part of a volunteer activity. Since 1998, the experiments have been performed annually at the Youngsters' Science Festival in Nagoya organized by the Japan Science Foundation and others. In addition, roughly 40 experiment demonstrations have been given at event booths installed at regional science museums, attracting a cumulative total of 20,000 participants.



Employee volunteers busily instructing crowds of children and families



Making "glasses for spying," which enables wearers to see behind them, was a hugely popular craft project.



#### NGK Science Site included in the Nikkei Plus1 ranking

Last-minute Summer Projects published in our NGK Science Site were ranked second and sixth in the August 22 edition of the Nikkei Plus1 ranking (page 1 of The Nikkei Saturday edition, separate print).



## Donating Meals to Children in Africa through TABLE FOR TWO Initiatives

Since September 2010, NGK has participated in the TABLE FOR TWO (TFT) program as a volunteer activity employees can easily participate in. When a meal is ordered from the employee cafeteria's healthy menu, a donation equivalent to one school lunch (20 yen) is provided to children in Africa. All NGK cafeterias (eight cafeterias in four areas) participate in this program.

The equivalent of 41,500 meals were donated in fiscal 2015, with the cumulative number of donated meals since September 2010 reaching 210,000, which amounts to a full year of school lunches for approximately 950 children.

In October 2015, we began creating triangular POP advertising displays featuring employees engaged in the TFT program. They have been placed on NGK cafeteria tables since June 2013 to encourage employees to take part in this effortless social contribution activity. Employees featured in the displays now number 108.

A total of around 200,000 yen was donated in fiscal 2015 through the three TFT vending machines, which were installed at NGK headquarters in July 2013.



Many employees participate in the TFT project, which is a hassle-free way of engaging in charity.



The equivalent of 41,500 meals were donated to children in developing countries in fiscal 2015.

## Group Volunteer Participation in Marathon Festival Nagoya-Aichi

Approximately 100 employees from the NGK Group participated in a group volunteer activity intended to enliven the Marathon Festival Nagoya-Aichi, in Nagoya City, a major local event held on March 13, 2016. The volunteers supported operations by providing runners with water and maintaining the course.

We invited members of the NGK Workers' Union, Group companies, and the cafeteria operator to join in. Prior to the event, the volunteers and employee runners assembled for a get-together, with President Taku Oshima of NGK dropping in to offer a few words of encouragement. Video clips produced by each workplace featuring employee runners and messages to cheer them on were also shown at the gathering to foster a mood of support and encouragement among the volunteers and employee runners.



Around 100 volunteers joined the event



Supporting runners by supplying water



### Yoko Dan, (NGK Ceramic Device)

My task was to supply water to the runners. While handing out cups of water, I cheered them on at the top of my voice in the hope of empowering them! After six hours of volunteering from the early morning and accomplishing my task in cooperation with other volunteer members, I felt a sense of fulfillment and a good kind of tired, and was glad that I had participated. I'd like to help boost the event next year with an even larger group of volunteers.



## NGK Eco Point System

[Click here](#)

### Forestation activity at OISCA forest

In fiscal 2015, 27 employees planted 50 yamazakura cherry trees as part of the forestation activity co-organized with The Organization for Industrial Spiritual and Cultural Advancement-International (OISCA) at the OISCA forest in Kitashitara District, Aichi Prefecture. This was the fourth time NGK engaged in forestation as a group-wide volunteer activity. A cumulative total of 82 employees have joined in the initiative so far, planting around 170 yamazakura.

In addition, as a measure to facilitate employees' participation in the OISCA initiative at the workplace, two vending machines with a donation collecting function were introduced in the NGK head office in November 2015.



## Social contribution activities by domestic Group companies

### NGK Okhotsk engages in maintenance of Asian skunk cabbage colonies

In August 2015, eight employees of NGK Okhotsk, Ltd. participated in a grass-cutting event at the Asian skunk cabbage colonies alongside Lake Abashiri, which was organized by the Lake Abashiri Mizu to Midori no Kai. This marked the company's sixth year of involvement in the event, which is held every spring and summer. With a mower, sickle, or hoe in hand, the employees joined local residents in cutting grass growing in the colonies and on roadsides. To create a wetland environment suitable for skunk cabbage, efforts were also made to enhance the wetlands and reinforce the gutter retaining walls by using the cut grass and driftwood.

Feedback from a participant

The water channel by the colonies is a great spot for enjoying the rich natural features of this area, with fireflies buzzing around in summer and salmon swimming upstream in autumn. I intend to continue helping to preserve the environment so that skunk cabbage can be seen in full bloom next spring.



### Soshin Electric participates in International Volunteer Day: Simultaneous Social Contribution Action

On December 4, 2015, Soshin Electric Co., Ltd. participated in the International Volunteer Day: Simultaneous Social Contribution Action held at Hamamatsucho Building, where its head office is located. To coincide with the UN-designated International Volunteer Day (December 5), the annual event was organized by the building's 15 tenant companies. Fair trade products were sold by NPOs and organizations, workshops were held, and a concert was given by the Toshiba Philharmonic Orchestra. Soshin Electric employees also worked as stall sellers. Proceeds from the event were used to support participant organizations' social contribution activities and producers in developing countries.



### NGK Ceramic Device participates in spring traffic safety campaign

In May 2015, 19 employees of NGK Ceramic Device Co., Ltd. (Komaki City, Aichi Prefecture) participated in a traffic safety campaign at a nearby intersection. The event was hosted by the Komaki Police Station as part of a nationwide traffic safety awareness movement. The Group company's employees join the campaign as a voluntary service twice a year.





## NGK Metex engages in local beautification activities

In October 2015, 10 employees of NGK Metex Corporation engaged in a cleanup activity in the vicinity of the company in Kazo City, Saitama Prefecture. The company conducts the activity twice a year along with neighboring companies in the industrial complex as part of its social contribution activities. During the one-hour cleanup, the employees gathered fallen leaves and waste equivalent to 23 bags, which were collected by the city to be used as compost.



## Social contribution activities by overseas Group companies

### Participating in world-class charity run (Germany)

In June 2015, 50 employees of NGK Europe GmbH participated in the JP Morgan Corporate Challenge, a jogging event held in Frankfurt. The event is one of the largest of its kind in the world, attracting around 70,000 runners. A portion of the participation fees collected is donated to organizations that support the physically challenged. The employees ran 5.6 kilometers in matching T-shirts displaying the company's 30th anniversary logo.



### Charity auction for selling pictures drawn by children (Poland)

In June 2015, NGK Ceramics Polska Sp. z o.o. (ACP) held a charity auction for selling pictures drawn by children in orphanages. The auction was held at the company's family picnic event, and drew around 3,000 ACP employees and their family members seeking to buy inspirational artworks by talented young artists. The pictures were sold off in quick succession for high bids, creating great excitement among the audience.



### Supporting a year-end charity (Poland)

In December 2015, NGK Ceramics Polska Sp. z o.o. (ACP) cooperated with a year-end charity drive called the Nobel Package, which is conducted each year throughout Poland. Food, clothing, and other daily necessities were donated, along with a special chair for a girl with physical disabilities.



### **Donating blood (Malaysia)**

NGK Electronics Devices (M) Sdn. Bhd. and NGK Globetronics Technology Sdn. Bhd. based in Penang, Malaysia conducted a blood donation campaign held as an annual event aimed at raising health awareness and contributing to the regional community. On April 14 and August 11, 2015, each 89 employees and 47 employees donated blood.



### **Distributing Christmas presents to children at an orphanage (U.S.A.)**

In December 2015, NGK Metals Corporation (U.S.A.) sent Christmas presents through a volunteer group to children at a nearby orphanage for the seventh consecutive year. Numerous toys and clothes donated by employees were carefully gift-wrapped and delivered to the children.



### **Participating in Make a CHANGE Day**

Make a CHANGE Day is a nationwide initiative hosted by the EXPO 2005 Aichi Volunteer Center, under which voluntary and civic activities are carried out intensively during a designated period to encourage participation in volunteering. By widely publicizing the activities of various organizations online and through a range of media, the event aims to enhance the social significance and impact of voluntary and civic activities, thereby contributing to fostering a "culture of volunteerism." As part of the Make a CHANGE Day initiative, NGK registered 12 social activities associated with the environment, sports, education, and social welfare, implemented between October 2014 and March 2015.



## Connection to Society

### Support for Volunteer Activities by Employees

The NGK Group proactively supports activities and provides information to create opportunities for employees to participate in volunteering outside the company.

#### Science volunteer activities

As a manufacturer, NGK is working on activities to share the joys of science with children and offering clearly presented information with the aim of sparking their interest in science and technology.

In 1997, we started running a regular feature entitled NGK Science Site: Experiments at Home Series in Newton, a science magazine, as a corporate advertisement. NGK also operates a dedicated webpage in tandem with the series, providing viewers with details of the featured experiments supervised by experts on a monthly basis. By using readily available items such as PET bottles, batteries, vegetables, and seasonings, the experiments help spark children's interest in science. The series presented its 220th experiment in January 2016.

NGK employees also demonstrate the experiments introduced in NGK Science Site as part of a volunteer activity. Since 1998, the experiments have been performed annually at the Youngsters' Science Festival in Nagoya organized by the Japan Science Foundation and others. In addition, roughly 40 experiment demonstrations have been given at event booths installed at regional science museums, attracting a cumulative total of 20,000 participants.



Employee volunteers busily instructing crowds of children and families



Making "glasses for spying," which enables wearers to see behind them, was a hugely popular craft project.



#### NGK Science Site included in the Nikkei Plus1 ranking

Last-minute Summer Projects published in our NGK Science Site were ranked second and sixth in the August 22 edition of the Nikkei Plus1 ranking (page 1 of The Nikkei Saturday edition, separate print).



## Donating Meals to Children in Africa through TABLE FOR TWO Initiatives

Since September 2010, NGK has participated in the TABLE FOR TWO (TFT) program as a volunteer activity employees can easily participate in. When a meal is ordered from the employee cafeteria's healthy menu, a donation equivalent to one school lunch (20 yen) is provided to children in Africa. All NGK cafeterias (eight cafeterias in four areas) participate in this program.

The equivalent of 41,500 meals were donated in fiscal 2015, with the cumulative number of donated meals since September 2010 reaching 210,000, which amounts to a full year of school lunches for approximately 950 children.

In October 2015, we began creating triangular POP advertising displays featuring employees engaged in the TFT program. They have been placed on NGK cafeteria tables since June 2013 to encourage employees to take part in this effortless social contribution activity. Employees featured in the displays now number 108.

A total of around 200,000 yen was donated in fiscal 2015 through the three TFT vending machines, which were installed at NGK headquarters in July 2013.



The equivalent of 41,500 meals were donated to children in developing countries in fiscal 2015.

Many employees participate in the TFT project, which is a hassle-free way of engaging in charity.

## Group Volunteer Participation in Marathon Festival Nagoya-Aichi

Approximately 100 employees from the NGK Group participated in a group volunteer activity intended to enliven the Marathon Festival Nagoya-Aichi, in Nagoya City, a major local event held on March 13, 2016. The volunteers supported operations by providing runners with water and maintaining the course.

We invited members of the NGK Workers' Union, Group companies, and the cafeteria operator to join in. Prior to the event, the volunteers and employee runners assembled for a get-together, with President Taku Oshima of NGK dropping in to offer a few words of encouragement. Video clips produced by each workplace featuring employee runners and messages to cheer them on were also shown at the gathering to foster a mood of support and encouragement among the volunteers and employee runners.



Around 100 volunteers joined the event



Supporting runners by supplying water

### **Yoko Dan, (NGK Ceramic Device)**

My task was to supply water to the runners. While handing out cups of water, I cheered them on at the top of my voice in the hope of empowering them! After six hours of volunteering from the early morning and accomplishing my task in cooperation with other volunteer members, I felt a sense of fulfillment and a good kind of tired, and was glad that I had participated. I'd like to help boost the event next year with an even larger group of volunteers.



## **NGK Eco Point System**

[Click here](#)

### **Forestation activity at OISCA forest**

In fiscal 2015, 27 employees planted 50 yamazakura cherry trees as part of the forestation activity co-organized with The Organization for Industrial Spiritual and Cultural Advancement-International (OISCA) at the OISCA forest in Kitashitara District, Aichi Prefecture. This was the fourth time NGK engaged in forestation as a group-wide volunteer activity. A cumulative total of 82 employees have joined in the initiative so far, planting around 170 yamazakura.



## **Social contribution activities by domestic Group companies**

### **NGK Okhotsk engages in maintenance of Asian skunk cabbage colonies**

In August 2015, eight employees of NGK Okhotsk, Ltd. participated in a grass-cutting event at the Asian skunk cabbage colonies alongside Lake Abashiri, which was organized by the Lake Abashiri Mizu to Midori no Kai. This marked the company's sixth year of involvement in the event, which is held every spring and summer. With a mower, sickle, or hoe in hand, the employees joined local residents in cutting grass growing in the colonies and on roadsides. To create a wetland environment suitable for skunk cabbage, efforts were also made to enhance the wetlands and reinforce the gutter retaining walls by using the cut grass and driftwood.

Feedback from a participant

The water channel by the colonies is a great spot for enjoying the rich natural features of this area, with fireflies buzzing around in summer and salmon swimming upstream in autumn. I intend to continue helping to preserve the environment so that skunk cabbage can be seen in full bloom next spring.





### Soshin Electric participates in International Volunteer Day: Simultaneous Social Contribution Action

On December 4, 2015, Soshin Electric Co., Ltd. participated in the International Volunteer Day: Simultaneous Social Contribution Action held at Hamamatsucho Building, where its head office is located. To coincide with the UN-designated International Volunteer Day (December 5), the annual event was organized by the building's 15 tenant companies. Fair trade products were sold by NPOs and organizations, workshops were held, and a concert was given by the Toshiba Philharmonic Orchestra. Soshin Electric employees also worked as stall sellers. Proceeds from the event were used to support participant organizations' social contribution activities and producers in developing countries.



### NGK Ceramic Device participates in spring traffic safety campaign

In May 2015, 19 employees of NGK Ceramic Device Co., Ltd. (Komaki City, Aichi Prefecture) participated in a traffic safety campaign at a nearby intersection. The event was hosted by the Komaki Police Station as part of a nationwide traffic safety awareness movement. The Group company's employees join the campaign as a voluntary service twice a year.



## NGK Metex engages in local beautification activities

In October 2015, 10 employees of NGK Metex Corporation engaged in a cleanup activity in the vicinity of the company in Kazo City, Saitama Prefecture. The company conducts the activity twice a year along with neighboring companies in the industrial complex as part of its social contribution activities. During the one-hour cleanup, the employees gathered fallen leaves and waste equivalent to 23 bags, which were collected by the city to be used as compost.



## Social contribution activities by overseas Group companies

### Participating in world-class charity run (Germany)

In June 2015, 50 employees of NGK Europe GmbH participated in the JP Morgan Corporate Challenge, a jogging event held in Frankfurt. The event is one of the largest of its kind in the world, attracting around 70,000 runners. A portion of the participation fees collected is donated to organizations that support the physically challenged. The employees ran 5.6 kilometers in matching T-shirts displaying the company's 30th anniversary logo.



### Charity auction for selling pictures drawn by children (Poland)

In June 2015, NGK Ceramics Polska Sp. z o.o. (ACP) held a charity auction for selling pictures drawn by children in orphanages. The auction was held at the company's family picnic event, and drew around 3,000 ACP employees and their family members seeking to buy inspirational artworks by talented young artists. The pictures were sold off in quick succession for high bids, creating great excitement among the audience.



### Supporting a year-end charity (Poland)

In December 2015, NGK Ceramics Polska Sp. z o.o. (ACP) cooperated with a year-end charity drive called the Nobel Package, which is conducted each year throughout Poland. Food, clothing, and other daily necessities were donated, along with a special chair for a girl with physical disabilities.





### **Donating blood (Malaysia)**

NGK Electronics Devices (M) Sdn. Bhd. and NGK Globetronics Technology Sdn. Bhd. based in Penang, Malaysia conducted a blood donation campaign held as an annual event aimed at raising health awareness and contributing to the regional community. On April 14 and August 11, 2015, each 89 employees and 47 employees donated blood.



### **Distributing Christmas presents to children at an orphanage (U.S.A.)**

In December 2015, NGK Metals Corporation (U.S.A.) sent Christmas presents through a volunteer group to children at a nearby orphanage for the seventh consecutive year. Numerous toys and clothes donated by employees were carefully gift-wrapped and delivered to the children.



### **Participating in Make a CHANGE Day**

Make a CHANGE Day is a nationwide initiative under which voluntary and civic activities are carried out intensively during a designated period to encourage involvement in volunteering. By widely publicizing the activities of various organizations online and through a range of media, the event aims to enhance the social significance and impact of voluntary and civic activities, thereby contributing to fostering a “culture of volunteerism.” As part of the Make a CHANGE Day initiative, NGK registered 12 social activities associated with the environment, sports, education, and social welfare implemented between October 2014 and March 2015.

## Connection to Society

# Collaborating with the Worker's Union to Conduct Social Contribution Activities

---

### Cleanup Activities around Plants

As a member of regional communities, the NGK Group proactively participates in cleanup activities around its plants. In fiscal 2015, these activities were conducted at all NGK sites and the Ishikawa Plant, as well as at each Group company. In cooperation with NGK Yu-Service Co., Ltd., and NGK Building Services, Ltd., the NGK Worker's Union has participated in cleanup activities around the NGK Head Office and a nearby park for the past 25 years. These activities were conducted two times in 2015, with nearly 436 people participating in park beautification efforts.



The cleanup activities have been undertaken for 25 years.



Employees cleaning up around their plant.

### Participating in the Fukushima Sunflower Project

In August 2015, the NGK Workers' Union participated in the Fukushima Sunflower Project, under which participants become "foster parents" to sunflowers by purchasing their seeds, growing new flowers from them, harvesting their seeds, and sending the seeds back to the project organizer. The project aims to help the people of Fukushima connect with the rest of the world, make sure the earthquake disaster is never forgotten, and create employment in the prefecture, including for those with intellectual disabilities. In May 2015, sunflowers came into full bloom at the three "foster parent" garden beds at NGK's Nagoya Site. Furthermore, in response to an internal solicitation, 42 individual NGK employees now serve as independent "foster parents," growing their own batch of sunflowers at home. The seeds sent back to Fukushima have grown and bloomed at various locations in the region, and the seeds of these flowers will be processed into sunflower oil to help with the restoration of the prefecture.



Sunflowers in bloom at NGK headquarters in Nagoya



"We'd like to implement the project on larger scale next year," says an NGK project staff member.



## Cherry Tree Planting and Recovery Support Tour

In April 2014, 22 employees participated in the “Cherry Tree Planting and Reconstruction Support Tour” project created by the NGK Worker’s Union, which planted 21 cherry trees around Wakabayashi Ward in Sendai City, Miyagi Prefecture. From October to December 2013, the Worker’s Union called for donations internally to the “Sakura Fund,” then planned a tour to deliver the collected funds directly to disaster-stricken areas.

At the end of October 2015, the Workers’ Union visited the site to see the planted trees and confirmed their steady progress. The couple in charge of looking after the trees told the union representatives about their growth, including details about the flowers they bore in spring.

In November 2015, a mature yamazakura cherry tree was additionally planted in Sanbontsuka, Wakabayashi Ward in Sendai City, with some union staff members invited to the unveiling ceremony. Local residents were reportedly delighted to see the grand tree. Support will be continued toward the goal of holding a blossom viewing party in spring to see them in full bloom.

### ■The Sakura Fund

This fund intends to provide economic recovery support in the form of tree planting and other programs conducted in disaster-stricken areas. Through the planting of cherry trees at the highest point reached by the massive tsunami after the Great East Japan earthquake, the memory of the disaster caused by the massive tsunami will never fade. This project is organized by NPO Sakuranamiki Network.



▶ [PO Sakuranamiki Network Website](#)

## Connection to Society

### Interaction with Regional Communities

---

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

#### Plant Tours

##### Interactions with Children and Local Residents

NGK attempts to interact with regional communities through plant tours to deepen interest in and understanding of NGK and manufacturing. In fiscal 2015 we conducted six plant tours at three sites for a total of 152 participants consisting of elementary school students and local residents.

##### Plant Tours in Fiscal 2015 (NGK)

	Tours	Participants	Details
Chita Site	1	61	Hosted a plant tour for local residents
Komaki Site	3	27	Hosted student visitors from Aichi Prefectural Kasugainishi Senior High School and Aichi Prefectural Seto Pottery Senior High School. Hosted a site tour for ward mayors and officers of the regional.
Ishikawa Plant	2	64	Hosted elementary school pupils from Nomi City and students from Ishikawa Technical Senior High School.

#### Plant Tour for Local Residents at the Chita Site

In November 2015, NGK hosted a plant tour at its Chita Site to create an opportunity to interact directly with local residents, who are important stakeholders for the company. Following an overview of NGK given by Shuhei Ishikawa, director and senior vice president of the company and general manager of its Chita Site, participants were taken around to see the rolling process at the metal plant and the production and inspection processes at the insulator plant. The tour helped the local residents better understand NGK's production and business activities.



61 local residents participated.



A tour of NGK's insulator plant

## NGK Holds its Annual Summer Festival

In July 2015, the Komaki Site held its annual NGK Summer Festival, marking the 49th year of this event, which drew local residents, employees, and their families, totaling around 2,200 people. On stage, a range of performances were presented including Japanese drums and jazz dance, as well as concerts by a singer originally from the area and a pop group. Carnival booths run by employees offered shaved ice and games, which were hugely popular with children. The annual raffle event offered prizes such as tickets for sightseeing by helicopter and C1 home-use water purifiers, creating excitement throughout the venue.



Performance on stage



Ball-scooping game draws many participants.

## Collaboration on Environmental Education

[Click here.](#)

# GRI Guidelines ISO26000 Comparison Table

## Standard Disclosures

		ISO26000 Issues *	Publication Location	
			Web Version Full Report	Print Version
<b>Strategy and Analysis</b>				
G4-1	Provide a statement from the most senior decision-maker of the organization (such as CEO, chair, or equivalent senior position) about the relevance of sustainability to the organization and the organization's strategy for addressing sustainability.	-	<ul style="list-style-type: none"> <li>▪ <a href="#">Management's Commitment</a></li> </ul>	P3-4 Management's Commitment
G4-2	Provide a description of key impacts, risks, and opportunities.	-	<ul style="list-style-type: none"> <li>▪ <a href="#">Management's Commitment</a></li> <li>▪ <a href="#">Risk Management</a></li> <li>▪ <a href="#">Special Feature: New Five-Year Environmental Action Plan and Environmental Products</a></li> <li>▪ <a href="#">Preservation of Global Environment</a></li> </ul>	P3-4 Management's Commitment P11-16 Special Feature: New Five-Year Environmental Action Plan and Environmental Products P17-22 Business Overview P41 Thorough Compliance P42 Risk Management
<b>Organizational Profile</b>				
G4-3	Report the name of the organization.	-	<ul style="list-style-type: none"> <li>▪ <a href="#">About NGK (Corporate Outline)</a></li> </ul>	P45 Corporate Outline
G4-4	Report the primary brands, products, and services.	-	<ul style="list-style-type: none"> <li>▪ <a href="#">Products (Corporate Outline)</a></li> </ul>	P5 Business Domain P7-10 Inspiration to Value Creation P14-16 Promoting Environmental Contribution through Products P17-22 Business Overview
G4-5	Report the location of the organization's headquarters.	-	<ul style="list-style-type: none"> <li>▪ <a href="#">About NGK (Corporate Outline)</a></li> </ul>	F4,P45 Corporate Outline
G4-6	Report the number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report.	-	<ul style="list-style-type: none"> <li>▪ <a href="#">About NGK (Corporate Outline)</a></li> <li>▪ <a href="#">Investor Relations &gt; IR Library &gt; Annual Report &gt; Subsidiaries and Affiliated Companies (P72-73)</a></li> </ul>	P45 Corporate Outline P47-48 Global Network
G4-7	Report the nature of ownership and legal form.	-	<ul style="list-style-type: none"> <li>▪ <a href="#">About NGK (Corporate Outline)</a></li> <li>▪ <a href="#">Investor Relations &gt; IR Library &gt; Annual Report &gt; Subsidiaries and Affiliated Companies (P72-73)</a></li> </ul>	
G4-8	Report the markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries).	-	<ul style="list-style-type: none"> <li>▪ <a href="#">About NGK &gt; Corporate Outline</a></li> </ul>	P17-22 Business Overview P44 Financial Highlights
G4-9	a. Report the scale of the organization, including: <ul style="list-style-type: none"> <li>▪ Total number of employees</li> <li>▪ Total number of operations</li> <li>▪ Net sales</li> <li>▪ Total capitalization broken down in terms of debt and equity</li> <li>▪ Quantity of products or services provided</li> </ul>	-	<ul style="list-style-type: none"> <li>▪ <a href="#">About NGK &gt; Corporate Outline</a></li> <li>▪ <a href="#">Investor Relations &gt; IR Library &gt; Annual Report &gt; Financial Highlights (P1); Subsidiaries and Affiliates (P72-73)</a></li> <li>▪ <a href="#">Products</a></li> </ul>	P43-44 Financial Highlights P45 Financial Summary

G4-10	<ul style="list-style-type: none"> <li>▪ Report the total number of employees by employment contract and gender.</li> <li>▪ Report the total number of permanent employees by employment type and gender</li> <li>▪ Report the total workforce by employees and supervised workers and by gender</li> <li>▪ Report the total workforce by region and gender.</li> <li>▪ Report whether a substantial portion of the organization's work is performed by workers who are legally recognized as self-employed, or by individuals other than employees or supervised workers, including employees and supervised employees of contractors.</li> <li>▪ Report any significant variations in employment numbers</li> </ul>	-	<ul style="list-style-type: none"> <li>▪ <a href="#">Respect for People and Ensure Comfortable Workplace</a></li> </ul>	P44 Financial Highlights
G4-11	<ul style="list-style-type: none"> <li>▪ Report the percentage of total employees covered by collective bargaining agreements.</li> </ul>	-	<ul style="list-style-type: none"> <li>▪ <a href="#">Investor Relations &gt; IR Library &gt; Annual Report &gt; Financial Highlights (P1)</a></li> </ul>	
G4-12	<ul style="list-style-type: none"> <li>▪ Describe the organization's supply chain.</li> </ul>	-	<ul style="list-style-type: none"> <li>▪ <a href="#">Supply Chain</a></li> </ul>	P36 Ensuring Fair and Equitable Partnerships with Suppliers
G4-13	<p>Report any significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain, including:</p> <ul style="list-style-type: none"> <li>▪ operations, including facility openings, closings, and expansions</li> <li>▪ Changes in the share capital structure and other capital formation, maintenance, and alteration operations (for private sector organizations)</li> <li>▪ Changes in the location of suppliers, the structure of the supply chain, or in relationships with suppliers, including selection and termination</li> </ul>	-	<ul style="list-style-type: none"> <li>▪ NA</li> </ul>	
G4-14	<p>Report whether and how the precautionary approach or principle is addressed by the organization.</p>	-	<ul style="list-style-type: none"> <li>▪ <a href="#">CSR Management</a></li> <li>▪ <a href="#">Thorough Compliance</a></li> <li>▪ <a href="#">Supply Chain</a></li> <li>▪ <a href="#">Respect for People and Ensure Comfortable Workplace</a></li> <li>▪ <a href="#">Risk Management</a></li> </ul>	P39-42 Striving to Become a Company Trusted by All Stakeholders
G4-15	<p>List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses.</p>	-	<ul style="list-style-type: none"> <li>▪ <a href="#">Management's Commitment</a></li> <li>▪ <a href="#">CSR Management &gt; Human rights initiatives</a></li> </ul>	P3-4 Management's Commitment P6 Promoting Human Rights Initiatives
G4-16	<p>List memberships of associations (such as industry associations) and national or international advocacy organizations in which the organization:</p> <ul style="list-style-type: none"> <li>▪ Holds a position on the governance body</li> <li>▪ Participates in projects or committees</li> </ul>	-	<ul style="list-style-type: none"> <li>▪ <a href="#">CSR Management &gt; Human rights initiatives</a></li> </ul>	P6 Promoting Human Rights Initiatives

	<ul style="list-style-type: none"> <li>▪ Provides substantive funding beyond routine membership dues</li> <li>▪ Views membership as strategic</li> </ul>			
<b>Identified Material Aspects and Boundaries</b>				
G4-17	<ul style="list-style-type: none"> <li>▪ List all entities included in the organization's consolidated financial statements or equivalent documents.</li> <li>▪ Report whether any entity included in the organization's consolidated financial statements or equivalent documents is not covered by the report.</li> </ul>	-	<ul style="list-style-type: none"> <li>▪ <a href="#">NGK Report 2016 Editorial Policy</a></li> <li>▪ <a href="#">About NGK</a></li> <li>▪ <a href="#">New Five-Year Environmental Action Plan (the Environment)</a></li> </ul>	P1 Editorial Policy P45-46 Corporate Outline
G4-18	<ul style="list-style-type: none"> <li>▪ Explain the process for defining the report content and the Aspect Boundaries.</li> <li>▪ Explain how the organization has implemented the Reporting Principles for Defining Report Content.</li> </ul>	-	<ul style="list-style-type: none"> <li>▪ <a href="#">CSR Management</a></li> <li>▪ <a href="#">NGK Report 2016 Editorial Policy</a></li> </ul>	P6 Corporate Philosophy
G4-19	<ul style="list-style-type: none"> <li>▪ List all the material Aspects identified in the process for defining report content.</li> </ul>	-	<ul style="list-style-type: none"> <li>▪ <a href="#">CSR Management</a></li> </ul>	P6 Corporate Philosophy
G4-20	<p>For each material Aspect, report the Aspect Boundary within the organization, as follows:</p> <ul style="list-style-type: none"> <li>▪ Report whether the Aspect is material within the organization</li> <li>▪ If the Aspect is not material for all entities within the organization (as described in G4-17), select one of the following two approaches and report either: <ul style="list-style-type: none"> <li>- The list of entities or groups of entities included in G4-17 for which the Aspect is not material or</li> <li>- The list of entities or groups of entities included in G4-17 for which the Aspects is material</li> </ul> </li> <li>▪ Report any specific limitation regarding the Aspect Boundary within the organization</li> </ul>	-	<ul style="list-style-type: none"> <li>▪ <a href="#">CSR Management &gt; Materiality</a></li> <li>▪ <a href="#">Special Feature: New Five-Year Environmental Action Plan and Environmental Products Preservation of Global Environment &gt; New Five-Year Environmental Action Plan</a></li> </ul>	P6 Corporate Philosophy P11-16 Special Feature: New Five-Year Environmental Action Plan and Environmental Products
G4-21	<p>For each material Aspect, report the Aspect Boundary outside the organization, as follows:</p> <ul style="list-style-type: none"> <li>▪ Report whether the Aspect is material outside of the organization</li> <li>▪ If the Aspect is material outside of the organization, identify the entities, groups of entities or elements for which the Aspect is material. In addition, describe the geographical location where the Aspect is material for the entities identified</li> <li>▪ Report any specific limitation regarding the Aspect Boundary outside the organization</li> </ul>	-	※Listed as necessary	※Listed as necessary
G4-22	Report the effect of any restatements of information provided in previous reports, and the reasons for such restatements.	-	NA	NA



G4-23	Report significant changes from previous reporting periods in the Scope and Aspect Boundaries.	-	NA	NA
Stakeholder Engagemen				
G4-24	<ul style="list-style-type: none"> <li>Provide a list of stakeholder groups engaged by the organization.</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li><a href="#">CSR Management &gt; Targeted Stakeholder and Response Policies</a></li> </ul>	
G4-25	<ul style="list-style-type: none"> <li>Report the basis for identification and selection of stakeholders with whom to engage.</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li><a href="#">CSR Management &gt; Targeted Stakeholder and Response Policies</a></li> </ul>	
G4-26	<ul style="list-style-type: none"> <li>Report the organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process.</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li><a href="#">CSR Management</a></li> <li><a href="#">Realization of Higher Quality Products and Services &gt; System for Making Use of Customer Feedback in Management</a></li> <li><a href="#">Connection to Society</a></li> </ul>	P36 Ensuring Fair and Equitable Partnerships with Suppliers P37-38 As a Company Contributing to a Society and Trusted by Communities across the Globe P42 CSR Talk Live
G4-27	<ul style="list-style-type: none"> <li>Report key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholder groups that raised each of the key topics and concerns.</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li><a href="#">Supply Chain &gt; Communication with Procurement Partners</a></li> <li><a href="#">Realization of Higher Quality Products and Services &gt; System for Making Use of Customer Feedback in Management</a></li> <li><a href="#">Respect of Humanity and Assurance of Comfortable Working Environment &gt; Dialogue with Employees</a></li> <li><a href="#">Third Party Opinion</a></li> </ul>	P36 Ensuring Fair and Equitable Partnerships with Suppliers P42 CSR Talk Live P50 Third Party Opinion, Response from NGK
Report Profile				
G4-28	<ul style="list-style-type: none"> <li>Reporting period (such as fiscal or calendar year) for information provided.</li> </ul>		<ul style="list-style-type: none"> <li><a href="#">NGK Report 2016 Editorial Policy</a></li> </ul>	P1 Editorial Policy
G4-29	<ul style="list-style-type: none"> <li>Date of most recent previous report (if any).</li> </ul>			F4
G4-30	<ul style="list-style-type: none"> <li>Reporting cycle (such as annual, biennial).</li> </ul>		<ul style="list-style-type: none"> <li><a href="#">NGK Report 2016 Editorial Policy</a></li> </ul>	P1 Editorial Policy
G4-31	<ul style="list-style-type: none"> <li>Provide the contact point for questions regarding the report or its contents.</li> </ul>		<ul style="list-style-type: none"> <li><a href="#">Contact</a></li> </ul>	F4
G4-32	<ul style="list-style-type: none"> <li>Report the 'in accordance' option the organization has chosen.</li> <li>Report the GRI Content Index for the chosen option (see tables below).</li> <li>Report the reference to the External Assurance Report, if the report has been externally assured.</li> </ul>		<ul style="list-style-type: none"> <li><a href="#">Independent Practitioner's Assurance Report</a></li> </ul>	P49 Independent Practitioner's Assurance Report
G4-33	<ul style="list-style-type: none"> <li>Report the organization's policy and current practice with regard to seeking external assurance for the report.</li> <li>If not included in the assurance report accompanying the sustainability report, report the scope and basis of any external assurance provided.</li> <li>Report the relationship between the organization and</li> </ul>		<ul style="list-style-type: none"> <li><a href="#">Independent Practitioner's Assurance Report</a></li> <li><a href="#">Third Party Opinion</a></li> </ul>	P49 Independent Practitioner's Assurance Report P50 Third Party Opinion

	<p>the assurance providers.</p> <ul style="list-style-type: none"> <li>▪ Report whether the highest governance body or senior executives are involved in seeking assurance for the organization's sustainability report.</li> </ul>			
<b>Governance</b>				
G4-34	<ul style="list-style-type: none"> <li>▪ Report the governance structure of the organization, including committees of the highest governance body. Identify any committees responsible for decision-making on economic, environmental and social impacts.</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">Corporate Governance</a></li> </ul>	P39-40 Corporate Governance
G4-35	<ul style="list-style-type: none"> <li>▪ Report the process for delegating authority for economic, environmental and social topics from the highest governance body to senior executives and other employees.</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">Corporate Governance &gt; Corporate Governance Scheme &gt; Committees on Corporate Governance</a></li> </ul>	P39-40 Corporate Governance > Corporate Governance Scheme, Enhancing the Corporate Governance Scheme
G4-36	<ul style="list-style-type: none"> <li>▪ Report whether the organization has appointed an executive-level position or positions with responsibility for economic, environmental and social topics, and whether post holders report directly to the highest governance body</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">Corporate Governance</a></li> <li>▪ <a href="#">CSR Management</a></li> <li>▪ <a href="#">Preservation of Global Environment &gt; Environmental Management Frameworks and Environmental Management System</a></li> </ul>	P39-40 Corporate Governance > Corporate Governance Scheme, Enhancing the Corporate Governance Scheme Corporate Governance
G4-37	<ul style="list-style-type: none"> <li>▪ Report processes for consultation between stakeholders and the highest governance body on economic, environmental and social topics. If consultation is delegated, describe to whom and any feedback processes to the highest governance body</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">Corporate Governance &gt; Corporate Governance Scheme &gt; Committees on Corporate Governance &gt; Corporate Governance Enhancement</a></li> <li>▪ <a href="#">CSR Management</a></li> </ul>	P39-40 Corporate Governance > Corporate Governance Scheme, Enhancing the Corporate Governance Scheme Corporate Governance
G4-38	<p>Report the composition of the highest governance body and its committees by:</p> <ul style="list-style-type: none"> <li>▪ Executive or non-executive</li> <li>▪ Independence</li> <li>▪ Tenure on the governance body</li> <li>▪ Number of each individual's other significant positions and commitments, and the nature of the commitments</li> <li>▪ Gender</li> <li>▪ Membership of under-represented social groups</li> <li>▪ Competences relating to economic, environmental and social impacts</li> <li>▪ Stakeholder representation</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">Corporate Governance &gt; Corporate Governance Scheme</a></li> <li>▪ <a href="#">Investor Relations &gt; IR Library &gt; Annual Report &gt; Corporate Governance (P10); Corporate Data (P69); Board of Directors, Executive Officers and Audit &amp; Supervisory Board (P70-71)</a></li> </ul>	P23 Management Structure P39-40 Corporate Governance > Corporate Governance Scheme, Enhancing the Corporate Governance Scheme
G4-39	<ul style="list-style-type: none"> <li>▪ Report whether the Chair of the highest governance body is also an executive officer (and, if so, his or her function within the organization's management and the reasons for this arrangement).</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">Corporate Governance &gt; Corporate Governance Scheme</a></li> </ul>	P39-40 Corporate Governance > Corporate Governance Scheme, Enhancing the Corporate Governance Scheme
G4-40	<p>Report the nomination and selection processes for the highest governance body and its</p>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">Corporate Governance</a></li> </ul>	

	<p>committees, and the criteria used for nominating and selecting highest governance body members, including:</p> <ul style="list-style-type: none"> <li>▪ Whether and how diversity is considered</li> <li>▪ Whether and how independence is considered</li> <li>▪ Whether and how expertise and experience relating to economic, environmental and social topics are considered</li> <li>▪ Whether and how stakeholders (including shareholders) are involved</li> </ul>			
G4-41	<p>Report processes for the highest governance body to ensure conflicts of interest are avoided and managed. Report whether conflicts of interest are disclosed to stakeholders, including, as a minimum:</p> <ul style="list-style-type: none"> <li>▪ Cross-board membership</li> <li>▪ Cross-shareholding with suppliers and other stakeholders</li> <li>▪ Existence of controlling shareholder</li> <li>▪ Related party disclosures</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">Corporate Governance</a></li> <li>▪ <a href="#">Investor Relations &gt; IR Library &gt; Annual Report &gt; Corporate Governance (P67-73)</a></li> </ul>	
G4-42	<ul style="list-style-type: none"> <li>▪ Report the highest governance body's and senior executives' roles in the development, approval, and updating of the organization's purpose, value or mission statements, strategies, policies, and goals related to economic, environmental and social impacts.</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">Corporate Governance</a></li> <li>▪ <a href="#">CSR Management</a></li> </ul>	
G4-43	<ul style="list-style-type: none"> <li>▪ Report the measures taken to develop and enhance the highest governance body's collective knowledge of economic, environmental and social topics.</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">CSR Management</a></li> </ul>	
G4-44	<ul style="list-style-type: none"> <li>▪ Report the processes for evaluation of the highest governance body's performance with respect to governance of economic, environmental and social topics. Report whether such evaluation is independent or not, and its frequency. Report whether such evaluation is a self-assessment.</li> <li>▪ Report actions taken in response to evaluation of the highest governance body's performance with respect to governance of economic, environmental and social topics, including, as a minimum, changes in membership and organizational practice.</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">P13 Corporate Governance &gt; Basic Approach to Corporate Governance</a></li> <li>▪ <a href="#">P14 CSR Management</a></li> </ul>	P13 Corporate Governance > Basic Approach to Corporate Governance P14 CSR Management
G4-45	<ul style="list-style-type: none"> <li>▪ Report the highest governance body's role in the identification and management of economic, environmental and social</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">Corporate Governance</a></li> <li>▪ <a href="#">Risk Management</a></li> <li>▪ <a href="#">Preservation of Global Environment &gt; Environmental</a></li> </ul>	

	<p>impacts, risks, and opportunities. Include the highest governance body's role in the implementation of due diligence processes.</p> <ul style="list-style-type: none"> <li>▪ Report whether stakeholder consultation is used to support the highest governance body's identification and management of economic, environmental and social impacts, risks, and opportunities.</li> </ul>		<p><a href="#">Management Frameworks and Environmental Management System</a></p>	
G4-46	<ul style="list-style-type: none"> <li>▪ Report the highest governance body's role in reviewing the effectiveness of the organization's risk management processes for economic, environmental and social topics.</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">Corporate Governance</a></li> <li>▪ <a href="#">Risk Management &gt; Risk Management System</a></li> </ul>	
G4-47	<ul style="list-style-type: none"> <li>▪ Report the frequency of the highest governance body's review of economic, environmental and social impacts, risks, and opportunities.</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">CSR Management</a></li> <li>▪ <a href="#">Risk Management</a></li> </ul>	
G4-48	<ul style="list-style-type: none"> <li>▪ Report the highest committee or position that formally reviews and approves the organization's sustainability report and ensures that all material Aspects are covered.</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">CSR Management</a></li> </ul>	
G4-49	<ul style="list-style-type: none"> <li>▪ Report the process for communicating critical concerns to the highest governance body.</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">Corporate Governance</a></li> <li>▪ <a href="#">Risk Management</a></li> </ul>	
G4-50	<ul style="list-style-type: none"> <li>▪ Report the nature and total number of critical concerns that were communicated to the highest governance body and the mechanism(s) used to address and resolve them.</li> </ul>	6.2 Organizational governance		
G4-51	<ul style="list-style-type: none"> <li>▪ Report the remuneration policies for the highest governance body and senior executives for the below types of remuneration: <ul style="list-style-type: none"> <li>- Fixed pay and variable pay: <ul style="list-style-type: none"> <li>&gt; Performance-based pay</li> <li>&gt; Equity-based pay</li> <li>&gt; Bonuses</li> <li>&gt; Deferred or vested shares</li> </ul> </li> <li>- Sign-on bonuses or recruitment incentive payments</li> <li>- Termination payments</li> <li>- Clawbacks</li> <li>- Retirement benefits, including the difference between benefit schemes and contribution rates for the highest governance body, senior executives, and all other employees.</li> </ul> </li> <li>▪ Specific restrictions on organizational boundaries</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">Corporate Governance &gt; Support for the Corporate Governance Code</a></li> </ul>	
G4-52	<ul style="list-style-type: none"> <li>▪ Report the process for determining remuneration. Report whether remuneration consultants are involved in determining remuneration and whether they are independent of management. Report any</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li>▪ <a href="#">Corporate Governance</a></li> <li>▪ <a href="#">Corporate Governance Report</a></li> </ul>	

	other relationships which the remuneration consultants have with the organization.			
G4-53	<ul style="list-style-type: none"> <li>Report how stakeholders' views are sought and taken into account regarding remuneration, including the results of votes on remuneration policies and proposals, if applicable.</li> </ul>	6.2 Organizational governance		
G4-54	<ul style="list-style-type: none"> <li>Report the ratio of the annual total compensation for the organization's highest-paid individual in each country of significant operations to the median annual total compensation for all employees (excluding the highest-paid individual) in the same country.</li> </ul>	6.2 Organizational governance		
G4-55	<ul style="list-style-type: none"> <li>Report the ratio of percentage increase in annual total compensation for the organization's highest-paid individual in each country of significant operations to the median percentage increase in annual total compensation for all employees (excluding the highest-paid individual) in the same country.</li> </ul>	6.2 Organizational governance		

### Ethics and Integrity

G4-56	<ul style="list-style-type: none"> <li>Describe the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics.</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li><a href="#">CSR Management</a></li> </ul>	P6 Corporate Philosophy
G4-57	<ul style="list-style-type: none"> <li>Report the internal and external mechanisms for seeking advice on ethical and lawful behavior, and matters related to organizational integrity, such as helplines or advice lines.</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li><a href="#">Thorough Compliance &gt; Compliance Promotion Structure</a></li> </ul>	P40 Enhancing the Whistle-Blowing System P41 Thorough Compliance
G4-58	<ul style="list-style-type: none"> <li>Report the internal and external mechanisms for reporting concerns about unethical or unlawful behavior, and matters related to organizational integrity, such as escalation through line management, whistleblowing mechanisms or hotlines.</li> </ul>	6.2 Organizational governance	<ul style="list-style-type: none"> <li><a href="#">Thorough Compliance &gt; Compliance Promotion Structure</a></li> </ul>	P19-20 How to Engage in Business Activities > Thorough Compliance and Risk Management > Compliance Promotion Structure

### Disclosures on Management Approach

G4-DMA	<ul style="list-style-type: none"> <li>Report why the Aspect is material. Report the impacts that make this Aspect material.</li> <li>Report how the organization manages the material Aspect or its impacts.</li> <li>Report the evaluation of the management approach, including: <ul style="list-style-type: none"> <li>The mechanisms for evaluating the effectiveness of the management approach</li> <li>The results of the evaluation of the management approach</li> <li>Any related adjustments to</li> </ul> </li> </ul>		<ul style="list-style-type: none"> <li><a href="#">CSR Management</a></li> <li><a href="#">Preservation of Global Environment &gt; Environmental Management Frameworks and Environmental Management System</a></li> </ul>	
--------	--	--	---	--

	the management approach			
Economic Performance				
G4-EC1	▪ Direct economic value generated and distributed	6.8.3 Community involvement 6.8.7 Wealth and income creation	▪ <a href="#">Investor Relations &gt; IR Library &gt; Annual Report &gt; Financial Highlights (P1)</a>	P18-22 Business Overview P43-44 Financial Highlights
G4-EC2	▪ Financial implications and other risks and opportunities for the organization's activities due to climate change	6.2 Organizational governance 6.5.5 Climate change mitigation and adaptation		
G4-EC3	▪ Coverage of the organization's defined benefit plan obligations			
G4-EC4	▪ Financial assistance received from government	6.6.4 Responsible political involvement		
G4-EC5	▪ Ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation	6.4.4 Conditions of work and social protection 6.8.7 Wealth and income creation		
G4-EC6	▪ Proportion of senior management hired from the local community at significant locations of operation	6.8.5 Employment creation and skills development		
G4-EC7	▪ Development and impact of infrastructure investments and services supported	6.3.9 Economic, social and cultural rights 6.8.9 Social investment		
G4-EC8	▪ Significant indirect economic impacts, including the extent of impacts	6.3.9 Economic, social and cultural rights 6.6 Fair operating practices 6.7 Consumer issues 6.8 Community involvement and development		
G4-EC9	▪ Proportion of spending on local suppliers at significant locations of operation	6.6.6 Promoting social responsibility in the value chain 6.8.5 Employment creation and skills development		
Environmental				
G4-EN1	▪ Materials used by weight or volume	6.5.4 Sustainable resource use	▪ <a href="#">Preservation of Global Environment &gt; Overall Perspective of Environmental Impact</a>	P26 As a Member of Society > Global Environmental Conservation > Overall Perspective of Environmental Impact
G4-EN2	▪ Percentage of materials used that are recycled input materials	6.5.4 Sustainable resource use	▪ <a href="#">Preservation of Global Environment &gt; Environmental Impact Reduction Initiatives</a>	P27-29 Results of Initiatives Within the Third Five-Year Environmental Action Plan
G4-EN3	▪ Energy consumption within the organization	6.5.4 Sustainable resource use 6.5.5 Climate change mitigation and adaptation	▪ <a href="#">Preservation of Global Environment &gt; Overall Perspective of Environmental Impact</a>	P26 Activities Aimed at Reducing Environmental Impact
G4-EN4	▪ Energy consumption outside of the organization	6.5.4 Sustainable resource use 6.5.5 Climate change mitigation and adaptation	▪ <a href="#">Preservation of Global Environment &gt; Overall Perspective of Environmental Impact</a>	P26 Activities Aimed at Reducing Environmental Impact



G4-EN5	▪ Energy intensity	6.5.4 Sustainable resource use	▪ <a href="#">Preservation of Global Environment &gt; Five-Year Environmental Action Plan</a>	P27-29 Results of Initiatives Within the Third Five-Year Environmental Action Plan
G4-EN6	▪ Reduction of energy consumption	6.5.4 Sustainable resource use	▪ <a href="#">Preservation of Global Environment &gt; Five-Year Environmental Action Plan</a>	P27-29 Results of Initiatives Within the Third Five-Year Environmental Action Plan
G4-EN7	▪ Reductions in energy requirements of products and services	6.5.4 Sustainable resource use 6.5.5 Climate change mitigation and adaptation	▪ <a href="#">Products &gt; Power Business &gt;NAS Batteries, Electronics Business, Ceramic Products Business</a> ▪ <a href="#">Special Feature: Environmental Products</a>	P14-16 Promoting Environmental Contribution through Products
G4-EN8	▪ Total water withdrawal by source	6.5.4 Sustainable resource use	▪ <a href="#">Preservation of Global Environment &gt; Overall Perspective of Environmental Impact</a>	
G4-EN9	▪ Water sources significantly affected by withdrawal of water	6.5.4 Sustainable resource use 6.5.6 Protection of the environment, biodiversity and restoration of natural habits	▪ <a href="#">Preservation of Global Environment &gt; Environmental Impact Reduction Initiatives</a>	
G4-EN10	▪ Percentage and total volume of water recycled and reused	6.5.4 Sustainable resource use		
G4-EN11	▪ Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	6.5.6 Protection of the environment, biodiversity and restoration of natural habits	NA	NA
G4-EN12	▪ Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	6.5.6 Protection of the environment, biodiversity and restoration of natural habits		
G4-EN13	▪ Habitats protected or restored	6.5.6 Protection of the environment, biodiversity and restoration of natural habits	▪ <a href="#">Preservation of Global Environment &gt; Biodiversity Initiatives</a>	P29 Promoting Biodiversity Initiatives
G4-EN14	▪ Total number of iucn red list species and national conservation list species with habitats in areas affected by operations, by level of extinction risk	6.5.6 Protection of the environment, biodiversity and restoration of natural habits		
G4-EN15	▪ Direct greenhouse gas (GHG) emissions (scope 1)	6.5.5 Climate change mitigation and adaptation	▪ <a href="#">Preservation of Global Environment &gt; Overall Perspective of Environmental Impact</a>	P26 Activities Aimed at Reducing Environmental Impact
G4-EN16	▪ Energy indirect greenhouse gas (GHG) emissions (scope 2)	6.5.5 Climate change mitigation and adaptation	▪ <a href="#">Preservation of Global Environment &gt; Overall Perspective of Environmental Impact</a>	P26 Activities Aimed at Reducing Environmental Impact
G4-EN17	▪ Other indirect greenhouse gas (GHG) emissions (scope 3)	6.5.5 Climate change mitigation and adaptation		
G4-EN18	▪ Greenhouse gas (GHG) emissions intensity	6.5.5 Climate change mitigation and adaptation	▪ <a href="#">Preservation of Global Environment &gt; Environmental Impact Reduction Initiatives</a>	P26 Activities Aimed at Reducing Environmental Impact
G4-EN19	▪ Reduction of greenhouse gas (GHG) emissions	6.5.5 Climate change mitigation and adaptation	▪ <a href="#">Preservation of Global Environment &gt; Environmental Impact Reduction Initiatives</a>	P26 Activities Aimed at Reducing Environmental Impact

G4-EN20	<ul style="list-style-type: none"> <li>Emissions of ozone-depleting substances (ODS)</li> </ul>	<p>6.5.3 Prevention of pollution</p> <p>6.5.5 Climate change mitigation and adaptation</p>		
G4-EN21	<ul style="list-style-type: none"> <li>NOx, SOx, and other significant air emissions</li> </ul>	<p>6.5.3 Prevention of pollution</p>		
G4-EN22	<ul style="list-style-type: none"> <li>Total water discharge by quality and destination</li> </ul>	<p>6.5.3 Prevention of pollution</p>	<ul style="list-style-type: none"> <li><a href="#">Preservation of Global Environment &gt; Overall Perspective of Environmental Impact</a></li> <li>*Total amount only</li> </ul>	<p>P26 Activities Aimed at Reducing Environmental Impact</p> <p>*Total amount only</p>
G4-EN23	<ul style="list-style-type: none"> <li>Total weight of waste by type and disposal method</li> </ul>	<p>6.5.3 Prevention of pollution</p>	<ul style="list-style-type: none"> <li><a href="#">Preservation of Global Environment &gt; Overall Perspective of Environmental Impact</a></li> <li>* Total weight of waste by disposal method</li> <li><a href="#">Preservation of Global Environment &gt; Overall Perspective of Environmental Impact</a></li> </ul>	
G4-EN24	<ul style="list-style-type: none"> <li>Total number and volume of significant spills</li> </ul>	<p>6.5.3 Prevention of pollution</p>	NA	NA
G4-EN25	<ul style="list-style-type: none"> <li>Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally</li> </ul>	<p>6.5.3 Prevention of pollution</p>		
G4-EN26	<ul style="list-style-type: none"> <li>Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff</li> </ul>	<p>6.5.6 Protection of the environment, biodiversity and restoration of natural habits</p>	<ul style="list-style-type: none"> <li><a href="#">Preservation of Global Environment &gt; Biodiversity Initiatives</a></li> </ul>	
G4-EN27	<ul style="list-style-type: none"> <li>Extent of impact mitigation of environmental impacts of products and services</li> </ul>	<p>6.5 Environment</p> <p>6.6.6 Promoting social responsibility in the value chain</p> <p>6.7.5 Sustainable consumption</p>	<ul style="list-style-type: none"> <li><a href="#">Preservation of Global Environment &gt; Creating Products that Contribute to the Environment</a></li> <li><a href="#">Special Feature: New Five-Year Environmental Action Plan</a></li> </ul>	<p>P11-16 Special Feature: New Five-Year Environmental Action Plan</p>
G4-EN28	<ul style="list-style-type: none"> <li>Percentage of products sold and their packaging materials that are reclaimed by category</li> </ul>	<p>6.5.4 Sustainable resource use</p> <p>6.6.6 Promoting social responsibility in the value chain</p> <p>6.7.5 Sustainable consumption</p>		
G4-EN29	<ul style="list-style-type: none"> <li>Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations</li> </ul>	<p>6.2 Organizational governance</p> <p>6.5 Environment</p> <p>6.6.3 Anti-corruption</p>	NA	
G4-EN30	<ul style="list-style-type: none"> <li>Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce</li> </ul>	<p>6.5 Environment</p> <p>6.6.6 Promoting social responsibility in the value chain</p>	<ul style="list-style-type: none"> <li><a href="#">Preservation of Global Environment &gt; Fiscal 2015 Initiatives Within the Third Five-Year Environmental Action Plan (2011-2015)</a></li> </ul>	<p>P27 Preservation of Global Environment &gt; Fiscal 2015 Initiatives Within the Third Five-Year Environmental Action Plan (2011-2015)</p>
G4-EN31	<ul style="list-style-type: none"> <li>Total environmental protection expenditures and investments by type</li> </ul>	<p>6.2 Organizational governance</p> <p>6.5 Environment</p>	<ul style="list-style-type: none"> <li><a href="#">Preservation of Global Environment &gt; Environmental Accounting</a></li> </ul>	

G4-EN32	▪ Percentage of new suppliers that were screened using environmental criteria	6.5 Environment 6.6.6 Promoting social responsibility in the value chain		
G4-EN33	▪ Significant actual and potential negative environmental impacts in the supply chain and actions taken	6.5 Environment 6.6.6 Promoting social responsibility in the value chain		
G4-EN34	▪ Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms	6.2 Organizational governance 6.5 Environment	NA	NA

### Labor Practices and Decent Work

G4-LA1	▪ Total number and rates of new employee hires and employee turnover by age group, gender and region	6.3.10 Fundamental principles and rights at work 6.4.3 Employment and employment relationship	▪ <a href="#">Respect for People and Ensure Comfortable Workplace</a>	P44 Financial Highlights, Number of Employees, Workforce by Region
G4-LA2	▪ Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation	6.4.4 Conditions of work and social protection		
G4-LA3	▪ Return to work and retention rates after parental leave, by gender	6.4.4 Conditions of work and social protection	▪ <a href="#">Respect for Employees &gt; Promoting a Work-Life Balance</a>	
G4-LA4	▪ Minimum notice periods regarding operational changes, including whether these are specified in collective agreements	6.4.4 Conditions of work and social protection		
G4-LA5	▪ Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs	6.3.10 Fundamental principles and rights at work 6.4.3 Employment and employment relationship 6.4.6 Health and safety at work	▪ <a href="#">Respect for Employees &gt; Health and Safety</a>	
G4-LA6	▪ Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender	6.4.6 Health and safety at work	▪ <a href="#">Respect for Employees &gt; Health and Safety</a>	
G4-LA7	▪ Workers with high incidence or high risk of diseases related to their occupation	6.4.6 Health and safety at work		
G4-LA8	▪ Health and safety topics covered in formal agreements with trade unions	6.4.6 Health and safety at work 6.4.5 Social Dialogue	▪ <a href="#">Respect for Employees &gt; Health and Safety</a>	
G4-LA9	▪ Average hours of training per year per employee by gender, and by employee category	6.4.7 Human development and training in the workplace	▪ <a href="#">Respect for Employees &gt; Human Resource Development</a>	
G4-LA10	▪ Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	6.4.7 Human development and training in the workplace 6.8.5 Employment creation and skills development	▪ <a href="#">Respect for Employees &gt; Human Resource Development</a>	

G4-LA11	<ul style="list-style-type: none"> <li>Percentage of employees receiving regular performance and career development reviews, by gender and by employee category</li> </ul>	6.4.7 Human development and training in the workplace	<ul style="list-style-type: none"> <li><a href="#">Respect for Employees &gt; Human Resource Development</a></li> </ul>	
G4-LA12	<ul style="list-style-type: none"> <li>Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity</li> </ul>	6.3.10 Fundamental principles and rights at work 6.4.3 Employment and employment relationship	<ul style="list-style-type: none"> <li><a href="#">Respect for Employees &gt; Diversity</a></li> </ul>	
G4-LA13	<ul style="list-style-type: none"> <li>Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation</li> </ul>	6.3.10 Fundamental principles and rights at work 6.4.3 Employment and employment relationship	<ul style="list-style-type: none"> <li><a href="#">Careers</a></li> <li>Starting salary for disabled employees disclosed on external sites (Careers &gt; Disabled Employment &gt; Compensation and work conditions)</li> </ul>	
G4-LA14	<ul style="list-style-type: none"> <li>Percentage of new suppliers that were screened using labor practices criteria</li> </ul>	6.4.4 Conditions of work and social protection 6.6.6 Promoting social responsibility in the value chain		
G4-LA15	<ul style="list-style-type: none"> <li>Significant actual and potential negative impacts for labor practices in the supply chain and actions taken</li> </ul>	6.4.4 Conditions of work and social protection 6.6.6 Promoting social responsibility in the value chain	<ul style="list-style-type: none"> <li><a href="#">Supply Chain &gt; Promotion of CSR Procurement</a></li> </ul>	
G4-LA16	<ul style="list-style-type: none"> <li>Number of grievances about labor practices filed, addressed, and resolved through formal grievance mechanisms</li> </ul>	6.2 Organizational governance 6.4.4 Conditions of work and social protection		

### SOCIAL (Human Rights)

G4-HR1	<ul style="list-style-type: none"> <li>Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening</li> </ul>	6.3 Human rights 6.6 Fair operating practices		
G4-HR2	<ul style="list-style-type: none"> <li>Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained</li> </ul>	6.3 Human rights 6.6.6 Promoting social responsibility in the value chain	<ul style="list-style-type: none"> <li><a href="#">Thorough Compliance &gt; Promoting Compliance Education</a></li> </ul>	
G4-HR3	<ul style="list-style-type: none"> <li>Total number of incidents of discrimination and corrective actions taken</li> </ul>	6.3.3 Due diligence 6.3.6 Resolving grievances 6.3.7 Discrimination and vulnerable groups		
G4-HR4	<ul style="list-style-type: none"> <li>Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights</li> </ul>	6.3.3 Due diligence 6.3.5 Avoidance of complicity 6.3.10 Fundamental principles and rights at work 6.4.5 Social Dialogue 6.6.6 Promoting social responsibility in the value chain		
G4-HR5	<ul style="list-style-type: none"> <li>Operations and suppliers identified as having significant risk for incidents of child labor,</li> </ul>	6.3.3 Due diligence 6.3.5 Avoidance of complicity	<ul style="list-style-type: none"> <li><a href="#">Supply Chain &gt; Promotion of CSR Procurement</a></li> </ul>	P36 Ensuring Fair and Equitable Partnerships with Suppliers

	and measures taken to contribute to the effective abolition of child labor	6.3.10 Fundamental principles and rights at work 6.6.6 Promoting social responsibility in the value chain		
G4-HR6	▪ Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor	6.3.3 Due diligence 6.3.5 Avoidance of complicity 6.3.10 Fundamental principles and rights at work 6.6.6 Promoting social responsibility in the value chain	▪ <a href="#">Supply Chain &gt; Promotion of CSR Procurement</a>	P36 Ensuring Fair and Equitable Partnerships with Suppliers
G4-HR7	▪ Percentage of security personnel trained in the organization's human rights policies or procedures that are relevant to operations	6.3 Human rights 6.4.7 Human development and training in the workplace 6.6.6 Promoting social responsibility in the value chain		
G4-HR8	▪ Total number of incidents of violations involving rights of indigenous peoples and actions taken	6.3.3 Due diligence 6.3.6 Resolving grievances 6.3.7 Discrimination and vulnerable groups 6.6.6 Promoting social responsibility in the value chain	NA	NA
G4-HR9	▪ Total number and percentage of operations that have been subject to human rights reviews or impact assessments	6.3 Human rights 6.6 Fair operating practices		
G4-HR10	▪ Percentage of new suppliers that were screened using human rights criteria	6.3 Human rights 6.6.6 Promoting social responsibility in the value chain		
G4-HR11	▪ Significant actual and potential negative human rights impacts in the supply chain and actions taken	6.3 Human rights 6.6.6 Promoting social responsibility in the value chain		
G4-HR12	▪ Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms	6.3 Human rights		

## SOCIAL (Society)

G4-SO1	▪ Percentage of operations with implemented local community engagement, impact assessments, and development programs	6.3.3 Due diligence 6.5 Environment 6.6 Fair operating practices 6.8 Community involvement and development	▪ <a href="#">Connection to Society &gt; Social Contribution Activities in Collaboration with Regional Communities and NPOs</a>	
G4-SO2	▪ Operations with significant actual and potential negative impacts on local communities	6.3.3 Due diligence 6.5 Environment 6.6 Fair operating practices 6.8 Community involvement and development	NA	NA
G4-SO3	▪ Total number and percentage of operations assessed for risks related to corruption and the significant risks identified	6.2 Organizational governance 6.6 Fair operating practices	▪ <a href="#">Thorough Compliance &gt; Corruption Prevention Structure</a>	

G4-SO4	<ul style="list-style-type: none"> <li>▪ Communication and training on anti-corruption policies and procedures</li> </ul>	<p>6.2 Organizational governance 6.4.7 Human development and training in the workplace 6.6 Fair operating practices</p>	<ul style="list-style-type: none"> <li>▪ <a href="#">Thorough Compliance &gt; Corruption Prevention Structure</a></li> </ul>	
G4-SO5	<ul style="list-style-type: none"> <li>▪ Confirmed incidents of corruption and actions taken</li> </ul>	<p>6.2 Organizational governance 6.6 Fair operating practices</p>	NA	NA
G4-SO6	<ul style="list-style-type: none"> <li>▪ Total value of political contributions by country and recipient/beneficiary</li> </ul>	<p>6.6.4 Responsible political involvement 6.8.9 Social investment</p>		
G4-SO7	<ul style="list-style-type: none"> <li>▪ Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes</li> </ul>	<p>6.6.3 Anti-corruption 6.6.5 Fair competition</p>	<ul style="list-style-type: none"> <li>▪ <a href="#">Thorough Compliance &gt; Status of Law and Regulations Violations</a></li> </ul>	
G4-SO8	<ul style="list-style-type: none"> <li>▪ Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations</li> </ul>	<p>6.2 Organizational governance 6.6 Fair operating practices</p>	<ul style="list-style-type: none"> <li>▪ <a href="#">Thorough Compliance &gt; Status of Law and Regulations Violations</a></li> </ul>	
G4-SO9	<ul style="list-style-type: none"> <li>▪ Percentage of new suppliers that were screened using criteria for impacts on society</li> </ul>	<p>6.6 Fair operating practices</p>		
G4-S10	<ul style="list-style-type: none"> <li>▪ Significant actual and potential negative impacts on society in the supply chain and actions taken</li> </ul>	<p>6.6 Fair operating practices</p>		
G4-S11	<ul style="list-style-type: none"> <li>▪ Number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms</li> </ul>	<p>6.6 Fair operating practices</p>		

### **SOCIAL (Product Responsibility)**

G4-PR1	<ul style="list-style-type: none"> <li>▪ Percentage of significant product and service categories for which health and safety impacts are assessed for improvement</li> </ul>	<p>6.6.3 Anti-corruption 6.6.6 Promoting social responsibility in the value chain 6.7.4 Protecting consumers' health and safety</p>	<ul style="list-style-type: none"> <li>▪ <a href="#">Realization of Higher Quality Products and Services</a></li> <li>▪ <a href="#">Preservation of Global Environment &gt; Five-Year Environmental Action Plan</a></li> <li>▪ <a href="#">Special Feature: New Five-Year Environmental Action Plan</a></li> </ul>	P11-16 New Five-Year Environmental Action Plan (2011-2016)
G4-PR2	<ul style="list-style-type: none"> <li>▪ Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes</li> </ul>	<p>6.2 Organizational governance 6.6.3 Anti-corruption 6.6.6 Promoting social responsibility in the value chain 6.7.4 Protecting consumers' health and safety</p>	NA	NA
G4-PR3	<ul style="list-style-type: none"> <li>▪ Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirements</li> </ul>	<p>6.7.6 Consumer service, support, and complaint and dispute resolution</p>	<ul style="list-style-type: none"> <li>▪ <a href="#">Realization of Higher Quality Products and Services &gt; System for Making Use of Customer Feedback in Management</a></li> </ul>	P17-18 Realizing Our Corporate Philosophy > Aiming for the Realization of High Quality Products and Services > Providing a Wide Variety of Responses to Customer Feedback
G4-PR4	<ul style="list-style-type: none"> <li>▪ Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and</li> </ul>	<p>6.2 Organizational governance 6.7.3 Fair marketing, factual and unbiased information and fair</p>	NA	NA



	labeling, by type of outcomes	contractual practices		
G4-PR5	▪ Results of surveys measuring customer satisfaction	6.7.6 Consumer service, support, and complaint and dispute resolution		
G4-PR6	▪ Sale of banned or disputed products	6.7 Consumer issues	NA	NA
G4-PR7	▪ Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by type of outcomes	6.2 Organizational governance 6.7.3 Fair marketing, factual and unbiased information and fair contractual practices	NA	NA
G4-PR8	▪ Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	6.3.6 Resolving grievances 6.7.6 Consumer service, support, and complaint and dispute resolution 6.7.7 Customer data protection and privacy	NA	NA
G4-PR9	▪ Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	6.2 Organizational governance 6.7.3 Fair marketing, factual and unbiased information and fair contractual practices	NA	NA

# Independent Practitioner's Assurance Report



デロイト トーマツ

(TRANSLATION)



## Independent Practitioner's Assurance Report

July 12, 2016

Mr. Taku Oshima,  
President,  
NGK Insulators, Ltd.

Hiroshi Inanaga  
Chief Executive Officer  
Deloitte Tohatsu Evaluation and Certification Organization Co., Ltd.  
3-3-1, Marunouchi, Chiyoda-ku, Tokyo

We have undertaken a limited assurance engagement of the energy-origin CO<sub>2</sub> emissions on a non-consolidated basis on page 26 and page 27, and the transport volume and basic unit per transport volume on a non-consolidated basis on page 29 (the "CO<sub>2</sub> information") for the year ended March 31, 2016 included in the "NGK Report 2016" (the "Report") of NGK Insulators, Ltd. (the "Company").

### The Company's Responsibility

The Company is responsible for the preparation of the CO<sub>2</sub> information in accordance with the calculation and reporting standard adopted by the Company (the Report page 27). CO<sub>2</sub> quantification is subject to inherent uncertainty for reasons such as incomplete scientific knowledge used to determine emissions factors and numerical data.

### Our Independence and Quality Control

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. We apply International Standard on Quality Control 1, *Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements*, and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

### Our Responsibility

Our responsibility is to express a limited assurance conclusion on the CO<sub>2</sub> information based on the procedures we have performed and the evidence we have obtained. We conducted our limited assurance engagement in accordance with the International Standard on Assurance Engagements ("ISAE") 3000, *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*, issued by the International Auditing and Assurance Standards Board ("IAASB"), ISAE 3410, *Assurance Engagements on Greenhouse Gas Statements*, issued by the IAASB and *the Practical Guideline for the Assurance of Sustainability Information*, issued by the Japanese Association of Assurance Organizations for Sustainability Information.

The procedures we performed were based on our professional judgment and included inquiries, observation of processes performed, inspection of documents, analytical procedures, evaluating the appropriateness of quantification methods and reporting policies, and agreeing or reconciling with underlying records. These procedures also included the following:

- Evaluating whether the Company's methods for estimates are appropriate and had been consistently applied. However, our procedures did not include testing the data on which the estimates are based or reperforming the estimates.
- Undertaking site visits to assess the completeness of the data, data collection methods, source data and relevant assumptions applicable to the sites.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement.

### Limited Assurance Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Company's CO<sub>2</sub> information is not prepared, in all material respects, in accordance with the calculation and reporting standard adopted by the Company.

The above represents a translation, for convenience only, of the original Independent Practitioner's Assurance report issued in the Japanese language.

Member of  
Deloitte Touche Tohmatsu Limited

## Third Party Opinion



**Mr. Koichi Ikeda**

Visiting Professor  
Ritsumeikan University Management School

Commitment at the beginning of the report.

In the following special feature section, New Five-Year Environmental Action Plan (2016-2020) and Environmental Products, specific details are described. The notable point is that the Group has, for the first time, set numerical targets on "development and distribution of products contributing to environmental protection" that are directly linked to its corporate philosophy. Another notable point is that the Group has set the shared goals in Japan and overseas on the main theme regarding reduction of environmental impact (reducing CO<sub>2</sub> emissions and waste) then clearly indicated consolidated management. The report demonstrates the Group's high aspirations to practice the environmental contribution through products and environment-friendly manufacturing at a global level; it also shows the Group's serious commitment to these goals to people within and outside the company. This enhances our trust and expectations for the Group's environmental and social contribution as well as for the specific results the Group brings that integrate such contribution into business growth.

Moreover, the Group also stresses that the driving force for growth is each and every employee. Based on this idea, the report introduces various practical activities in ESG Report 2: Society, reflecting the top commitment to build a company where each employee can fully demonstrate his/her potential and initiative. In order to accomplish its corporate mission to provide products and services that contribute to the quality of life, the Group engages in a variety of activities, including human resource development, a safe work environment, and an employee-friendly environment for women. The report introduces these activities using a lively style with photos, simple charts, and real voices of people in the field; that is one of the wonderful features we can see throughout the NGK Report 2016.

We can say that the NGK Report 2016 has set the direction and central axis toward an integrated report demanded by society. I hope the Group continues to refine the structure of the report to gain further support and understanding from society, as well as to review the contents so that all the information is provided equally and effectively.

The NGK Report 2016 takes on a big challenge to cover everything about the NGK Group in a way that is easy for readers to understand. This is the first step toward an integrated report, combining financial and non-financial (e.g. CSR) information. An integrated report strongly reflects management philosophy and the actual business performance in what information to be chosen from a wide variety of facts and how to be reported. The NGK Report 2016 clearly shows that the Group is fully aware of its social significance and strengths, makes them the foundations of its management, pursues its business based on these foundations, and foresees its sustainable growth.

Under the corporate philosophy "NGK products and technologies must create new value and contribute to the quality of life," the NGK Group has placed the highest priority on "environmental and social contribution through products" by leveraging its unique and various technologies such as ceramics, one of its great strengths, in its new Five-Year Environmental Action Plan which started in fiscal 2016. Based on this plan, the Group will actively promote efforts to develop and spread environmentally-friendly products. These are emphasized in the Management's

### Response from NGK



**Nobumitsu Saji**

Director and Senior Vice  
President  
CSR Committee Chair

Thank you very much for sharing your valuable opinions.

Starting this year, we have combined financial and non-financial information as the NGK Report in its printed version. All NGK Group staff and employees are focused on realizing our corporate philosophy by reflecting on ourselves and constantly pursuing the essence of "contributing to the global environment and society through work activities," while listening with sincerity to the voices of our stakeholders in an attempt to rise to a higher level. I would appreciate if you would read the report along with the information on our website then give us your candid feedback.

While we anticipate further expansion of business overseas, the global society is increasingly demanding international corporation to comply with laws and regulations. The Group will work as one to live up to the expectations and trust from global society by continuing to recognize compliance as the lynchpin of CSR activities, while also following international standards for decision-making and acting with sincerity.

# NGK Report 2016 Editorial Policy

---

## Reference Guidelines

---

Ministry of the Environment's Environmental Reporting Guidelines (2012) and the Global Reporting Initiative's (GRI) Sustainability Reporting Guidelines (Version 3.1 and 4.0).

## Target Organization

---

As each example differs, data is presented individually for each article in the report.

## Target Period

---

April 1, 2015–March 31, 2016

## Report Content Based on CSR Promotion Actions

---

NGK clearly states eight actions for promoting CSR defined in the NGK Group Guidelines for Corporate Behavior and establishes targets for each action every fiscal year. The CSR Report 2016 is based on these CSR promotion actions and includes chapters partially reorganized from the perspective of socially responsible investment (SRI).